# IOWA'S FIVE-YEAR STRATEGIC HIGHWAY SAFETY PLAN (SHSP)
2024-2028



IOWA | DOT

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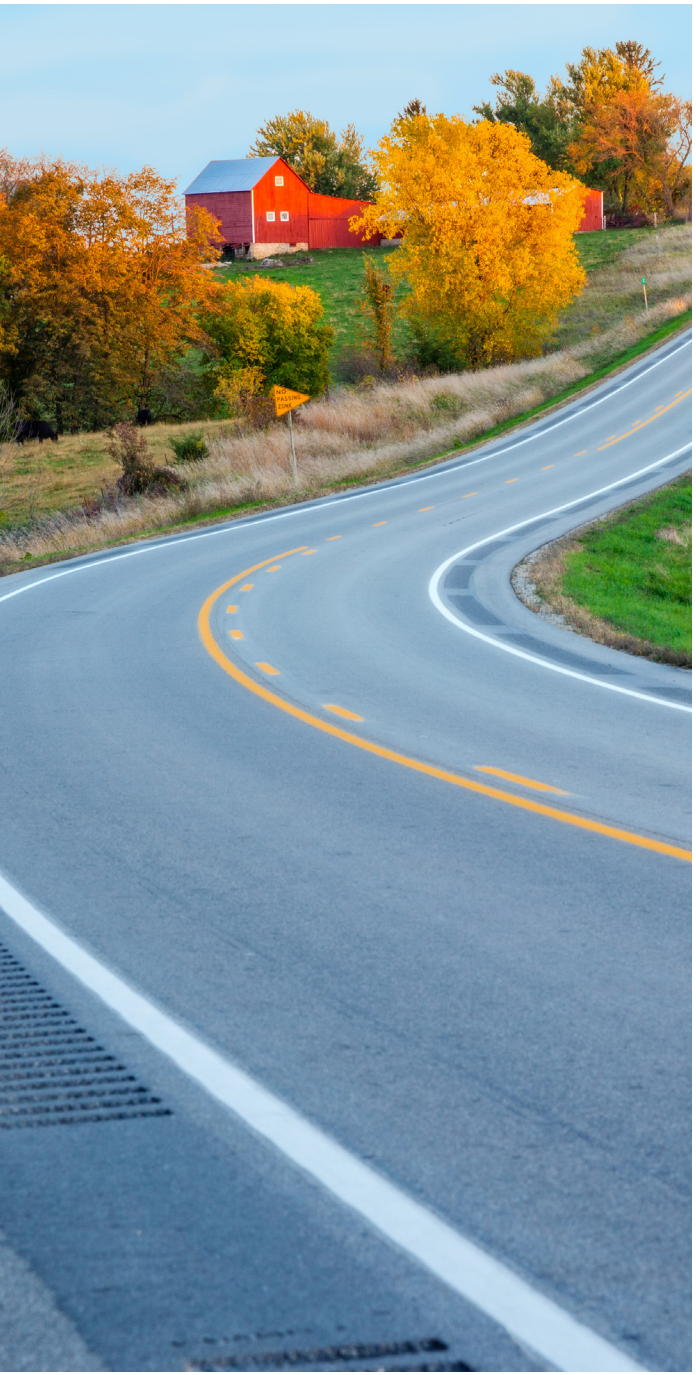

## Letter from Governor Kim Reynolds

My Fellow Travelers,

Thank you for your interest in the state of Iowa and the safety of our roadways.

Whether you have lived in Iowa all of your life, vacation here, or are looking for a great place to establish a career and raise a family, Iowa offers you a wealth of great opportunities. Ensuring we have an efficient and safe transportation system is key to many of those opportunities.

We're excited to join with our safety partners from around the state in supporting Iowa's Five-Year Strategic Highway Safety Plan (SHSP) 2024-2028. In it, you will read that Iowa is continuing our public outreach program encouraging safe driving behaviors. The plan lays out several more safety strategies we'll implement as we strive to reduce traffic fatalities. Implementation of the safety strategies outlined in this SHSP will help road users stay safe while driving, walking, or riding on Iowa's roadways.

Iowa has shown that with dedication to proven safety programs and projects, traffic fatalities and serious injuries can be reduced. We are committed to broadening existing programs that work and to implementing the safety strategies outlined in the SHSP to continue to drive down fatalities and serious injuries. We are steadfast to continue our partnerships with the many dedicated safety professionals in our education, enforcement, engineering, and emergency response communities.

This statewide, interagency plan includes a fifth E – everyone. Because with everyone working together, we can change the traffic culture so that everyone arrives to their destination safely.

We urge all Iowans to join the effort to keep our roadways safe.

Sincerely,

Kim Reynolds

**Kim Reynolds**
Governor of Iowa

# SHSP ADVISORY TEAM

**Iowa is fortunate to have the dedicated support of various public and private entities committed to the ultimate goal of zero fatalities.** These partners not only support the development of the SHSP but also advocate for and implement strategies that ultimately result in fewer fatalities and serious injuries on Iowa's roadways. The agencies and organizations below are recognized for their contribution of time and resources to the development of this plan.

- American Automobile Association
- Clear Lake Police Department
- Clinton County Sheriff's Office
- Clive Police Department
- East Central Intergovernmental Association
- Heartland Express
- Iowa Association of Councils of Governments
- Iowa County Engineers Association
- Iowa Department of Health and Human Services
- Iowa Department of Human Rights
- Iowa Department of Public Safety
  - Commercial Motor Vehicle Unit
  - Governor's Traffic Safety Bureau
  - Iowa State Patrol
- Iowa Department of Transportation
  - Customer Services Bureau
  - Local Systems Bureau
  - Strategic Communications and Policy Bureau
  - Systems Planning Bureau
  - Traffic and Safety Bureau
- Iowa Fire Fighters Association
- Iowa Motor Truck Association
- Iowa Professional Fire Fighters Association
- Iowa State University's Institute for Transportation
- Mary Greeley Medical Center
- Meskwaki Nation Police Department
- Omaha-Council Bluffs Metropolitan Area Planning Agency
- Story County Sheriff's Office
- University of Iowa
  - Driving Safety Research Institute
  - Injury Prevention Research Center
- U.S. Department of Transportation
  - Federal Highway Administration
  - Federal Motor Carrier Safety Administration
  - National Highway Traffic Safety Administration

# 1. INTRODUCTION AND BACKGROUND

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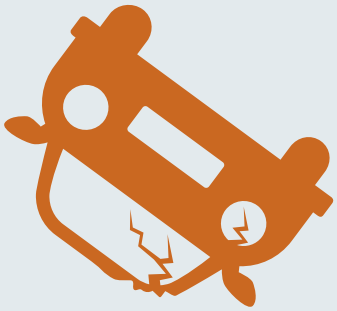
Traffic-related fatalities remain one of the leading causes of death by unintentional injury in the United States, according to the Centers for Disease Control and Prevention. In Iowa, over the past five years, 1,686 people have lost their lives, and 6,884 people have been seriously injured in vehicle-related crashes. Additionally, significantly more Iowans have been impacted by these severe injury crashes due to their societal and economic impacts that extend beyond those involved in the crash. Therefore, the Iowa SHSP focuses on fatalities and serious injuries. The challenge of reducing crashes on Iowa's roadways demonstrates the need to develop a strategic effort to save lives and prevent injuries. Trends in Iowa for fatalities and serious injuries are shown in **Figures 1.1 through 1.4**.



In Iowa, over the past five years, **1,686 people have lost their lives,** and **6,884 people have been seriously injured** in **vehicle-related crashes**.

## 1.1 BACKGROUND OF THE SHSP

Iowa has developed its SHSP to meet the significant challenge of reducing fatal and serious injury crashes on public roadways within the state. Developing an SHSP is a federal requirement for prioritizing Iowa Department of Transportation (Iowa DOT) projects funded by the Federal Highway Administration (FHWA) Highway Safety Improvement Program (HSIP) and supports the Iowa Governor's Traffic Safety Bureau Highway Safety Plan. The plan aims to guide investment decisions by identifying effective safety strategies to address areas of greatest need to make roadways safer. Therefore, it is evaluated annually and updated every five years to respond to changing safety trends.

A diverse group of road safety professionals collaborated to develop the SHSP. These like-minded safety partners typically leverage agency resources to address the diverse safety challenges within the state collectively. The most important aspect of an SHSP is that the strategies developed to address safety issues are comprehensive and coordinated. More information about the history of SHSPs can be found on the 'about' page of the FHWA SHSP website.

## 1.2 STATE LEGISLATION

Iowa's traffic safety culture is supported by policy and legislation focused on reducing the number and severity of vehicle crashes on Iowa's roadways. Iowa has passed many life-saving traffic safety laws, including:

- Recent legislation increasing sanctions for operating while intoxicated (OWI) offenses
- Allowing the addition of blue and white lights on snow removal equipment for increased visibility
- Requiring motorists to slow down or change lanes when approaching a stationary vehicle on the side of the road using flashing lights or emergency signal lamps

While Iowa has made great strides in passing legislation that supports reducing the number of serious injury crashes on its roadways, there are still opportunities to improve traffic safety.

**According to FHWA, an SHSP is a statewide coordinated safety plan that provides a comprehensive framework for reducing fatalities and serious injuries on all public roads.** An SHSP must use a data-driven approach to identify Key Emphasis Areas and strategies with the greatest potential to reduce highway fatalities and serious injuries. Goals and strategies within the plan must be performance-based and consistent with other state highway safety programs.

The SHSP Advisory Team will support numerous legislative strategies during the plan period to improve safety, including providing information to support legislation designed to:

- Reduce all forms of distracted, drowsy, and impaired driving with a particular emphasis on restricting the use of mobile devices while driving
- Strengthen seatbelt requirements for passengers in motor vehicles, including requiring seat belts for all passengers regardless of seating position
- Require helmet use for all ages when riding a motorcycle
- Enhance requirements and conditions placed on graduated drivers licenses (GDLs)
- Protect bicyclists by requiring drivers to change lanes when passing a cyclist
- Tighten speed regulations and enhance speed limit enforcement

Useful legislative comparisons can be found in states surrounding Iowa, including those in the Mid America Association of State Transportation Officials (MAASTO): Illinois, Indiana, Kansas, Kentucky, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.

**COMPARISON OF LEGISLATION RELATED TO DISTRACTED DRIVING, SEAT BELTS, AND MOTORCYCLE HELMETS IN MAASTO STATES.**

### Distracted Driving

- Distracted driving accounted for almost **1,300 fatalities or serious injuries** on Iowa roadways during the five-year period from 2017 to 2021.
- Although the effectiveness of hands-free laws is still being studied, these restrictions are included in the National Highway Traffic Safety Administration's (NHTSA's) guide: Countermeasures That Work.
- Illinois, Indiana, Michigan, Minnesota, Missouri, and Ohio have "hands-free" laws in effect, restricting the holding of mobile devices while driving. Wisconsin restricts the use of mobile devices in work zones.

### Seat Belts

- Crashes involving people using no restraint or protective device accounted for almost **3,200 fatalities or serious injuries** on Iowa roadways during the five-year period from 2017 to 2021.
- Research has shown that exposure to unbelted persons increases the risk of injury or death to other occupants in the vehicle by 40 percent.
- NHTSA's Countermeasures That Work states that a good seat belt use law should be comprehensive, covering all seating positions equipped with a seat belt in all passenger vehicles. Such a law sends a clear and consistent message to the public.
- Half of the MAASTO states (Illinois, Indiana, Kentucky, Minnesota, and Wisconsin) require seat belt usage for all passengers in a motor vehicle.

### Motorcycle Helmets

- More than **1,400 fatalities or serious injuries** occurred in motorcycle crashes in Iowa during the five-year period from 2017 to 2021.
- All other MAASTO states, except for Illinois, require helmets for motorcycle riders under a certain age.

FIGURE 1.1: IOWA FATALITIES

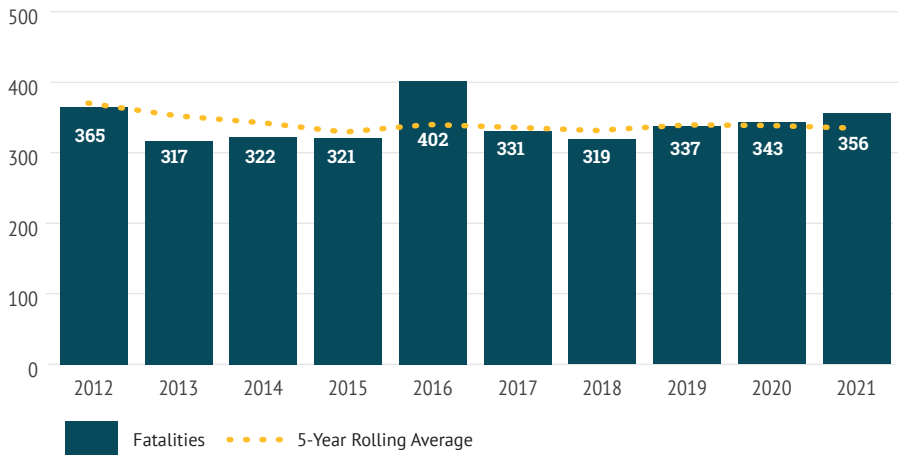



FIGURE 1.2: IOWA SERIOUS INJURIES

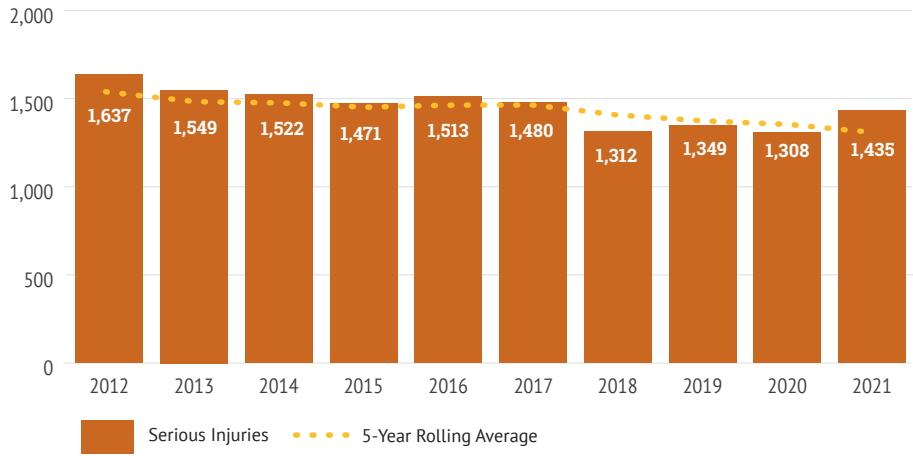



FIGURE 1.3: IOWA FATALITY RATE PER 100 MILLION VEHICLE MILES TRAVELED (VMT)

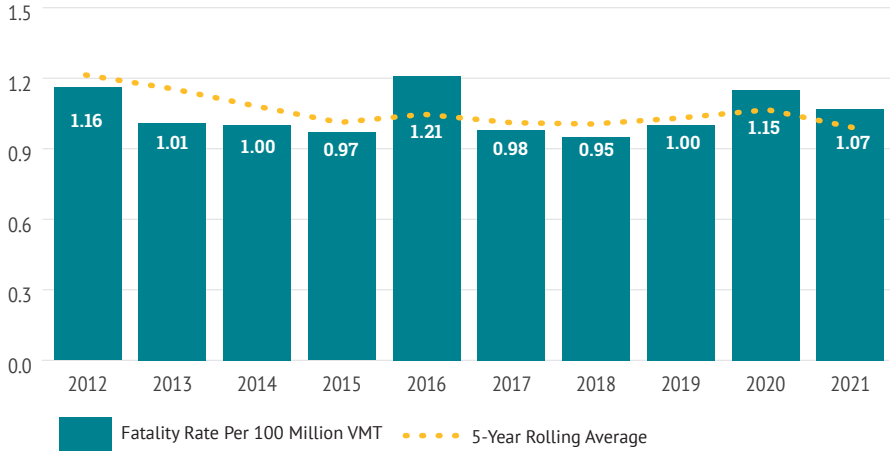
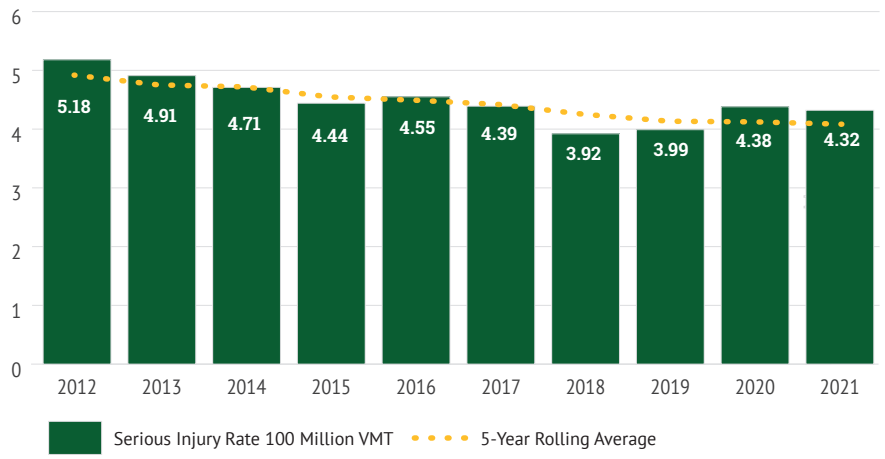


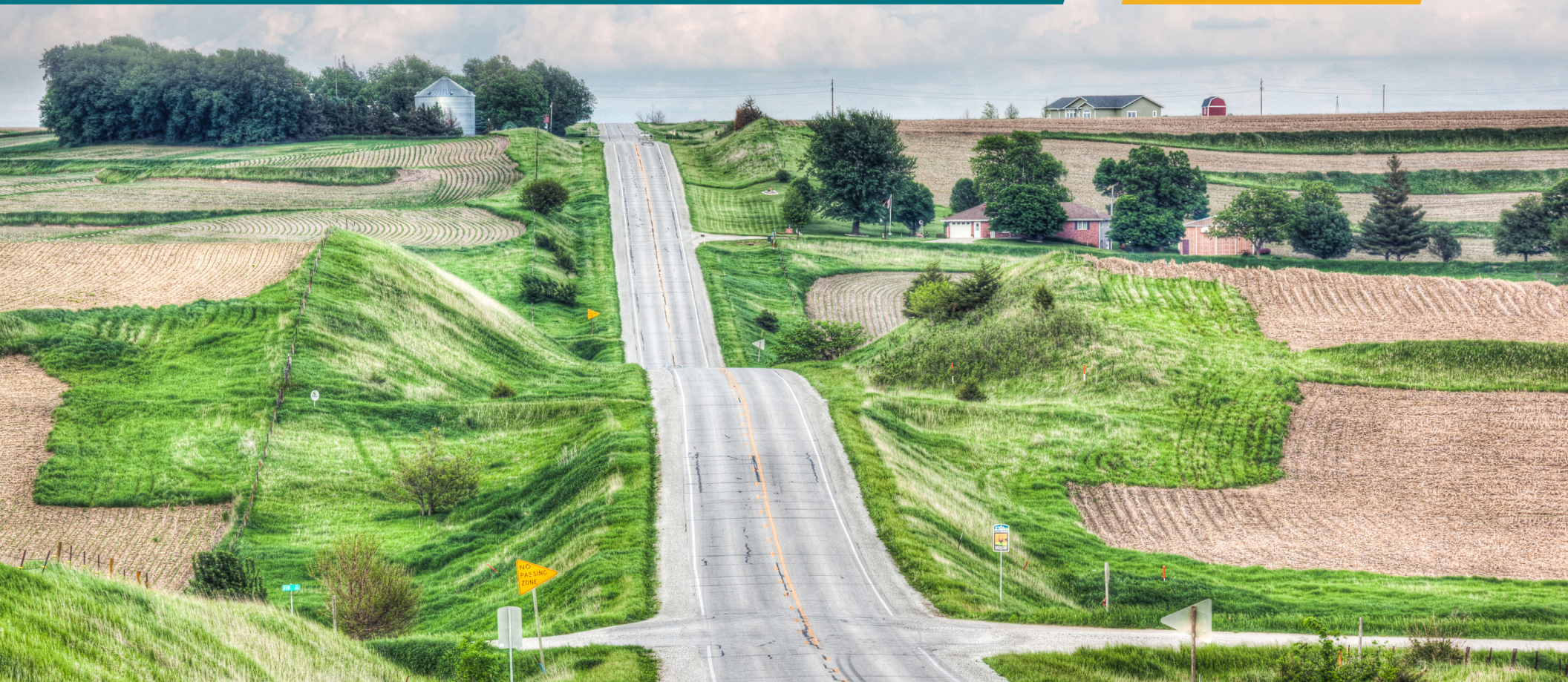

FIGURE 1.4: IOWA SERIOUS INJURY RATE PER 100 MILLION VMT




## 1.3 PREVIOUS IOWA SAFETY PLANNING EFFORTS

Iowa has been developing safety plans since 2006, Iowa's Comprehensive Highway Safety Plan. This SHSP is Iowa's fifth and most recent statewide safety plan. Previous plans are available on the Iowa DOT SHSP website.

# 2. DEVELOPING IOWA'S SHSP



# 2. DEVELOPING IOWA'S SHSP

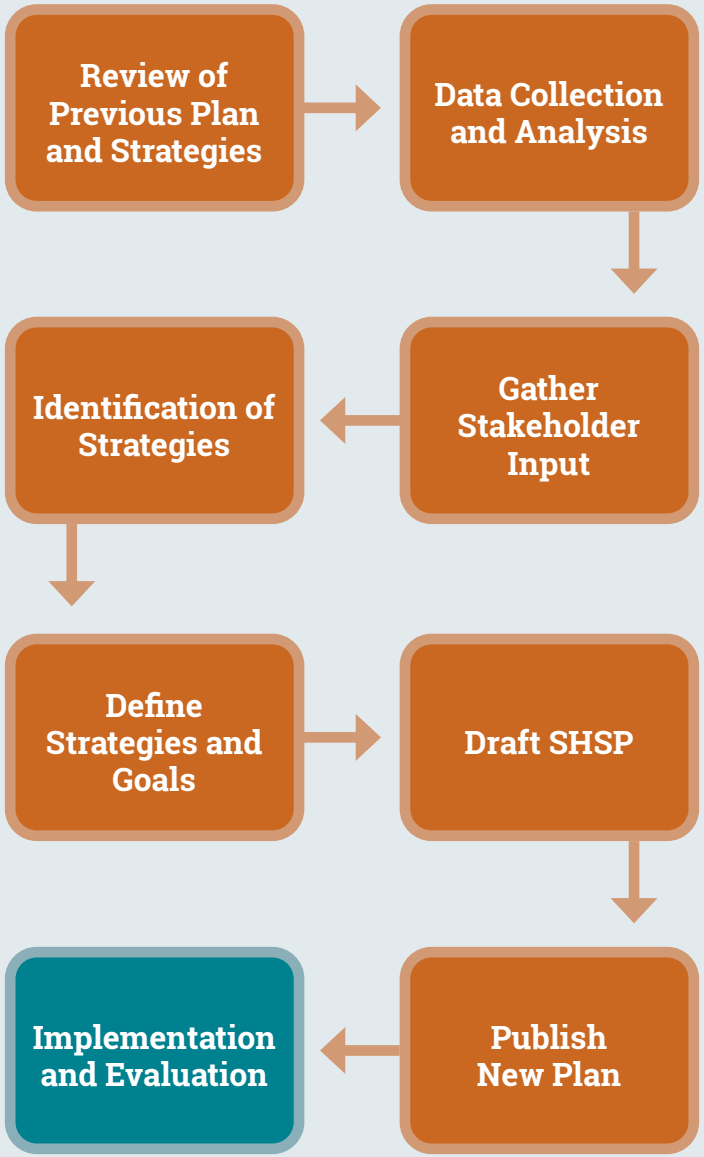
## 2.1 OVERVIEW OF PROCESS

Iowa's SHSP, developed in consultation with federal, state, local, and private sector safety stakeholders, is a coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roadways across the state. This safety plan includes highways, secondary roads, and municipal streets. Development of the SHSP included the following elements:

- Engagement with a multidisciplinary group of stakeholders
- Coordination with other plans and alignment of goals
- Use of state crash data to identify Emphasis Areas
- Performance-based approach to selecting strategies and evaluating performance

This plan represents the culmination of these efforts and a framework for reducing fatalities and serious injuries on Iowa's roadways. **Figure 2.1** displays the steps used to develop the plan.

FIGURE 2.1: SHSP DEVELOPMENT PROCESS



## 2.2 STAKEHOLDER INPUT

Iowa's SHSP was developed in consultation with the SHSP Advisory Team, composed of individuals representing the Es of safety (**education**, **emergency medical services**, **engineering**, and **enforcement**). These multidisciplinary representatives provide updates on programs, policies, and educational campaigns for their respective organizations, as well as data on the latest research for their areas of expertise. Each discipline has a unique perspective on improving traffic safety while also remaining connected to the other disciplines. Iowa's SHSP also considers a fifth E: **everyone**. Ultimately every driver on Iowa's roadways is responsible for making safe choices and driving responsibly.

**Education:** Education plays a key role in helping the public understand what they should and should not do when using the roadway, with the goal of changing habits to reduce fatalities and serious injuries on our roadways. The SHSP Advisory Team included members from the Iowa DOT Motor Vehicle Division, Iowa State University, University of Iowa, members of the Governor's Traffic Safety Bureau, and planning agencies from across the state.

**Enforcement:** Despite the best efforts of driver education and roadway design efforts, the role of enforcement remains vital in ensuring drivers adhere to the rules of the road. In recognition of the important role law enforcement plays in traffic safety, the SHSP Advisory Team included representatives from municipal, county, and state law enforcement.

**Engineering:** Roadway safety begins with design. Transportation engineers use design principles that reliably reduce the risk of crashes on Iowa's roadways. National standards are used for signs and traffic markings to provide consistency for the traveling public. In addition to using proven design methods, engineers continue to research new ways to make transportation safer. The SHSP Advisory Team included many Iowa DOT employees and representatives from county engineering offices and regional planning agencies across the state.

**Emergency Medical Services:** Quick response times from emergency personnel are crucial to saving the lives of those involved in a traffic crash. While emergency medical personnel assist anyone injured in a crash, other emergency responders can also clear roadways, reducing the risk of secondary crashes. To gain insights from this important group, the SHSP Advisory Team included representatives from various health and medical facilities, Iowa Department of Health and Human Services staff, and volunteer and professional firefighters.

**Everyone:** Although roadway user education efforts, fast emergency response, safe roadway design, and proper enforcement of traffic laws are all critical components of roadway safety, the ultimate responsibility rests on everyone who uses the roadway. We all need to work together toward increased traffic safety. To capture the most important E of all, additional stakeholders were asked to participate in a survey to express their views on how to improve safety on public roadways. The results of the survey were used to inform the selection of Emphasis Areas.

The SHSP Advisory Team met throughout the planning process to review crash data and survey results, provide input on Emphasis Areas, identify strategies, and define output measures for inclusion in the plan. Emphasis Areas were developed using a data-driven process that included input from safety stakeholders. They demonstrate the areas with the greatest potential to reduce fatalities and serious injuries on public roads.

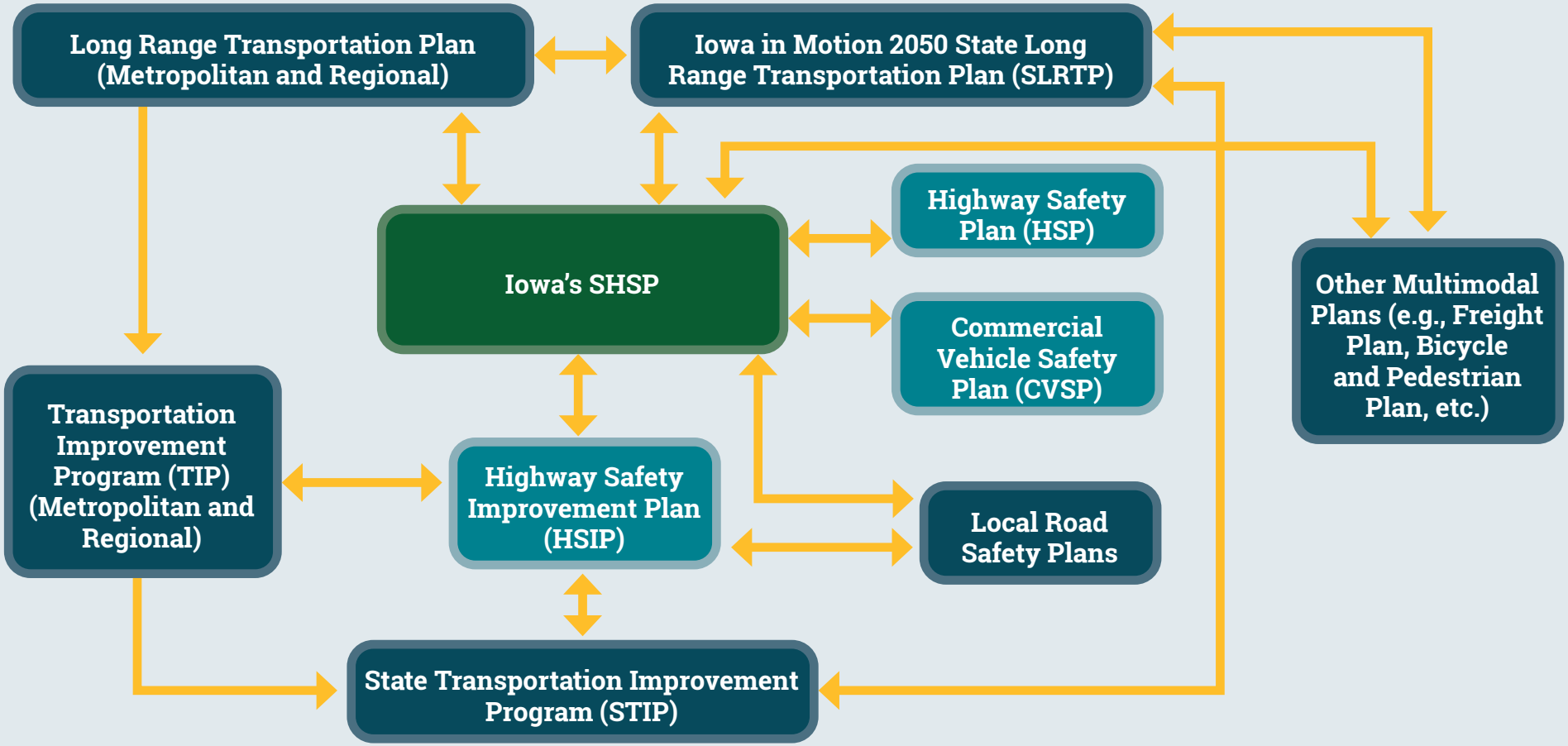
A survey was conducted to gather feedback on the selection of Emphasis Areas, which was shared with the SHSP Advisory Team as well as a broader group of stakeholders. The distribution list included those internal to the Iowa DOT, local agencies, regional planning affiliations (RPAs), partner agencies, law enforcement, tribes, etc., and was distributed by the SHSP Advisory Team members. During the input process, 540 stakeholders participated in the survey with representation from each of the Es of safety, as shown in **Figure 2.2**. Responses from the SHSP Advisory Team and broader stakeholder groups were kept separate to understand how the different groups prioritized safety Emphasis Areas for Iowa.

FIGURE 2.2: SAFETY EMPHASIS AREA SURVEY RESULTS

## 2.3 COORDINATION WITH OTHER PLANS

For an SHSP to be effective, it must leverage and inform existing transportation planning activities. These include any long-range planning activities the state and partner planning agencies perform that integrate the SHSP's goals and vision. Integrating aspects of the SHSP into planning efforts helps solidify those aspects as priorities. Since many of these plans help guide policy and investment decisions, building a connection with the SHSP will provide more opportunities for the strategies that are identified to be implemented. Further, long-range planning efforts within the state provide a framework to understand the complex issues that face Iowa's transportation system. A holistic perspective of these issues creates a greater understanding of the connections between and the importance of each effort. **Figure 2.3** illustrates how Iowa's SHSP is connected to many of the other planning and programming efforts within the state.

FIGURE 2.3: HOW THE STRATEGIC HIGHWAY SAFETY PLAN RELATES TO OTHER PLANS AND PROGRAMS




*(Source: Adapted from Strategic Highway Safety Plans: A Champion's Guidebook to Saving Lives Second edition Cambridge Systematics)*

# 3. EMPHASIS AREAS

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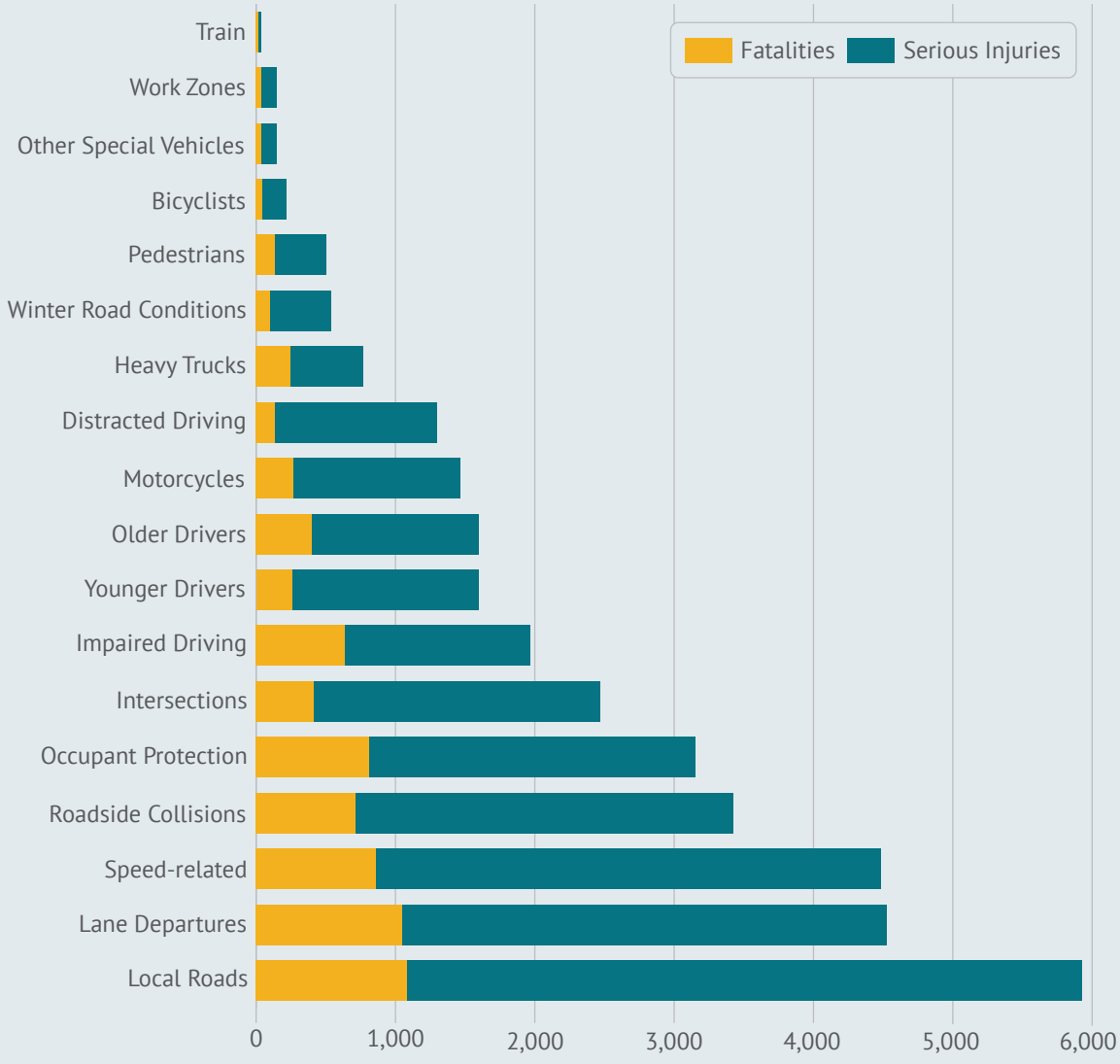
In 1997, the American Association of State Highway and Transportation Officials (AASHTO) published a national SHSP, which was later updated in 2005. The plan addressed the significant challenge of highway safety and outlined strategies to tackle specific safety issues. Since its publication, AASHTO's SHSP has been one of the leading documents for highway safety. AASHTO's plan identified 22 Emphasis Areas that affect highway safety and provided guidance for states to develop their highway safety plans. Since the publication of AASHTO's SHSP, FHWA has required that a state's "SHSP update shall identify Key Emphasis Areas and strategies that have the greatest potential to reduce highway fatalities and serious injuries and focus resources on areas of greatest need." Therefore, many states have modeled their analysis off the work done by AASHTO in its SHSP, which also satisfies the federal requirement.

**Figure 3.1** displays the number of fatalities and serious injuries in Iowa attributed to each of the Emphasis Areas that can be linked to crash data.

Emphasis Areas were determined using a data-driven process that includes input from safety stakeholders and must demonstrate the areas with the greatest potential to reduce fatalities and serious injuries on public roads. As part of the planning process, safety strategies were developed for each Emphasis Area with input from professionals across the state. This version of the SHSP grouped the selected Emphasis Areas into the five Safe System elements in order to align with the national shift to the Safe System Approach.

**FIGURE 3.1: IOWA FATALITIES AND SERIOUS INJURIES BY EMPHASIS AREAS (2017-2021)**




*Fatalities and serious injuries may be associated with multiple Emphasis Areas.*

## 3.1 SAFE SYSTEM APPROACH

The U.S. Department of Transportation (U.S. DOT) has adopted a Safe System Approach as the guiding paradigm to address roadway safety. The Safe System Approach effectively addresses and mitigates the risks inherent in our complex transportation system. It works by building and reinforcing multiple layers of protection to both prevent crashes from happening in the first place and minimize the harm caused to those involved when crashes do occur.

Traditional traffic safety efforts have involved a review of crash, roadway, and driver data segregated into Emphasis Areas. Aligning with the national shift to the Safe System Approach, the Emphasis Areas have been grouped into the five Safe System elements:

- Safer People
- Post-Crash Care
- Safer Vehicles
- Safer Speeds
- Safer Roads

**Figure 3.2** displays the Emphasis Areas organized by the Safe System elements as well as the percent of fatalities and serious injuries attributed to the Emphasis Area.

The Safe System Approach is a shift from conventional approaches to roadway safety because it focuses on human mistakes and vulnerability and designs a system with many redundancies to protect everyone. The Safe System Approach is founded on the principles that humans make mistakes and that human bodies have limited ability to tolerate crashes. It is a holistic and comprehensive approach that provides a guiding framework to make driving, riding, and walking on the roadway safer for people. Additional information and resources on the Safe System Approach are available on the U.S. DOT website.

**FIGURE 3.2: EMPHASIS AREAS BY THE SAFE SYSTEM APPROACH**


*Source: Adapted from FHWA*

*Key Emphasis Area

(%) Percent of fatalities and serious injuries attributed to the Emphasis Area. Fatalities and serious injuries may be associated with multiple Emphasis Areas.

### Safer People

- Occupant Protection (37%) *
- Impairment Involved (23%) *
- Distracted Driving (15%) *
- Younger Drivers (19%)
- Older Drivers (19%)
- Pedestrians (6%)
- Bicyclists (3%)

### Safer Vehicles

- Motorcycles (17%)
- Heavy Trucks (9%)
- Other Special Vehicles (2%)
- Train (0.4%)

### Safer Speeds

- Speed-related (52%) *

### Safer Roads

- Local Roads (69%) *
- Lane Departures (53%) *
- Intersections (29%) *
- Roadside Collisions (40%)
- Winter Road Conditions (6%)
- Work Zones (2%)

### Post-Crash Care

- Post-Crash Care

Although the SHSP Advisory Team is fully committed to reducing fatalities and serious injuries on Iowa's roadways, we recognize that this commitment pales in comparison to the cumulative impact every driver can have on the safety of Iowa's roadways.

## 3.2 PRIORITIZATION OF EMPHASIS AREAS

The Emphasis Areas were prioritized based on an analysis of crash data and an extensive statewide input process involving Iowa's traffic safety stakeholders, resulting in the seven Key Emphasis Areas. Strategies for each Key Emphasis Area were developed and are based on prior strategies identified in Iowa's 2019-2023 SHSP, FHWA's Proven Safety Countermeasures, and NHTSA's Countermeasures That Work. After an initial listing of strategies was identified, discussions were held with members of the SHSP Advisory Team to identify which strategies should be included in the plan for their respective safety Emphasis Area, and corresponding output measures were identified for each strategy. Output measures for each strategy are defined in the SHSP Implementation Plan. The recommended safety strategies selected provide the greatest opportunity to reduce fatalities and serious injuries on Iowa's roadways.

Implementation of strategies for each of the Key Emphasis Areas will be carried out by the SHSP Advisory Team and broadly supported by traffic safety professionals from around the state. The plan's implementation and progress will be evaluated annually over the five-year planning period, starting in January 2024 and ending in December 2028. The ultimate goal of this plan is to reduce fatalities and serious injuries.

Annual goals, aligning with the HSIP performance measures, will be developed during the plan period. While the strategies identified in this plan represent the current focus of the SHSP Advisory Team, the Team recognizes the quickly changing landscape of transportation and technology and is prepared to be responsive and flexible to the needs of the state.

**Figure 3.3** illustrates the Emphasis Areas as they were ranked by stakeholders and the SHSP Advisory Team, along with the corresponding ranking according to the data. For example, stakeholders ranked Occupant Protection as one of the lowest priorities, but fatality data shows that it is ranked as the fifth most critical issue when compared to fatalities of other Emphasis Areas. In addition, stakeholders and the Advisory Team ranked Distracted Driving as the most important issue, but it is ranked eleventh based on the fatality data. This is likely because Distracted Driving is difficult for officers to capture on the crash report and is therefore under-represented in crash data. This data allows us to understand how public perception stacks up against the data.

## FIGURE 3.3: EMPHASIS AREA PRIORITIZATION

*Circled numbers show the most significant differences between the priorities, the different survey response groups and the ranking based on crash data.*

| Emphasis Area | Priority Rank | | | Crash Data Rank |
|---|---|---|---|---|
| | All | Stakeholder | Advisory Team | 2017 to 2021 Fatalities and Serious Injuries Rank |
| Distracted Driving | 1 | 1 | 1 | 11 |
| Impairment Involved | 2 | 2 | 2 | 7 |
| Speed-Related | 3 | 3 | 3 | 3 |
| Intersections | 4 | 4 | 6 | 6 |
| Lane Departures | 5 | 6 | 4 | 2 |
| Local Roads | 6 | 5 | 12 | 1 |
| Younger Drivers | 7 | 7 | 8 | 8 |
| Roadside Collisions | 8 | 8 | 13 | 4 |
| Heavy Trucks | 9 | 10 | 9 | 9 |
| Winter Road Conditions | 10 | 9 | 16 | 13 |
| Older Drivers | 11 | 11 | 11 | 9 |
| Motorcycles | 12 | 12 | 10 | 10 |
| Bicyclists | 13 | 13 | 14 | 15 |
| Occupant Protection* | 14 | 14 | 5 | 5 |
| Work Zones | 15 | 15 | 7 | 7 |
| Pedestrians | 16 | 16 | 15 | 14 |
| Other Special Vehicles | 17 | 17 | 17 | 16 |
| Train | 18 | 18 | 18 | 18 |

** Occupant Protection formerly known as Unprotected Persons.*

## 3.3 EMPHASIS AREA OVERVIEW

The following pages define each Emphasis Area and identify the percentage of all fatalities and serious injuries attributed to each as broken out in the Safe System Approach.

### Safer People

**Occupant Protection** 37%

No restraint or protective device (such as a seat belt, child restraint system, helmet, or other device)

**Impairment Involved** 23%

When any driver or non-motorist is found to be under the influence of drugs or alcohol, which includes those who have a positive drug or alcohol test or who refused to be tested

**Younger Drivers** 19%

14 to 20 years old

**Older Drivers** 19%

65 and older

**Distracted Driving** 15%

Any driving activity that takes a driver's focus off the task of navigating the roadway (phone use, eating, drinking, smoking, passengers, fatigue)

**Pedestrians** 6%

A person walking or in a wheelchair

**Bicyclists** 3%

A person who rides a pedal-driven vehicle

*Key Area*

### Safer Vehicles

**Motorcycles** 17%

Two or three-wheeled motor vehicle steered by a handlebar

**Heavy Trucks** 9%

A large motor vehicle used for transporting goods or materials weighing 10,000 pounds or more

**Other Special Vehicles** 2%

Includes buses and farm equipment

**Trains** 0.4%

A series of railroad cars moved as a unit by a locomotive or by integral motors

### Strategy

Though not included as a Key Emphasis Area, the following strategy was identified to address safer vehicles in Iowa: Provide edge lines on all paved roads to assist vehicles with lane departure warning messages.

## Post-Crash Care

### Post-Crash Care

Providing expedient emergency medical care in a safe environment for first responders

### Strategy

Though not included as a Key Emphasis Area, the following strategy was identified to address post-crash care in Iowa: Continue the Iowa Traffic Incident Management (TIM) Coalition training.

## Safer Speeds

### Speed-Related 52%

Driver consciously choosing an inappropriate speed or inappropriately responding to the roadway conditions (e.g., during weather events such as ice or fog)

*Key Area*

## Safer Roads

### Local Roads 69%

Roads not owned by the Iowa DOT, such as city or county roads

### Lane Departures 53%

When a vehicle leaves the travel lane, encroaches onto the shoulder, or crosses the centerline or median and crashes

### Roadside Collisions 40%

When a vehicle departs the roadway and crashes into a natural or artificial object

### Intersections 29%

The junction where two or more roads converge, diverge, meet, or cross at the same grade

### Winter Road Conditions 6%

Conditions such as snow, ice, and slush

### Work Zones 2%

An area of a road with construction, maintenance, or utility work activities

*Key Area*

## 3.4 KEY EMPHASIS AREA STRATEGIES

The following pages provide additional details for each Key Emphasis Area, including its definition, the percent of fatalities and serious injuries attributed to it, strategies identified for the Key Emphasis Area, the percentage of fatalities and serious injuries associated with the other Key Emphasis Areas, and fatality and serious injury trends over the last five years.

**SAFER PEOPLE**

# OCCUPANT PROTECTION

No restraint or protective device (such as a seatbelt, child restraint system, helmet, or other device)

**37%**

### STRATEGIES

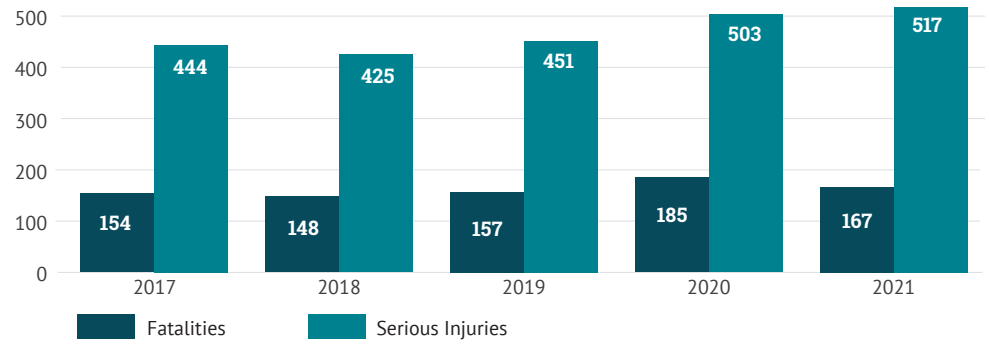
**OP 1.** Conduct Public Awareness Campaigns focused on generating awareness of the risks of being an unprotected person.

**OP 2.** Conduct highly publicized enforcement campaigns focused on restraint use.

**OP 3.** The general public should buckle up, everyone and every time.

### ASSOCIATED EMPHASIS AREAS

- 70% Local Roads
- 62% Speed-Related
- 60% Lane Departures
- 32% Impairment Involved
- 26% Intersections
- 13% Distracted Driving




Over the past 5 years, an average of **12 PEOPLE** died or were seriously injured **EACH WEEK** in Iowa that were unprotected.

## SAFER PEOPLE

# IMPAIRMENT INVOLVED

When any driver or non-motorist is found to be under the influence of drugs or alcohol, which includes those who have a positive drug or alcohol test or who refused to be tested

**23%**

### STRATEGIES

**II 1.** Conduct Public Awareness Campaigns focused on educating drivers and passengers on the different impairments and their effects on driving.

**II 2.** Supporting training for new Drug Recognition Expert (DRE) and Advanced Roadside Impaired Driving Enforcement (ARIDE) officers.

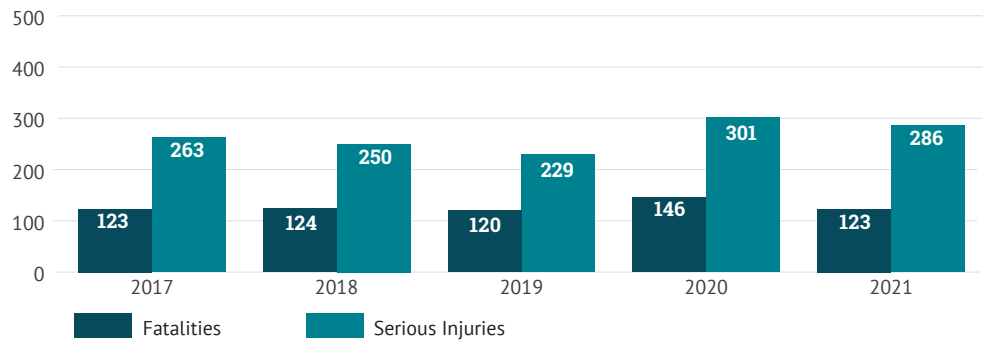
**II 3.** Enhance detection through special OWI patrols and related traffic enforcement.

**II 4.** Implement countermeasures at access locations to reduce wrong-way driving on multi-lane divided highways.

**II 5.** The general public should designate a driver, call a cab, or use a transportation network company and not risk driving impaired.

### ASSOCIATED EMPHASIS AREAS

- 70% Local Roads
- 70% Speed-Related
- 68% Lane Departures
- 51% Occupant Protection
- 24% Intersections
- 12% Distracted Driving




Over the past five years, an average of **EIGHT PEOPLE** died or were seriously injured **EACH WEEK** in Iowa in a crash involving an impaired driver.

## SAFER PEOPLE

# DISTRACTED DRIVING

Any driving or non-driving activity that takes a driver or non-motorist's focus off the task of navigating the roadway (phone use, eating, drinking, smoking, passengers, fatigue)

**15%**

### STRATEGIES

**DD 1.** Conduct Public Awareness Campaigns targeted to high-risk populations.

**DD 2.** Support high visibility enforcement campaigns for hands-free cell phone law.

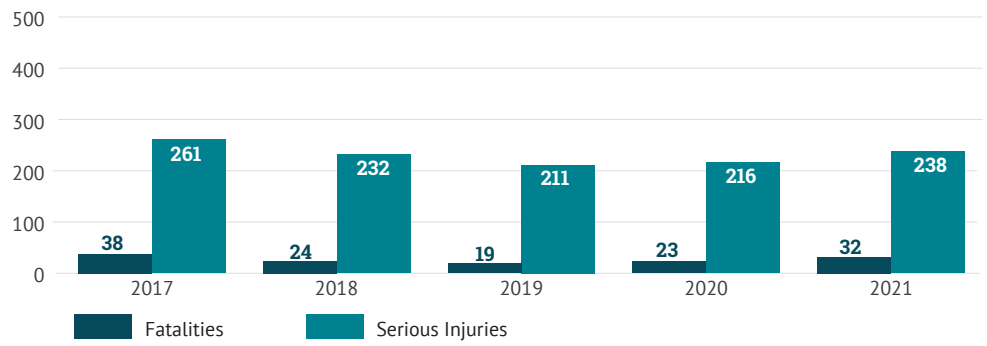
**DD 3.** Provide more commercial motor vehicle parking to allow drivers to rest instead of driving further to find adequate parking.

**DD 4.** All general public should put their cell phone down, avoid distractions, be alert, and focus on the roadway.

### ASSOCIATED EMPHASIS AREAS

- 67% Local Roads
- 49% Lane Departures
- 48% Speed-Related
- 32% Occupant Protection
- 31% Intersections
- 18% Impairment Involved

*Fatalities and serious injuries involving distracted driving are likely under-represented in the crash data as they are difficult for law enforcement to report.*




Over the past five years, an average of **FIVE PEOPLE** died or were seriously injured **EACH WEEK** in Iowa in a crash involving a distracted driver.

# SAFER SPEEDS

## SPEED-RELATED

Driver consciously choosing an inappropriate speed or inappropriately responding to the roadway conditions (e.g., during weather events such as ice or fog)

**52%**

### STRATEGIES

**SR 1.** Conduct Public Awareness Campaigns to educate drivers on the importance of controlling and managing vehicle speed.

**SR 2.** Identify corridors with a high frequency of speed-related crashes (safety corridors) and implement high visibility enforcement.

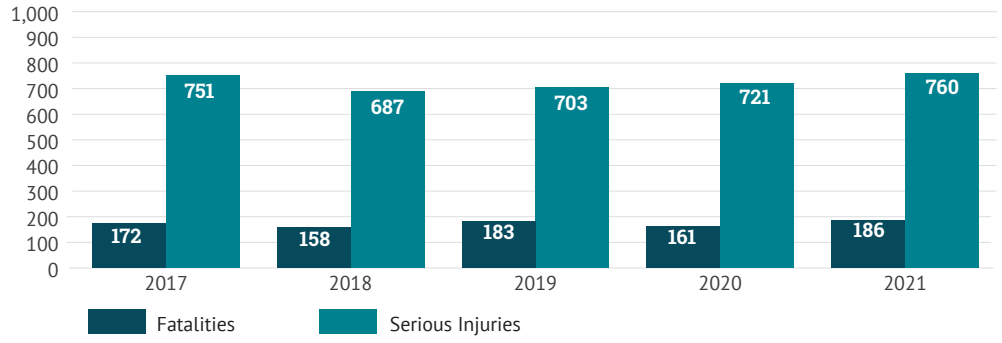
**SR 3.** Evaluate high-speed-related corridors for speed reduction countermeasures and implement geometric design strategies to reduce speeds.

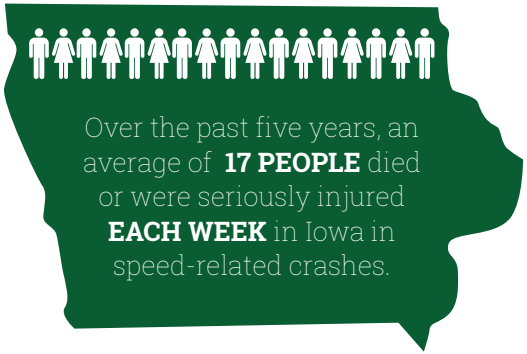
**SR 4.** Implement speed feedback signs at targeted locations.

**SR 5.** The general public should give themselves enough time to reach their destination. Be patient, slow down, and don't engage with aggressive drivers.

### ASSOCIATED EMPHASIS AREAS

- 68% Lane Departures
- 66% Local Roads
- 43% Occupant Protection
- 31% Impairment Involved
- 18% Intersections
- 14% Distracted Driving



## SAFER ROADS

# LOCAL ROADS

Roads not owned by the Iowa DOT, such as city or county roads

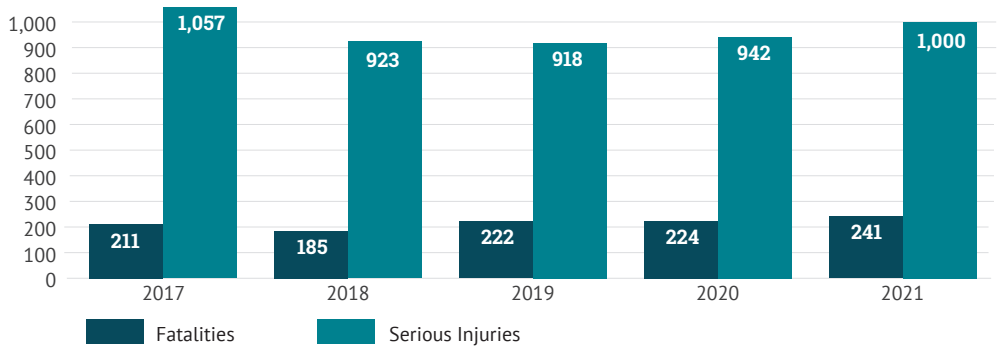
**69%**

### STRATEGIES

Nearly all strategies identified in this plan address local roads, as well as state-maintained roads.

### ASSOCIATED EMPHASIS AREAS

- **50%** Speed-Related
- **48%** Lane Departures
- **42%** Intersections
- **37%** Occupant Protection
- **33%** Impairment Involved
- **22%** Distracted Driving




Over the past five years, the equivalent of **ONE PERSON** died or was seriously injured **EACH MONTH** on a local roadway in **EACH OF THE 99 COUNTIES** in Iowa.

## SAFER ROADS

# LANE DEPARTURES

Vehicle leaves the travel lane, encroaches onto the shoulder, or crosses the centerline or median and crashes; this Emphasis Area encompasses roadside collisions

**53%**

### STRATEGIES

**LD 1.** Evaluate high-lane departure crash corridors for two-lane highways and deploy Road Safety Audit (RSA) teams to evaluate.

**LD 2.** Evaluate high-friction surface treatments at targeted locations on the primary and local systems.

**LD 3.** Implement countermeasures to reduce lane departure crashes on rural two-lane highways on the primary and local systems (edge line rumble strips, shoulder rumble strips, wider edge lines, SafetyEdge, wider shoulders).

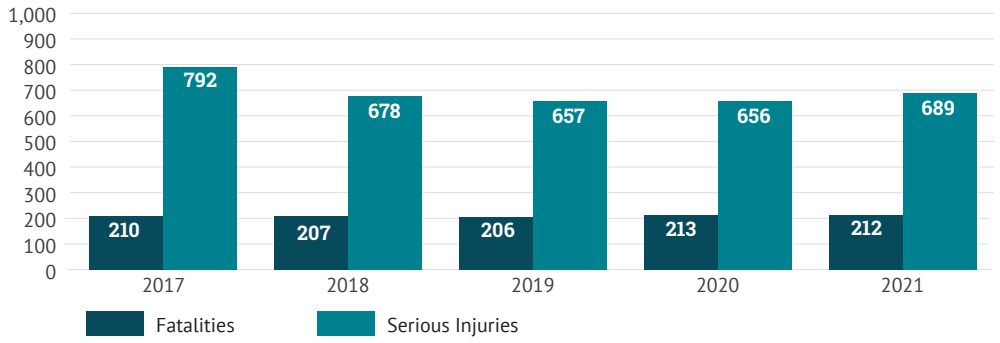
**LD 4.** Continue median cable barrier installations on the interstate system. Initiate median cable barrier installations on multi-lane divided highways.

**LD 5.** Implement countermeasures to reduce lane departures in curves (retroreflective sign posts, upgraded signage, enhanced delineation, roadside design improvements).

**LD 6.** The general public should focus on the road, and not over-correct or veer for objects or animals in the roadway.

### ASSOCIATED EMPHASIS AREAS

- 68% Speed-Related
- 63% Local Roads
- 42% Occupant Protection
- 30% Impairment Involved
- 16% Intersections
- 14% Distracted Driving




Over the past five years, an average of **17 PEOPLE** died or were seriously injured **EACH WEEK** in Iowa in a lane departure crash.

## SAFER ROADS

# INTERSECTIONS

29%

Junction where two or more roads converge, diverge, meet, or cross at the same grade

### STRATEGIES

**I 1.** Conduct Public Awareness Campaigns to inform/educate the public of alternative intersection types, traffic signals, and laws.

**I 2.** Conduct high visibility enforcement campaigns related to driver awareness of bicycles and pedestrians at targeted intersections.

**I 3.** Systemic application of multiple low-cost countermeasures at stop-controlled intersections.

**I 4.** Implement alternative intersection designs that reduce conflict points and enhance safety and mobility.

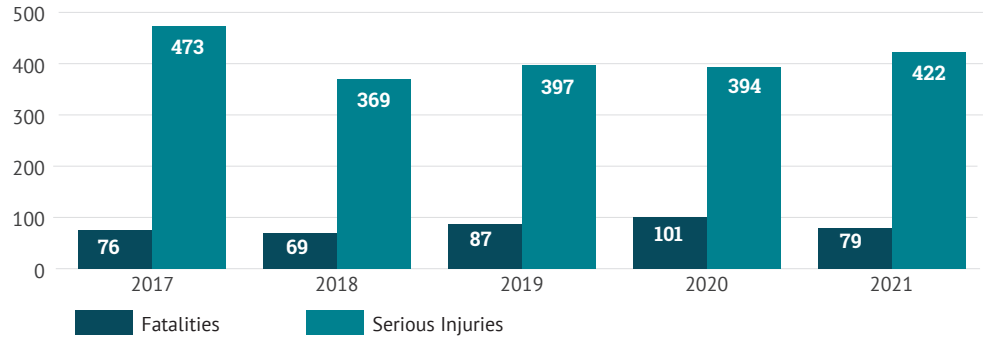
**I 5.** Preparation of a guide for using the intersection configuration/evaluation tool to aid planners and designers in selecting appropriate intersection types.

**I 6.** Develop a process for local agencies to obtain funding for retroreflective backplates at signalized intersections.

**I 7.** The general public should approach intersections with caution and become familiar with new designs in their community.

### ASSOCIATED EMPHASIS AREAS

- 90% Local Roads
- 34% Occupant Protection
- 32% Speed-Related
- 30% Lane Departures
- 19% Impairment Involved
- 16% Distracted Driving




Over the past five years, an average of **10 PEOPLE** died or were seriously injured **EACH WEEK** in Iowa in an intersection crash.

# 4. IMPLEMENTATION AND EVALUATION

# 4. IMPLEMENTATION AND EVALUATION

Since adopting the 2013 SHSP, Iowa has continued to align with the national vision to eliminate all traffic fatalities. To do this, Iowa developed multimedia education outreach in 2014 as part of the state's first SHSP implementation effort. Several state departments partnered to develop the campaign, including the Iowa DOT, Iowa Department of Public Safety, and Iowa Department of Health and Human Services. For several years, messaging strategies focused on the fact that zero is the only acceptable goal for fatalities when it comes to people's loved ones. In 2023, messaging asked people, "What drives you to drive safely?" The newer approach incorporates the idea of helping people to identify their "Why?" for safer driving. These education outreach efforts help people to understand that every fatality is a life that is important to someone and not just a statistic.


*A dynamic message sign (DMS) displaying strategic campaign messaging.*

## 4.1 IOWA'S LONG-TERM SAFETY VISION AND SHORT-TERM TARGETS

Although zero fatalities are Iowa's long-term vision, the state also recognizes the need to establish short-term goals to pursue this vision. The FHWA published the HSIP and Safety Performance Management Final Rules in 2016. As part of these rules, states must develop statewide targets annually for five safety performance measures, including:

- Number of fatalities
- Rate of fatalities per 100 million VMT
- Number of serious injuries
- Rate of serious injuries per 100 million VMT
- Number of non-motorized fatalities and non-motorized serious injuries

These targets will serve as short-term goals for the state. In developing the strategies and content within this plan, the SHSP Advisory Team considered how they would support the targets and goals defined annually by the state. As these targets are established, adjustments will be considered to either the targets or strategies to align with Iowa's long-term vision of zero fatalities.

## 4.2 HOW THIS PLAN WILL BE IMPLEMENTED

Iowa's SHSP Advisory Team implements strategies and programs detailed in this plan. The success of this plan will be dependent upon the continued collaboration of the agency partners. Over the plan period, the SHSP Advisory Team will focus on:

- Meeting regularly to update fellow team members
- Tracking the progress of strategies defined by the team
- Adopting, evaluating, or modifying strategies that are either existing or new to the plan
- Guiding safety-related programs
- Supporting local agencies and organizations wishing to adopt the strategies or programs defined in the plan
- Facilitating future updates of the SHSP

Implementing of the strategies defined within this plan is financially supported by a number of federal and state sources, most notably the HSIP facilitated by the Iowa DOT and Section 402 and 405 National Priority Safety Program funds facilitated by the Governor's Traffic Safety Bureau.

## 4.3 HOW SHSP IMPLEMENTATION WILL BE EVALUATED

The SHSP will go through an annual evaluation in conjunction with setting the yearly safety performance targets, as shown in **Figure 4.1**. The SHSP Advisory Team will consider the progress made over the previous year in the overall goals highlighted in the safety performance measures, how many fatalities and serious injuries are associated with that particular Emphasis Area, and the impact of the strategies identified for each Emphasis Area.

Definitions for each strategy's output measures are in the SHSP Implementation Plan. The SHSP Advisory Team will use the evaluation findings to focus their attention and resources towards areas needing more or less support. This evaluation structure provides feedback loops that the team can monitor up and down the levels of evaluation.

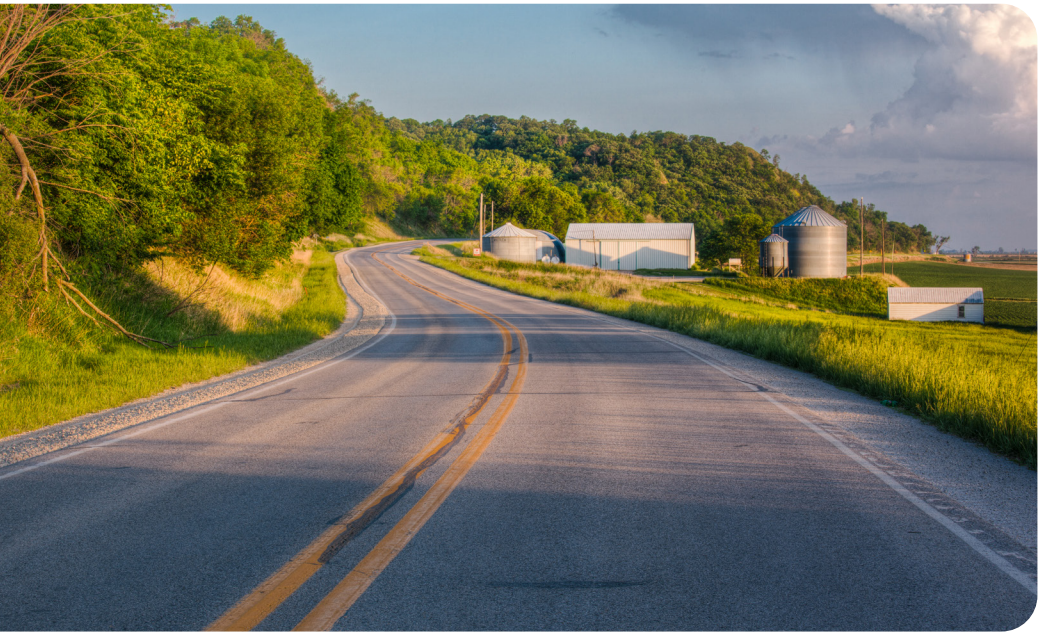
**FIGURE 4.1: SHSP EVALUATION PROCESS**

## 4.4 PREPARING FOR THE FUTURE

Beyond the strategies identified in this plan, partner agencies and the SHSP Advisory Team are committed to proactively addressing safety through existing and future initiatives in Iowa. The following is a brief listing of programs, projects, and technology that are anticipated to impact the future of traffic safety in Iowa.

### Crash Data Records and Accuracy

A critical component of developing the SHSP is the availability of complete and reliable crash data. Iowa's Statewide Traffic Records Coordinating Committee (STRCC) includes safety professionals charged with data collection, management, and application. Iowa's STRCC has and will continue to support and enhance the quality of this data. Providing timely accessibility to reliable data is one step in supporting the goal of reducing fatalities and serious injuries. Another aspect is improving accuracy by continuously improving the data collection and transformation processes. In 2016, Iowa DOT released the Iowa Crash Analysis Tool (ICAT) application, which allows users to access and analyze crash data for the state. The data in the ICAT application is updated on a daily basis.



### Safety Analysis

AASHTO published the Highway Safety Manual (HSM) to be used by transportation agencies in determining safety issues and developing solutions through data-driven analysis. The HSM allows safety professionals to accurately estimate where there are safety issues on the system and how their future design decisions will impact the safety performance of the roadway.

In 2016, the Iowa DOT formed the Safety Analysis Incorporation (SAI) Committee which focused on integrating the methodologies identified in the HSM into Iowa's transportation project development process. The committee supported the development of the Iowa Safety Analysis Guide, which provides practical guidance executing various safety analysis processes. The committee has overseen the development of several safety analysis tools, including the Potential for Crash Reduction (PCR), Planning-Level Crash Reduction Factor (CRF) List, the Crash Prediction Tool, Calibration Factors, and the Access Management Manual. The tools are intended to make safety analysis easier, allowing for consistent results of safety analyses performed by practitioners across the state.

## Transportation Systems Management and Operations (TSMO) and Traffic Incident Management (TIM)

Iowa is using its Transportation Systems Management and Operations (TSMO) approach to focus on cost-effectively improving safety and mobility in the state. The TSMO approach is best used to optimize the performance of existing infrastructure and partnerships, prioritizing improving transportation system safety and performance. A crash on Iowa's roadways directly affects the persons involved and indirectly affects others on the roadway, such as increasing travel times and the risk of secondary crashes.

The main strategy applied from the TSMO plan is TIM, which provides a systematic, coordinated approach to managing incidents on the highway system to minimize impacts on the traveling public and enhance the safety of those involved in and responding to those incidents. The Statewide Traffic Incident Management Committee was established in 2016 to address quick clearance techniques, TIM performance measures, training, best practices, and improved collaboration across emergency response disciplines. Responding to and clearing incidents more quickly with a uniform approach reduces the risk of a secondary crash.

Iowa will continue to work towards achieving TIM goals, such as reaching 20% saturation for TIM training program implementation, partnering with local traffic management centers (TMCs), and improving overall performance measures such as response time, timeliness of completing crash investigations while using the Traffic and Criminal Software (TraCS), and tracking severe crashes.

## Automated Vehicle (AV) and Connected Vehicle (CV) Technology

The use of Automated Vehicle (AV) and Connected Vehicle (CV) technology will likely be paramount in reducing the frequency of fatalities and serious injuries. AV technology uses a combination of light detection and ranging (LiDAR), global positioning systems (GPS), optical cameras, and processing power to analyze the roadway and position the vehicle. CV technology uses wireless communication between vehicles, infrastructure, and non-motorists.

In the CV space, Iowa currently manages more than 1,000 intelligent transportation system devices and about 750 miles of fiber-optic cable across the state. These include closed-circuit television cameras (CCTVs), dynamic message signs (DMS), and other devices to improve safety on roadways and work zones. Iowa has already begun to conduct research activities relating to AV and CV technologies to reduce human error in vehicle crashes. Current examples of this include adaptive cruise control, emergency braking, lane assist, automatic parking, blind spot monitoring, distribution of basic safety messages (BSMs) and personal safety messages (PSMs), and real-time traveler information.

As AV and CV technology advances, Iowa will stay at the cutting edge to optimize the benefits to roadway safety. Staying on the cutting edge may include partnering with research institutions, the deployment of additional CV devices and the use of predictive analytics at intersections to improve roadway conditions further, alert emergency responders of incidents more quickly, relay safety messages, and encourage Iowans to use and invest in CV technology.

## 4.5 HIGHWAY SAFETY IMPROVMENT PROGRAM (HSIP) SPECIAL RULES

FHWA has three Special Rules under the HSIP that apply to high-risk rural roads, older drivers and pedestrians, and vulnerable road users (VRU). When the Special Rules apply, FHWA requires the State to take specific actions to reduce fatalities and serious injuries within areas triggered by increased crash trends.

### High-Risk Rural Roads (HRRR)

Iowa defines HRRR as paved rural major and minor collectors and paved local roads with a posted speed limit greater than 45 miles per hour (mph) and a paved surface width of less than 26 feet.

**The High-Risk Rural Roads (HRRR) Special Rule applies if the fatality rate on rural roads in a state increases over the most recent two-year period for which data is available.** If the State is subject to the rule, FHWA requires the State to obligate at least 200 percent of the funding received in the fiscal year 2009 for HRRR for the following fiscal year. At the publication of this plan, the Special Rule applies to Iowa; therefore, $2,671,790 in HSIP funding will fund HRRR projects for use in the fiscal year 2024.

### Older Drivers and Pedestrians

**If the rate of traffic fatalities and serious injuries for drivers and pedestrians 65 years of age and older increases during the most recent two-year period, then the Older Drivers and Pedestrians Special Rule is applied.** If the rule is triggered, the state must include strategies to address older drivers in the next SHSP and conduct a secondary analysis to determine whether the emphasis on safety programs and countermeasures should focus on drivers and/or pedestrians.

During the most recent two-year period, the rate of traffic fatalities and serious injuries for drivers and pedestrians 65 years of age and older increased; therefore, the special rule applies to Iowa. During the SHSP analysis period, the percentage of older pedestrian fatalities and serious injuries is similar to the percentage of fatalities and serious injuries that involved an older driver (ranging between 20 and 30 percent). Because pedestrian fatalities and serious injuries account for six percent of all fatalities and serious injuries in Iowa during the analysis period, and older drivers account for 18 percent, funding is best focused on older drivers rather than older pedestrians. Regardless, public information campaigns aimed at older pedestrians, as well as drivers of all ages, focusing on pedestrian safety would be beneficial.

Although not included as a Key Emphasis Area for this SHSP, because the Special Rule applies at the time of this publication, Iowa will consider the following strategies to address safety concerns for older drivers:

- Support a road-based coalition to plan for addressing age-based transportation needs
- Provide educational and training opportunities for older drivers that address driver safety, road engineering and signage, vehicle technology, driver licensing, health and vision concerns, and alternative transportation options
- Update publications and web resources for older drivers and their families to include safety strategies, warning signs, and planning for driving retirement
- Update procedures for assessing medical fitness to drive
- Know when to put the keys down or when to have a conversation with the family (AARP's CarFit program provides older drivers tools needed to ensure their safety when driving)

Strategies to improve pedestrian safety are specifically addressed in Iowa's VRU Safety Assessment. Many of the strategies identified for the Key Emphasis Areas in Section 3.4 of this plan also benefit older drivers, as included in the FHWA Handbook for Designing Roadways for the Aging Population. Examples include reduced conflict intersections, retroreflective backplates at signalized intersections, enhanced delineation, and high-friction surface treatments.

### Vulnerable Road Users (VRU)

**The VRU Special Rule applies if a State's annual VRU fatalities represent not less than 15 percent of the total annual crash fatalities.** If the State is subject to the rule, FHWA requires the State to obligate at least 15 percent of the funding apportioned to the State for the following fiscal year to address the safety of VRUs. At the publication of this plan, the special rule does not apply to Iowa. Strategies to improve pedestrian safety are specifically addressed in Iowa's VRU Safety Assessment.

IOWA | DOT

## CONTACT US


**LARRY GRANT**

State Safety Planner
Traffic and Safety Bureau
515-233-7828
larry.grant@iowadot.us

**JAN LAASER-WEBB, P.E.**

State Safety Engineer
Traffic and Safety Bureau
515-239-1349
jan.laaser-webb@iowadot.us



*The latest electronic version of this document can be found at the following location on the Iowa DOT website:* https://iowadot.gov/traffic/shsp/home