

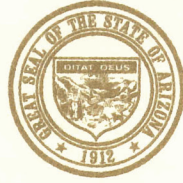
*Toward Zero Deaths by Reducing Crashes for a Safer Arizona*



# ARIZONA

2014 Strategic Highway Safety Plan

*This report was funded in part through grants from the Federal Highway Administration, U.S. Department of Transportation. The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data, and for the use or adaptation of previously published material, presented herein. The contents do not necessarily reflect the official views or policies of the Arizona Department of Transportation or the Federal Highway Administration, U.S. Department of Transportation. This report does not constitute a standard, or regulation. Trade or manufacturers' names that may appear herein are cited only because they are considered essential to the objectives of the report. The U.S. government and the State of Arizona do not endorse products or manufacturers.*



## STATE OF ARIZONA

JANICE K. BREWER  
GOVERNOR

EXECUTIVE OFFICE

For the millions of people who travel Arizona's roads each year, public safety is our top priority. This mission requires collaboration and coordination among a broad group representing all of Arizona. That is why I am proud of the effort that has gone into the development and implementation of the 2014 Arizona Strategic Highway Safety Plan.

This Plan outlines a clear set of actions and proposed strategies to be taken over the next five years to reduce motor vehicle and pedestrian-involved crashes and save lives on our roadways. It also reflects a collaborative effort by more than 300 stakeholders statewide, representing 87 different agencies and organizations, who dedicated 2,400 hours to this project. The culmination of their efforts is a comprehensive plan that addresses safety issues and offers feasible solutions for everyone who travels in Arizona by car, truck, motorcycle, bicycle, transit or on foot.

Our shared vision of eliminating highway fatalities can become tomorrow's reality. Achieving that vision requires continued collaboration, cooperation, and the sharing of knowledge and resources throughout the implementation of this plan. It also requires a commitment by each of us to make safety our top priority every time we travel.

I extend my sincere appreciation to the Arizona Department of Transportation, the Arizona Governor's Office of Highway Safety, the Arizona Department of Public Safety, the Arizona Department of Health Services, our federal partners, and the hundreds of participating stakeholders from across our state for their hard work and dedication to the development of Arizona's 2014 Strategic Highway Safety Plan.

Sincerely,

A handwritten signature in cursive script that reads "Janice K. Brewer".

Janice K. Brewer  
Governor



ARIZONA



THE GRAND CANYON STATE  
WELCOMES YOU

*Interstate 15 at the  
Arizona and Utah border*

# Arizona Strategic Highway Safety Plan Endorsement

As part of the Arizona 2014 Strategic Highway Safety Plan (SHSP) update process, the Executive Committee serves in a leadership capacity for developing, promoting and implementing cost-effective transportation-safety strategies within the state to reduce the number and severity of crashes on all of Arizona’s public roadways.

This SHSP was developed through a data-driven, collaborative approach amongst Arizona’s safety stakeholders. The SHSP represents our state safety goal statement and identifies the Emphasis Areas that we will focus on to achieve our goal. The SHSP is an overarching strategic statewide safety document to guide our existing safety planning and programming processes; facilitate implementation of recommended safety strategies and action steps or countermeasures through our existing plans and programs; and modify our current planning processes over time to adopt and institutionalize a change in Arizona’s transportation safety culture.

## 2014 SHSP Executive Committee Members

- John S. Halikowski, Director, Arizona Department of Transportation
- Alberto Gutier, Director, Arizona Governor’s Office of Highway Safety
- Robert Halliday, Director, Arizona Department of Public Safety
- Dr. David Harden, Strategic Planning and Communications Section Chief, Arizona Department of Health Services
- Karla Petty, Arizona Division Administrator, Federal Highway Administration
- Matthew Fix, Arizona Division Administrator, Federal Motor Carrier Safety Administration
- Christopher Murphy, Region 9 Administrator, National Highway Traffic Safety Administration
- James McLaughlin, Region 9 Program Manager, National Highway Traffic Safety Administration

We, on behalf of the State Agency members of the Arizona Strategic Highway Safety Plan Executive Committee, approve this SHSP.





**John S. Halikowski**  
Director, Arizona Department of Transportation





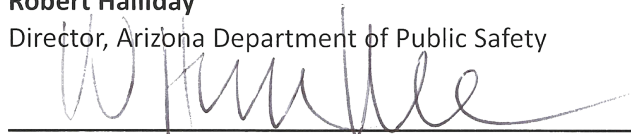
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**Robert Halliday**  
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**Will Humble**  
Director, Arizona Department of Health Services

In coordination with the following federal transportation-safety agencies:



This report is the result of the combined efforts of seven Executive Committee agencies: the Arizona Department of Transportation, the Arizona Governor’s Office of Highway Safety, the Arizona Department of Public Safety, the Arizona Department of Health Services, the Federal Highway Administration, the Federal Motor Carrier Safety Administration, and the National Highway Traffic Safety Administration, as well as the Strategic Highway Safety Plan Task Force members, external safety stakeholders and partners:

3M Traffic Safety and Security  
AAA Arizona  
AARP Driver Safety  
American Association of Retired Persons  
AIA Sports Properties  
Air Evac Services  
Allstate Foundation, Teen Safe Driving Program  
Allstate Insurance  
American Traffic Safety Services Association  
Arizona Conference of Police and Sheriffs  
Arizona Department of Education  
Arizona Department of Health Services  
Arizona Department of Health Services, Bureau of EMS and Trauma System  
Arizona Department of Public Safety  
Arizona Department of Public Safety, Crime Laboratory  
Arizona Department of Transportation  
Arizona Department of Transportation, Communications  
Arizona Department of Transportation, Director’s Office  
Arizona Department of Transportation, Enforcement and Compliance Division  
Arizona Department of Transportation, Environmental Compliance  
Arizona Department of Transportation, Executive Hearing Office  
Arizona Department of Transportation, Government Relations and Policy Development  
Arizona Department of Transportation, Holbrook District  
Arizona Department of Transportation, Intermodal Transportation Division  
Arizona Department of Transportation, Maintenance Permits Services

Arizona Department of Transportation, Motor Vehicle Division  
Arizona Department of Transportation, Multimodal Planning Division  
Arizona Department of Transportation, Regional Traffic  
Arizona Department of Transportation, Road Safety Assessment Program  
Arizona Department of Transportation, Roadside Resources  
Arizona Department of Transportation, Safe Routes To Schools  
Arizona Department of Transportation, Safford District  
Arizona Department of Transportation, Traffic Engineering Group  
Arizona Department of Transportation, Traffic Records  
Arizona Department of Transportation, Traffic Safety Section  
Arizona Department of Transportation, Transportation Technology Group  
Arizona Department of Transportation, Yuma District  
Arizona Emergency Nurses Association  
Arizona Game and Fish Department  
Arizona Governor’s Office of Highway Safety  
Arizona Motorcycle Safety Advisory Council  
Arizona Operation Lifesaver  
Arizona Professional Driving Schools  
Arizona Professional Towing & Recovery Association  
Arizona State University  
Arizona Students Against Destructive Decisions  
Arizona Supreme Court  
Arizona Trucking Association  
American Traffic Safety Services Association, Arizona Chapter  
Banner Children’s Hospital  
Banner Estrella Medical Center  
Banner Good Samaritan Medical Center  
Barrow Dignity Health, St. Joseph’s Hospital and Medical Center  
Barrows Neurological Institute, St. Joseph’s Hospital and Medical Center  
Black Canyon Fire District  
Bureau of Indian Affairs, Western Regional Office  
Cambridge Systematics  
Centerline Supply West  
Central Yavapai Metropolitan Planning Organization  
CH2M HILL  
Chino Valley Fire Department  
City of El Mirage  
City of Flagstaff Metropolitan Planning Organization  
City of Glendale  
City of Mesa Transportation Department  
City of Peoria

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# Acknowledgements

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Colorado River Indian Tribes, Commercial Vehicle Enforcement  
Colorado State University  
Guardian Medical Transport  
DrivingMBA  
DUI Abatement Council  
Federal Highway Administration, Arizona Division  
Federal Motor Carrier Safety Administration  
Fort Mojave Tribal Roads Department  
Gila River Emergency Medical Services  
Gila River Indian Community  
Gila River Indian Community Department of Transportation  
Governor's Advisory Council on Aging  
Guardian Interlock  
Hopi Emergency Medical Services  
Hopi Resource Enforcement Services  
Hopi Tribe  
Hualapai Tribe Motor Vehicle Crash Injury Prevention  
Hualapai Tribe Police  
Indian Health Service  
Indian Health Service, Parker Service Unit  
Indian Health Service, Shiprock Service Unit  
Inter Tribal Council of Arizona  
J & L Transportation  
Kittelson & Associates  
Knight Refrigerated  
Lee Engineering  
Living Streets Alliance  
Maricopa Association of Governments  
Maricopa County Animal Care and Control  
Maricopa County Department of Transportation  
Maricopa County Justice Courts  
Maricopa Medical Center, Trauma Services  
Mesa Police Department  
Mesa Police Department, Traffic Section  
Mothers Against Drunk Driving  
National Highway Traffic Safety Administration  
National Safety Council  
National Weather Service  
Nationwide Insurance  
Native Air / Air Methods  
Navajo Area Indian Health Service  
Navajo Division of Transportation, Highway Safety  
Phoenix Children's Hospital  
Phoenix Fire Department  
Phoenix Indian Health Service

Phoenix Police Department  
Phoenix Police Department, Traffic Bureau  
Pima Association of Governments  
Pima County Department of Transportation, Traffic Engineering Division  
Pinal County  
Pinal County Air Quality  
Prescott Alternative Transportation  
Red Means Stop Traffic Safety Alliance  
Ride Northern Arizona  
RideNow, Tucson  
Salt River Pima-Maricopa Indian Community  
Salt River Police Department  
San Carlos Apache Tribe  
San Carlos Apache Tribe, Motor Vehicle Crash Injury Prevention  
San Carlos Emergency Medical Services  
State Transportation Improvement Program  
TEAM Arizona Motorcyclist Training Centers  
Tempe Bicycle Action Group  
Tribal Technical Assistance Program CSU  
Tohono O'odham Nation  
Tohono O'odham Police Department  
Tohono O'odham Nation Transportation  
Tour West America  
Town of Camp Verde  
Trafficade Service, Inc  
Tri-Valley Ambulance  
Tuba City Regional Health Care Corp, Division of Environmental Health Services Injury Prevention Program  
Tucson Indian Health Service  
United Civil Group  
United State Department of Agriculture, Forest Service  
Valley Metro Regional Public Transportation Authority  
Western Arizona Council of Governments  
White Mountain Apache Tribe Police  
Window Rock Emergency Medical Services  
Wilson & Company, Inc., Engineers & Architects  
Yavapai County Public Works Department

We apologize to any agency, organization or individual whose name was inadvertently omitted. We appreciate your participation in and contributions to this process.



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*This document, and current updates of each of the supporting appendices, are available at: [azdot.gov/shsp](http://azdot.gov/shsp)*



*State Route 179  
near Sedona*

# Executive Summary

# Executive Summary

## What Is a Strategic Highway Safety Plan?

A Strategic Highway Safety Plan (SHSP) is a statewide, coordinated plan that provides a comprehensive framework for reducing fatalities and serious injuries on all public roads. The SHSP is developed by the Arizona Department of Transportation in cooperation with local, regional, state, federal, tribal, non-profit and private-sector safety stakeholders. The SHSP is a data-driven, multiyear plan that establishes statewide goals and objectives and identifies Emphasis Areas that must be addressed to reduce traffic fatalities and serious injuries. The plan outlines feasible strategies and action steps or countermeasures to address the Emphasis Areas through integration of the 4 E's of transportation safety: Engineering, Education, Enforcement and Emergency Medical Services.



## Arizona's 2007 SHSP

### 2007 SHSP EMPHASIS AREAS

1. RESTRAINT USAGE
2. YOUNG DRIVERS
3. SPEEDING
4. IMPAIRED DRIVING
5. ROADWAY/ROADSIDE
6. DATA IMPROVEMENT

The previous Arizona SHSP was adopted in 2007 and, since then, significant reductions in fatalities and serious injuries have been observed. With the 2007 plan, Arizona established a long-term state vision of “Zero fatalities on Arizona roads, your life depends on it” and “No fatalities by 2050.” The plan also included an intermediate goal of a 12 percent reduction in the number of fatalities in the first five years, and a stretch subgoal in each Emphasis Area category of reducing fatalities by 15 percent during the five-year period. By the end of 2012, reductions in fatalities in Arizona had exceeded the state safety goal, as fatalities decreased overall by 23 percent. In addition, the 15 percent stretch subgoal for each Emphasis Area was exceeded: Restraint Usage (29%); Young Drivers (34%); Speeding (34%); Impaired Drivers (26%); Roadway Lane Departure (25%); and Roadway Intersection Related (26%).

2014 SHSP EMPHASIS AREAS

TOP FOCUS  
EMPHASIS AREAS

- SPEEDING AND AGGRESSIVE DRIVING
- IMPAIRED DRIVING
- OCCUPANT PROTECTION
- MOTORCYCLES
- DISTRACTED DRIVING

- ROADWAY INFRASTRUCTURE AND OPERATIONS
- AGE RELATED
- HEAVY VEHICLES / BUSES / TRANSIT
- NONMOTORIZED USERS
- NATURAL RISKS
- TRAFFIC INCIDENT MANAGEMENT
- INTERJURISDICTIONAL

## Arizona's 2014 SHSP

In late 2012, Arizona's safety leaders began the process to update the SHSP in accordance with the new federal regulations outlined in legislation that funds the federal surface transportation programs, Moving Ahead for Progress in the 21st Century Act (MAP-21). The purpose of the SHSP update is to direct transportation-project investment decisions and assure best practices are adopted to achieve a significant reduction in transportation-related fatalities and serious injuries on all public roadways.

The SHSP update process was a collaborative effort involving safety stakeholders, transportation safety research, and extensive analysis and documentation of the statewide database of crash records and other data. The data analysis included geospatial investigation of crash characteristics associated with all fatal

and serious-injury crashes and the relationship or interaction of these crashes between the various summarized crash characteristics. These efforts helped to identify 12 safety Emphasis Areas and two support areas, as well as identify and prioritize safety strategies. The Executive Committee recommended focusing especially on five Emphasis Areas that are associated with the highest number of fatalities and serious injuries. Focus on these Emphasis Areas is expected to have the greatest impact in reducing fatalities and serious injuries. This process established a new vision that encompasses and focuses on all safety efforts in the state.

EMPHASIS AREAS SUPPORT

**DATA IMPROVEMENTS**

COORDINATE IMPROVEMENTS TO, AND SHARING OF, SAFETY DATA

**POLICY INITIATIVES**

PROVIDE DIRECTION ON PROPOSED CHANGES TO POLICIES, PROCEDURES OR LAWS

# Executive Summary

# Executive Summary

## SHSP Vision

*Toward Zero Deaths by Reducing Crashes for a Safer Arizona*

The vision of the Arizona Strategic Highway Safety Plan is consistent with the national movement of **Toward Zero Deaths**. The goal and objective for this plan have been identified and will be used to monitor the status of implementation efforts and progress. A performance-based approach has been established directly linking performance measures to the goal and objective established for this plan. These measures are coordinated with goals and annual targets in other Arizona transportation safety programs. The goals and objectives of associated safety plans and the established Emphasis Areas of the 2014 SHSP ultimately will contribute to the overall statewide 2014 SHSP goal and objective.

### SHSP GOAL:

*Reduce fatalities and the occurrence and severity of serious injuries on all public roadways in Arizona.*

### SHSP

### OBJECTIVE:

*Reduce the total number of fatalities and serious injuries in Arizona by three to seven percent during the next five years from the 2013 base year.*



*Interstate 17  
near Flagstaff*

# Background

# Background

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), passed in 2005, created a new core safety program in Section 148: the Highway Safety Improvement Program (HSIP). This new program was carried forward in the most recent legislation under MAP-21. The current HSIP provides significantly more funds to state departments of transportation (DOTs) for safety improvement projects and requires states to develop a Strategic Highway Safety Plan (SHSP). The SHSP involves preparation of a comprehensive, collaborative and data-driven approach that incorporates the 4 E's of highway safety—Engineering, Education, Enforcement, and Emergency Medical Services. The process defined by the Federal Highway Administration (FHWA) involves developing an SHSP that establishes the overall framework for analysis of priority needs and opportunities relating to safety on all public roadways. The SHSP can also identify complementary and jointly funded activities to be implemented among state, regional, local and tribal partners. All partners are encouraged to utilize the SHSP as a guide to investing safety-related funds. The SHSP will be the overarching transportation safety plan to guide Arizona's highway safety planning and programming processes and facilitate implementation of recommended safety strategies and countermeasures.

## Arizona SHSP History

In 2005, state safety leaders developed and released the Arizona Transportation Safety Plan (TSP) that examined and planned for safety from a broad perspective that included the 4 E's. SAFETEA-LU was passed in that same year and included important new and continued funding sources for safety-related projects, programs and initiatives. In response to passage of SAFETEA-LU and the requirements of the legislation, leadership in Arizona championed development of Arizona's most recent SHSP in 2007. That plan established a long-term state vision of "Zero fatalities on Arizona roads, your life depends on it" and the "No fatalities by 2050" goal. An intermediate goal was set for a 12 percent reduction in serious crashes by the end of 2012 with a 15 percent stretch subgoal for each of six Emphasis Areas. Arizona has previously been presented unique challenges with a rapidly growing population and an accompanying increase in vehicle miles traveled (VMT). The Arizona 2007 SHSP still aimed for this substantial reduction in total number of crashes, in line with the long-term vision.

Following consideration and evaluation of available data and information during development of the 2007 SHSP, participants agreed to focus attention on six areas considered to be the most significant indicators for assessing the safety of highways and public roadways in Arizona.

## Arizona 2007 Strategic Highway Safety Plan

*In response to passage of SAFETEA-LU and the requirements of that legislation, leadership in Arizona championed development of the 2007 Arizona SHSP.*



Available at [azdot.gov/shsp](http://azdot.gov/shsp)

## 2007 SHSP EMPHASIS AREAS

1. RESTRAINT USAGE
2. YOUNG DRIVERS
3. SPEEDING
4. IMPAIRED DRIVING
5. ROADWAY/ROADSIDE
6. DATA IMPROVEMENT

Evaluation of the 2007 SHSP revealed that Arizona achieved an overall decrease in fatalities of 23 percent by the end of 2012. The 15 percent reduction stretch subgoal established for each Emphasis Area also was met and exceeded: Restraint Use (29%); Young Drivers (34%); Speeding (34%); Impaired Drivers (26%); Roadway Lane Departure (25%); and Roadway Intersection Related (26%).

A point of concern, however, is that fatalities increased by nine percent in 2011 from the previous year. Fatality totals in 2012 remained essentially flat; however, preliminary counts for 2013 indicate an additional increase in fatalities of approximately three percent from 2012. These most recent years indicate a potential reversal from the downward trend in fatalities experienced in prior years.

## Arizona Safety Accomplishments

Since the 2007 SHSP, Arizona has enhanced existing transportation-safety programs and laws and implemented new safety programs. Some examples of these efforts to improve safety on public roadways in Arizona are listed below:

- The Arizona Governor's Office of Highway Safety (GOHS) has been recognized nationally for sponsoring successful Driving Under the Influence (DUI) Task Forces in Arizona. The Arizona Department of Transportation (ADOT) supports these efforts by utilizing its network of Dynamic Message Signs (DMS) to display the "Drive Hammered, Get Nailed" messaging.
- The Arizona Department of Public Safety (DPS) initiated a distracted driving enforcement campaign in 2014 and will publish the results as a public information/education initiative.
  - In January and March 2014, the Arizona GOHS partnered with ADOT to review and revise the Arizona Crash Report form. More than 20 law enforcement agencies participated in the review. The new form will provide more detailed data about types of distracted driving; secondary collisions; traffic incident response and transport times; and wrong-way driving collisions. The updated crash report form went into effect on July 1, 2014.
  - In 2013, ADOT launched the Driving Safety Home campaign to reduce the number of people seriously injured and killed in transportation incidents across Arizona. It is a multiyear initiative that aims to motivate positive changes in behavior through increased awareness about transportation safety and encourages leaders in the transportation industry to be role models for safe behavior when using any mode of

# Background

# Background

transportation. Initially the program focused on ADOT's workforce but now has expanded to include transportation industry professionals statewide.

- ADOT partnered with DPS, GOHS and the Arizona Department of Health Services to pilot a "Safety Corridor" on Interstate 17 north of Phoenix during Labor Day weekend 2013. The innovative, multiagency effort exceeded its goal of preventing fatal crashes in the Safety Corridor. Zero crashes occurred, despite busy holiday-travel conditions. Additional Safety Corridor efforts have been implemented during other holiday weekends to build on this success.
- In 2013, the Traffic Records Coordinating Committee (TRCC) and FHWA approved a formal program in which ADOT obligated \$1 million of its HSIP funding to assist with information-technology costs associated with Arizona law enforcement agencies converting to electronic crash reporting systems such as TraCS or XML Schema.
- In August 2012, the state of Arizona expanded its car seat law to require vehicle booster seats for all children ages five years through seven years and under 4' 9" in height.
- In July 2012, Arizona expanded its Move Over law to include tow truck drivers, roadside assistance providers, construction and maintenance vehicles, and stranded motorists who have activated their vehicle's hazard lights. The law, which requires motorists to move over one lane or slow down when driving by any vehicle with flashing lights pulled to the side of a road or highway, originally applied only to law-enforcement officers and other first responders.
- ADOT, through its Road Safety Assessment (RSA) program, has conducted 73 RSAs in the last seven years. The RSA program is available statewide to local, tribal, regional, state, and federal agencies. Each RSA is a formal examination of road user safety associated with an existing or future roadway by a qualified and experienced independent multidisciplinary team. An RSA team is typically comprised of five-to-nine people and is assembled based on expertise needed for the site specific issues. Recently, RSA program technical assistance was provided to the Pima and Maricopa Associations of Governments (PAG, MAG), and ADOT hosted multiple safety coordination meetings with the Inter Tribal Council of Arizona to improve its RSA process.
- ADOT has created a Local Public Agency (LPA) section to manage HSIP and other federal funding to local agencies and a High Risk Rural Roads Program (HRRRP) to deliver safety projects where necessary and eligible.
- ADOT has worked in cooperation with the Arizona Game and Fish Department to improve highway safety associated with wildlife crossings on state roadways. This cooperative effort has resulted in development of the nation's first wildlife-vehicle collision mitigation system that uses military-grade target acquisition software to detect elk and other wildlife approaching the highway. Once detected, a series of flashing signs alert motorists of the presence of wildlife. During the first two years of implementation, elk-vehicle collisions declined by 96 percent. Single-vehicle collisions involving wildlife dropped by 65 percent. Additionally, ADOT has worked in cooperation with Arizona Game and Fish and other wildlife experts to construct 11 underpasses and six bridges along 17 miles of SR 260 where wildlife is abundant. ADOT has also constructed three Desert Bighorn Sheep crossings on U.S. 93 south of the Hoover Dam.



*Tucson Basket Bridge over  
Euclid Avenue south of Broadway*

# SHSP Update Process

# SHSP Update Process

## STRATEGIC HIGHWAY SAFETY PLAN

Is based on crash data and other safety analyses to identify safety issues on all public roads

Is developed from consultation with a broad range of stakeholders

Addresses the 4 E's of safety through a multidisciplinary approach

Describes a program of strategies to reduce fatal and serious-injury crashes

Includes other Arizona safety plans and processes in a comprehensive manner

Sets goal(s) and objective(s) and measures performance

The Arizona SHSP is the state's comprehensive transportation safety plan. It is consistent with federal requirements and the ADOT Long Range Transportation Plan (LRTP). As the overarching transportation safety plan, the SHSP coordinates with other state safety plans and programs, such as the Highway Safety Plan (HSP), the HSIP and the Commercial Vehicle Safety Plan (CVSP). The SHSP's goal, objective and strategies should be coordinated for alignment during the revisions of these state safety plans and development of other Metropolitan Planning Organization (MPO), Council of Government (COG) and tribal community safety plans.

The SHSP Update is an evolutionary process. Implementation of state SHSP will be carried out through these other state and local safety plans and the impacts of implemented strategies will be monitored and used to determine where adjustments and revisions to strategies are most warranted. Adjustments will be made through supporting plans and programs. The state SHSP will be formally updated every five years as required by legislation under MAP-21. This coordination with other plans supports and advances common goals and aligned strategies, programs and projects to help Arizona reduce the number of fatalities and serious injuries on all of its public roadways.

The purpose of the SHSP update is to direct transportation project investment decisions and encourage the adoption of best practices to achieve a significant reduction in traffic fatalities and serious injuries on all public roadways, including non-state-owned public roads and public roads on tribal lands.

In addition to utilizing a collaborative, data-driven approach, the SHSP update incorporates transportation-safety research and extensive analysis and documentation of the statewide database of crash records, and other data, to identify safety Emphasis Areas and prioritize safety strategies. This approach included geospatial analyses of crash characteristics associated with all serious-injury and fatal crashes and the relationship or interaction of these crashes between the various crash characteristics summarized. This plan's recommended Emphasis Areas and strategies resulted from the multidisciplinary efforts of agencies integrating the 4 E's of transportation safety. This process established a new vision that encompasses and focuses on all safety efforts in the state.



# SHSP Update Process

# SHSP Update Process

## Data Driven

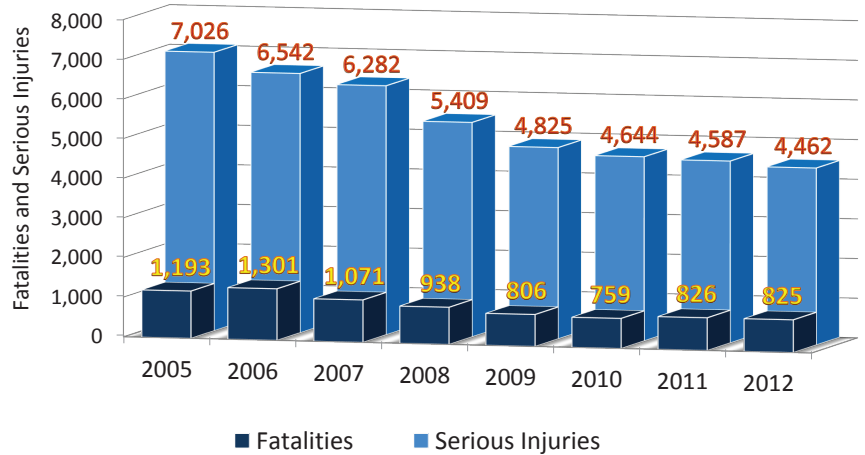
Statewide crash data for 2005 through 2012 was analyzed to identify trends and help guide strategies to improve safety on Arizona’s public roadways. The top figure to the right shows the trend for the annual number of fatalities and serious injuries for this eight-year period. Serious injuries were those identified as incapacitating injury on the Arizona Crash Report form.

The second figure to the right shows the annual rates for fatalities or serious injuries. These rates are computed as the number of fatalities or serious injuries divided by the number of 100 million VMT. Rates are therefore influenced by both the numbers of fatalities and serious injuries and the amount of travel within the state. The fatality rate has been reduced since 2005 by 31 percent, and the serious-injury rate has been reduced by 36.7 percent. While the annual serious injury rate has been slightly lower each year, the fatality rate has recently increased from the low of 1.27 in 2010 to 1.38 in 2012.

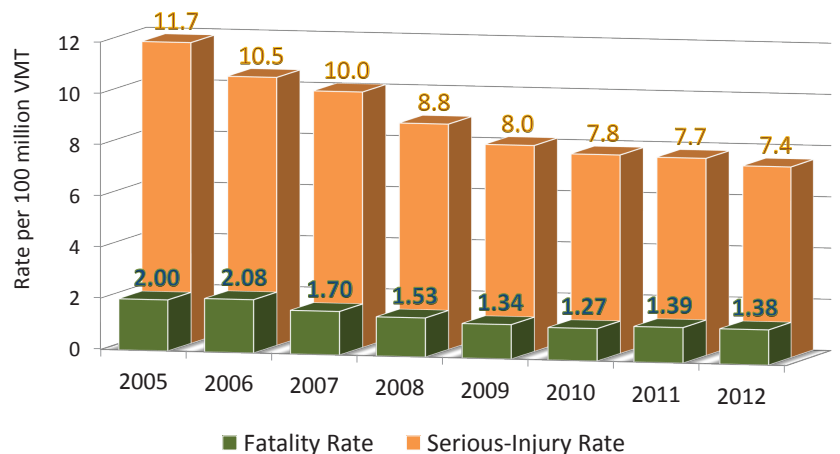
Additional data, in correlation with the eight years of crash data, were further evaluated to identify relationships between safety Emphasis Areas. Results were used to identify roadway and behavioral characteristics where crash frequencies are the highest. This analysis contributed to identifying relevant safety strategies and action steps with the greatest potential impact for reducing fatalities and serious injuries on all public roadways in Arizona.

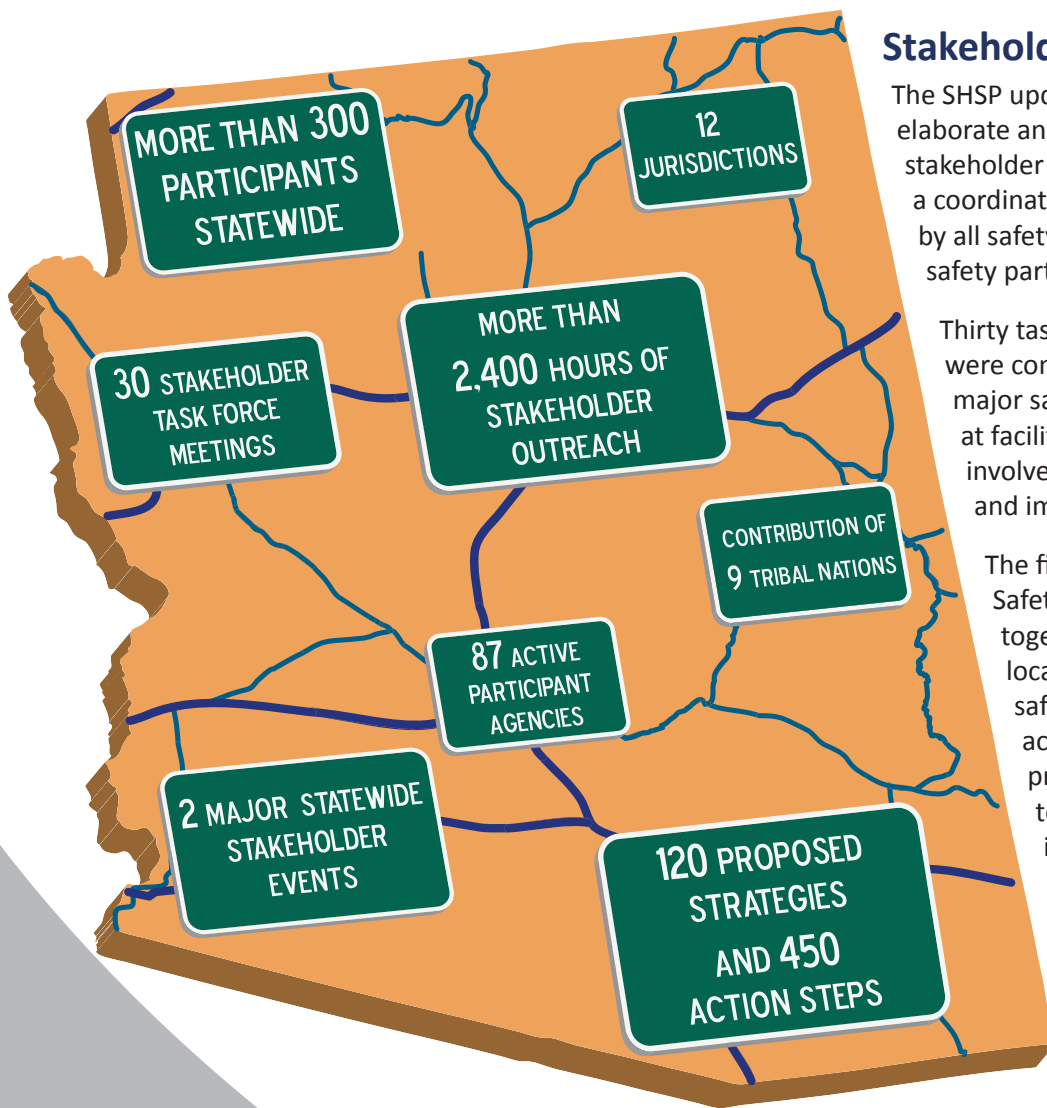
Crash information was obtained from the Accident Location Identification Surveillance System (ALISS) database, maintained by ADOT. This database is developed from information entered on the standard Arizona Crash Report form by law enforcement officers responding to each crash incident. Because crash records are collected from agencies throughout the state, data for past years can sometimes be updated later, as information becomes available. Fatality and serious injury data shown in this plan reflects the database as of July 2013.

ANNUAL TREND IN STATEWIDE FATALITY AND SERIOUS-INJURY COUNTS



ANNUAL TREND IN STATEWIDE FATALITY AND SERIOUS-INJURY RATES





## Stakeholder Input

The SHSP update process included an elaborate and extensive statewide safety stakeholder outreach effort to promote a coordinated SHSP for implementation by all safety agencies and private-sector safety partners.

Thirty task force work sessions were conducted as well as two major safety events aimed at facilitating stakeholder involvement in the SHSP update and implementation process.

The first major event was the Safety Launch, designed to bring together federal, state, regional, local and tribal transportation-safety stakeholders from across Arizona. This event provided a unique opportunity to examine critical safety issues impacting the state's multimodal transportation system and to identify opportunities to improve transportation safety. Six months later, the Safety Summit took place, giving Arizona's safety stakeholders

the opportunity to review and prioritize the strategies and action steps proposed for potential Emphasis Areas. Stakeholders participated in three rounds of individual task force work sessions between and after the two major safety events. Each task force included industry and subject-matter experts and other transportation-safety advocates passionate about specific areas of transportation safety. These task forces worked to establish the SHSP Emphasis Areas and develop proposed strategies and action steps to improve safety.

# SHSP Update Process

# SHSP Update Process

## SHSP Vision

*Toward Zero Deaths by  
Reducing Crashes for a  
Safer Arizona*

## SHSP Vision Statement

The vision of the Arizona Strategic Highway Safety Plan is consistent with the national movement of Toward Zero Deaths. One death on Arizona's roadways is too many; as such, a safety culture change is necessary to improve safety for the traveling public in Arizona on all public roads, no matter the mode of transportation used.

## SHSP Goal and Objective

During the SHSP update process, a long-term goal was established to align state agencies on a statewide, overarching safety goal. Historic trends in crash data were analyzed and an achievable five-year objective set to contribute to the SHSP goal and vision. This objective will measure the sum of the number of fatalities and serious injuries represented using a five-year rolling average with 2013 as the base year. Fatality and serious injury data for 2013 became available just before publication of this plan. In 2013, fatalities increased to 849 from the 2012 total of 825, while serious injuries decreased slightly to 4,319 from the 2012 total of 4,462. The five-year rolling average 2013 total number of fatalities and serious injuries is 5,380. Goals and objectives set for each Emphasis Area during the implementation of the SHSP will contribute to achieving the statewide goal.



## Performance Measures

Under MAP-21, performance management will transform federal highway programs and encourage more efficient investment of federal transportation funds by focusing on national transportation goals, increasing the accountability and transparency of the federal highway programs, and improving transportation investment decision making through performance-based planning and programming.

The cornerstone of MAP-21's highway program transformation is the transition to a performance- and outcome-based program. States are encouraged to invest resources to achieve individual goals that collectively make progress toward national goals. With respect to safety, MAP-21 establishes the national performance goal to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. The federal legislation does not establish a specific goal nor define significant reduction, leaving it up to the states to ascertain appropriate performance goals and objectives relative to local conditions.

Safety performance measures have been developed using Arizona's fatality and serious-injury data to establish a framework for monitoring progress toward reducing fatalities and serious injuries. The injury status of individuals involved in crashes is reported on the Arizona Crash Report form, where injuries classified as incapacitating injuries ("A" on the KABCO severity scale) are equivalent to serious injuries. The proposed MAP-21 annual safety performance measures are for all public roads and will be reported as a five-year rolling average for the following measures:

- Fatalities: The number of persons killed in motor vehicle crashes on all public roads for a calendar year
- Serious Injuries: The number of persons seriously injured in motor vehicle crashes on all public roads for a calendar year
  - Fatality Rate: The number of persons killed in motor vehicle crashes per 100 million VMT for a calendar year
  - Serious Injury Rate: The number of persons seriously injured in motor vehicle crashes per 100 million VMT for a calendar year

Safety performance measures, and other data analyses, are incorporated into Arizona's safety programs. As part of the annual evaluation and coordination of Arizona's transportation safety programs, such as in the HSP and HSIP, Arizona will likely be required to establish annual targets for these performance measures, pending the final rule making legislation. Optional separate annual targets may be established for urbanized and non-urbanized areas.

# SHSP Update Process

# SHSP Update Process

## Additional Safety Performance Measure Rules

Congress has given special consideration to improving safety on rural roads and the safety of older drivers and pedestrians, each defined as age 65 and older. To assist in this effort, safety performance standards have been set for these two important categories and additional mitigation efforts are required, if performance standards are not met.

### High Risk Rural Road Safety

MAP-21 legislation redefines and creates a Special Rule for High Risk Rural Roads (HRRR). In doing this, it eliminates the requirement for states to set aside funds for HRRRs, as instituted in previous legislation. The current rule requires Arizona to obligate 200 percent of its HRRR set aside funds received for fiscal year 2009, if the fatality rate on such roads increases during the most recent two-year period for which data is available. The FHWA will use the fatality rate per 100 million VMT for roads in the state classified as rural major and minor collectors and rural local roads. The Fatality Analysis Reporting System (FARS) data and Highway Performance Monitoring System (HPMS) data will be used to calculate the fatality rate. MAP-21 legislation provides flexibility to states in determining how they define HRRR.



Arizona defines HRRRs as roadways that are functionally classified as a rural major collector, rural minor collector or rural local road with a rate for fatalities and/or serious injuries that exceeds the statewide average for those functional classifications of roadways, or are likely to experience an increase in traffic volume that leads to rates for fatalities and/or serious injuries that exceed the statewide average for those functional classifications of roadways. Although MAP-21 eliminates the requirement for states to set aside funds for HRRR, Arizona will continue to allocate funds for safety projects on rural roads that meet this definition.

### Older Drivers and Older Pedestrians

The MAP-21 Special Rule for Older Drivers and Pedestrians creates additional requirements for states, if the rate of traffic fatalities and serious injuries combined, for drivers and pedestrians age 65 and older, increases during the most recent two-year period. These rates will be calculated relative to the statewide population of persons in that age group.



Arizona is committed to proactively monitoring the safety of older drivers and older pedestrians through specific Emphasis Areas established by this SHSP. If this special rule is triggered, Arizona would be required to include, in its subsequent SHSP, strategies to address the increases in those rates. Arizona would also conduct further evaluation to determine the severity in which driver or pedestrian group the increase is occurring and determine where emphasis on safety programs and countermeasures should be focused.



*Interstate 17 and Loop 101  
Interchange in Phoenix*

# SHSP Emphasis Areas

# SHSP Emphasis Areas

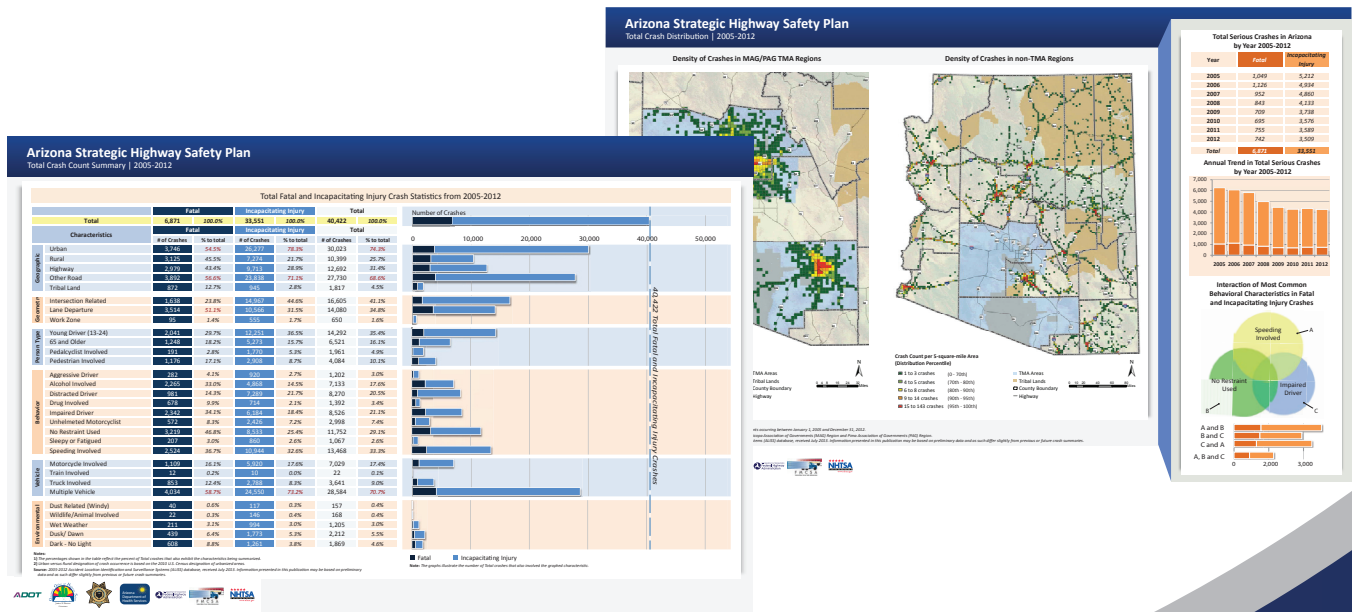
## CRASH CHARACTERISTICS

- Geographic Area of Crash
- Geometric Type of Crash
- Person Type Involved in Crash
- Behavioral Characteristics Associated with Crash
- Vehicle Type Involved in Crash
- Environmental Conditions During Crash

The crash data from 2005 through 2012 were categorized to reflect 30 crash characteristics. These included the original 16 crash-related conditions or characteristics identified for consideration in the 2007 SHSP Goal and Emphasis Area Workshop. The additional crash characteristics, beyond the original 16, were those determined to be significant by the 2014 SHSP update team, based on extensive data analyses and consultation with the Executive Committee. These 30 crash characteristics were grouped into six categories to reflect the geographic area, geometry type, person type, behavioral characteristics, vehicle type and environmental conditions associated with severe crashes.

To best share data summaries throughout the process so that the safety stakeholders could make informed, meaningful decisions, all eight years of data were compiled into the Crash Characteristic Data Map Book (Data Map Book). The Data Map Book, and other data requested by individual task force teams, was available for review at all meetings and events and on an FTP site for stakeholders participating in the update

process. Throughout the task force meetings, all stakeholders had the opportunity to review crash data, statistics, countermeasures and other elements to develop feasible strategies and action steps. The Data Map Book is provided as one of the appendices to this plan and is available at [azdot.gov/shsp](http://azdot.gov/shsp).



Example of Crash Characteristic Data Map Book pages

## 2014 SHSP EMPHASIS AREAS

### TOP FOCUS EMPHASIS AREAS

SPEEDING AND AGGRESSIVE DRIVING  
IMPAIRED DRIVING  
OCCUPANT PROTECTION  
MOTORCYCLES  
DISTRACTED DRIVING

ROADWAY INFRASTRUCTURE AND OPERATIONS  
AGE RELATED  
HEAVY VEHICLES / BUSES / TRANSIT  
NONMOTORIZED USERS  
NATURAL RISKS  
TRAFFIC INCIDENT MANAGEMENT  
INTERJURISDICTIONAL

The Data Map Book and other analyses were used to further clarify how, where and under what conditions fatal and serious-injury crashes had occurred on public roadways in Arizona. This information was the catalyst in establishing the 12 Emphasis Areas in this plan. These Emphasis Areas include categories of crashes in which fatalities and serious injuries are highest, and categories for which crashes have not been trending down during the years of data analyses, as well as other safety areas of greatest concern in Arizona.

During the SHSP update process, the Executive Committee recommended focusing especially on five Emphasis Areas that account for the greatest number of fatalities and serious injuries or appear to be trending upward. Focus on these Emphasis Areas will have the greatest impact on achieving the SHSP goal, and contribute to reducing fatalities and serious injuries in other Emphasis Areas, such as Age Related, Nonmotorized Users and Roadway Infrastructure and Operations. Status as a Top Focus Emphasis Areas will not affect project selection, prioritization or funding.

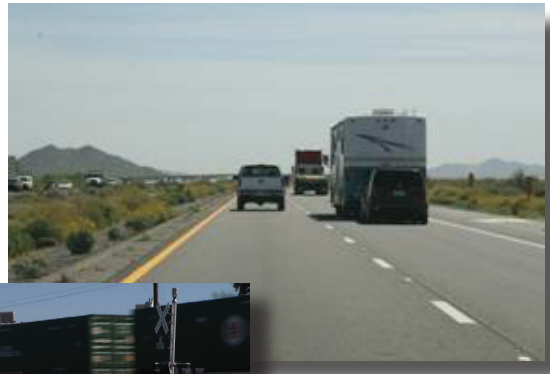
# SHSP Emphasis Areas

# SHSP Emphasis Areas

## SHSP Fact Sheets

The Emphasis Areas identified for this plan are presented on the pages to follow as one-page fact sheets. The fact sheets provide an overview of each specific Emphasis Area category, including: recent historical trends; each Emphasis Area's purpose statement, as defined by safety stakeholders in Arizona who participated in the update process; goals; and the prioritized strategies to achieve each Emphasis Area's goals. These fact sheets are listed first in order of the Top Focus Emphasis Areas.

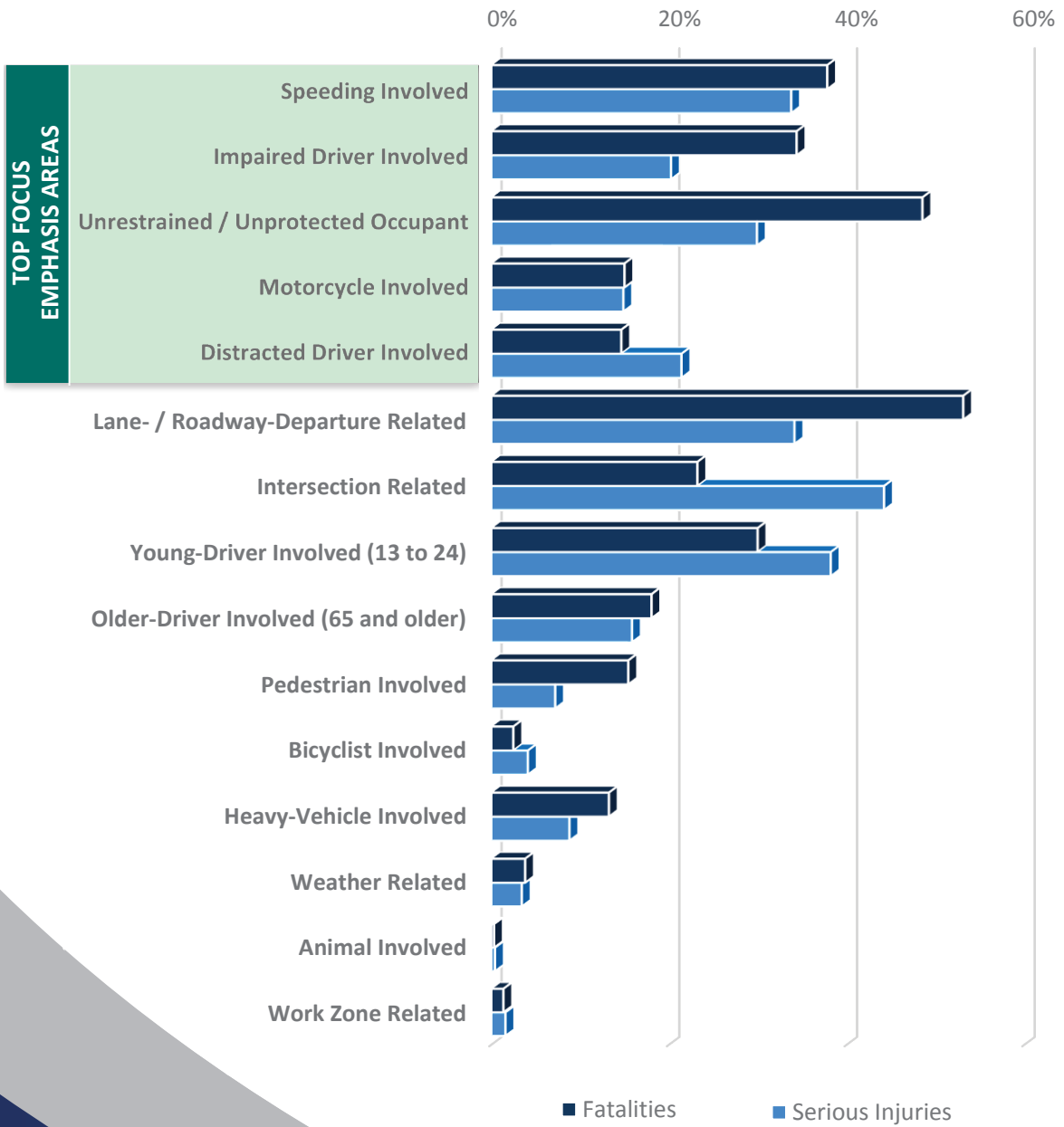
Several Emphasis Area categories containing two sufficiently different crash types are divided into two separate subcategories and summarized on individual fact sheets. The Emphasis Area for Roadway Infrastructure and Operations has separate fact sheets for Lane / Roadway Departure and for Intersections / Railroad Crossings; Nonmotorized Users has separate fact sheets for Bicyclists and Pedestrians; Age Related has a separate fact sheet for Young Drivers and for Older Drivers; and Natural Risks has separate fact sheets for Weather-Related and Animal-Involved. Traffic fatalities and serious injuries reflected in each of the Emphasis Area categories most often fall into the Roadway Infrastructure and Operations Emphasis Area from either an intersection or lane departure crash. Strategies addressing other Emphasis Areas will consequently contribute to reducing these severe intersection and lane departure crashes.



The chart on the next page shows the total percent share of all fatalities or serious injuries included in the eight year period, from 2005 through 2012, associated with each of the Emphasis Area categories or subcategories. Most individual crashes involved multiple characteristics and potential contributing factors and, therefore, are reflected in the statistics for more than one or several Emphasis Areas. Count totals shown are true to the crash database dated July 2013.

More detailed information about crash trends and characteristics for these 15 categories relating to the 12 Emphasis Areas is included in the supplemental appendix, Detailed Emphasis Area Document. That appendix is intended as a "living document" to be modified and updated during the Implementation and Evaluation phases of this SHSP. It is available at [azdot.gov/shsp](http://azdot.gov/shsp).

PERCENT OF TOTAL FATALITIES AND SERIOUS INJURIES BY CRASH CHARACTERISTIC



# SHSP Emphasis Areas

# Speeding and Aggressive Driving



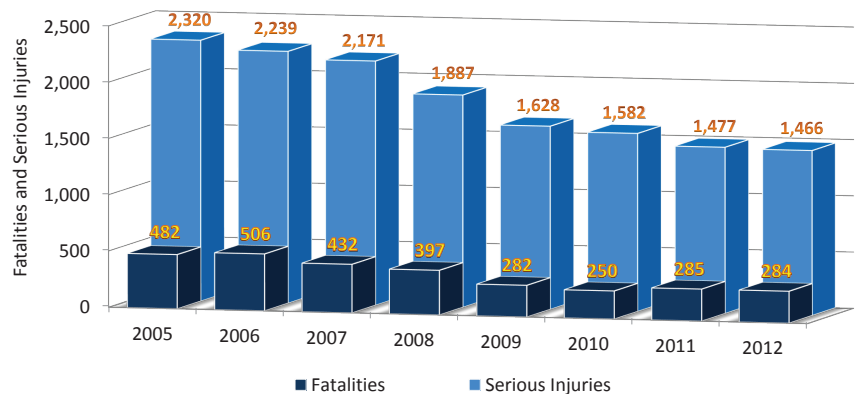
Speeding is the leading behavioral factor contributing to fatal and serious-injury crashes in Arizona. Speeding is commonly associated with other high-risk behaviors, such as aggressive or impaired driving and lack of restraint use. Speeding substantially increases both the occurrence and severity of collisions. Speeding-related fatalities and serious injuries are counted from all crashes involving at least one motorist driving above the speed limit or driving too fast for conditions. These crashes contributed to 38 percent of all fatalities and 34 percent of all serious injuries in Arizona from 2005 to the end of 2012.

## Purpose Statement

Save lives through education, enforcement and engineering, and promote safe and respectful driving on all Arizona roadways.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from crashes involving speeding and aggressive driving on all public roadways in Arizona.



*Trend in Speeding-Related Crash Fatalities and Serious Injuries*

## Strategies to Achieve Goal

- Increase highly visible and effective enforcement to reduce the frequency of crashes associated with speeding and aggressive driving.
- Institute a statewide speed-management strategic initiative.
- Educate all road users about the dangers and consequences of speeding and aggressive driving.
- Use engineering design to reduce speeds.
- Use crash-related data to target enforcement and public information campaigns.
- Utilize marketing efforts, such as a multimedia approach, to educate drivers.



Executive Committee designated top focus Emphasis Area.

# Impaired Driving



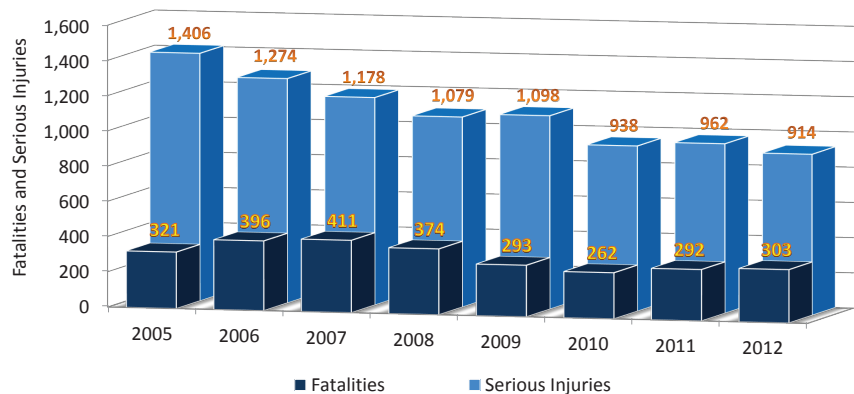
Impaired-driving fatalities and serious injuries include all instances in which a driver is under the influence of alcohol, drugs or medication, or was ill, fatigued or physically impaired. These crashes are more likely to be very severe and represent a far larger proportion of fatalities than that of less-severe crashes. In Arizona, 34 percent of all fatal crashes and 20 percent of crashes resulting in serious injuries involved an impaired driver. While alcohol remains the largest contributor to impaired-driving crashes that result in fatalities or serious injuries, the trend in alcohol-related crashes is steadily declining; however, fatal and serious-injury crashes involving a driver impaired by drugs and medication are increasing.

## Purpose Statement

Prevent alcohol- and drug-related crashes through education and enforcement.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from impaired-driving-related crashes on all public roadways in Arizona.



*Trend in Impaired-Driving-Involved Crash Fatalities and Serious Injuries*

## Strategies to Achieve Goal

- Conduct high-visibility impaired-driving enforcement initiatives.
- Increase educational efforts for everyone about the dangers and consequences of driving impaired.
- Work with the court system to promote policies and practices that result in the imposition of meaningful penalties for impaired-driving convictions.
- Partner with employers to suggest policies and procedures aimed at reducing impaired driving by their employees.
- Improve public awareness of and access to alternate forms of transportation.
- Improve data collection to understand and address impaired driving more effectively.
- Treat alcohol and drug dependency of DUI offenders.



Executive Committee designated top focus Emphasis Area.

# Occupant Protection



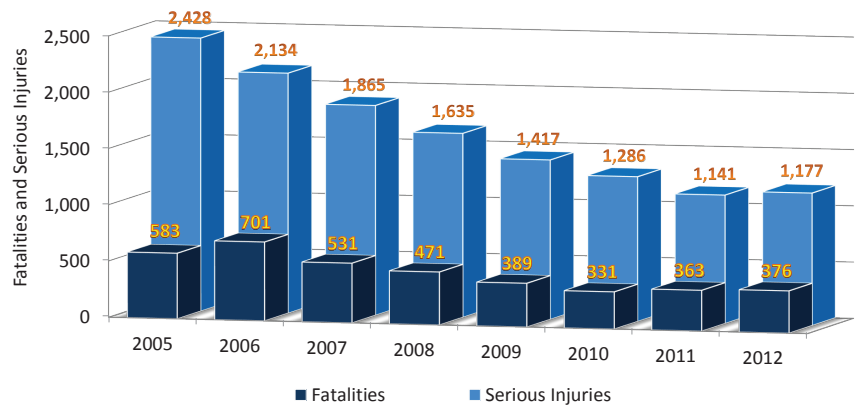
Occupant-protection fatalities and serious injuries are counted in crashes involving drivers or passengers not wearing a seat belt, not being properly restrained in the appropriate child safety seat or not wearing a helmet. Nearly 50 percent of people who died in a crash in Arizona were not properly restrained. This figure compares to 24 percent of those who sustained serious injuries and 12 percent of those who sustained minor injuries. Simply stated: Crash data show that seat belts, child safety seats and helmets save lives. Collisions in which motorists are unrestrained are also associated with a higher number of other behavioral characteristics, such as speeding and impaired driving, where safety risk is further increased.

## Purpose Statement

Everyone is buckled up, every time.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from crashes involving unrestrained or unprotected occupants on all public roadways in Arizona.



**Trend in Unprotected-Occupant Crash Fatalities and Serious Injuries**

## Strategies to Achieve Goal

- Couple enhanced enforcement of existing restraint-use laws with high-visibility marketing about enforcement efforts.
- Strengthen outreach and education about the proper use of seat belts and child-restraint devices to identified target audiences.
- Strengthen driver education and safety-restraint-usage outreach to identified target audiences.
- Improve restraint-usage data collection, integration, analysis and sharing between agencies at all levels.
- Research and identify effective policies to increase restraint usage that can be implemented by state, local and tribal governments.
- Promote employer engagement in efforts to encourage restraint usage 100 percent of the time.



Executive Committee designated top focus Emphasis Area.

# Motorcycles



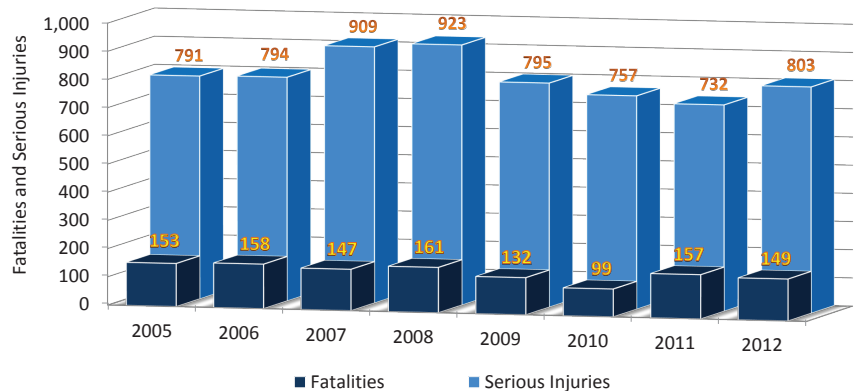
Motorcycles require more skill to safely operate than a passenger vehicle. The relationship of speed and balance is a key consideration when operating a motorcycle. A motorcycle offers no protection in a crash as opposed to the protective features of passenger vehicles. In Arizona, high-severity motorcycle crashes have gone up slightly since 2005, while most other crash categories have gone down significantly. While serious motorcycle crashes have decreased for many age groups of drivers, the numbers have increased dramatically among riders ages 55 and older.

## Purpose Statement

Create a safer Arizona for all motorcyclists through education and training, and promote accountability and responsible attitudes of all road users.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from crashes involving motorcycles on all public roadways in Arizona.



**Trend in Motorcycle-Involved Crash Fatalities and Serious Injuries**

## Strategies to Achieve Goal

- Improve public awareness, education and training for motorcyclists, motorists and all safety stakeholders to promote safer driving behaviors.
- Research, identify and implement effective policies to improve motorcycle safety at the state, local and tribal government levels.
- Enhance rider training programs to improve motorcycle safety.
- Develop and execute enforcement programs to improve motorcycle safety.
- Improve infrastructure features to help reduce the number and severity of motorcycle crashes.
- Improve motorcycle crash, registration and licensing data collection, integration, analysis and sharing between agencies at all levels.
- Seek funding to support motorcycle-related safety projects and programs.



Executive Committee designated top focus Emphasis Area.

# Distracted Driving



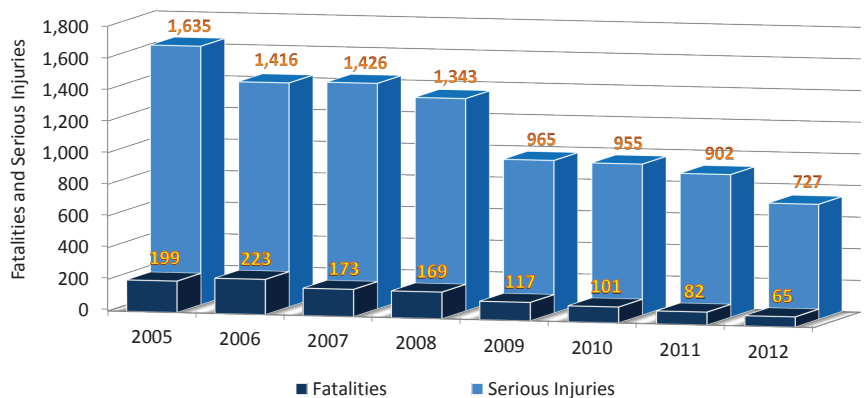
Distracted driving is a serious issue that is gaining attention statewide and across the nation. Any activity that diverts a driver's attention away from the primary responsibility of driving – which includes taking your eyes off the road, hands off the wheel or mind off the task of driving – endangers the safety of road users. Historic crash data indicates that distracted-driving fatalities and serious injuries have declined since 2005. Arizona is updating the statewide crash report form to collect more information on how distractions contribute to crashes, and this additional data is likely to reveal important trends that are not currently apparent.

## Purpose Statement

Use enforcement, education and awareness to create a safety culture in which all Arizona road users are focused and alert at all times.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from distracted-driver-involved crashes on all public roadways in Arizona.



**Trend in Distracted-Driver-Involved Crash Fatalities and Serious Injuries**

## Strategies to Achieve Goal

- Increase enforcement of existing laws to reduce distracted-driver-involved crashes.
- Conduct aggressive public information campaigns to discourage all forms of distracted driving.
- Encourage using technology to eliminate using cell phones, other mobile devices and texting while driving.
- Improve data collection and reporting for distracted-driving crashes.
- Research and identify effective policies to discourage all forms of distracted driving that can be implemented by state, local and tribal governments.
- Improve infrastructure and roadways to reduce the number and severity of crashes resulting from distracted driving.



Executive Committee designated top focus Emphasis Area.

# Roadway Infrastructure and Operations

## Lane / Roadway Departure



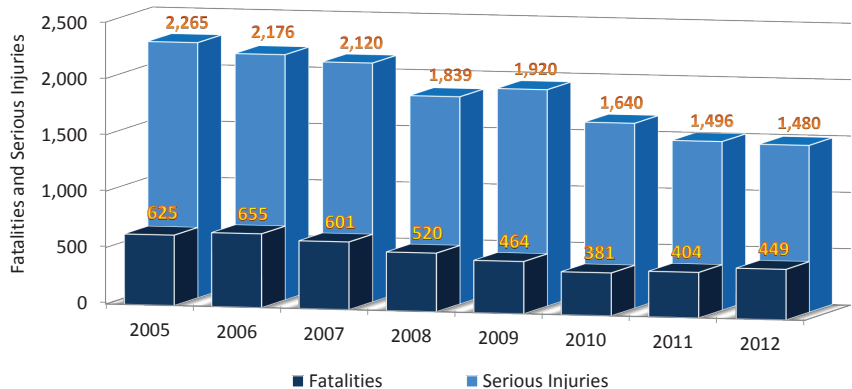
The majority of crashes represented in other Emphasis Areas fall into the Roadway Infrastructure and Operations Emphasis Area and lane- and roadway-departure crashes contribute to more than half of all fatalities in Arizona. These crashes often take place on rural highways at high speeds, and can therefore be very severe. Lane-departure-related fatalities and serious injuries are counted from all crashes where the collision was head-on, sideswipe, rollover, or took place with any fixed object on the roadside or median. More than 53 percent of all fatalities and 34 percent of all serious injuries occurred from a lane- or roadway-departure crash during the years from the beginning of 2005 to the end of 2012.

### Purpose Statement

Use the 4 E's to reduce risk and exposure, increase safety for all users and save lives in all traffic zones across Arizona.

### Goal

Reduce fatalities and the occurrence and severity of serious injuries on all public roadways in Arizona through enhanced roadway infrastructure and operations.



**Trend in Lane / Roadway Departure Crash  
Fatalities and Serious Injuries**

### Strategies to Achieve Goal

- Reduce the frequency and severity of lane- and roadway-departure crashes through roadway infrastructure improvements.
- For vehicles that run off the road for any reason, minimize the potential for overturning or colliding with another object.
- Increase public education on corrective roadway-departure driving techniques.
- Research and evaluate the impact of recent vehicle technology improvements relating to the frequency and severity of crashes to better assess potential policy changes.

# Roadway Infrastructure and Operations

## Intersections / Railroad Crossings



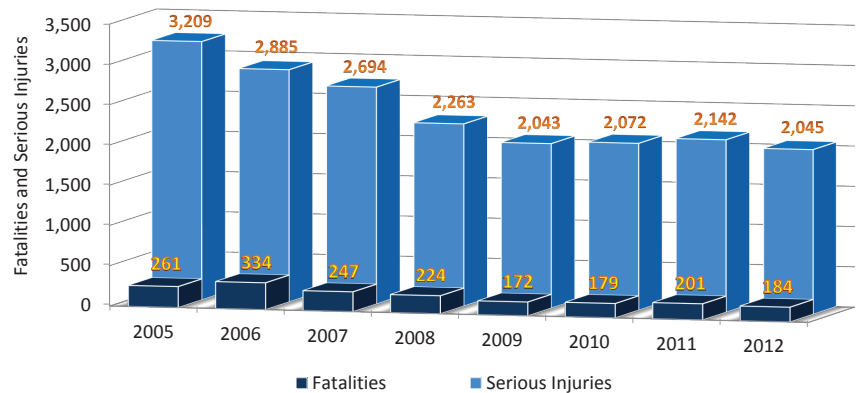
The majority of crashes represented in other Emphasis Areas fall into the Roadway Infrastructure and Operations Emphasis Area. Almost 45 percent of crashes of all severity levels in Arizona occurred at an intersection. These crashes are especially common when traffic volumes are highest. Intersection-related fatalities and serious injuries are counted from all crashes that relate to or occur at an intersection. Intersection crashes contribute to 23 percent of all fatal crashes in Arizona and make up an even higher percentage of lower-severity crashes.

### Purpose Statement

Use the 4 E's to reduce risk and exposure, increase safety for all users and save lives in all traffic zones across Arizona.

### Goal

Reduce fatalities and the occurrence and severity of serious injuries on all public roadways in Arizona through enhanced roadway infrastructure and operations.



**Trend in Intersection / Railroad-Crossing Crash Fatalities and Serious Injuries**

### Strategies to Achieve Goal

#### Intersections:

- Reduce frequency and severity of intersection crashes through traffic-control and operational improvements.
- Implement speeding and red-light-running enforcement efforts.
- Reduce frequency and severity of intersection crashes through geometric improvements.

#### Railroad Crossings:

- Implement programs that create safety partnerships between railroads and state and local agencies.
- Make engineering and infrastructure improvements to increase safety at railroad crossings.
- Increase public education about safe railroad crossing.
- Utilize railroad-crossing safety enforcement techniques.

# Age Related | Young Drivers



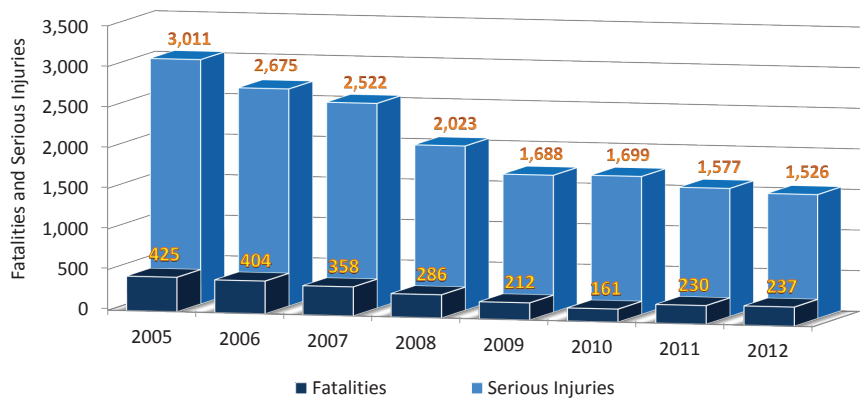
## Purpose Statement

Move toward zero fatal and serious-injury crashes involving drivers of all ages through education, enforcement, engineering, emergency medical services and on-going evaluation.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from young-driver-involved crashes on all public roadways in Arizona.

Young drivers are defined as drivers under the age of 25. Drivers in this age group are involved in more than one-third of all serious crashes in Arizona, which is more than any other age group. Motor vehicle crashes remain the leading cause of death for people ages five through 24. Young drivers have less driving experience, may be less likely to identify hazardous conditions and react to them, and are disproportionately involved in risky driving behaviors that directly result in more crashes. Young-driver-involved fatalities and serious injuries have declined since 2005, more than any other age group, yet this category remains one of the most important areas where transportation safety can continue to be improved statewide.



**Trend in Young Driver Involved Crash Fatalities and Serious Injuries**

## Strategies to Achieve Goal

- Strengthen driver education.
- Strengthen provisions and policies for graduated driver license (GDL).
- Strengthen driver license testing (written and road tests).
- Enhance outreach campaigns to young drivers and their families about safe driving behavior and programs.
- Strengthen enforcement of GDL restrictions and compliance with GDL terms and conditions.
- Promote stronger parental/guardian education and engagement in the licensure process for young drivers.
- Promote technology monitoring young-driver behavior.
- Improve data collection, integration, analysis and sharing at all levels.
- Make engineering and infrastructure improvements and enhancements to roadways.

# Age Related | Older Drivers



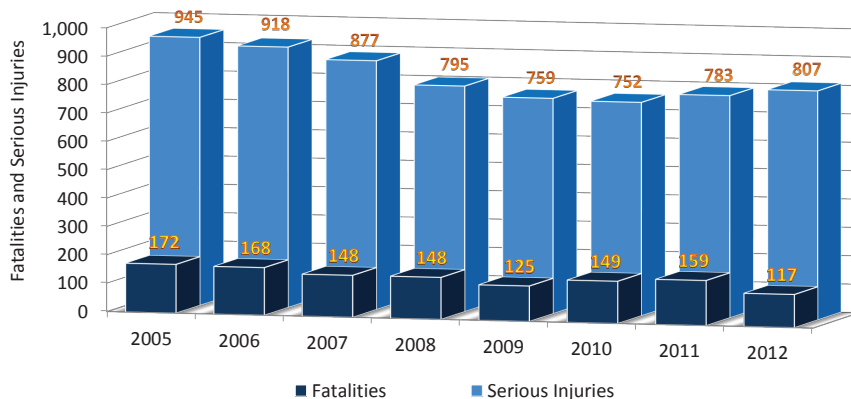
Older drivers are defined as drivers 65 years of age and older. This age group is the fastest-growing segment of the population in Arizona. For older drivers, the ability to drive is important to maintaining mobility, independence and health. Driving abilities can diminish with age, however, and the challenge is in maintaining the safety of older drivers and other road users. This end can be achieved by enhancing features of the current system of roads, traffic signals and controls, laws, and licensing practices to accommodate older drivers. Crashes involving older drivers have decreased substantially through 2009 or 2010; however, older-driver serious-injury crashes have increased through 2011 and 2012.

## Purpose Statement

Move toward zero fatal and serious-injury crashes involving drivers of all ages through education, enforcement, engineering, emergency medical services and on-going evaluation.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from older-driver-involved crashes on all public roadways in Arizona.



**Trend in Older-Driver-Involved Crash Fatalities and Serious Injuries**

## Strategies to Achieve Goal

- Enhance license testing and renewal for older drivers (requires review and possible revision of ADOT policies and processes).
- Require re-education of older drivers and periodic updates (requires review and possible revision of ADOT policies and processes).
- Strengthen reporting and referral of drivers with reduced skills by doctors, law-enforcement officers, emergency responders and others (requires review and possible revision of ADOT policy and processes).
- Increase awareness about, and availability of, alternative transportation options.
- Make engineering and infrastructure improvements and enhancements to roadways.
- Promote insurance and other incentives for safe driving.
- Improve or enhance technology and vehicle engineering.
- Make use of other potential data sources to improve data collection on older drivers.
- Strengthen laws to protect older drivers.

# Nonmotorized Users | Pedestrians



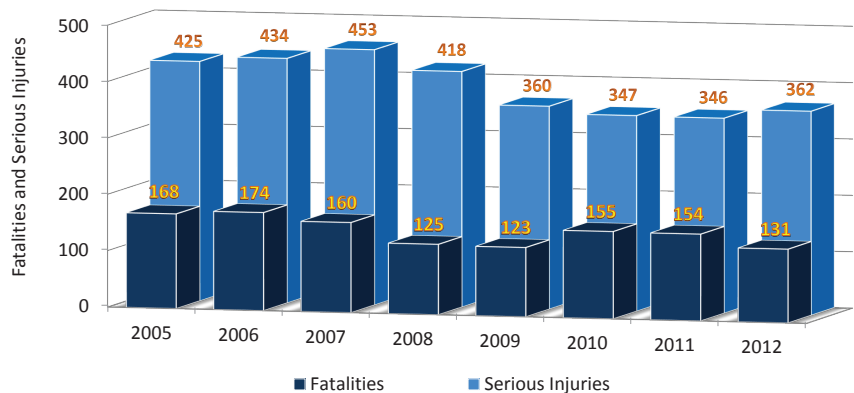
Pedestrian-involved fatalities and serious injuries are counted from all crashes involving a pedestrian and a motor vehicle. Every year in Arizona, more than 1,500 pedestrians are struck by a motor vehicle, and nearly 10 percent of those crashes result in a pedestrian fatality. These crashes contributed to 15 percent of all fatalities and seven percent of serious injuries during the eight-year period analyzed. As populations in Arizona grow and communities and cities become more walkable, pedestrian safety continues to be a critical safety focus.

## Purpose Statement

Create a safer Arizona for all nonmotorized users through education and training, and promote accountability and responsible attitudes of all road users.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from crashes involving nonmotorized users on all public roadways in Arizona.



**Trend in Pedestrian-Involved Crash Fatalities and Serious Injuries**

## Strategies to Achieve Goal

- Reduce pedestrian exposure to vehicle traffic.
- Improve sight distance and/or visibility between motor vehicles and pedestrians.
- Increase enforcement of existing laws designed to promote pedestrian safety, such as jaywalking and vehicles failing to stop for pedestrians at pedestrian crossings.
- Increase pedestrian-safety education for all roadway users.
- Reduce vehicle speeds in predictable locations, such as areas of high pedestrian traffic and school bus stops.
- Utilize the Safe Routes to School Program.

# Nonmotorized Users | *Bicyclists*



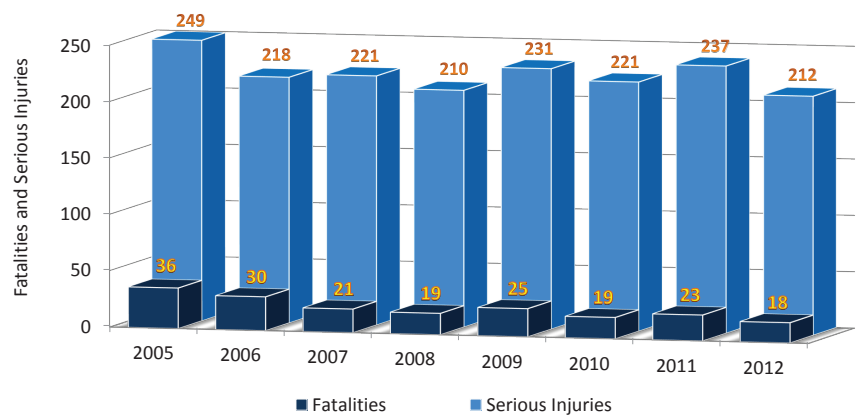
Bicycle-related fatalities and serious injuries are counted from all crashes involving a motor vehicle and a bicycle or other pedalcycle. These crashes contributed to 2.5 percent of all fatalities and four percent of all serious injuries in Arizona during the last eight years. Bicycling is increasing in popularity both as recreation and a means of travel. These nonmotorized road users are more difficult to see and especially vulnerable to impact by motor vehicles. While awareness and efforts related to bicycle safety continue to increase, bicycle fatalities and injuries remain high and have increased in some areas.

## Purpose Statement

Create a safer Arizona for all nonmotorized users through education and training, and promote accountability and responsible attitudes of all road users.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from crashes involving nonmotorized users on all public roadways in Arizona.



***Trend in Bicyclist-Involved Crash Fatalities and Serious Injuries***

## Strategies to Achieve Goal

- Improve public awareness to promote safer behavior by all roadway users relative to bicycle traffic.
- Improve infrastructure features to reduce the frequency of bicycle crashes.
- Conduct enforcement programs for all roadway users relative to bicycle traffic.
- Enhance training programs for all roadway users and safety practitioners.
- Improve data collection, integration, analysis and sharing at all levels.
- Seek funding to support safety programs to improve bicycle safety.
- Research and identify effective policies to improve bicycle safety that can be implemented by state, local and tribal governments.

# Heavy Vehicles / Buses / Transit



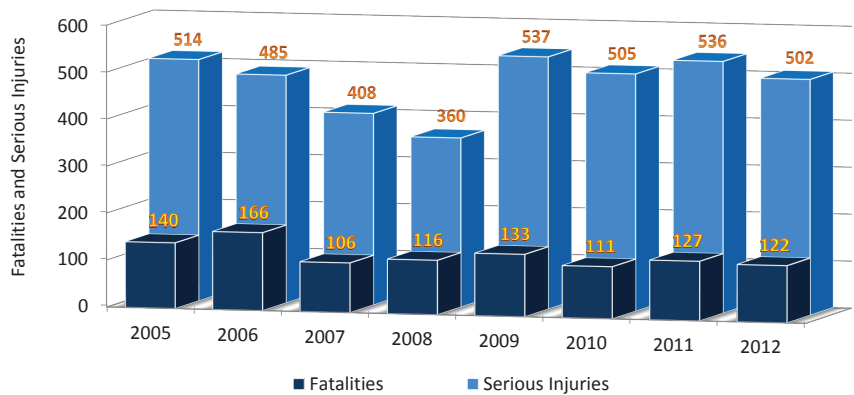
Heavy trucks, buses and transit vehicles are combined in this Emphasis Area because of the similarity of vehicle characteristics, such as size and weight. Many fatalities and serious injuries involving heavy vehicles occur to occupants of other vehicles. National studies have shown that in more than two-thirds of these crashes, drivers of other passenger vehicles were cited for contributing to these crashes. Further improvements to safety, including educating all road users, are critical to reducing these types of crashes and improving safety on Arizona roads.

## Purpose Statement

All vehicles share the road and all drivers are alert, focused and use courtesy and respect to prevent crashes, reduce injuries and save lives.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from crashes involving heavy vehicles on all public roadways in Arizona.



*Trend in Heavy Vehicle / Bus / Transit Crash  
Fatalities and Serious Injuries*

## Strategies to Achieve Goal

- Identify and improve infrastructure and operational characteristics on Arizona's roadways.
- Use engineering to reduce fatigue-related heavy-vehicle crashes on Arizona's roadways.
- Improve enforcement-related efforts for heavy vehicles.
- Strengthen commercial driver license program to enhance the testing process and the skill sets of heavy-vehicle operators on Arizona's roadways.
- Increase knowledge about "sharing the road" with heavy vehicles for all roadway users.
- Improve and enhance truck-safety data.
- Increase development and execution of educational programs and information sharing to all roadway users regarding heavy vehicles.
- Improve maintenance of heavy vehicles to reduce the frequency of heavy-vehicle crashes caused by equipment failure.
- Promote industry safety initiatives.
- Utilize connected vehicle technology in commercial vehicles.

# Natural Risks | *Weather*



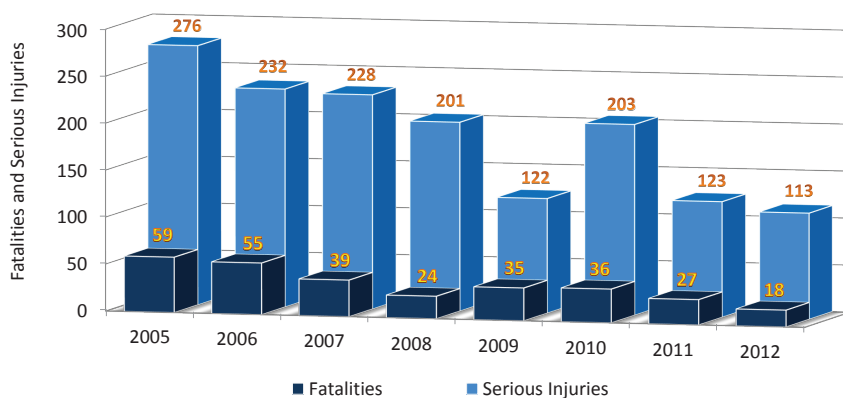
Favorable weather attracts visitors and new residents to Arizona every year, but Arizona weather can also pose unique risks to the traveling public. These risks range from snow and ice at higher elevations, to sudden thunderstorms during the monsoon season and blinding dust storms. Weather-related fatalities and serious injuries are counted from all crashes involving rain, snow, ice, high cross winds or blowing dust. While the number of weather-related crashes is lower than other crash types, the severity of these crashes, with some types of weather events, can be high and involve multiple vehicles.

## Purpose Statement

Minimize high-risk, low-frequency weather-related and animal-involved incidents in predictable locations on Arizona roadways through engineering, education, enforcement, technology and science.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from weather-related crashes on all public roadways in Arizona.



***Trend in Weather-Related Crash Fatalities and Serious Injuries***

## Strategies to Achieve Goal

- Advance the use of detection and warning systems to reduce the frequency and severity of weather-related crashes.
- Increase proactive driver awareness of weather-related safety procedures to reduce the frequency and severity of weather-related crashes.
- Develop corridor or area-wide programs to address locations with a high number of weather-related crashes.
- Alter the state of roadway devices to permit or restrict traffic flow to reduce weather-related crashes.
- Develop and implement comprehensive enforcement programs focused on weather-related crashes.
- Improve data collection and analysis of weather-related incidents to better determine crash causes.
- Utilize infrastructure improvements to reduce the number and severity of crashes caused by weather incidents.

# Natural Risks | *Animal*



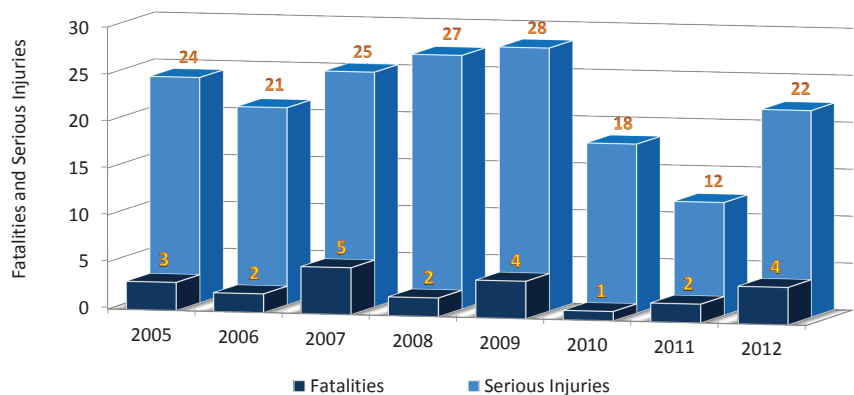
Animal-involved fatalities and serious injuries are counted in all crashes involving wildlife, domestic pets or livestock. These types of crashes are comparably rare, but they can be very severe. For example, crashes involving elk, deer or livestock often occur at high speeds in rural settings, where emergency response and transfer can take longer than in an urban setting with nearby medical facilities.

## Purpose Statement

Minimize high-risk, low-frequency weather-related and animal-involved incidents in predictable locations on Arizona roadways through engineering, education, enforcement, technology and science.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries resulting from animal-involved crashes on all public roadways in Arizona.



**Trend in Animal-Involved Crash Fatalities and Serious Injuries**

## Strategies to Achieve Goal

- Implement comprehensive infrastructure improvements and maintenance to separate animals from the roadway while improving and maintaining wildlife connectivity.
- Enhance wildlife planning through research, planning and collaboration.
- Increase driver awareness to reduce the frequency of animal-involved crashes.
- Improve the collection and quality of data for a better understanding of animal-involved crashes.
- Utilize technology to reduce animal-involved incidents.
- Advance research in wildlife-crash-reduction programs and their effectiveness to reduce or eliminate wildlife-involved crashes.
- Reduce the number of animals on the roadway to reduce the frequency of animal-involved crashes.
- Explore opportunities to manage speed limits in animal-prone areas to reduce the number and severity of animal-involved crashes.
- Utilize infrastructure improvements to reduce or eliminate animal-involved crashes on Arizona's roadways.
- Better utilize existing funding options, and explore new funding opportunities for effective mitigation efforts to reduce or eliminate animal-involved crashes on Arizona's roadways.
- Explore local ordinance opportunities to reduce animal-involved crashes on Arizona's roadways.

# Traffic Incident Management



Traffic incident management (TIM) consists of a planned and coordinated multidisciplinary process to detect, respond to and clear traffic incidents to improve or restore traffic flow as safely and quickly as possible. Effective TIM reduces the duration and impact of obstructing traffic incidents, which can subsequently reduce the occurrence of secondary collisions and improve the safety of motorists, crash victims and emergency responders.

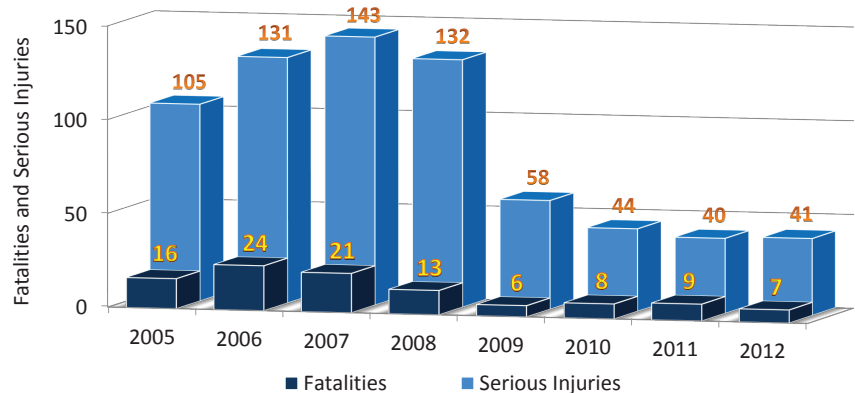
Similar efforts and tactics can be used to improve safety in work zones. Because there are many types of work zones, driving conditions within these areas will differ. Lack of driver knowledge of appropriate work-zone driving behavior; failure to obey traffic laws, signage, traffic-control devices and flaggers; and lack of awareness about work-zone conditions or workers present also contribute to work-zone crashes.

## Purpose Statement

Use the 4 E's to reduce risk and exposure, increase safety for all users and save lives in all traffic zones across Arizona.

## Goal

Reduce fatalities, the occurrence and severity of serious injuries and the occurrence of secondary collisions, and improve the safety of motorists, crash victims and all emergency and first responders.



*Trend in Work-Zone-Related Crash Fatalities and Serious Injuries*

## Strategies to Achieve Goal

### *TIM/Secondary Crashes:*

- Develop cross-cutting TIM programs that include training, public education, research, evaluation and application of technology.
- Develop and implement practices, policies and public education efforts to increase TIM responder safety.
- Develop and implement procedures that achieve safe and quick incident clearance.
- Develop and implement prompt and reliable communications systems that support TIM.

### *Work Zones:*

- Develop and improve work-zone design and management practices.
- Improve driver compliance with work-zone traffic controls.
- Increase knowledge and awareness of work zones and work-zone safety.

# Interjurisdictional



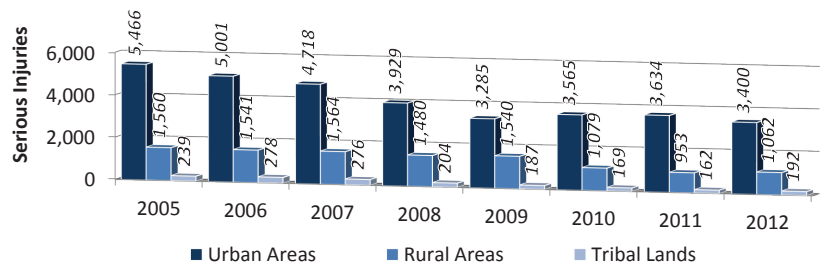
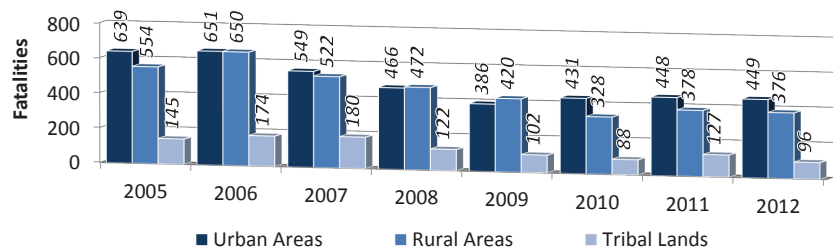
Arizona is the sixth-largest state in the nation by area, with an increasingly diverse population, including 22 federally-recognized tribes and nearly 400 miles of border with Mexico. Interjurisdictional coordination amongst agencies and safety stakeholders is critical to utilize all safety resources effectively and maximize opportunities to improve safety for everyone on all public roadways.

## Purpose Statement

Agencies, organizations and jurisdictions statewide seamlessly share data, information and resources and work in collaboration to reduce fatal and serious-injury crashes on all Arizona roadways.

## Goal

Reduce fatalities and the occurrence and severity of serious injuries on all public roadways in Arizona.



**Trends in Fatalities and Serious-Injuries in Urban and Rural Areas and on Tribal Land**

## Strategies to Achieve Goal

- Coordinate and promote interjurisdictional cooperation and practices throughout Arizona.
- Improve data collection, integration, analysis and sharing at all levels.
- Develop interjurisdictional methods and agreements to improve rural road infrastructure.
- Assist regions and tribal governments in evaluating safety data, identifying priorities and developing projects.
- Prioritize research funding to support implementation of the SHSP.
- Review and provide recommendations to ADOT on the HSIP allocation process; work with ADOT to incorporate future performance measures and targets into the HSIP upon final MAP-21 ruling.
- Work with ADOT to incorporate data-driven strategies from local, regional and tribal safety plans into the HSIP.
- Coordinate engineering and operational efforts across jurisdictions.

# SHSP Emphasis Areas

## EMPHASIS AREAS SUPPORT

**DATA IMPROVEMENTS**  
COORDINATE IMPROVEMENTS TO,  
AND SHARING OF, SAFETY DATA

**POLICY INITIATIVES**  
PROVIDE DIRECTION ON  
PROPOSED CHANGES TO POLICIES,  
PROCEDURES OR LAWS

## Emphasis Areas Support

In addition to the 12 Emphasis Areas, two additional areas were identified to be supportive of attaining goals associated with the 12 Emphasis Areas.

### Data Improvements

Data Improvements Emphasis Area support refers to improving the accuracy, reliability and availability of crash data as well as the collection, analysis and sharing of safety information. The Data Improvements support team will collaborate with all Emphasis Area teams and stakeholders, most notably the Interjurisdictional Emphasis Area team and the Arizona TRCC.

The collection and analysis of crash data, as well as other data related to roadway safety, is the foundation of a comprehensive system to reliably monitor the performance of the SHSP relative to reducing fatalities and serious injuries in Arizona. This will facilitate data sharing across all jurisdictions and improve the timeliness and quality of all necessary data.



### Policy Initiatives

The Policy Initiatives support team will assist at all levels of government regarding changes to policies, procedures and/or laws. This support team will collaborate with Emphasis Area teams to provide direction and assistance on proposed legislation, as well as the review and possible revision of ADOT or other agency policies, procedures and processes. This resource will enable the Emphasis Area teams to evaluate the feasibility of proposed action steps and to identify possible barriers or the necessary procedures to implement a strategy or action step successfully. This team will work closely with the Executive Committee and the SHSP Administrator to provide a proactive and effective process to support all Emphasis Areas and to promote safety.





*Interstate 19  
near Tubac*

# Implementation Framework

# Implementation Framework

Arizona has adopted the long-term Vision of moving toward zero deaths by reducing crashes, with a short-term objective of reducing the number of fatalities and serious injuries by three-to-seven percent in the next five years, from a 2013 base year. Arizona recognizes development of this data-driven SHSP and adopting its goals and objectives are only the initial steps. Developing safety plans does not prevent serious crashes or save lives; rather, this end is achieved by effective implementation of identified safety improvements and programs. Therefore, to achieve the adopted SHSP goals, Arizona is committed to development of a comprehensive statewide highway safety program to effectively guide implementation of safety strategies on all of Arizona's public roadways.

For this reason, this plan is considered to be a "living document." Periodic reviews will be necessary to ensure the plan is current and on track, which will be achieved by reaching out for suggestions on implementation, conducting post-project evaluations to measure effectiveness, revising action steps to better support the strategies in this plan and reporting on progress toward achieving Arizona's goal of reducing fatalities and serious injuries on all public roadways.

The basic components of this comprehensive program include implementing strategies aimed at reducing fatalities and serious injuries based on the following elements:

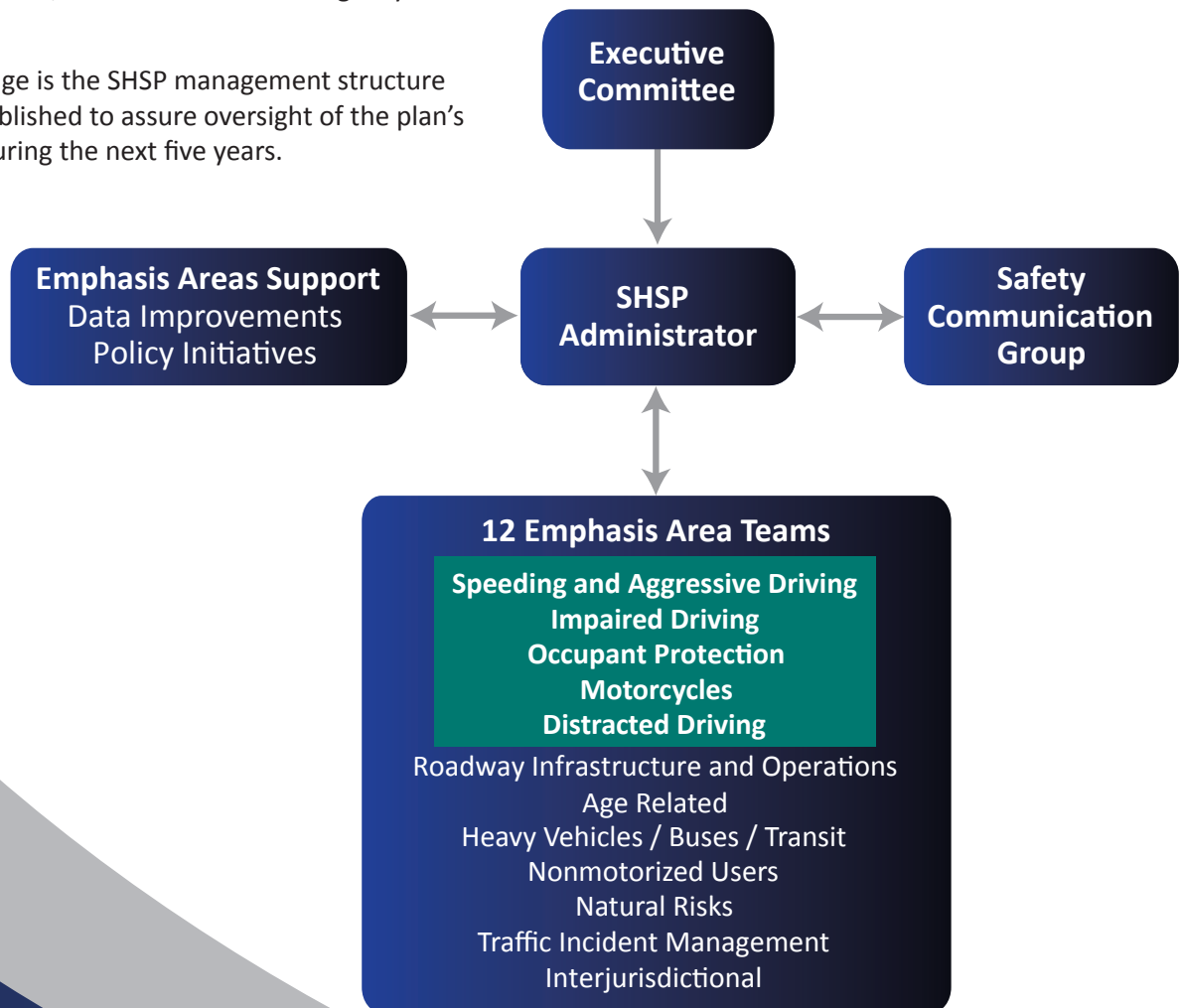
- Engineering: implementing infrastructure safety improvements demonstrated as effective at reducing the number and severity of crashes
- Education: continually educating and training all road users and promoting safe transportation behaviors
- Enforcement: supporting and promoting efficiency in enforcing current laws
- Emergency Medical Services: supporting and promoting the efficiency of first responders and trauma centers
- Policy: supporting changes in safety-related laws or policies
- Data and Research: improving the collection, quality and use of crash and other safety-related data

The implementation of the SHSP is continuously evolving and needs to be readdressed and updated through regular evaluation of results.

## SHSP Management Structure

Effective implementation of the SHSP vision, goals and Emphasis Area strategies requires extensive coordination and collaboration among all stakeholders. The SHSP defines a system, organization and process to achieve an enhanced level of roadway safety by integrating the work of the disciplines and agencies involved. The comprehensive process involves stakeholders at every level of government in Arizona (local, county, regional, state, tribal and federal) as well as the private sector, advocacy groups and the general public, which includes representation from all 4 E's of safety: Engineering, Education, Enforcement and Emergency Medical Services (EMS).

Pictured on this page is the SHSP management structure as it has been established to assure oversight of the plan's implementation during the next five years.



# Implementation Framework

# Implementation Framework

## Leadership Roles and Responsibilities

### Executive Committee

#### Members of the Executive Committee

- Director, Arizona Department of Transportation
- Director, Arizona Governor's Office of Highway Safety
- Director, Arizona Department of Public Safety
- Section Chief, Arizona Department of Health Services
- Arizona Division Administrator, Federal Highway Administration
- Arizona Division Administrator, Federal Motor Carrier Safety Administration
- Regional 9 Program Manager, National Highway Traffic Safety Administration

#### Roles and Responsibilities

- Meets quarterly or as deemed necessary
- Promotes collaboration among the agencies and stakeholders
- Establishes SHSP policies and procedures
- Reviews progress
- Provides input and guidance
- Addresses challenges and removes barriers to success
- Provides support and assistance to specific SHSP strategies, as appropriate
- Consults the SHSP before updating agency or organization plans and programs to ensure consistency
- Shares progress on safety initiatives

## SHSP Administrator

The SHSP Administrator position falls under the direction of the ADOT State Traffic Engineer and the State Safety Engineer within the ADOT Traffic Group. The Administrator is responsible for managing implementation of the SHSP. This is a new position within ADOT. In the interim, a consultant will facilitate and support SHSP-related activities.

### Roles and Responsibilities

- Manages the coordination, implementation and evaluation of the SHSP
- Serves as the direct line of communication between the Executive Committee, Emphasis Area team leaders, Emphasis Areas support leaders and Safety Communication Group
- Plans, organizes, facilitates and documents all Executive Committee and Emphasis Area team meetings
- Provides assistance, when appropriate, to overcome challenges or solve problems
- Provides recommendations to the Executive Committee from Emphasis Area team leaders relating to major plan initiatives, such as the HSIP, updating this SHSP, adding or revising goals, and changes in Emphasis Area team leadership
- Reviews implementation progress and performance for each of the Emphasis Areas and provides recommendations for enhancements
- Coordinates annual updates to SHSP strategies and action steps and performance reporting, including coordination with other agencies on annual safety performance measure targets
- Assists ADOT staff in coordinating and facilitating safety events such as the annual safety summit
  - Provides analytical support to summarize annual crash counts by characteristics and responds to specific analysis requests from the Executive Committee and Emphasis Area teams
    - Evaluates the SHSP annually relative to meeting established performance measures, progress on fatality and serious injury objectives, process evaluation and accomplishments.

# Implementation Framework

# Implementation Framework

## Safety Communication Group

### Members of the Safety Communication Group

- Arizona Department of Transportation (representative)
- Director, Arizona Governor's Office of Highway Safety
- Media Relations / Public Information Office, Arizona Department of Public Safety
- Communication Director, Arizona Department of Health Services
- Federal Highway Administration (representative)
- Federal Motor Carrier Safety Administration (representative)
- National Highway Traffic Safety Administration (representative)

### Roles and Responsibilities

- Meets quarterly or as deemed necessary
- Develops an SHSP Marketing and Communications calendar to outline the timing and messaging of annual public information and educational campaigns
- Oversees development of SHSP marketing and communication materials
- Participates in news media events
- Develops campaign ideas for Emphasis Areas not already covered by existing campaigns
- Provides assistance, when necessary, to local agencies or groups hosting SHSP-related media and outreach events
- Assists in supporting SHSP safety events such as the annual safety summit

## Emphasis Area Teams

Emphasis Area teams are comprised of federal, state, regional, tribal and local safety stakeholders, as well as other subject-matter experts and safety advocates. They are responsible for developing and implementing action plans for the strategies outlined in the SHSP. Emphasis Area team leaders work with the SHSP Administrator to provide guidance and direction for their teams and coordinate with other branches of the SHSP management structure. These team leaders are considered “Champions,” who provide enthusiasm and momentum and promote communication and collaboration among team members and other safety partners.

### Roles and Responsibilities

- Meet quarterly or as deemed necessary
- Ensure a multidisciplinary approach by including representatives from the commonly recognized 4 E’s of safety and consulting the SHSP Administrator where assistance is needed on team composition
- Reviews and implements Emphasis Area strategies; develops action plans for strategies, including determining who is responsible for implementation; tracks progress; determines if revisions to SHSP strategies are necessary; identifies new strategies; and notifies the SHSP Administrator if assistance is needed during implementation
- Participates in ongoing tracking and evaluation of outputs and outcomes associated with strategy action plans, including development of performance measures for evaluating the effectiveness of implemented strategies
- Receives and reviews updates on SHSP-related campaigns, trainings or other programs
- Prepares quarterly progress reports for the SHSP Administrator and the Executive Committee
  - Provides assistance, when appropriate, to overcome challenges or solve problems
    - Works in cooperation with the SHSP Administrator to provide recommendations to the Executive Committee on all major plan initiatives, such as the HSIP, updating this SHSP, adding or revising goals, changes in Emphasis Area team leadership
  - Emphasis Area team leaders support the SHSP Administrator in facilitating team meetings and development and review of meeting materials and reports

# Implementation Framework

# Implementation Framework

## Emphasis Areas Support Data Improvements Policy Initiatives

Emphasis Area support teams are comprised of federal, state, regional, tribal and local safety stakeholders, as well as other subject-matter experts and safety advocates. The two Emphasis Area support teams will be led by an ADOT-appointed staff person, who will work with the SHSP Administrator to coordinate with and support the Emphasis Area teams.

### ***Data Improvements Emphasis Areas Support Team***

#### **Roles and Responsibilities**

- Meets as determined in accordance with data needs identified by the 12 Emphasis Area teams or as directed by the SHSP Administrator
- Coordinates implementation of data improvement projects through the TRCC for proposed funding
- Oversees implementation of data projects funded through the HSIP; identifies potential challenges for review and comment by the Executive Committee
- Identifies data needs from each of the Emphasis Area teams and reports to the Arizona TRCC on team needs
- Provides data acquisition support to the SHSP Administrator, when necessary, in coordinating safety-related data needed to support the efforts of Emphasis Area teams
- Facilitates collaboration of data sources from different agencies that support all Emphasis Areas

### ***Policy Initiatives Emphasis Areas Support Team***

#### **Roles and Responsibilities**

- Meets, as necessary, to discuss policy needs identified by the 12 Emphasis Area teams or as directed by the SHSP Administrator
- Coordinates and collaborates on the development of policies, procedures and/or laws
- Provides guidance and assistance on proposed policy initiatives and reviews possible revisions to ADOT or other agency policies and processes

## Evaluation

The purpose of SHSP evaluation is to keep the focus of safety efforts on effectively achieving the goal of reducing fatalities and serious injuries. Evaluation provides guidance in prioritization of transportation-safety resources and helps identify where efforts are most effective or where potential course corrections are needed. Ongoing evaluation strengthens multidisciplinary cooperation as stakeholders work together to achieve a common goal.

Implementation of this SHSP will include development of an evaluation plan to support implementation of safety efforts throughout the state. The evaluation plan will identify methods to track Emphasis Area performance measures and action plans to implement safety strategies. Safety-related data, additional stakeholders and other necessary resources to support evaluation efforts will be identified.

Evaluation will consider the overall SHSP process and effectiveness toward achieving the stated objective of reducing the total number of fatalities and serious injuries in Arizona by three-to-seven percent during the five-year plan implementation period. With support from the SHSP Administrator, Emphasis Area teams will meet and participate in evaluating agreed-upon Emphasis Area performance measures and actions. Performance measures specific to Emphasis Areas, and the progress of the plan as a whole, will be reported in an SHSP Effectiveness Annual Report that will be developed as an additional appendix to this SHSP and made available at [azdot.gov/shsp](http://azdot.gov/shsp).

Emphasis Area teams will use evaluation results to adjust their own action plans and specific goals. These teams will identify problems or barriers to further progress and request assistance from the SHSP Executive Committee and/or agencies responsible for specific safety action steps, countermeasures and programs. An annual safety summit will be held to bring all of the state's safety stakeholders together to share progress toward achieving SHSP and individual Emphasis Area goals, and to look ahead at efforts proposed for the subsequent year.



# Implementation Framework

# Implementation Framework

## Marketing and Communication

The marketing and communications effort to raise awareness about the Arizona SHSP and its strategies, and to develop and execute safety-related campaigns, is another critical component to the success of the SHSP. Developing and delivering a consistent, resonating message is an effective mechanism to promote shared awareness about, and ownership of, a transportation-safety culture throughout Arizona. The Safety Communication Group will be the driving force behind this movement by leveraging resources, educating key leaders about their role in saving lives and engaging the public and safety stakeholders to encourage active participation in the implementation of the SHSP.

## Funding

The success of Arizona's SHSP is dependent on sufficient funding for implementation of strategies and action steps. This document must be used as a tool to direct resources or allocate additional funding to Emphasis Areas, strategies and actions outlined. More importantly, funding and resources must be leveraged across agencies and jurisdictional boundaries so everyone plays a meaningful role in implementing the SHSP.





*1st Avenue and Washington Street  
in Phoenix*

# Glossary

# Glossary of Key Terms and Acronyms

<i>Acronyms and Terms</i>	<i>Definitions</i>
4 E's	Engineering, Enforcement, Education, and Emergency Medical Services (or Emergency Response); defines the broad stakeholder communities who care about safety and are responsible for making the roads safe for all users.
AASHTO	American Association of State Highway and Transportation Officials
ARIDE	Advanced Roadside Impaired Driving Enforcement
BAC	Blood Alcohol Concentration
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CDL	Commercial Driver License
CMAQ	Congestion Mitigation and Air Quality Program; federal program to support surface transportation projects and other related efforts to reduce transportation-related emissions
CMF	Crash Modification Factor; a multiplicative factor used to compute the expected number of crashes after implementing a given safety countermeasure
CODES	Crash Outcome Data Evaluation System; program in many states to probabilistically link crash and health-outcome data; Arizona CODES project discontinued in 2009
COG	Council of Governments
Collision	An unintended event that causes death, injury or property damage and involves at least one motorized vehicle on a public roadway
Countermeasure	An action designed to address a specific traffic-safety problem
CVSP	Commercial Vehicle Safety Plan
AZDHS	Arizona Department of Health Services
ADOT	Arizona Department of Transportation
DMS	Dynamic Message Sign
DPS	Arizona Department of Public Safety
DRE	Drug Recognition Expert
DUI	Driving Under the Influence (alcohol/drugs)
DWI	Driving While Intoxicated or Impaired
DWU	Driving While Unlicensed
Emphasis Area	Emphasis Areas at the national level have been divided into 23 categories based on federal research. FHWA guidance suggests that state SHSP Emphasis Areas be selected that offer the greatest potential for reducing fatalities and injuries. Emphasis Areas for Arizona are defined in this SHSP.
EMS	Emergency Medical Services; includes all emergency responders and emergency medical facilities
ER	Emergency Response
FARS	Fatality Analysis Reporting System; National database of fatal crashes since 1975 that allows detailed analysis of the driver, vehicle, involved persons and crash

Fatality	A death; counted in FARS when it takes place within 30 days of injuries sustained in a collision
Fatality rate	Number of deaths resulting from reportable collisions relative to a measure of exposure; often reported as the number of fatalities on a public roadway per 100 million VMT
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
GDL	Graduated Driver License
GES	General Estimates System; a nationally representative sample of police-reported crashes of all types, from minor to fatal
GHSA	Governors Highway Safety Association
Goal	The result or achievement toward which effort is directed; in context to the SHSP, a multiyear objective that is measurable through specific outputs and outcomes
GOHS	Governor's Office of Highway Safety
HLDI	Highway Loss Data Institute; a nonprofit research organization that publishes insurance loss statistics on most automobile, SUV, pickup truck and motorcycle models on U.S. highways
HPMS	Highway Performance Monitoring System; a national highway information system that includes data on the extent, condition, performance, use and operating characteristics of each state's highways
HRRR	High Risk Rural Road; any roadway functionally classified as a rural major or minor collector or a rural local road with significant safety risks, as defined by a state in accordance with an updated state SHSP. Roadway functional classification is assigned to all public roads using federal guidelines and is approved by FHWA.
HRRRP	High Risk Rural Roads Program; established under SAFETEA-LU through a set-aside from each state's apportionment of federal HSIP funds for construction and operational improvements on high-risk rural roads; the HRRRP set-aside was not continued in fiscal year 2013 under MAP-21 as obligations are defined through the special rule for HRRR safety
HSIP	Highway Safety Improvement Program; the core federal-aid program to achieve a significant reduction in traffic fatalities and serious injuries; requires the development of SHSPs by states; also refers to the ADOT HSIP, which includes implementation of safety projects underneath the umbrella of the Arizona SHSP
HSM	Highway Safety Manual; an AASHTO publication that synthesizes highway safety research and provides tools for states to predict the impact of decisions on safety as well as measure safety performance
HSP	Highway Safety Plan; produced annually by the Governor's Office of Highway Safety to document top priority highway safety challenges and strategies to address them; submitted to and approved by the NHTSA and the FHWA for funding under the Federal 402 Program.
KABCO injury severity scale	A measure of the functional injury level of the victim at the crash scene; codes are selected based on the on-site judgment of the investigating police officer completing the Arizona Crash Report form; K=fatal injury, A=incapacitating injury, B=nonincapacitating injury, C=possible injury, and O=no injury
L RTP	Long-Range Transportation Plan
LTAP	Local Technical Assistance Program; an FHWA technology transfer program that provides technical assistance and training to local highway departments

# Glossary

# Glossary

MAP-21	Moving Ahead for Progress in the 21st Century Act; the current funding and authorization bill, at the time of this plan, to govern United States federal surface transportation spending
MCMIS	Motor Carrier Management Information System; contains information on the safety fitness of commercial motor carriers and hazardous material shippers
MCSAP	Motor Carrier Safety Assistance Program; federal grant program in association with the state's CVSP
MPO	Metropolitan Planning Organization; required in all metropolitan areas with a population of 50,000 or more; MPOs conduct regional transportation and other planning activities and are required to develop the region's Metropolitan Transportation Safety Plan
MUTCD	Manual on Uniform Traffic Control Devices
MVD	Motor Vehicle Division
NCHRP	National Cooperative Highway Research Program
NEMSIS	National Emergency Medical Services Information System; the national database of EMS data from each state
NHTSA	National Highway Traffic Safety Administration
Objective	The defined actions that must be accomplished to properly achieve a goal; goal-setting should involve establishing Specific, Measurable, Action-oriented, Realistic and Time-bound (SMART) objectives
Outcome measure	A quantitative measure of the results of an activity, plan, process or program
Output measure	A quantitative measure of activities or actions taken
Performance Measure	A quantitative description of an agency or organization's work and the results of that work; based on data and describe how an agency or an activity is achieving its objectives and if progress is being made toward achieving goals; may be quantifiable in expression of the amount, cost or result of activities that indicate how much, how well and at what level products or services are provided during a given time period
Public Roadway	Any highway or street under the jurisdiction of and maintained by a public authority and open to public travel; includes major arterials (interstate, other freeways and expressways and other principle arterials), minor arterials, collectors (major and minor) and local roadways, including those serving tribal communities, national forests and state and local parks
Restraint	A device, such as a seat belt, shoulder belt, booster seat or child seat, used to hold the occupant of a motor vehicle in place during a collision
RHGX	Railway-Highway Grade Crossing Program; a federal-aid program to support the elimination of hazards at railway-highway crossings
RSA	Road Safety Audit; also known as Road Safety Assessment in Arizona; a formal safety performance examination of a roadway or intersection by an independent, multidisciplinary audit team to identify elements of the road that present safety concerns and opportunities for mitigation;
Rural	All areas, incorporated and unincorporated, with a population of less than 2,500
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users; federal transportation bill passed in 2005 mandating a state-developed SHSP

Serious Injury	Incapacitating injury status, indicated on the Arizona Crash Report form using the KABCO severity scale; any nonfatal injury which prevents the injured person from walking, driving or normally continuing activities; often defined as “needing help from the scene;” includes: severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness when taken from the crash scene
Serious Injury Rate	The number of traffic-collision-related serious injuries relative to a measure of exposure, such as vehicle miles traveled
SHSO	State Highway Safety Office
SHSP	Strategic Highway Safety Plan; statewide transportation safety plan required by federal legislation and developed by the State Department of Transportation in a cooperative process with local, state, federal, tribal and private-sector safety stakeholders; a data-driven, multiyear comprehensive plan that establishes statewide goals, objectives and key Emphasis Areas and integrates the 4 E’s of highway safety
STIP	State Transportation Improvement Program; identifies projects from the state’s long-range transportation plan that are funded and will be implemented in the short term
Strategy	An approach or method for obtaining a specific goal or result; safety strategies address specific areas or elements of traffic safety to reduce fatalities and injuries
Target	A specific, measurable outcome
TIM	Traffic Incident Management
TIP	Transportation Improvement Program; identifies funded projects to be implemented in the short term from the Regional Transportation Plans for MPO, COG, state, local and tribal governments
TMA	Transportation Management Area; designated for all urbanized areas with populations greater than 200,000, as determined by the 2010 Census; Metropolitan Planning Organizations designated as TMAs have greater requirements for congestion management, project selection and certification; TMAs are currently designated in Arizona for the MAG and PAG regions
TRCC	Traffic Records Coordinating Committee; the entity charged with improving road safety through the collection, integration and analysis of traffic-safety data
TZD	Toward Zero Deaths; a national effort to eliminate highway fatalities as a threat to public and personal health
UPWP	Unified Planning Work Program; a statement of work identifying the planning priorities and activities to be carried out within a metropolitan planning area
Urban	An incorporated area with a population greater than 2,500
USDOT	United States Department of Transportation
Vision	A statement that directs the long-term goal of the organization, and should be aspirational
VMT	Vehicle Miles Traveled

# Glossary



*Loop 202  
at 24th Street in Phoenix*

