SAFETY DATA-SHARING

ARIZONA STRATEGIC HIGHWAY SAFETY PLAN

DEFINITION

Safety data related to the Strategic Highway Safety Plan (SHSP) involves the collection, analysis, and sharing of crash report information related to the driver, vehicle, and injury outcome. Safety data also includes roadway inventory, traffic volume, vehicle registration, enforcement/conviction activity, and emergency medical/trauma data. Some data items are aggregated and redacted to remove sensitive personal identifiable information.

Quality safety data is critical to drawing correct conclusions from analysis of that data. The National Highway Traffic Safety Administration (NHTSA) has identified six performance attributes by which to evaluate crash data.

ARIZONA SAFETY DATA SOURCES

ADOT Crash Facts	https://azdot.gov/arizona-motor-vehicle-crash-facts
ADOT Traffic Monitoring	https://azdot.gov/planning/data-and-information/traffic-monitoring
ADOT Roadway Classification	https://arcg.is/95qWH
ADOT Traffic Reporting Dashboard	https://arcg.is/0vjrXi1
ADOT Inventory of Travel and Roadways	https://arcg.is/18WOSu0
Governor's Office of Highway Safety (GOHS)	https://gohs.az.gov/about/publications-reports
State Trauma Data	https://www.azdhs.gov/preparedness/emergency-medical-services-trauma-system/data-and-quality-assurance/index.php#astr

STRATEGIES

Strategy: Provide all law enforcement agencies, including Tribal, the resources and support to adopt electronic crash reporting.

ELECTRONIC CRASH REPORTING (2014-2023):

Increased from 46% up to:

90%

Crash records are a vital component in analyzing and identifying safety countermeasures as well as providing input to traffic management, enforcement activities, policies, and other activities to improve highway safety. To enhance the accuracy and timeliness of crash data, ADOT and GOHS have championed the use of a common electronic crash reporting platform known as AZ TraCS (Traffic and Criminal Software).

The TraCS platform incorporates the Arizona Crash Report Form making it easier and more accurate for law enforcement to fill out the report on an electronic device. TraCS uses drop-down fields, many of which cannot be skipped, to ensure uniformity and completeness.

The ADOT Motor Vehicle Division (MVD) is ultimately responsible for managing the statewide database of crash data. Records from agencies using the TraCS system are electronically transferred to the crash records database without any additional data entry steps.

In the last ten years, electronic crash reporting has increased from 46% to 90% with approximately 83 law enforcement agencies now using TraCS.

Strategy: Improve roadway inventory collection and reporting on all local roadways.

Roadway data is an important element in safety problem identification, countermeasures analysis, and prioritization of safety projects. FHWA has developed a recommended list of roadway and traffic elements called the Model Inventory of Roadway Elements (MIRE) Fundamental Data Elements (FDE) that serve as a minimum standard for data items needed for advanced safety analysis activities promoted in the AASHTO Highway Safety Manual, systemic safety, and the Safe System Approach. Local agencies (MPOs, COGs, Counties, Tribes, and Municipalities) are encouraged to partner with ADOT in both collection and use of MIRE FDE data for safety analysis and project planning.

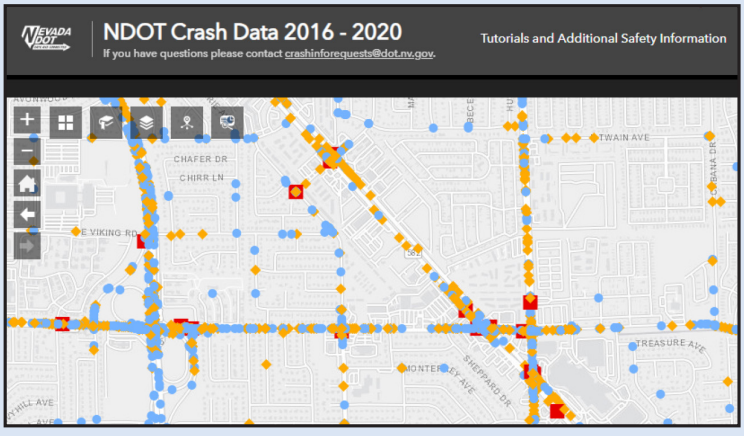
Strategy: Develop a quantitative approach to network screening that aligns with FHWA Data-Driven Safety Analysis (DDSA)

Quantitative measures of safety performance provide agencies the ability to perform scientific, data-driven analyses to identify safety concerns and determine appropriate countermeasures to achieve fewer fatal and serious injury crashes. Two such approaches are predictive and systemic analyses.

Source: FHWA Office of Safety

- Predictive analyses combine crash data with roadway inventory and traffic volumes to determine a roadway's expected safety performance relative to nationwide and/or local averages. Predictive methodologies rely on unique roadway characteristics rather than traditional crash frequencies or rates.
- Systemic analyses focus on broader trends in safety data to account for fluctuations in crash locations. This approach implements specific countermeasures (infrastructure, enforcement, etc) across a number of high-risk locations that have similar characteristics regardless of the historic crashes at an individual site.

Strategy: Provide crash information through a public safety data dashboard.



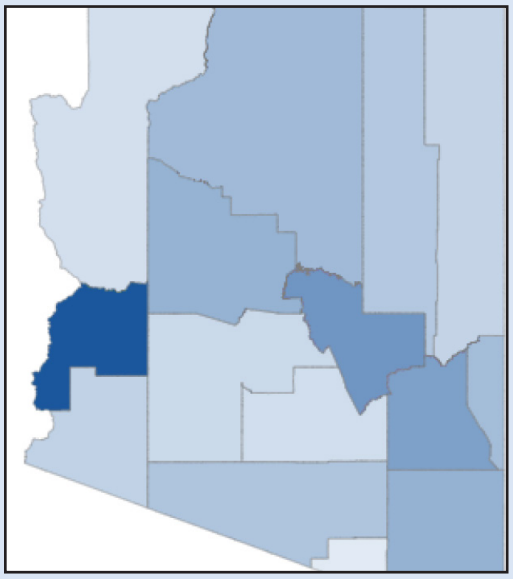
Source: Nevada DOT

Providing increased access to crash data can improve public awareness and serve as an educational tool on current safety trends. ADOT currently provides an annual summary of crashes through the Arizona Crash Facts (https://azdot.gov/arizona-motor-vehicle-crash-facts) and NHTSA provides a high-level data visualization of fatal roadway crashes (https://cdan.dot.gov/DataVisualization/DataVisualization.htm). While both reports provide a range of summaries, the interfaces are static. A map-based dashboard with interactive filters can better support user needs while still protecting personal identifiable information. The image to the right is typical of platforms provided by other states and regions.

Strategy: Utilize available trauma data to assist in emergency response planning and tactics.

Emergency medical services play an important role in the injury outcome of traffic crashes. Response time, available equipment, and staff training all contribute in the initial assessment and treatment that is critical in the first moments after a crash. The Arizona Department of Health Services (ADHS) maintains data related to those traumatic injuries reported to the Arizona State Trauma Registry (ASTR). In addition, the Arizona Crash Form requires supplemental data related to the medical transport and location of death for fatal traffic crash victims. Local law enforcement, fire, hospitals, and other medical facilities should utilize the available data to evaluate resources and response plans.

County-specific trauma rate per 100,000 Arizona residents



Source: ADHS

RESOURCES

FHWA Guidance on State Safety Data Systems	https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/ssds_guidance.pdf
FHWA State Traffic Records Coordinating Committee Noteworthy Practices	https://www.transportation.gov/sites/dot.gov/files/docs/TRCC%20Noteworthy%20Practices%20Guide%20final%20september%202015.pdf
FHWA Roadway Safety Data Program Tools	https://highways.dot.gov/safety/data-analysis-tools/rsdp/rsdp-tools
FHWA Safety Data Analysis & Tools	https://highways.dot.gov/safety/data-analysis-tools
FHWA Data-Driven Safety Analysis (DDSA)	https://highways.dot.gov/safety/data-analysis-tools/rsdp/data-driven-safety-analysis-ddsa
FHWA Safety Analysis Needs Assessment for TSMO	https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/fhwssa19041_0.pdf
Arizona Crash Report Form Instruction Manual—13th Edition	https://apps.azdot.gov/files/highway%20safety%20improvement%20program/arizona-crash-forms-instruction-manual.pdf
NHTSA Model Minimum Uniform Crash Criteria (MMUCC)	https://www.nhtsa.gov/traffic-records/model-minimum-uniform-crash-criteria
Model Inventory of Roadway Elements (MIRE)	https://highways.dot.gov/safety/data-analysis-tools/mire-fde/model-inventory-roadway-elements-mire