



DELAWARE STRATEGIC HIGHWAY SAFETY PLAN: TOWARD ZERO DEATHS



DECEMBER 2015



December 2015

To the Citizens of Delaware:

We are pleased to present the 2015 Delaware Strategic Highway Safety Plan: Toward Zero Deaths, which provides a framework to reduce fatalities and serious injuries resulting from crashes on Delaware's roadways. Enhancing highway safety is critical to the health and well-being of the citizens of Delaware and to others who travel on Delaware's roadways and is a top priority of our agencies.

This plan builds upon the success of Delaware's previous plans and is designed to be a "living document" that provides a framework within which roadway safety programs and initiatives can be evaluated and selected based on their consistency with the goals of the Strategic Highway Safety Plan (SHSP). Delaware's coordinating agencies collaborated to update Delaware's emphasis areas based on current crash data, establish performance-based goals, identify strategies and countermeasures, and evaluate progress of the SHSP. The overall mission of the plan is to eliminate fatalities and serious injuries on Delaware's roadways through a multi-agency approach that utilizes education, enforcement, engineering, and emergency medical service strategies.

This plan is intended to be used by a wide range of highway safety stakeholders and its success depends heavily on the acceptance and support of those stakeholders. Implementation of strategies and countermeasures requires strong advocacy, coordination, and the commitment of resources from various sources. Goals and strategies included in this plan should be incorporated into other safety programs and projects should be prioritized based on their consistency with the SHSP goals.

We, on behalf of the members of the SHSP committee, approve the 2015 Delaware Strategic Highway Safety Plan.



A handwritten signature in black ink that reads "Jennifer Cohan".

Jennifer Cohan
Secretary, Department of Transportation



A handwritten signature in black ink that reads "James Mosley".

James Mosley
Secretary, Department of Safety and Homeland Security



A handwritten signature in blue ink that reads "Colonel Nathaniel McQueen, Jr.".

Colonel Nathaniel McQueen, Jr.
Superintendent, Delaware State Police



Acknowledgements

This report is the result of the combined efforts of 18 state and municipal agencies, three federal agencies, the Strategic Highway Safety Plan Core Committee, the SHSP Stakeholder Committee and eight Emphasis Area Teams.

- ❖ City of Wilmington
- ❖ Delaware Criminal Justice Information System (DELJIS)
- ❖ Delaware Office of Highway Safety (OHS)
- ❖ Delaware Office of Emergency Medical Services (OEMS)
- ❖ Delaware Department of Justice (DOJ)
- ❖ Delaware Department of Transportation, Division of Motor Vehicles (DMV)
- ❖ Delaware Department of Transportation, Division of Planning (DeIDOT Planning)
- ❖ Delaware Department of Transportation, Division of Transportation Solutions
- ❖ Delaware Police Chiefs' Council
- ❖ Delaware State Police (DSP)
- ❖ Delaware State Police Truck Enforcement Unit
- ❖ Delaware Transit Corporation (DTC)
- ❖ Dover/Kent County Metropolitan Planning Organization (Dover/Kent County MPO)
- ❖ Federal Highway Administration (FHWA)
- ❖ Federal Motor Carrier Safety Administration (FMCSA)
- ❖ National Highway Traffic Safety Administration (NHTSA)
- ❖ New Castle County Police Department
- ❖ Ocean View Police Department
- ❖ Sussex County Government
- ❖ University of Delaware T² / LTAP Center
- ❖ Wilmington Area Planning Council (WILMAPCO)



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This document is available at http://www.deldot.gov/information/community_programs_and_services/DSHSP/



Executive Summary

Nearly 1,900 people have died as a result of a motor vehicle crash on Delaware's roadways since 2000, and nearly 6,750 people have suffered serious injuries since 2005. The coordinating agencies of Delaware's Strategic Highway Safety Plan (SHSP) are committed to eliminating fatalities and serious injuries on Delaware roadways through the development, evaluation, and implementation of the SHSP. A SHSP is a comprehensive transportation safety plan with a goal of reducing fatalities and serious injuries on all public roads which makes effective use of state, regional, and local crash data to establish consistent statewide goals, objectives, emphasis areas, priorities, and countermeasures with stakeholders and other transportation plans. A SHSP addresses engineering, management, operation, education, enforcement, and emergency medical services. Moving Ahead for Progress in the 21st Century Act (MAP-21) requires states to develop, implement, and update an SHSP. Delaware's SHSP serves as the state's comprehensive transportation safety plan and was developed in coordination with Delaware's other transportation plans.

Mission Statement: The *Delaware Strategic Highway Safety Plan: Toward Zero Deaths* aims to eliminate fatalities and serious injuries on Delaware's roadways through a multi-agency approach that utilizes education, enforcement, engineering, and emergency medical service strategies.

Delaware's 2015 SHSP builds upon the successes and lessons learned of previous plans and will serve as the state's plan from 2016 through 2020. Members of the Core Committee (Delaware Department of Transportation, Delaware Office of Highway Safety, and Delaware State Police) and Stakeholder Committee met several times throughout 2015 to coordinate updates to Delaware's SHSP. Fatal and serious injury crash data from 2007 through 2014 was analyzed to identify data-driven emphasis areas. Data-driven emphasis areas were ranked by the percentage of fatalities and serious injuries relevant to the emphasis areas compared to total fatalities and serious injuries statewide. The SHSP Committee agreed to include the top seven data-driven emphasis areas in Delaware's 2015 SHSP. Additionally, Traffic Records was also selected as an emphasis area recognizing that comprehensive and quality traffic safety data is critical to making informed decisions regarding safety resource allocation. The plan includes strategies for each emphasis area that were selected based on their cost effectiveness and proven success in reducing fatal and serious injury crashes.

2015 SHSP EMPHASIS AREAS

1. Intersections
2. Roadway Departure
3. Impaired Driving
4. Unrestrained Motorists
5. Motorcycles
6. Speeding
7. Pedestrians
8. Traffic Records

Performance measures relevant to the emphasis areas as well as those required by MAP-21 are included in the plan. Delaware will continue to annually monitor these performance measures as it implements strategies to achieve the plan's goal.

OVERALL GOAL

The goal of the *Delaware Strategic Highway Safety Plan: Toward Zero Deaths* is to achieve a reduction of at least 3 fatalities and 15 serious injuries annually and continue to reduce the total number of fatalities and serious injuries to achieve at least a 50 percent reduction by 2035.



Introduction

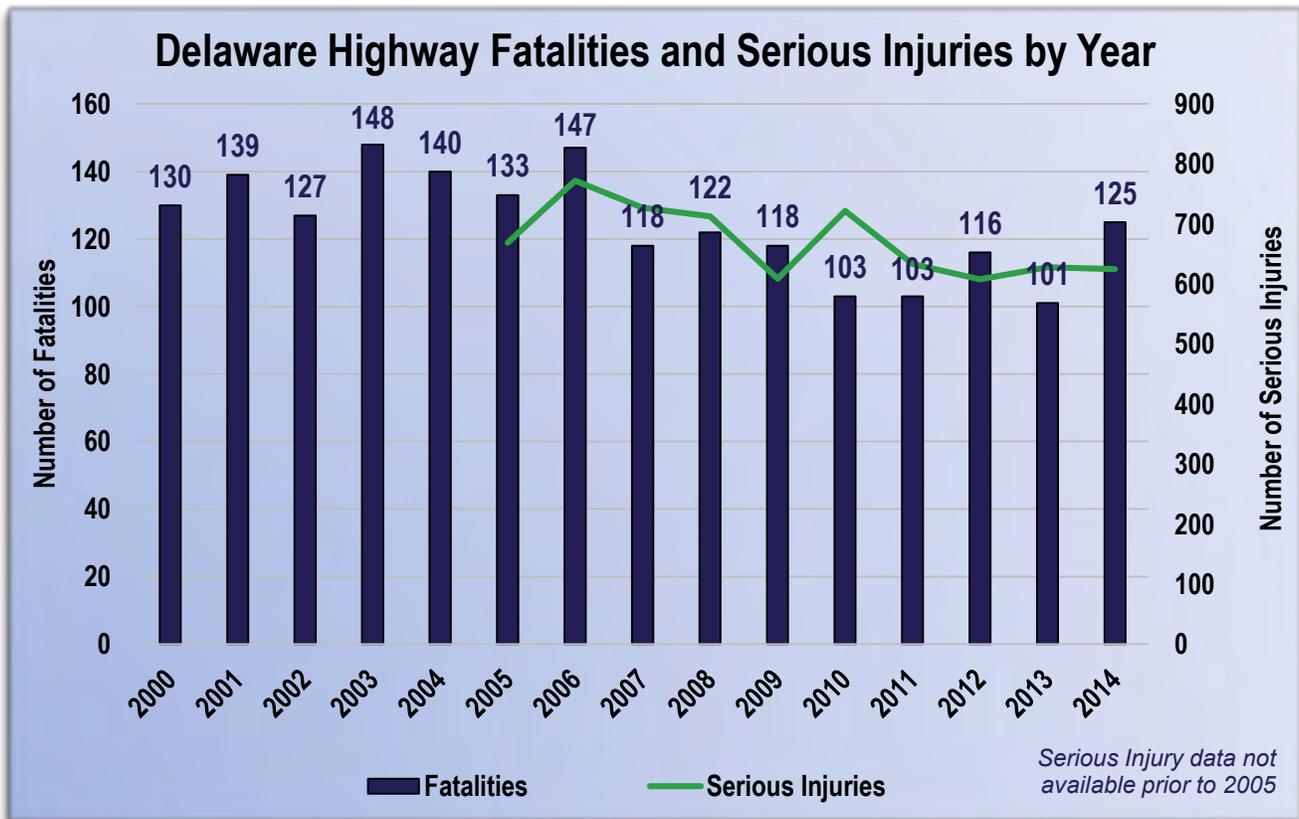
Since 2000, nearly 1,900 people have died as a result of a motor vehicle crash on Delaware's roadways. Additionally, nearly 6,750 people have suffered serious injuries since 2005. Many of these crashes were preventable incidents resulting from any number of behavioral, environmental, and infrastructure related factors. Therefore, a multi-agency approach that utilizes education, enforcement, engineering, and emergency medical services strategies is essential to eliminating these crashes.

Although fatalities and serious injuries have declined in recent years, public safety is a top priority for the State of Delaware. The coordinating agencies of Delaware's Strategic Highway Safety Plan are committed to eliminating fatalities and serious injuries on Delaware roadways through the development, evaluation, and implementation of this update to the Strategic Highway Safety Plan.

Vehicle Crashes in Delaware:

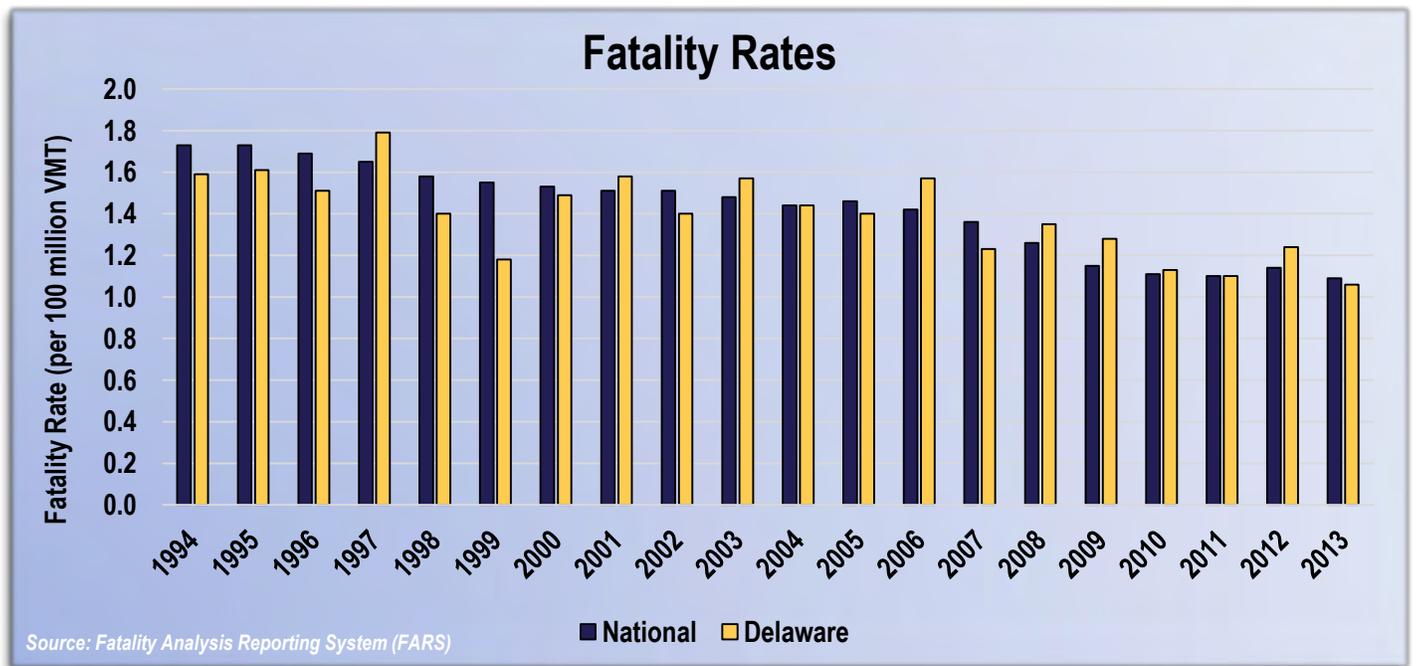
- 1 person is killed every three days
- More than 2 people are killed or seriously injured every day
- Every week, 15 people are killed or seriously injured
- Nearly 1,900 people have died since 2000

Source: DeIDOT Crash Analysis and Reporting System



SHSP Background

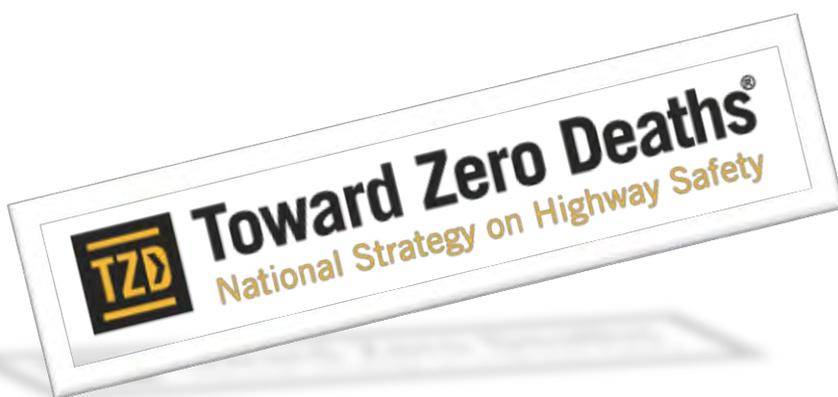
Noticing that efforts to reduce highway fatalities were stalling, the American Association of State Highway and Transportation Officials (AASHTO) initiated the Strategic Highway Safety Plan (SHSP) in 1998 to encourage agencies involved in highway safety to collaboratively develop a plan of innovative strategies to reduce fatalities on America’s highways. In 2003, the U.S. Department of Transportation set a goal to reduce the nationwide fatality rate to not more than one fatality per 100 million vehicle miles traveled. Although the nation did not meet the 2008 goal, the nation has experienced a steady decline in fatality rates since the SHSP was initiated. In 2013, the national fatality rate was 1.09 fatalities per 100 million vehicle miles traveled.



Beginning in 2009, several national traffic safety stakeholders began discussions to create a national highway safety vision. Recognizing that even one death is unacceptable, the group concluded that the elimination of highway deaths is an appropriate goal. *Toward Zero Deaths: A National Strategy on Highway Safety* was published in June 2014. The nationwide vision was officially rolled out on March 10, 2015 in Washington, D.C.

The development of SHSPs at the state level supports this national vision.

Several federal laws and programs have supported the conception of the SHSP, beginning with the Highway Safety Act of 1966, enacted by Congress on September 9, 1966. The primary purpose of this legislation was to provide for a coordinated national highway safety program through financial assistance to



the states to accelerate highway traffic safety programs. The Highway Safety Act of 1973, Surface Transportation Assistance Act of 1978, and Transportation Equity Act for the 21st Century (TEA-21) continued national efforts to reduce the number and severity of highway crashes. In 2005, Congress and President Bush enacted the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) to extend and build upon the precedence of previous legislative efforts. SAFETEA-LU required that each state establish a SHSP by October 1, 2006 in order to be eligible for full funding apportionments.

Moving Ahead for Progress in the 21st Century Act (MAP-21) was codified in 2012. Among other requirements, MAP-21 requires states to develop, implement, and update an SHSP. As part of the requirements, states must evaluate and update the SHSP regularly (a full update is required at least every five years) in consultation with stakeholders identified in MAP-21. Safety problems and priorities should be identified using a data-driven approach utilizing crash (both fatalities and serious injuries), roadway, and traffic data and states must set performance-based goals. The SHSP should be coordinated with other transportation and safety plans such as the Statewide Transportation Improvement Program (STIP), Highway Safety Plan (HSP), Commercial Vehicle Safety Plan (CVSP), and Metropolitan Transportation Plans.

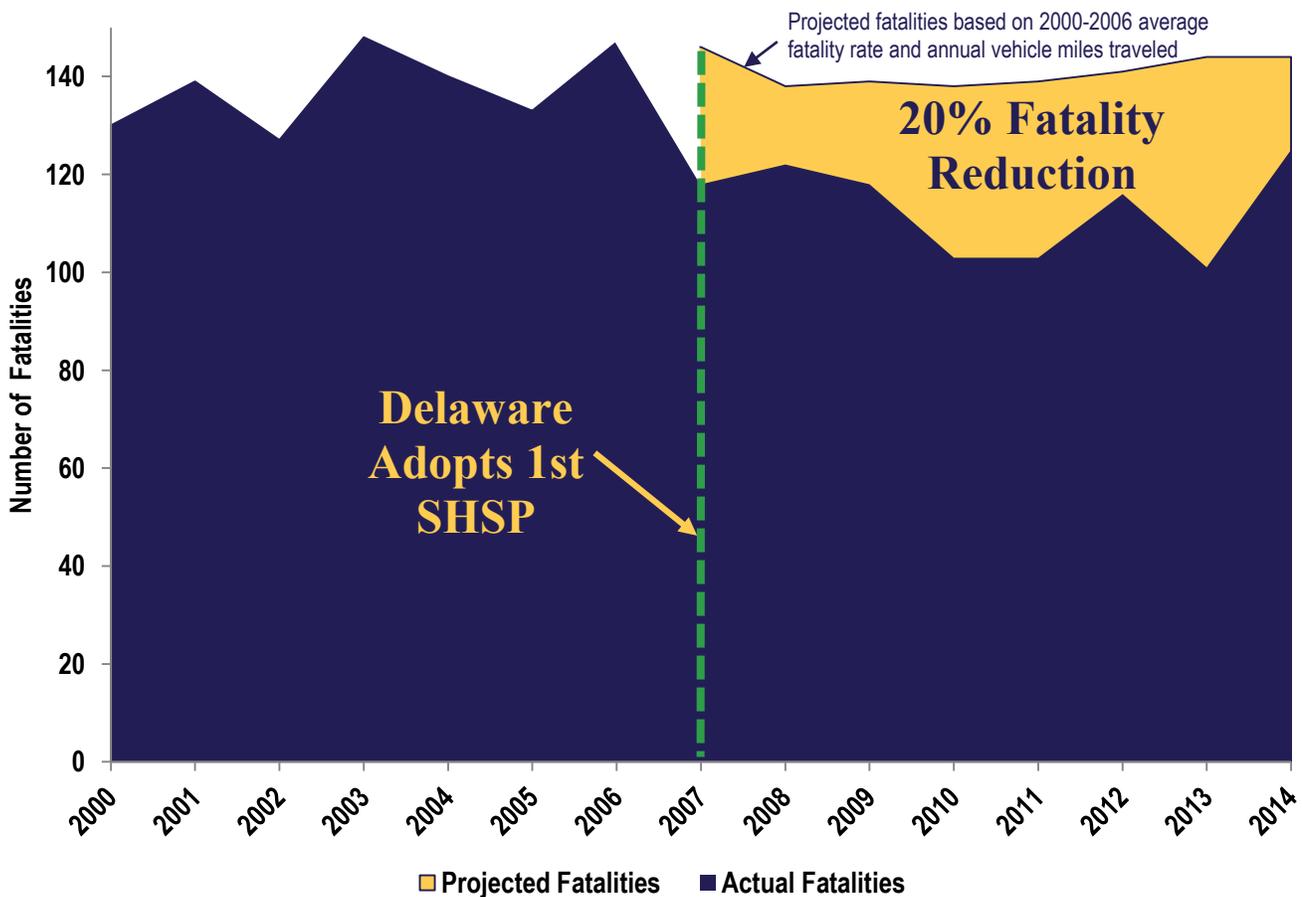
What is an SHSP?

A Strategic Highway Safety Plan (SHSP) is a comprehensive transportation safety plan with a goal of reducing fatalities and serious injuries on all public roads. A SHSP makes effective use of state, regional, and local crash data to establish consistent statewide goals, objectives, emphasis areas, priorities, and countermeasures with stakeholders and other transportation plans. A SHSP addresses engineering, management, operation, education, enforcement, and emergency medical services.



Delaware's SHSP History

The first Delaware SHSP was implemented in 2006 to fulfill the requirements outlined in SAFETEA-LU. Based on a review of crash statistics for a three-year period from January 2001 through December 2003, the 2006 Delaware SHSP identified eight data-driven emphasis areas. In 2007, the SHSP coordinating agencies met to review current crash statistics (January 2004 through December 2006) and progress since the 2006 Delaware SHSP. Although the newer data indicated a reduction in fatal crashes and fatality percentages in several of the emphasis areas, the SHSP coordinating agencies decided to maintain the eight data-driven emphasis areas to continue the downward trends in these areas. In addition to the eight data-driven emphasis areas, the 2006 and 2008 plans included one non-data-driven emphasis area related to improving traffic records. The 2006 plan served as Delaware's SHSP from September 2006 through 2008. The 2008 plan served as Delaware's SHSP from 2009 through 2010. The goal of Delaware's 2006 and 2008 plans was to reduce the number of traffic fatalities to 100 or fewer per year, or to achieve a fatality rate of 1.0 per 100 million vehicle miles traveled. The goal was almost met in 2013 when there were 101 reported fatalities and 1.08 fatalities per 100 million vehicle miles traveled; however, the 2006 and 2008 plan goal has not been met through the end of 2014.



In 2010, the SHSP coordinating agencies reconvened to rewrite Delaware's SHSP. The goal of the 2010 SHSP was to achieve a fatality rate of 1.0 per 100 million vehicle miles traveled by 2018. In addition, Delaware adopted the national *Toward Zero Deaths* strategy as the overall plan mission. Through 2014, the lowest achieved fatality crash rate was 1.08 fatalities per 100 million vehicle miles.

Each emphasis area was reevaluated based on the most recent available crash data. The coordinating agencies selected emphasis areas with a higher corresponding fatal crash or fatality percentage in Delaware as compared to national averages, emphasis areas with one of the highest fatal crash or fatality percentages in Delaware even if Delaware's percentage is lower than the national percentage, or an emphasis area that is likely to become a concern in the near future.

Ten data-driven emphasis areas were identified in the 2010 plan, compared to eight data-driven emphasis areas in the 2006 and 2008 plans. As part of the 2010 plan, the two emphasis areas related to roadway departure crashes included in the 2006 and 2008 plans were combined into a single emphasis area. The 2010 plan, unlike previous versions, prioritized the emphasis areas based on Delaware's fatal crash data and included both primary and secondary emphasis areas. Similar to prior plans, the 2010 plan included one non-data-driven emphasis area related to improving traffic records. The 2010 plan served as Delaware's Strategic Highway Safety Plan from 2011 through 2015.



SHSP Update Process

The 2015 Delaware Strategic Highway Safety Plan update was conducted in accordance with federal requirements as described below and in the following sections. The 2015 SHSP will serve as Delaware's Strategic Highway Safety Plan from 2016 through 2020.

Consultative Process

- Stakeholders included representatives from federal, state, county, and municipal agencies
- Stakeholders were involved throughout the plan development and their input was considered prior to decision making

Coordination

- The plan was coordinated with the Highway Safety Plan (HSP) and the Commercial Vehicle Safety Plan (CVSP) as well as other statewide transportation plans

Data-Driven Process

- Emphasis areas were selected based on a detailed review of fatality and serious injury crash data from 2007 through 2014

Performance-Based Approach

- The overall plan goal is consistent with federal performance measures to decrease the number and rate of serious injuries and fatalities
- Emphasis area goals support the mission to eliminate all fatalities and serious injuries and the overall plan goal to reduce the total number of fatalities and serious injuries by 50% by 2035

Strategy Selection

- Emphasis Area teams identified strategies based on a detailed review of crash data for the emphasis areas, consideration of the success of past strategies, and a review of recommended and proven best practices

Evaluation and Update Schedule

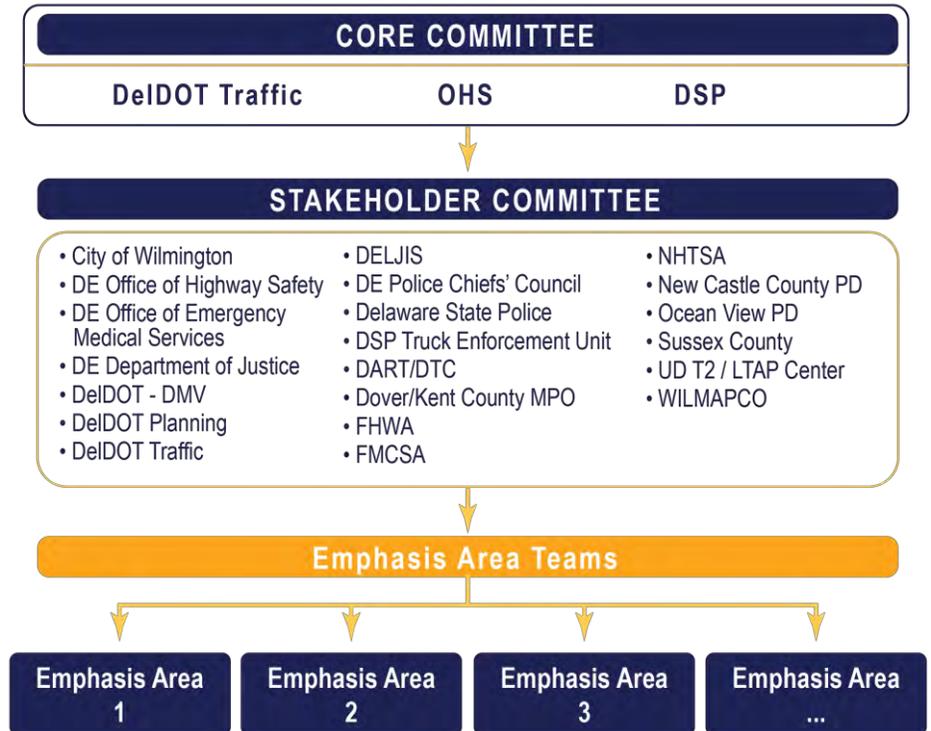
- The overall plan goal, plan performance measures, and the emphasis area goals will be evaluated on an annual basis
- The SHSP will be updated every five years



Stakeholder Input

In Delaware, the Department of Transportation (DelDOT) is responsible for the creation of the state's SHSP. However, the plan was developed in collaboration with representatives from multiple stakeholders who contribute unique and valuable perspectives toward the goal of reducing fatalities and serious injuries on Delaware's roadways. The stakeholders provide expertise in the 4 E's of transportation safety including engineering, education, enforcement, and emergency medical services.

The 2015 Delaware SHSP committee is established at three levels as shown in the organizational chart. The Core Committee members include DelDOT Traffic, Delaware Office of Highway Safety, and Delaware State Police and provided guidance and direction during the development of the SHSP update. The Stakeholder Committee provided a broad perspective on safety throughout Delaware at the federal, state, county, and municipal level. Committee members involved in the prior 2010 update of Delaware's SHSP provided a depth of experience and leadership while new members were able to provide unique perspectives and insights.

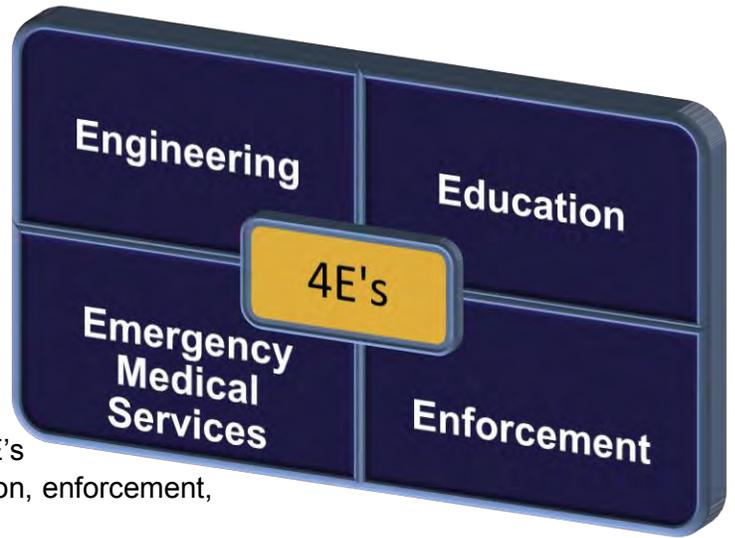


Members of the Core Committee and Stakeholder Committee met several times throughout 2015 to coordinate updates to Delaware's SHSP. Following the selection of emphasis areas to be included in the plan, members of the Core Committee and Stakeholder Committee volunteered to participate on Emphasis Area Teams based upon their background, expertise, and organization's respective responsibilities. Each Emphasis Area Team met to review detailed crash data specific to the emphasis area, establish an emphasis area goal, discuss ongoing initiatives, and develop strategies to reduce fatalities and serious injuries.

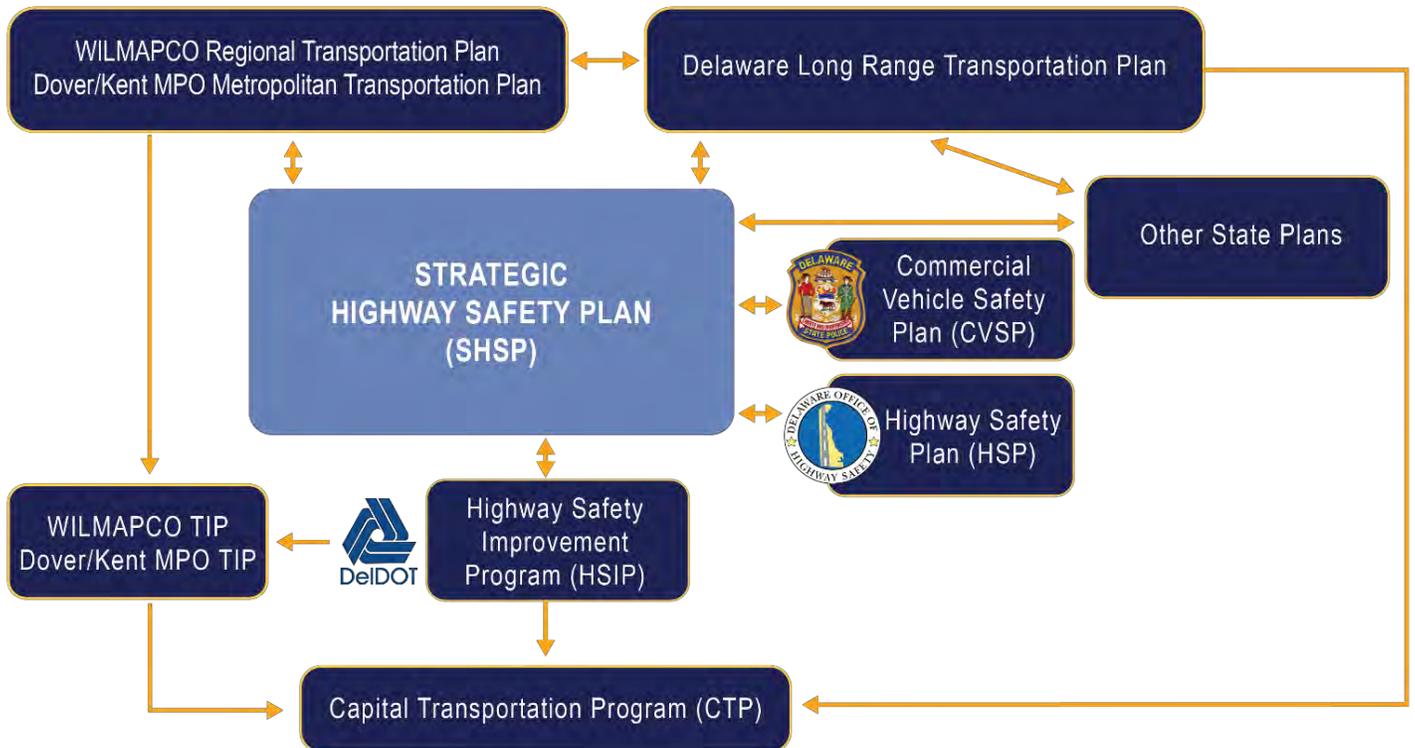


Plan Coordination

Delaware's SHSP serves as the state's comprehensive transportation safety plan. The SHSP was developed in coordination with Delaware's other transportation safety plans, including the Office of Highway Safety's Highway Safety Plan (HSP) and Delaware State Police's Commercial Vehicle Safety Plan (CVSP). The current priority areas of the Highway Safety Plan were considered while developing emphasis areas for the SHSP. The plan incorporates multidisciplinary strategies of several stakeholder agencies and the 4 E's of transportation safety including engineering, education, enforcement, and emergency medical services.



The SHSP is consistent with the Delaware Long Range Transportation Plan and metropolitan transportation plans including the WILMAPCO Regional Transportation Plan and the Dover/Kent MPO Metropolitan Transportation Plan. Implementation of Delaware's Strategic Highway Safety Plan will be carried out through these other state plans. Therefore, future updates to these and other statewide plans will be aligned to provide consistent goals and strategies to reduce the number of fatalities and serious injuries on Delaware's roadways.

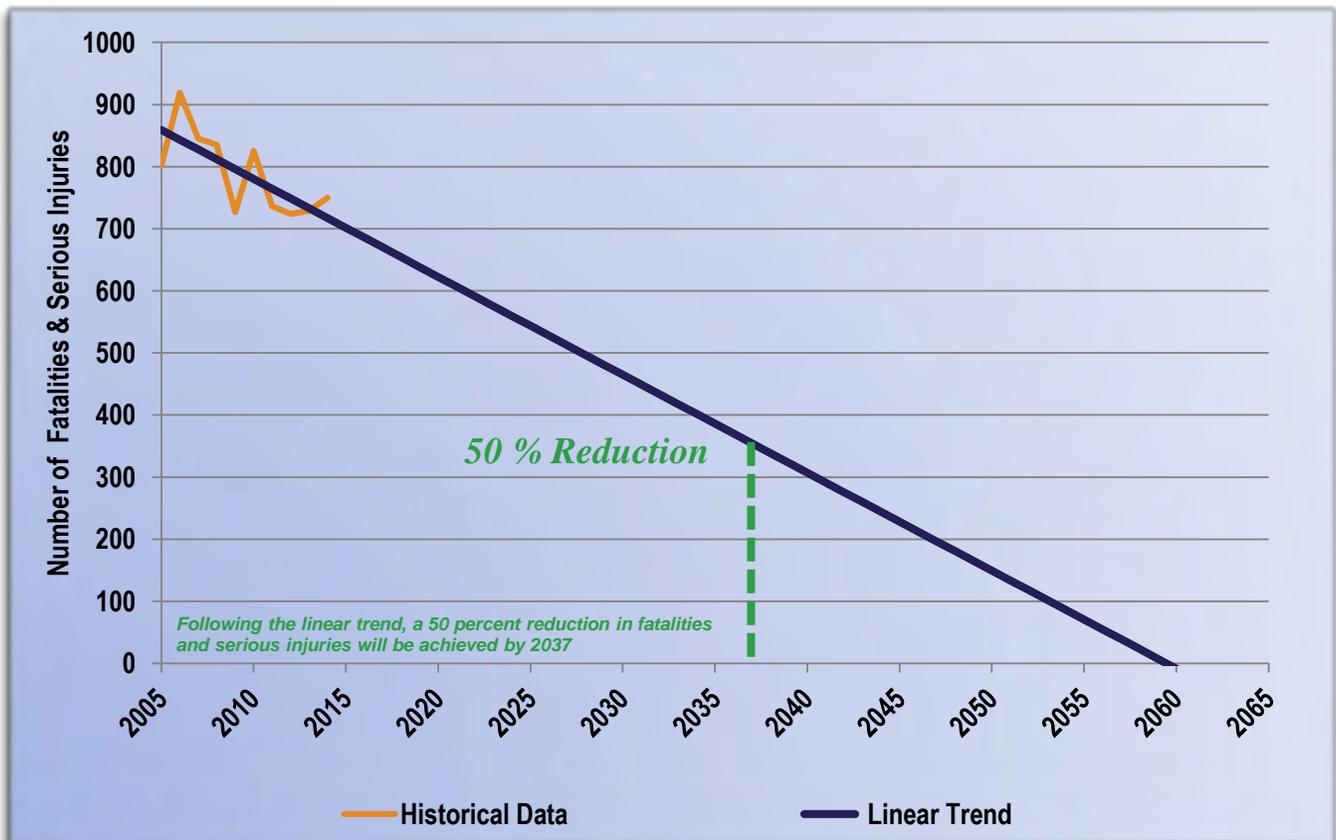


SHSP Mission Statement

The mission of the Delaware SHSP is consistent with the *Toward Zero Deaths* national goal. With this SHSP update, serious injuries were incorporated into Delaware's mission statement, consistent with FHWA's goal to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

Mission Statement

The *Delaware Strategic Highway Safety Plan: Toward Zero Deaths* aims to eliminate fatalities and serious injuries on Delaware's roadways through a multi-agency approach that utilizes education, enforcement, engineering, and emergency medical service strategies.



SHSP Overall Goal

Limited resources demand that FHWA and Delaware have the ability to demonstrate the effectiveness of their programs and projects, including the SHSP. MAP-21 transformed the policy and programmatic framework for investments into the nation's surface transportation program by creating a streamlined and performance-based surface transportation program.

During the SHSP update process, the Stakeholder Committee reviewed historic fatality and serious injury data to establish an overall SHSP goal to complement the mission to eliminate all fatalities and serious injuries on Delaware's roadways. Based on a review of historic trends, an aggressive goal was established as follows: "achieve a reduction of at least 3 fatalities and 15 serious injuries annually and continue to reduce the total number of fatalities and serious injuries to achieve at least a 50 percent reduction by 2035." This goal achieves a 50 percent reduction in fatalities and serious injuries two years in advance of the historic linear trend of fatalities and serious injuries.

SHSP Overall Goal

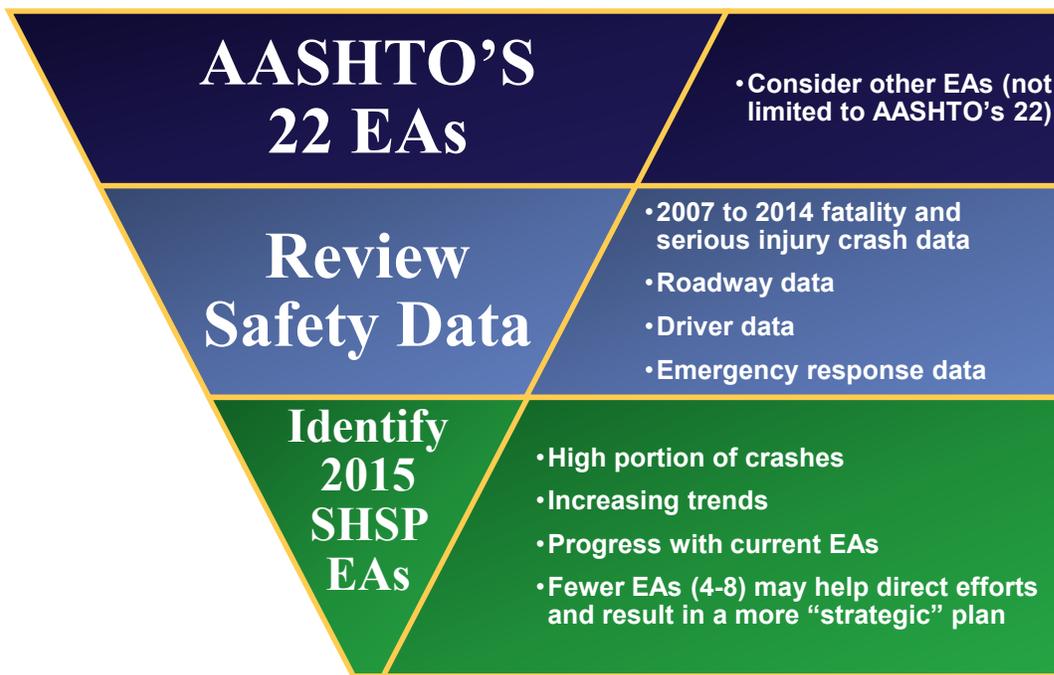
The goal of the *Delaware Strategic Highway Safety Plan: Toward Zero Deaths* is to achieve a reduction of at least 3 fatalities and 15 serious injuries annually and continue to reduce the total number of fatalities and serious injuries to achieve at least a 50 percent reduction by 2035.



Emphasis Area Selection

The establishment of emphasis areas (EA) allows Delaware to prioritize the use of limited funds and resources and ensure that safety efforts are targeted effectively to meet Delaware’s safety goals. In order to select data-driven emphasis areas, crash data was obtained from DeIDOT’s *Crash Analysis and Reporting System (CARS)* which includes detailed crash data for all reported crashes statewide. CARS is populated by crash reports that are entered by law enforcement officers statewide into E-Crash, Delaware’s statewide electronic crash reporting system.

Historically, transportation safety officials have focused on fatality data, which was more readily available and believed to be more accurate and robust compared to less severe crashes. Strategies developed to address fatal crashes would, in theory, apply to all crashes regardless of severity; therefore, this was deemed to be an appropriate approach to highway safety. Delaware’s previous SHSPs relied primarily on fatal crash data to guide decision making and strategy development; however, MAP-21 legislation requires states to expand their focus to also include serious injury crash data. Therefore, Delaware’s SHSP includes the consideration of crashes involving both fatalities and serious injuries.

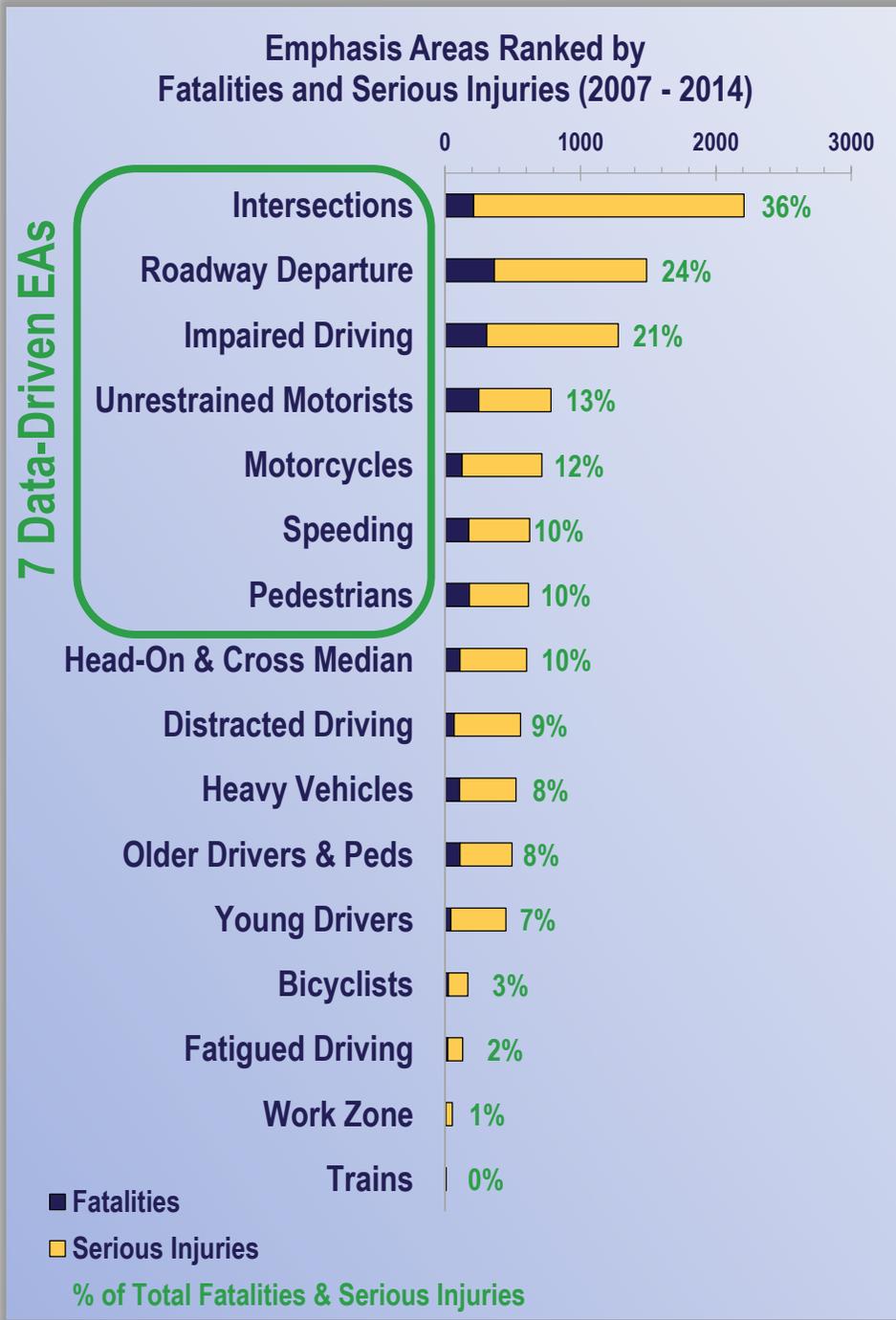


AASHTO’s original SHSP established 22 key EAs for consideration by states. These data-driven EAs correspond to driver behaviors, crash circumstances, crash locations, vehicle types, and/or person types. In addition to considering these EAs, the SHSP stakeholder committee also considered other potential EAs (e.g., vulnerable users) and subcategories of the AASHTO 22 EAs (e.g., fatigued driving versus cell phone use). Data-driven EAs were ranked by the percentage of fatalities and serious injuries relevant to the emphasis area compared to total fatalities and serious injuries statewide. The emphasis areas were ranked based on 2007 through 2014 crash data; however, 2010 through 2014 crash data was also evaluated to ensure that crash trends have not changed in more recent years. No significant variations between 2007 through 2014 and 2010



through 2014 data were identified. It should be noted that a single fatality or serious injury may involve several emphasis areas. For example, a roadway departure crash involving an impaired, unrestrained driver that was speeding would be included in four emphasis areas – roadway departure, impaired driving, unrestrained motorists, and speeding.

The SHSP stakeholders aimed to minimize the number of selected EAs recognizing limited resources and funds with a goal of achieving a more strategic and targeted plan and therefore a more successful implementation of the SHSP.



During the eight-year period from 2007 through 2014, 906 fatalities and 5,265 serious injuries were reported (combined total of 6,171 fatalities and serious injuries). As shown in the table, Intersections, Roadway Departure, and Impaired Driving emphasis areas each account for more than 20% of fatalities and serious injuries. Unrestrained Motorists and Motorcycles emphasis areas each account for more than 10% of fatalities and serious injuries. Speeding and Pedestrian emphasis areas ranked similar to Head-On and Cross Median crashes, each accounting for 10% of the total fatalities and serious injuries; however, a significant portion of head-on and cross median fatalities and serious injuries are included in the Roadway Departure Emphasis Area (ranked the second highest) and would be addressed by similar strategies; therefore, a separate Head-On and Cross Median emphasis area was not selected.

As such, the SHSP committee agreed to include the top seven data-driven emphasis areas in Delaware's 2015 SHSP. These



seven data-driven EAs are represented in 94 percent of the fatalities and 81 percent of the serious injuries from 2007 through 2014.

These emphasis areas were also included in the 2010 SHSP. Furthermore, with the exception of Distracted Driving and Bicyclists, Delaware's SHSP includes the behavioral priority areas identified in Delaware's FY 2016 Highway Safety Plan (HSP).

The seven data-driven Emphasis Areas account for 94% of fatalities and 81% of serious injuries

As described above, Delaware's EAs were selected based on a data-driven review of serious injury and fatality crash data. Recognizing that comprehensive and quality traffic safety data is critical to making informed decisions regarding safety resource allocation, Traffic Records was selected as an emphasis area in addition to the seven data-driven emphasis areas.

The figure below presents a summary of emphasis areas included in Delaware's past SHSPs, in addition to the eight emphasis areas selected for the 2015 SHSP:



Detailed crash data for EAs that were not selected for inclusion in the SHSP are summarized in Appendix B including a discussion of distracted driving which has gained significant attention in the transportation safety community with the recent advancement and prevalence of cell phones and personal devices. Although an emphasis area may not be selected for inclusion in this plan, ongoing efforts and strategies to reduce fatalities and serious injuries in emphasis areas not selected will continue. For example, ongoing efforts to increase work zone safety will continue through established public outreach, training, and enforcement activities.



Performance Measures

MAP-21 emphasizes a performance-based approach to safety to provide accountability and transparency of highway safety programs, improve transportation decision making when considering investments of federal highway safety funds, and allow safety managers to determine the extent to which the SHSP is achieving its goals and objectives.

In Delaware, statewide fatality and serious injury crash data is reviewed and reported annually in DeIDOT's Highway Safety Improvement Program (HSIP) Annual Report, the Office of Highway Safety's Annual Highway Safety Report, and Delaware State Police's Annual Traffic Statistical Report. Each of these reports documents performance measures relevant to the specific agencies' responsibilities associated with the SHSP emphasis areas. In addition, statewide fatal crash trends for individual crash types are monitored throughout the year by OHS, DeIDOT, and DSP to target engineering, enforcement, education, and emergency service efforts.

Performance measures for the combined number of fatalities and serious injuries are incorporated into the SHSP overall goal statement. Performance measures for the emphasis areas were developed in order to document success in achieving Delaware's overall goal of at least a 50 percent reduction in fatalities and serious injuries by 2035 as follows:

1. Combined number of intersection fatalities and serious injuries
2. Combined number of fatalities and serious injuries in roadway departure crashes
3. Combined number of impaired driving fatalities and serious injuries
4. Combined number of unrestrained motorist fatalities and serious injuries
5. Combined number of motorcyclist fatalities and serious injuries
6. Combined number of speeding fatalities and serious injuries
7. Combined number of pedestrian fatalities and serious injuries

In addition to the performance measures relevant to the specific emphasis areas and in accordance with MAP-21, the following four performance measures will be reviewed and reported as five-year rolling averages on an annual basis for all public roadways:

- Total number of fatalities
- Fatality rate per 100 million vehicle miles traveled
- Total number of serious injuries
- Serious injury rate per 100 million vehicle miles traveled



MAP-21 Special Rules

MAP-21 establishes two Special Rules specific to High Risk Rural Roads and Older Drivers and Pedestrians. Crash rates (as defined by the Rules) for these two crash types are reviewed on an annual basis and additional mitigation efforts are required if rates increase compared to prior years.

High Risk Rural Roads

The Special Rule for High Risk Rural Roads (HRRR) eliminated set-aside funds from the Highway Safety Improvement Program (HSIP) and now requires states with an increase in fatality rates on rural roads to obligate a specified amount of HSIP funds to HRRR. If the fatality crash rate increases over the most recent two-year period, states must obligate 200 percent of the amount of HRRRP funds received in 2009. In recent years, the fatality crash rate on HRRR in Delaware has not increased and therefore this Special Rule has not applied.



MAP-21 defines a “high risk rural road” as “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 strategic highway safety plan.” As part of the SHSP update process, states must define its methodology to define a “significant safety risk.” Prior to the creation of the Special Rule, DeIDOT administered Delaware’s High Risk Rural Roads Program. High risk locations were defined using the Critical Ratio methodology considering crashes involving fatalities and serious injuries during a three year study period along all rural major collectors, minor collectors, and local roadways. The Critical Ratios of locations with two or more fatal or serious injury crashes within a 0.3-mile segment during a three-year study period are ranked in descending order to identify HRRR locations.



Older Drivers and Pedestrians

MAP-21 requires a State to include strategies in its SHSP to address older drivers and pedestrians, defined as 65 years and older, if the state meets the Older Drivers and Pedestrians Special Rule. According to FHWA’s Older Drivers and Pedestrians Rule, the Special Rule applies to the state if the rate of traffic fatalities and serious injuries per capita for drivers and pedestrians 65 years of age and older increases during the most recent 2-year period.

In recent years, the older drivers and pedestrians crash rate in Delaware as defined by the Special Rule has not increased and therefore this Special Rule has not applied. Strategies specifically addressing older drivers and pedestrians are not included in this plan; however, Delaware’s older population is considered when implementing several strategies outlined in the seven data-driven emphasis areas.



Strategy Selection

The selection of strategies for each emphasis area was based on a detailed review of fatal and serious injury crash data for the eight-year period between 2007 and 2014. Relevant crash characteristics were reviewed and evaluated to identify the most prevalent roadway and behavioral crash characteristics. A review of crashes by location (counties and municipalities) was also conducted for each emphasis area. Data was reviewed to identify relationships between emphasis areas and crash types that would be addressed through the implementation of strategies in multiple emphasis areas. This allowed the Emphasis Area Teams to select strategies that would have the greatest potential impact on reducing fatalities and serious injuries.

A list of general strategies to mitigate crashes in each of the emphasis areas was considered by combining *NCHRP 500-Series Reports*, countermeasures and best practices recommended in NHTSA's *Countermeasures that Work, A Highway Safety Countermeasure Guide for State Highway Safety Offices*, the *Highway Safety Manual*, solutions proposed by other states, and several other safety resources. These strategies were then compared to Delaware's 2010 SHSP and Delaware's existing programs. A combination of

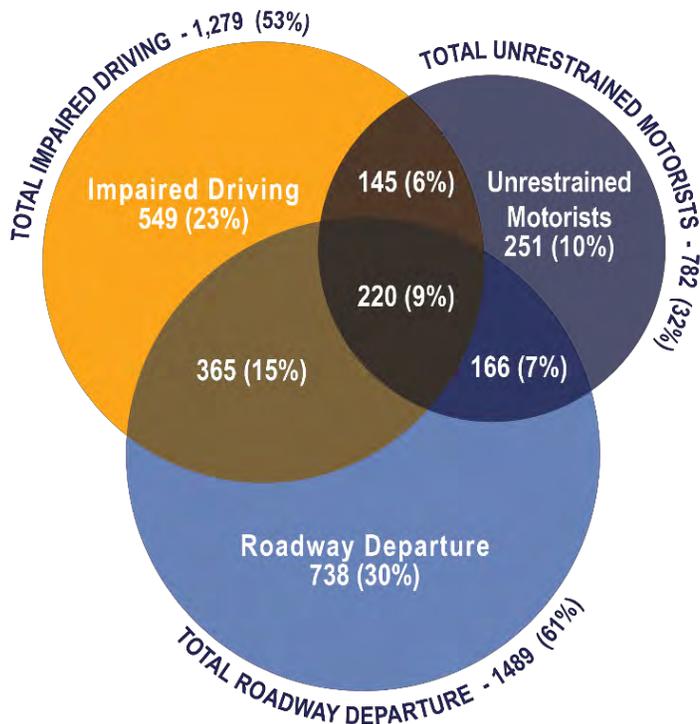
strategies was selected to address each of Delaware's emphasis areas. Strategies included in this plan focus on addressing the four E's of transportation safety - Education, Enforcement, Engineering, and Emergency Medical Services. Strategies were selected based on their cost effectiveness and proven effectiveness. Emergency Medical Service strategies are not explicitly included for each emphasis area; however, strategies associated with the other emphasis areas (e.g., protection of fixed objects in clear zones) have the potential to significantly reduce the number of fatalities and serious injuries by improving the likelihood of survival from any crash. Additionally, identifying proven countermeasures is a vital step to allow decision makers the ability to strategically invest limited resources; therefore, performing before/after studies to determine the effectiveness and safety benefits of countermeasures continues to be a strategy for all emphasis areas.

Sample Crash Characteristics

- Age
- County
- Day of Week
- Driver Condition at Time of Crash
- Driver Contributing Circumstance
- Driver Distraction
- Gender
- Harmful Event
- Lighting Condition
- Manner of Impact
- Month
- County
- Municipality
- Person Type
- Roadway Contributing Circumstance
- Roadway Functional Classification
- Rural vs. Urban
- State Residency
- Surface Condition
- Time of Day
- Vehicle Type
- Year



OVERLAPPING EMPHASIS AREAS



Percentages represent the portion of the total fatalities and serious injuries (2,434 total) of the three emphasis areas.

39% of the 6,171 total fatalities and serious injuries between 2007 and 2014 involved at least one of these three emphasis areas.

In many cases, a strategy for one emphasis area could contribute to reducing fatalities and serious injuries in another emphasis area. A single crash is frequently the result of multiple behavioral, environmental, and infrastructure-related factors working together; therefore, emphasis areas often overlap. Understanding how the emphasis areas overlap is important to identifying the most effective strategies to reduce fatalities and serious injuries since a strategy for one emphasis area could contribute to reducing fatalities and serious injuries in another emphasis area. For example, strategies to reduce roadway departure crashes (e.g., rumble strips and high friction surface treatments) could contribute to reductions in impaired driving crashes. Fatality and serious injury data was reviewed to determine which emphasis areas most frequently overlap. The three most common overlapping emphasis areas in Delaware are roadway departure, impaired driving, and unrestrained motorists. Nearly 40 percent of all fatalities and serious injuries since 2007 in Delaware involved at least one of these three factors.

Additionally, the advancement of new vehicle technologies such as connected and

autonomous vehicles hold the prospect of improved safety on our roadways; however, many obstacles remain before these technologies become fully integrated into our transportation system. As best as possible, Delaware will continue to prepare for a future with these new technologies that will serve as another strategy to improve safety on Delaware's roadways.

Emphasis Area Fact Sheets

The eight selected emphasis areas are presented in the following pages as emphasis area fact sheets. The fact sheets for the seven data-driven emphasis areas are ordered by their respective rankings. The emphasis area fact sheets provide a brief description of the emphasis area category, the emphasis area goal, a review of relevant crash data, and strategies to reduce fatalities and serious injuries. Following each fact sheet is a summary of supporting crash data including fatality and serious injury crash characteristics relevant to the specific emphasis area.



1

Intersections

EMPHASIS AREA GOAL: Reduce the combined number of intersection-related fatalities and serious injuries by 35 every 5 years (7 per year) to achieve the overall goal of a 50 percent reduction by 2035.

Background

Intersection fatalities and serious injuries include crashes occurring at an intersection or related to an intersection or crossover, as determined by the reporting police enforcement officer at the time of the crash. Although intersections only constitute a small percentage of the overall roadway system in Delaware, both signalized and unsignalized intersections involve multiple turning and crossing maneuvers that create numerous conflict points and crash potentials between vehicles, pedestrians, and bicyclists – making intersections one of the most complex traffic situations that motorists encounter.

In Delaware, intersection crashes represent the largest percentage of serious injuries (38 percent) and represent 23 percent of fatalities based on 2007 through 2014 crash data.



Strategies to Reach Goal

- Prioritize and implement systemic intersection-related safety improvements (e.g., innovative designs, roundabouts, back plates, median channelization, grade separation, left-turn phasing, lighting) at high-risk intersections
- Develop a high-crash intersection prioritization process
- Identify and implement effective safety improvements (traffic control devices, operational improvements, and/or geometric improvements) to address crash trends at high-crash intersections
- Prioritize critical corridors for safety audits to identify and implement effective countermeasures, such as reducing conflict points along divided highways
- Develop and support guidelines and/or policies for choosing the appropriate traffic controls and safety measures at intersections
- Perform before/after studies to evaluate and identify the most effective treatments for a given crash type/location
- Develop and distribute consistent public information messages to educate the public on traffic laws, new traffic control devices, and high-crash locations
- Conduct enforcement of red-light violations and other intersection-related traffic violations contributing to crashes at high-crash intersections



Data Trends: 2007 to 2014 Intersection Fatalities & Serious Injuries

- 79% occurred in urban areas
- 57% were angle crashes
- 57% occurred in New Castle County
- 52% occurred at unsignalized intersections
- 52% were male
- 37% occurred between 2 PM and 7 PM
- 31% occurred on principal arterials
- 23% were 20 to 29 years old
- 15% occurred on wet/snowy/icy roadways
- 13% occurred during dark, unlit conditions



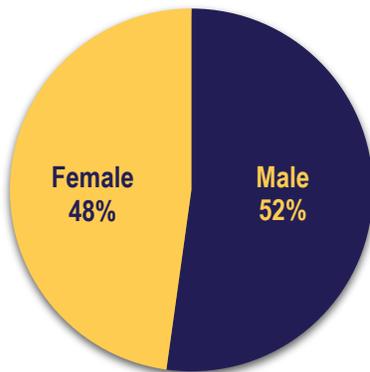
1

Intersections

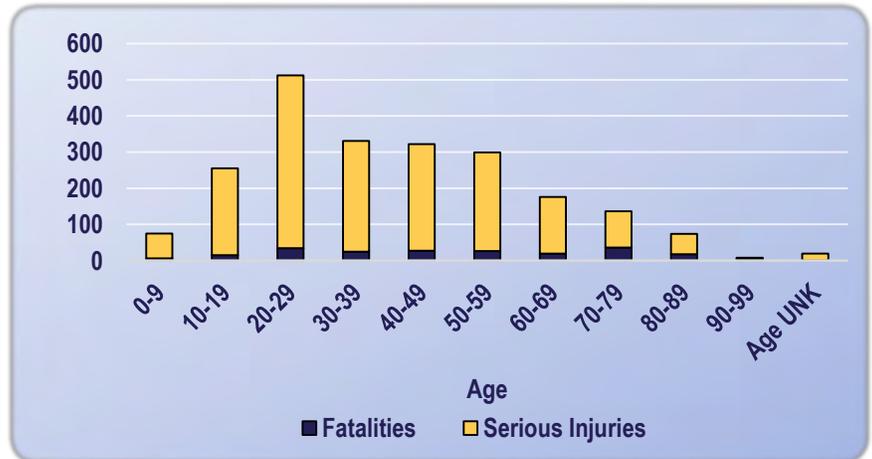
CRASH DATA SUMMARY

Intersections – Persons fatally or seriously injured in crashes that occurred at an intersection or related to an intersection or crossover

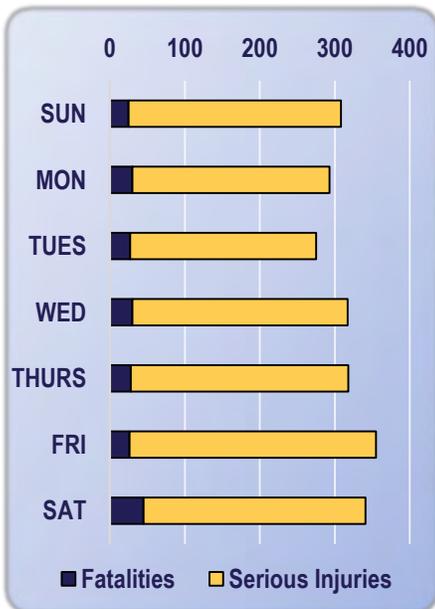
PERSON TYPE



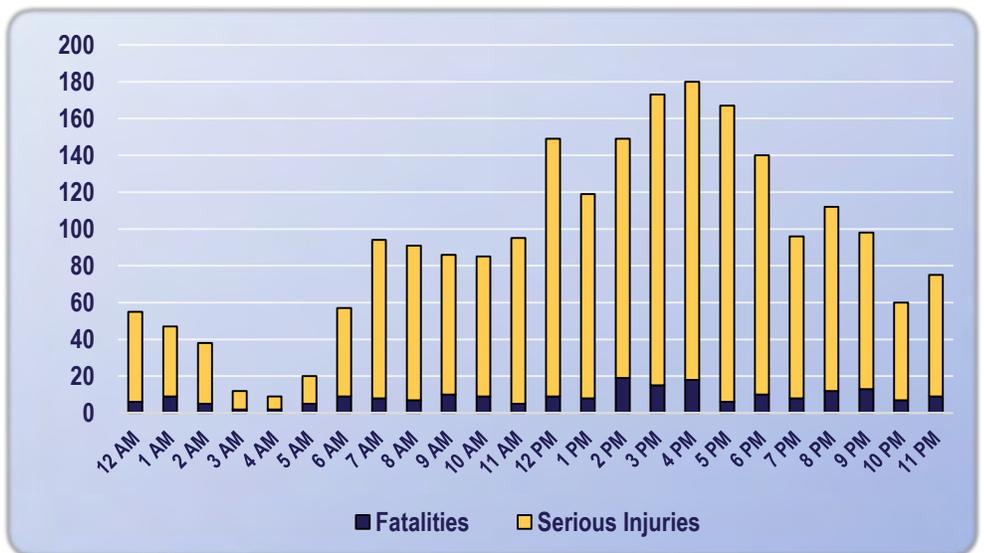
Intersection Fatalities and Serious Injuries



DAY OF WEEK



TIME OF DAY

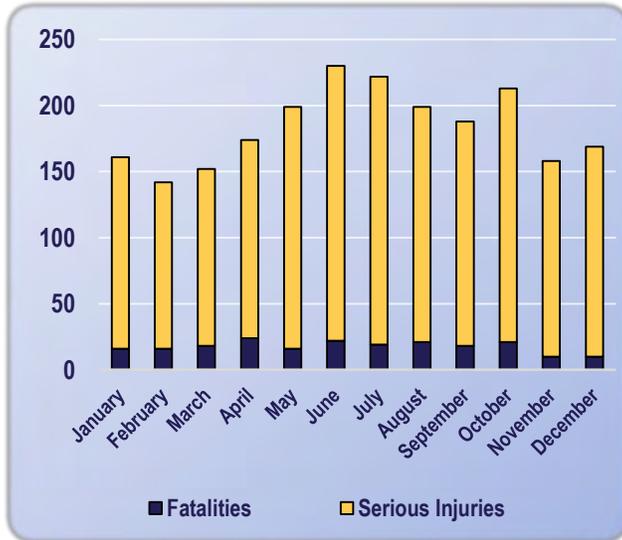


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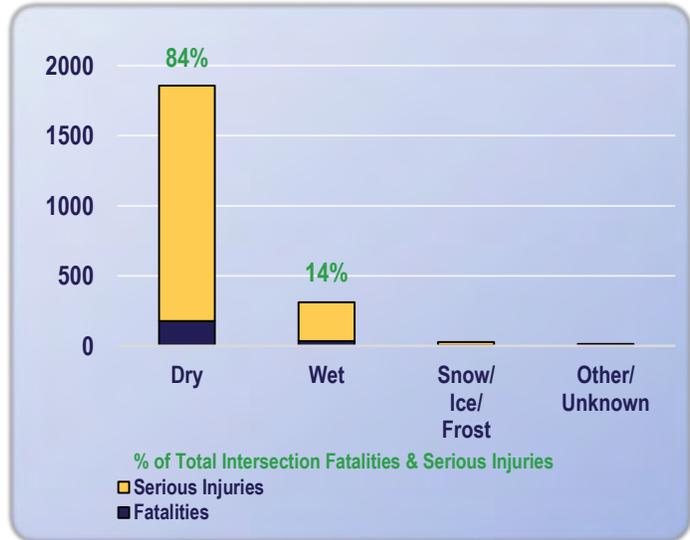
Intersections

CRASH DATA SUMMARY

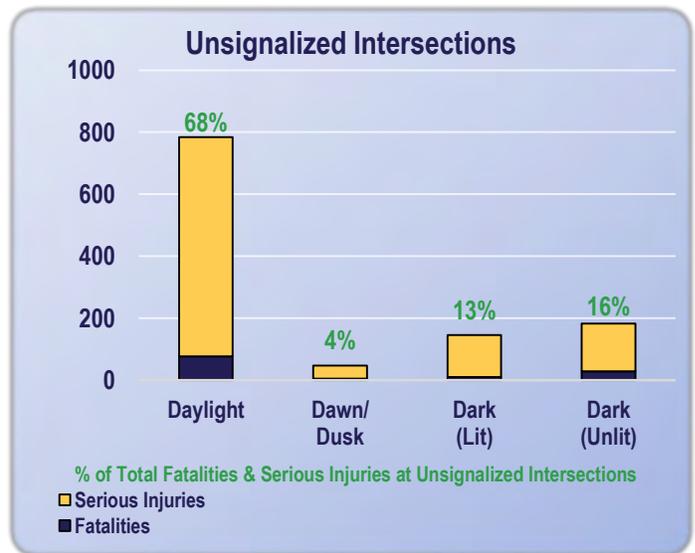
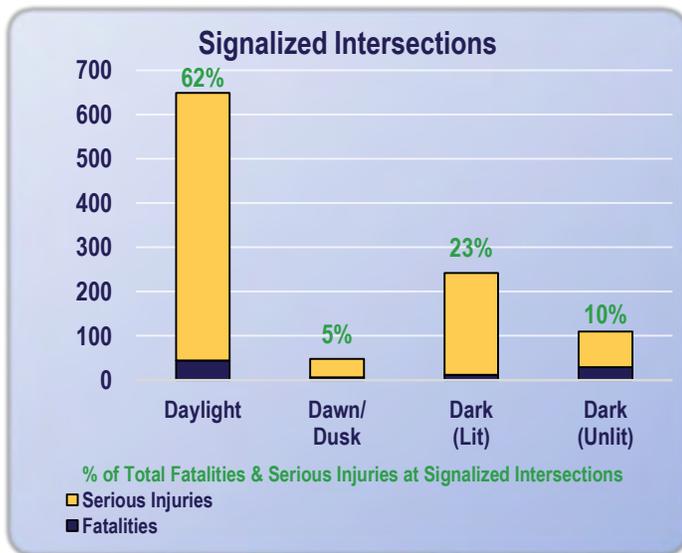
MONTH



SURFACE CONDITION



LIGHTING CONDITION

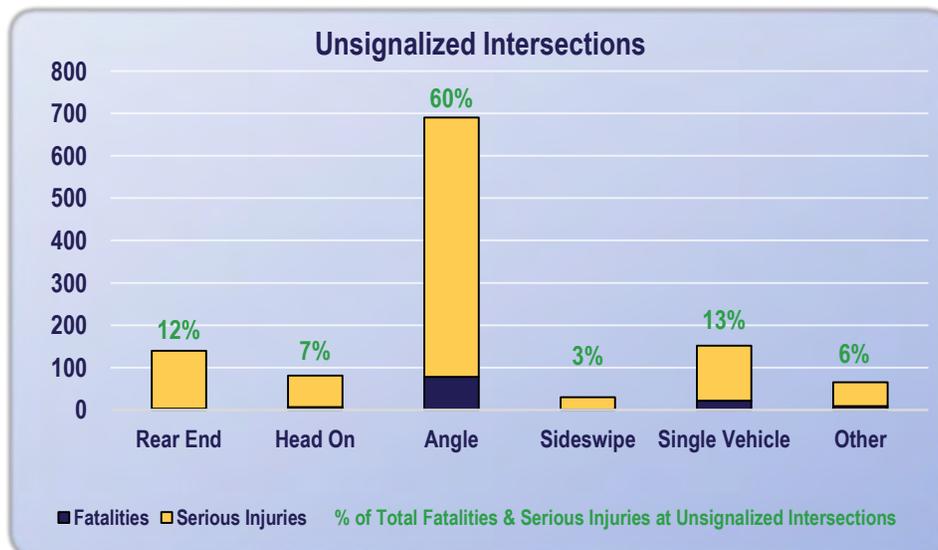
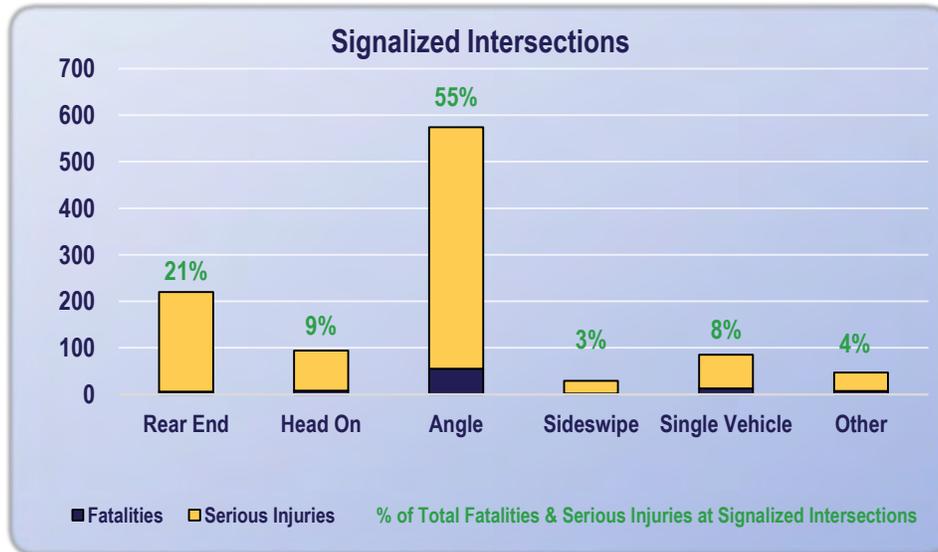


1

Intersections

CRASH DATA SUMMARY

MANNER OF IMPACT

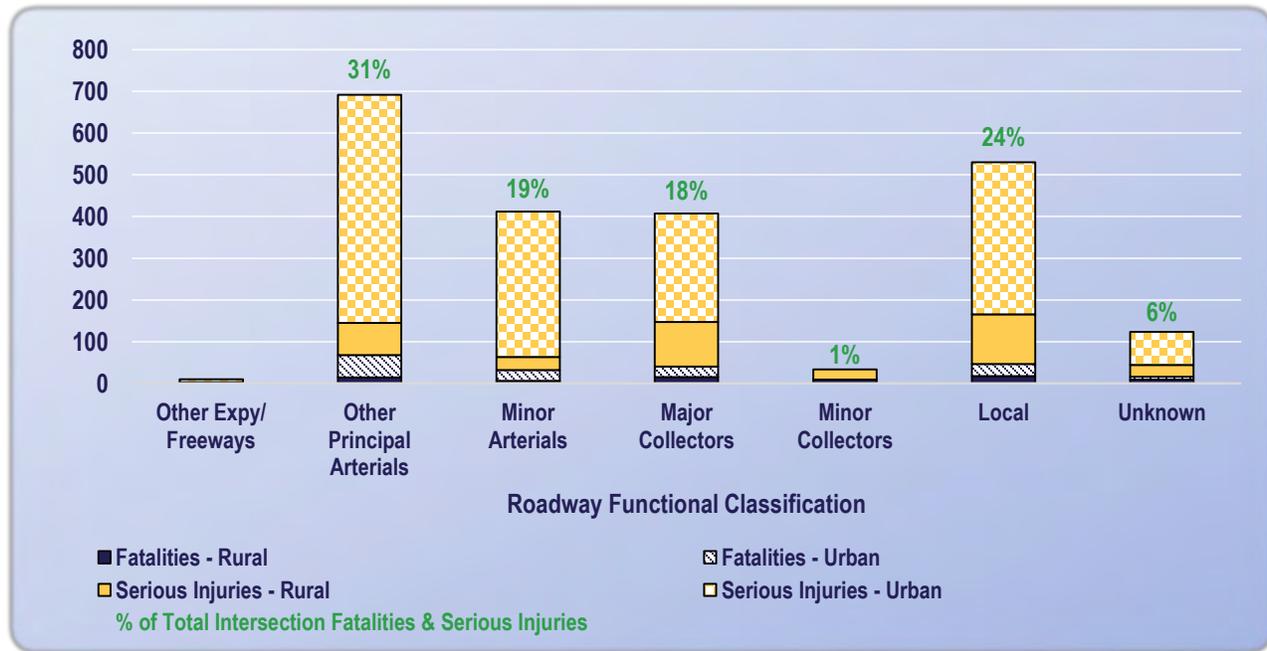
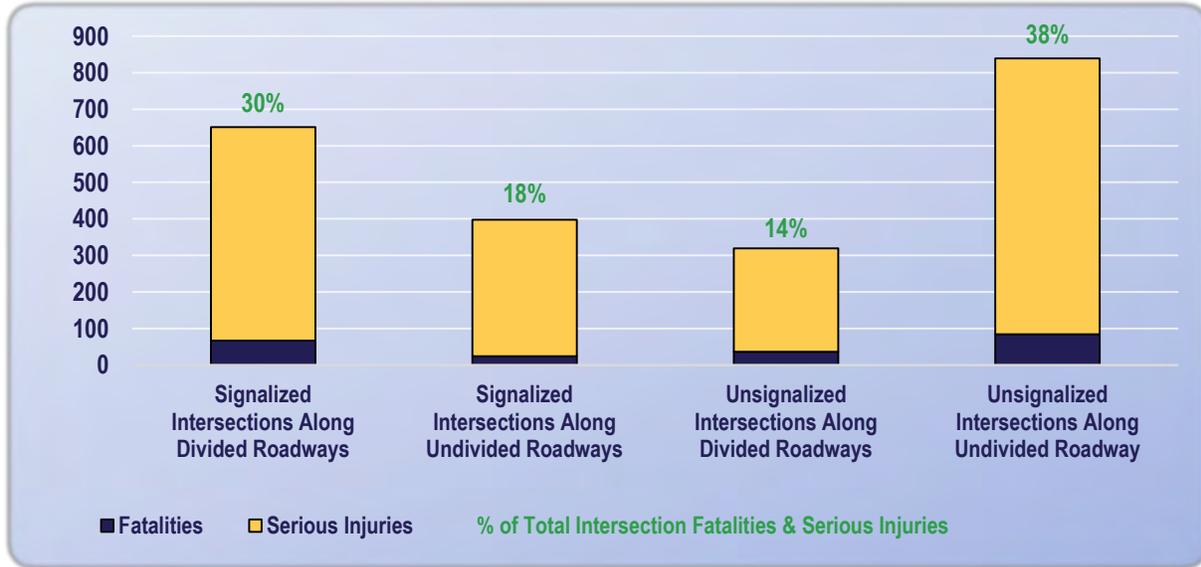


1

Intersections

CRASH DATA SUMMARY

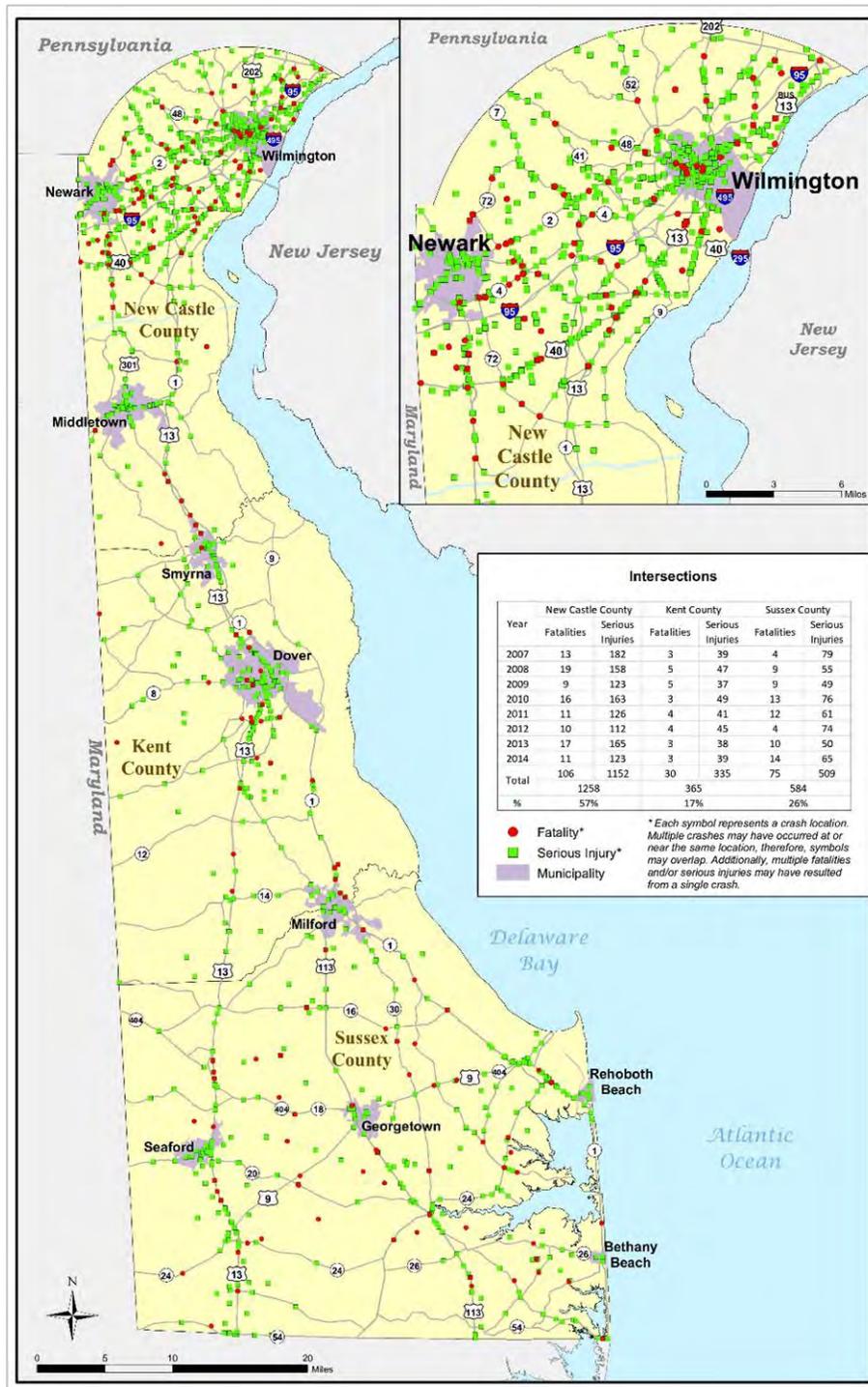
LOCATION



1

Intersections

CRASH DATA SUMMARY



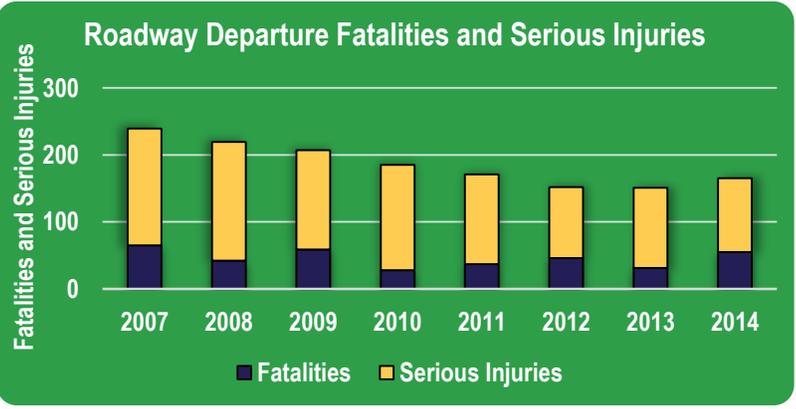
2

Roadway Departure

EMPHASIS AREA GOAL: Reduce the combined number of fatalities and serious injuries in roadway departure crashes by 20 every 5 years (4 per year) to achieve the overall goal of a 50 percent reduction by 2035.

Background

FHWA defines a roadway departure crash as a non-intersection crash which occurs after a vehicle crosses an edge line, a center line, or otherwise leaves the traveled way. Frequently, a roadway departure results in the departing vehicle striking another vehicle or one or more fixed objects located outside the travel way such as trees, utility poles, ditches, and bridge abutments, resulting in an injury or fatality. Often times, roadway departure crashes involve a single vehicle; therefore, strategies should first address keeping vehicles on the roadway and secondly address the consequence of leaving the roadway. In Delaware, roadway departure crashes represent the largest percentage of fatalities (40 percent) and second highest percentage of serious injuries (21 percent) based on 2007 through 2014 crash data.



Data Trends: 2007 to 2014 Roadway Departure Fatalities & Serious Injuries

Strategies to Reach Goal

- Prioritize and implement systemic improvements (e.g., rumble strips, high-friction surface treatment, median barrier) along high-risk locations for roadway departure crashes
- Install effective countermeasures for roadway departure crashes at high crash locations
- Install compliant signing and pavement markings approaching horizontal curves statewide
- Implement a system to correlate crash frequency and skid resistance to identify locations for resurfacing and/or high-friction pavement surface treatments
- Maintain clear zones whenever possible, including removing, preventing, or delineating trees within the clear zone and implementing planting and mowing guidelines to prevent vegetation from growing in hazardous locations

- 79% occurred in single-vehicle crashes
- 67% were male
- 51% occurred along collector and local roadways
- 49% occurred in rural areas
- 49% occurred within a horizontal curve
- 40% occurred during dark, unlit conditions
- 39% involved impaired driving
- 38% occurred on a Saturday or Sunday
- 32% were 20 to 29 years old
- 32% of fatalities and serious injuries in Sussex County were roadway departures
- 26% were unrestrained motorists
- 22% occurred on wet/snowy/icy roadways
- 22% involved speeding
- 20% occurred between 12 AM and 3 AM
- 20% involved striking a tree(s)



- Coordinate with utility companies to delineate, shield, or redesign poles as part of the permit process or at locations with a history of crashes involving utility poles
- Implement guardrail repair and maintenance guidelines for installing and or upgrading to provide compliant guardrail
- Develop policies and guidelines to implement effective safety measures to reduce the frequencies and severity of roadway departure crashes



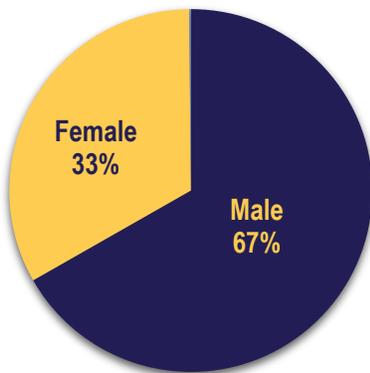
2

Roadway Departure

CRASH DATA SUMMARY

Roadway Departure – Persons fatally or seriously injured in crashes that involved a roadway departure as defined by FHWA’s roadway departure definition

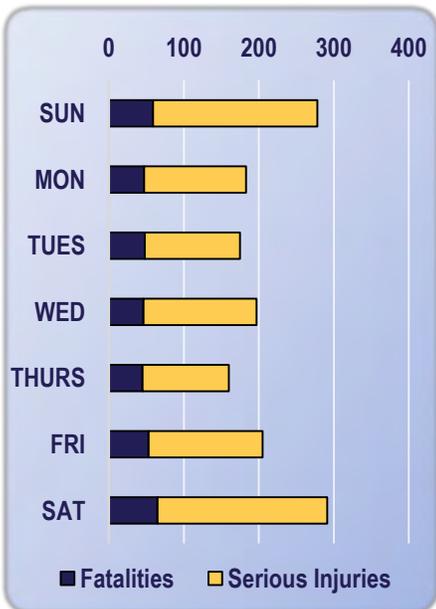
PERSON TYPE



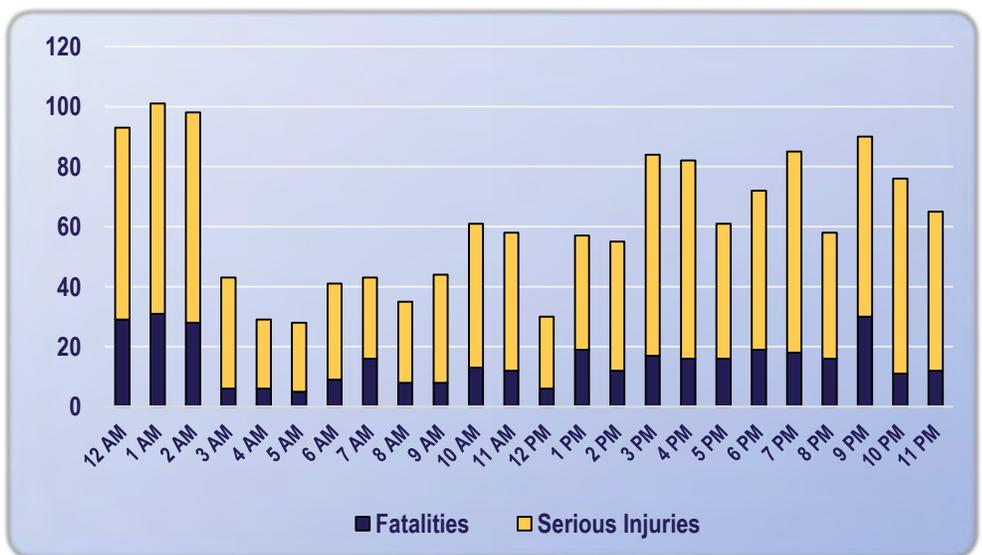
Roadway Departure Fatalities and Serious Injuries



DAY OF WEEK



TIME OF DAY

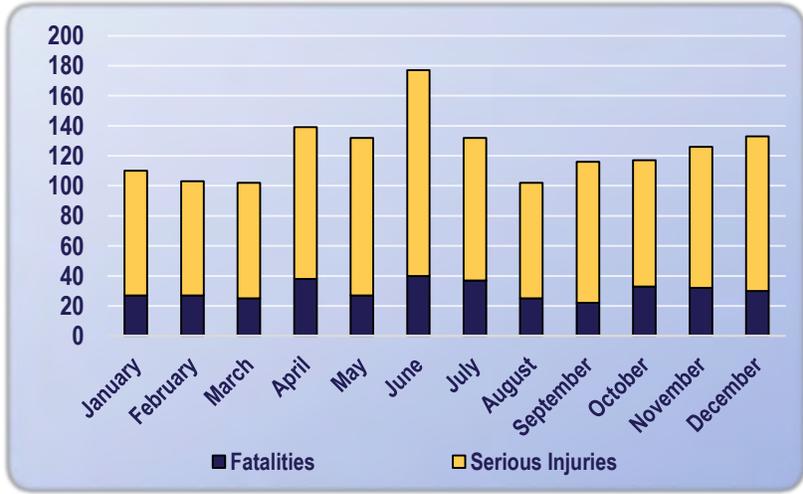


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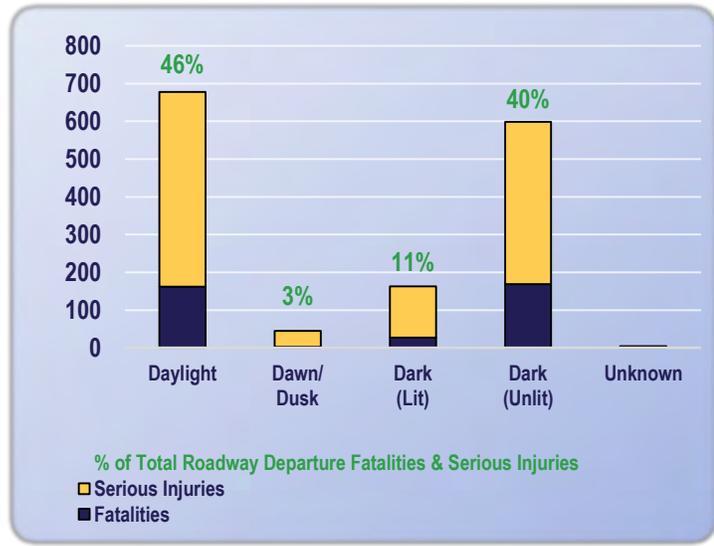
Roadway Departure

CRASH DATA SUMMARY

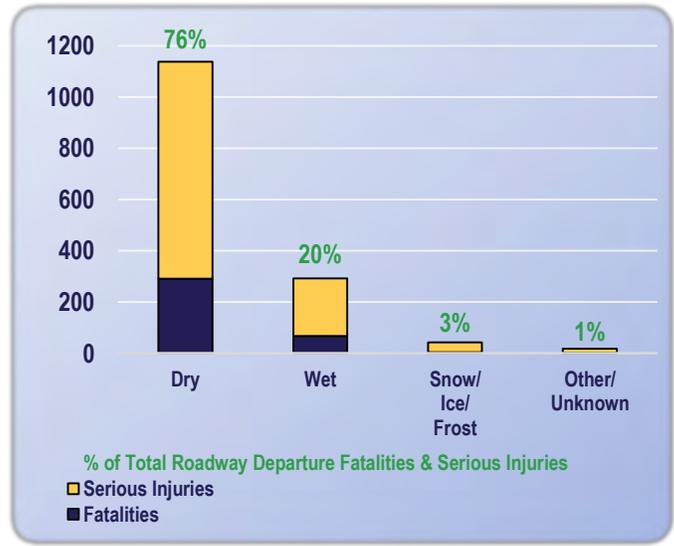
MONTH



LIGHTING CONDITION



SURFACE CONDITION

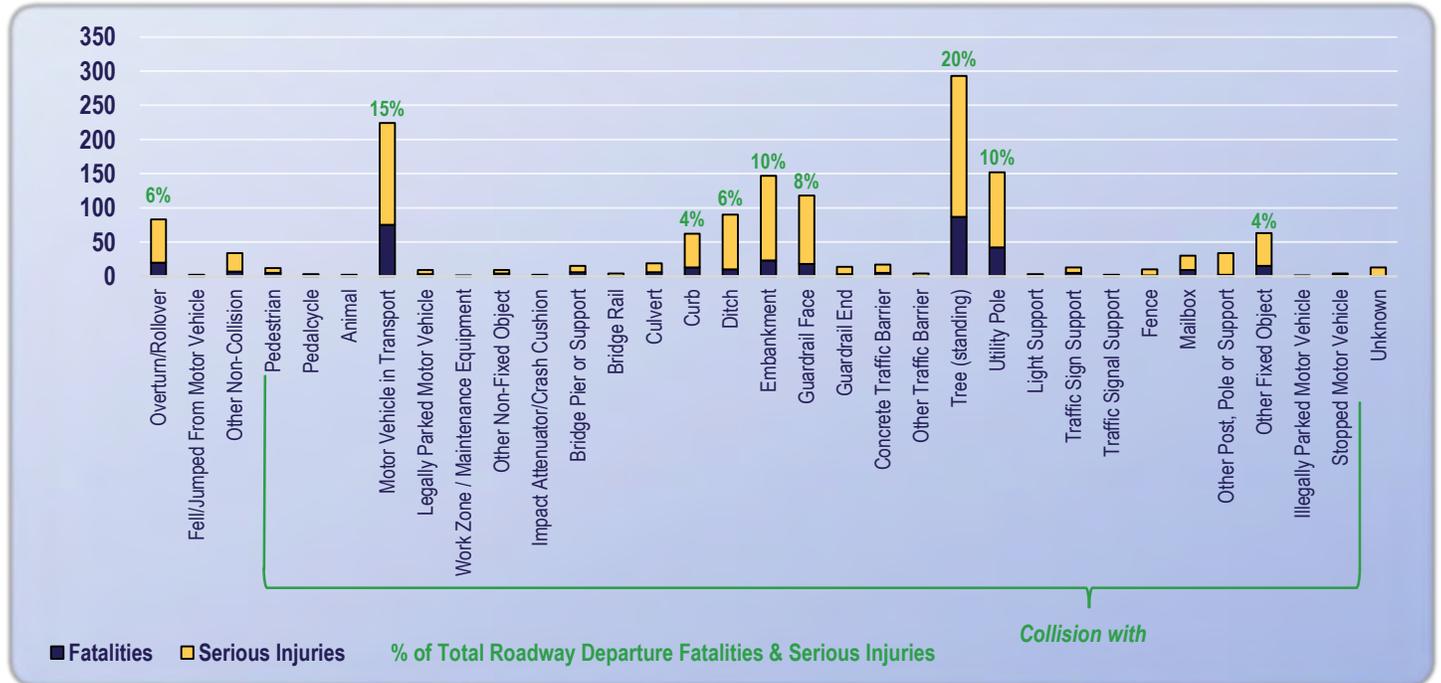


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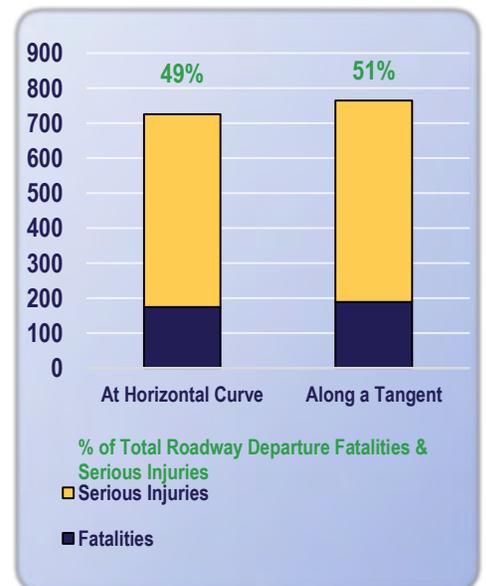
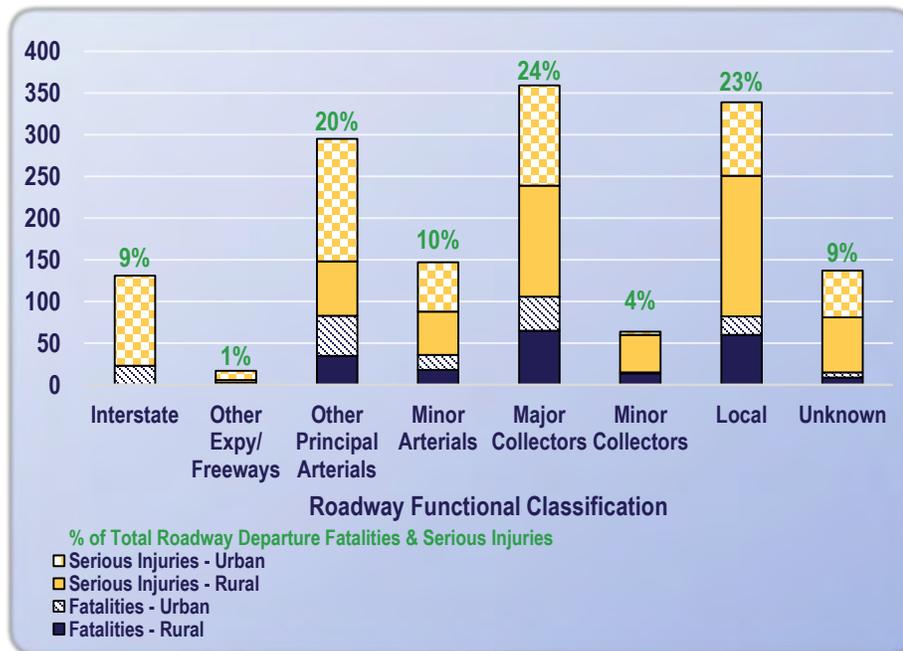
Roadway Departure

CRASH DATA SUMMARY

HARMFUL EVENT



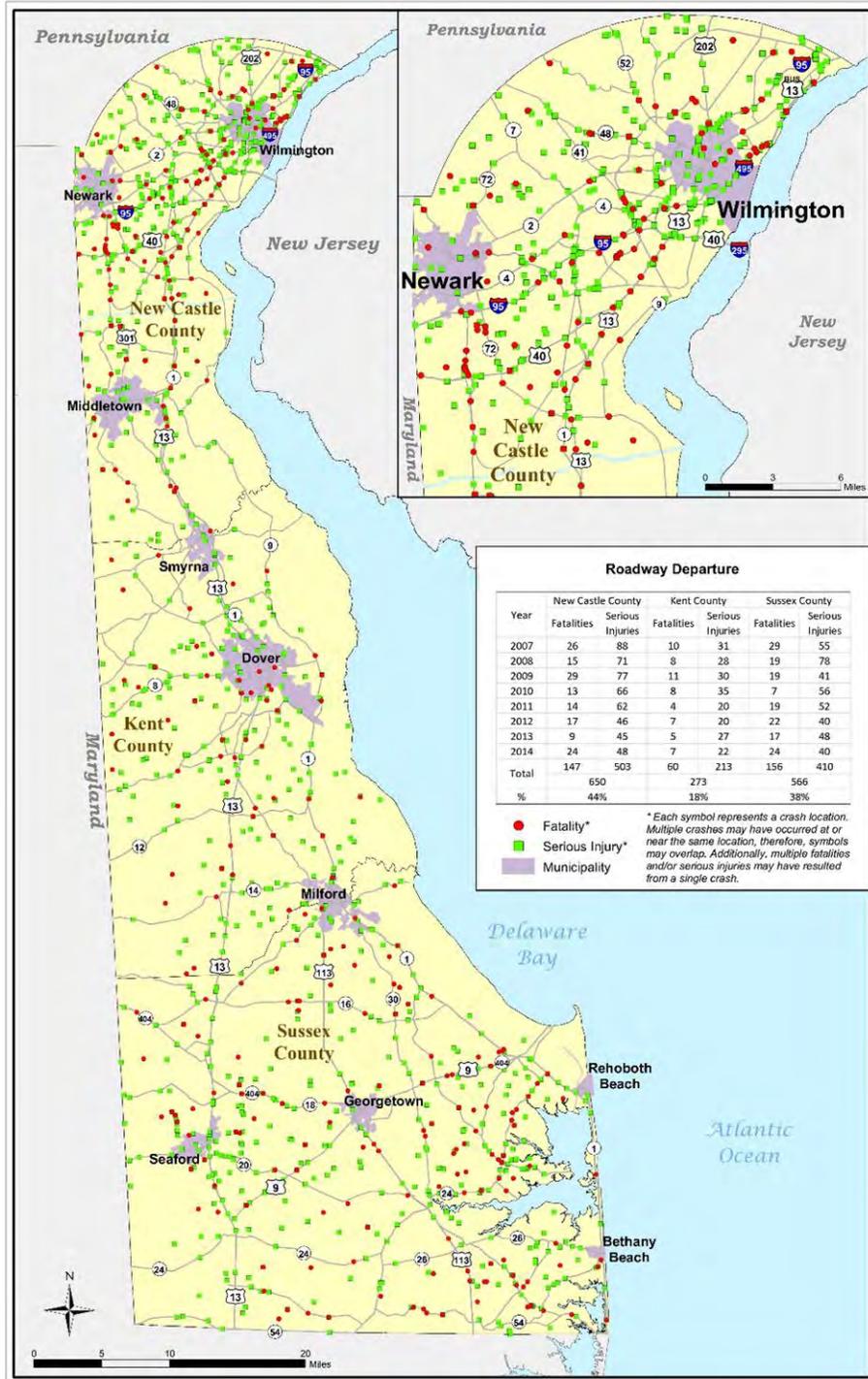
LOCATION



2

Roadway Departure

CRASH DATA SUMMARY



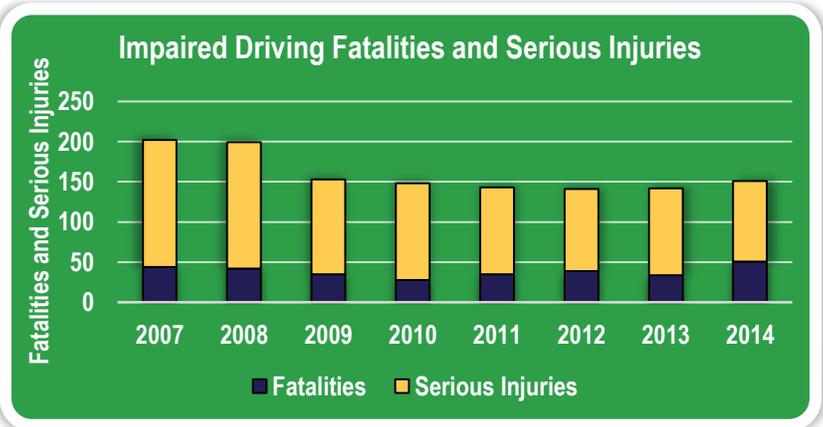
3

Impaired Driving

EMPHASIS AREA GOAL: Reduce the combined number of impaired driving fatalities and serious injuries by 20 every 5 years (4 per year) to achieve the overall goal of a 50 percent reduction by 2035.

Background

Impaired driving includes all fatalities and serious injuries occurring in a crash involving a driver under the influence of alcohol, drugs, or medication. In Delaware, a driver is considered legally impaired when their blood alcohol concentration (BAC) is 0.08 percent or greater. Drivers can also be charged with driving under the influence (DUI) if their BAC is below the 0.08 limit and they are under the influence of legal medications but they appear to be impaired enough to pose a threat to others. Additionally, the presence of any illegal drug is enough evidence to convict a driver of driving under the influence (DUI). Drivers under the age of 21 with a BAC of 0.02 or higher can be arrested for DUI. Delaware has an “implied consent” law, meaning that you if you drive in Delaware and are suspected of DUI, you voluntarily agree to a chemical test to determine your degree of impairment. Refusal to take the chemical test results in the loss of driving privileges for a minimum of 12 months. Ignition Interlock Devices and satisfactory completion of an alcohol education/treatment program are mandatory for license reinstatement beginning with the first DUI offense. In Delaware, impaired driving (alcohol and drugs) was a factor in 34 percent of all fatalities and 18 percent of all serious injuries from 2007 through 2014.

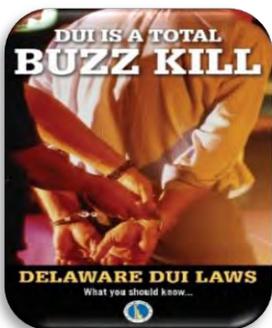


Data Trends: 2007 to 2014 Impaired Driving Fatalities & Serious Injuries

- 72% were male
- 59% occurred on a Friday, Saturday, or Sunday
- 51% were in roadway departure crashes
- 47% occurred during dark (unlit) conditions
- 45% occurred in New Castle County
- 38% were 20 to 29 years old
- 29% were unrestrained motorists
- 28% occurred between 12 AM and 3 AM
- 25% occurred on principal arterials
- 15% involved speeding

Strategies to Reach Goal

- Develop and distribute consistent public information messages to increase public awareness of the law and dangers of impaired driving and provide information about forms of transportation to ensure a safe ride home
- Conduct targeted high-visibility enforcement campaigns, such as DUI checkpoints, to reduce impaired driving
- Increase risk perception by publicizing information about enforcement initiatives
- Educate servers and liquor store employees to identify impaired persons and discourage driving
- Improve data collection and monitor impaired driving trends, especially when both drugs and alcohol may be contributing factors
- Promote and support the treatment of alcohol and drug addictions of impaired drivers
- Support legislative enhancements to impaired driving laws (both alcohol and drugs)



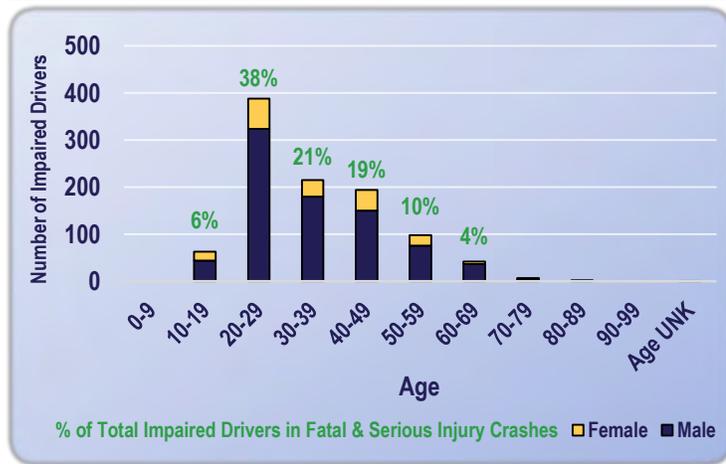
3

Impaired Driving

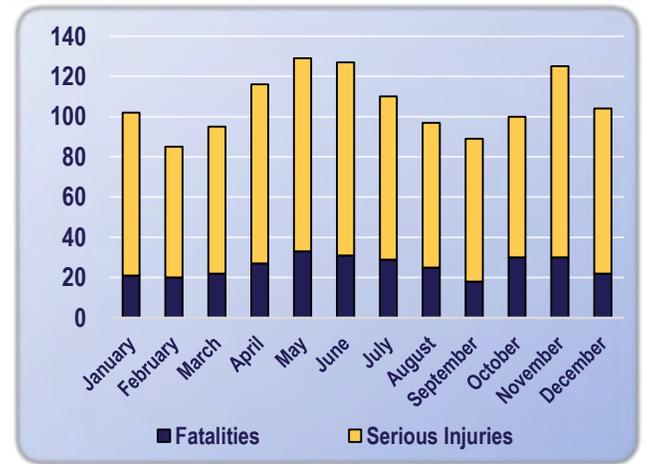
CRASH DATA SUMMARY

Impaired Driving – Persons fatally or seriously injured in crashes that involved an impaired driver

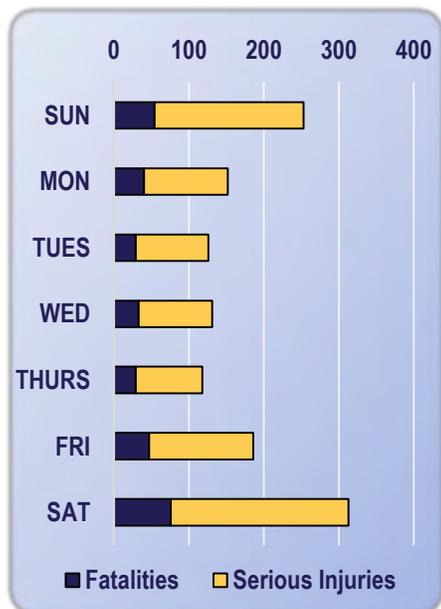
DRIVER TYPE



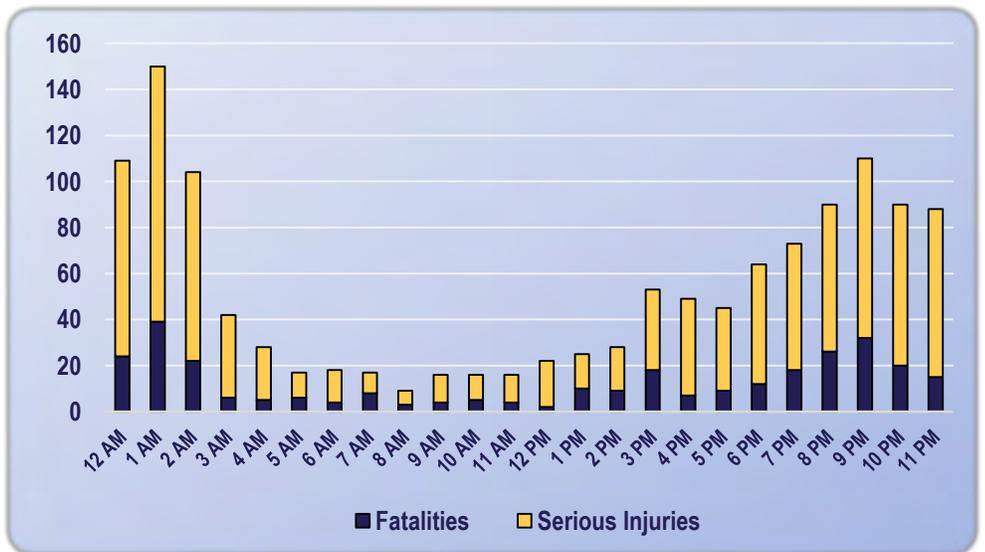
MONTH



DAY OF WEEK



TIME OF DAY

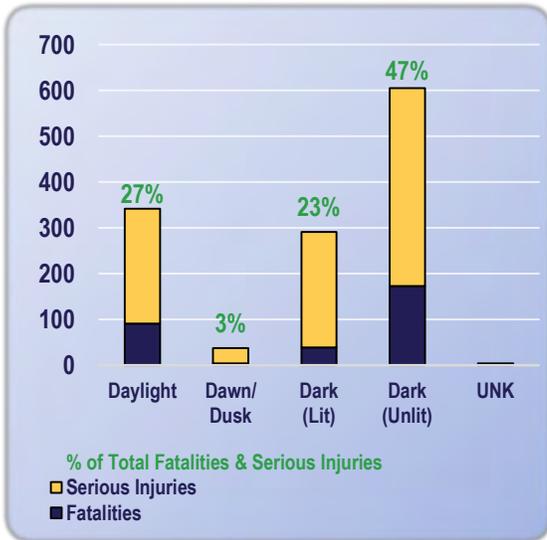


3

Impaired Driving

CRASH DATA SUMMARY

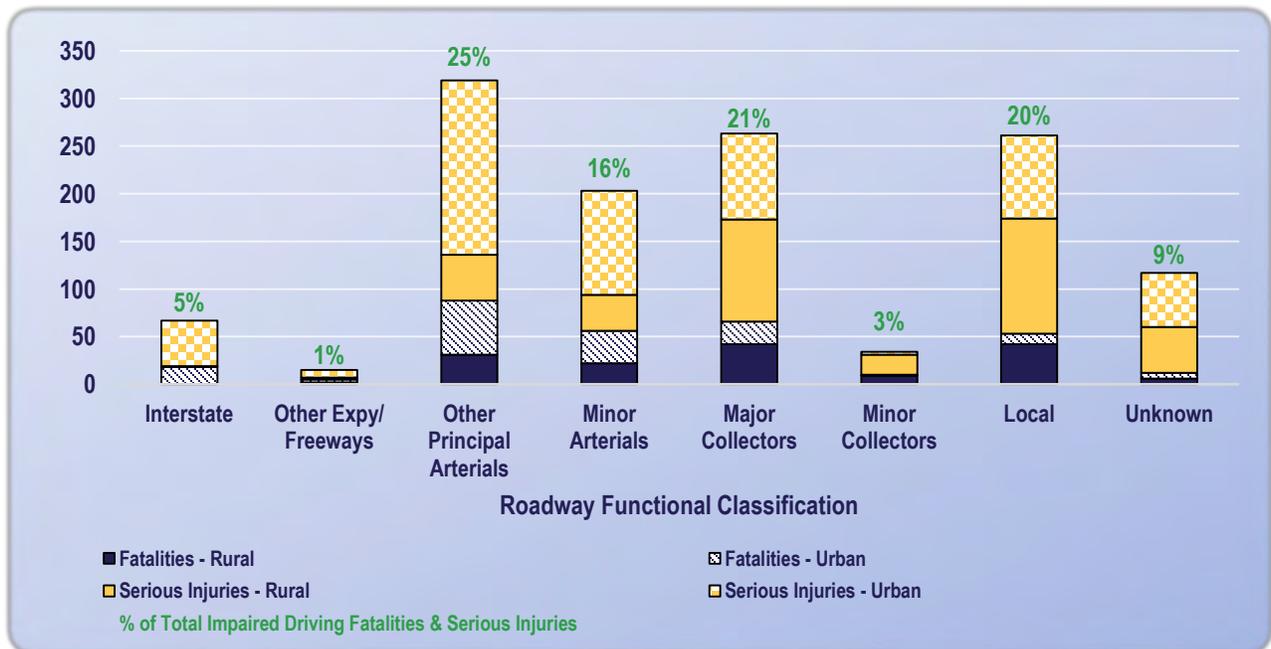
LIGHTING CONDITION



MANNER OF IMPACT



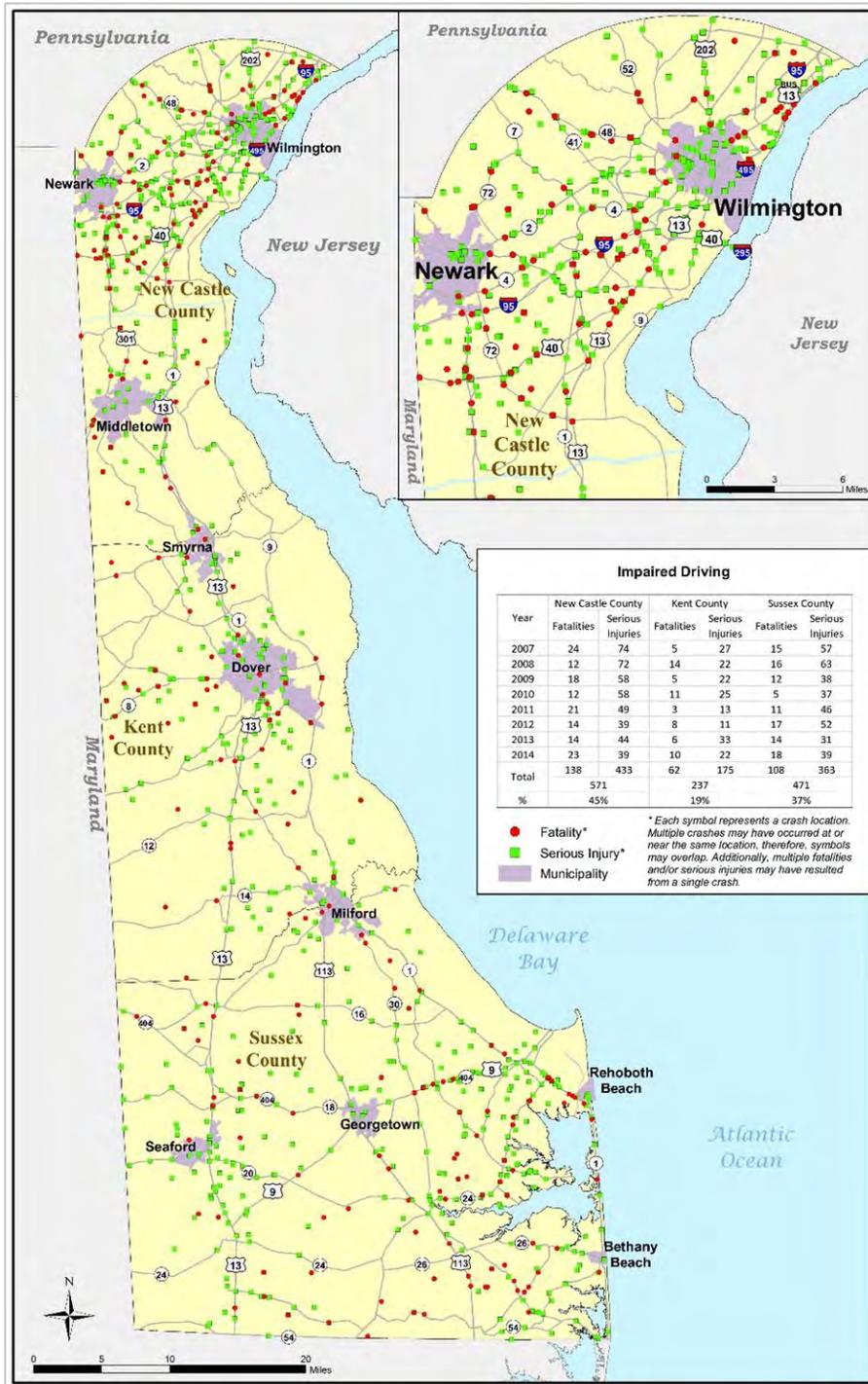
LOCATION



3

Impaired Driving

CRASH DATA SUMMARY



4

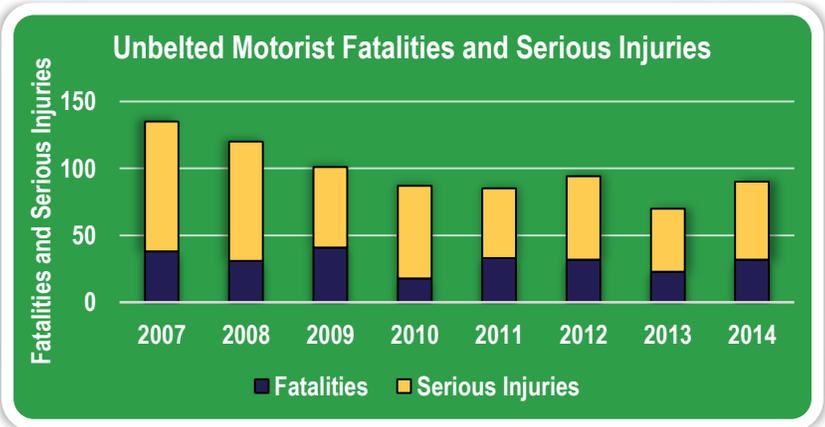
Unrestrained Motorists

EMPHASIS AREA GOAL: Reduce the combined number of unrestrained motorist fatalities and serious injuries by 10 every 5 years (2 per year) to achieve the overall goal of a 50 percent reduction by 2035.

Background

Wearing a seat belt is the most effective way to prevent serious injuries and death during a crash. Seat belts provide the best defense by keeping motorists safe and secure inside their vehicle and preventing motorists from being ejected due to the force of the impact in the event of a crash. In Delaware, the vehicle driver is responsible for making sure that everyone in the vehicle is properly wearing a seat belt.

Delaware joined many other states in 2003 by establishing a primary seat belt enforcement law, allowing law enforcement officials to stop a vehicle for a seatbelt use violation alone. Delaware's seat belt usage rate has generally increased since establishing the primary seat belt law and reached 92 percent in 2014; however, 43 percent of vehicle occupant fatalities and 13 percent of vehicle occupant serious injuries from 2007 through 2014 were unrestrained motorists. Crashes in which motorists are unrestrained are also associated with a higher number of other poor driving characteristics, including speeding and impaired driving. Additional public awareness and heightened enforcement may further increase the rate of seat belt usage and, in doing so, contribute to a reduction in statewide fatalities and serious injuries.



Data Trends: 2007 to 2014 Unrestrained Motorist Fatalities & Serious Injuries

- 68% were male
- 67% were drivers
- 56% of all fatalities in Sussex County were unrestrained motorists
- 49% were in roadway departure crashes
- 47% were in impaired driving crashes
- 41% occurred on a Saturday or Sunday
- 34% were 20 to 29 years old
- 31% were impaired drivers
- 24% occurred between 12 AM and 3 AM
- 19% involved speeding

Strategies to Reach Goal

- Develop and distribute consistent public information messages to increase public awareness of the law and safety benefits related to seat belt usage, especially among high-risk groups
- Conduct targeted high-visibility enforcement campaigns, such as nighttime saturation patrols, to increase seat belt usage
- Ensure drivers education instructors incorporate the laws and benefits related to seat belt usage into their lesson plans

- Increase risk perception by publicizing information about enforcement initiatives
- Support legislative enhancements to increase seatbelt compliance and the penalties for violators
- Promote and enforce the use of child and infant restraints



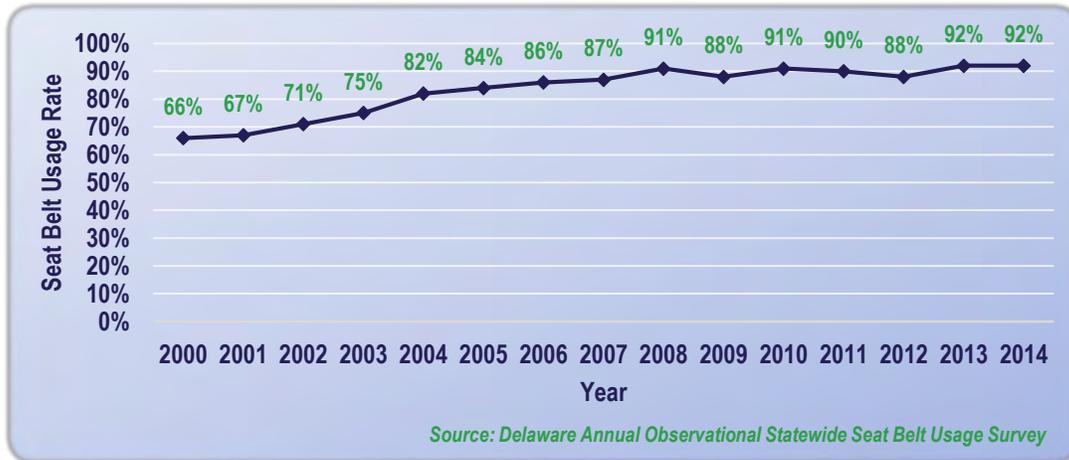
4

Unrestrained Motorists

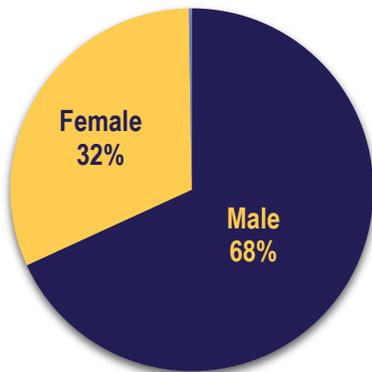
CRASH DATA SUMMARY

Unrestrained Motorists – Drivers or passengers of motor vehicles excluding those in the following vehicle styles: Farm Tractors, Motorcycles, Scooters, Snowmobiles, Horse and Buggies, ATVs

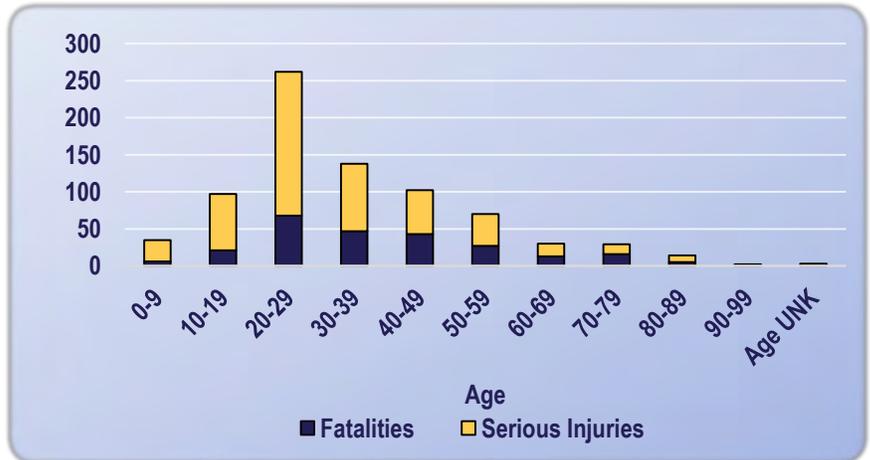
SEAT BELT USAGE IN DELAWARE



PERSON TYPE



Unrestrained Motorist Fatalities and Serious Injuries

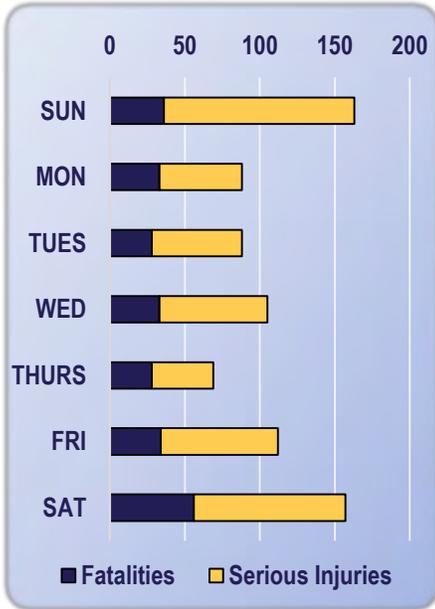


4

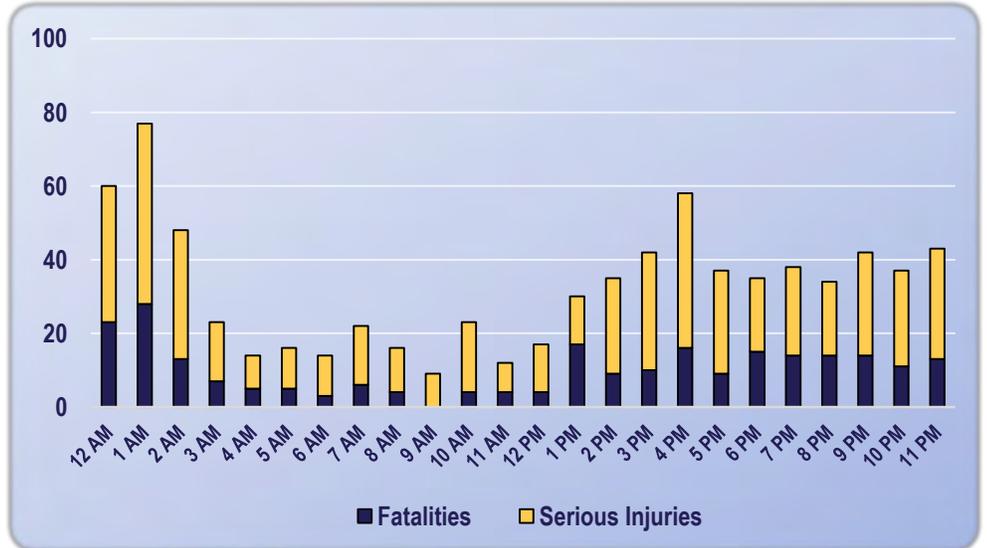
Unrestrained Motorists

CRASH DATA SUMMARY

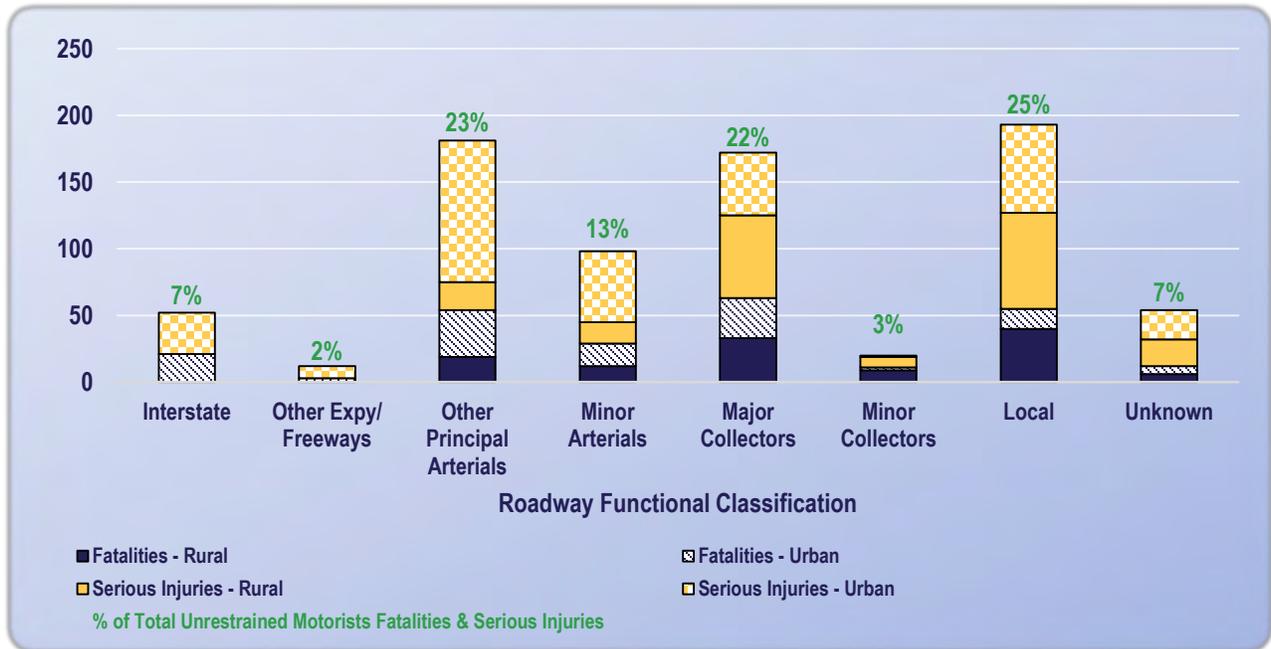
DAY OF WEEK



TIME OF DAY



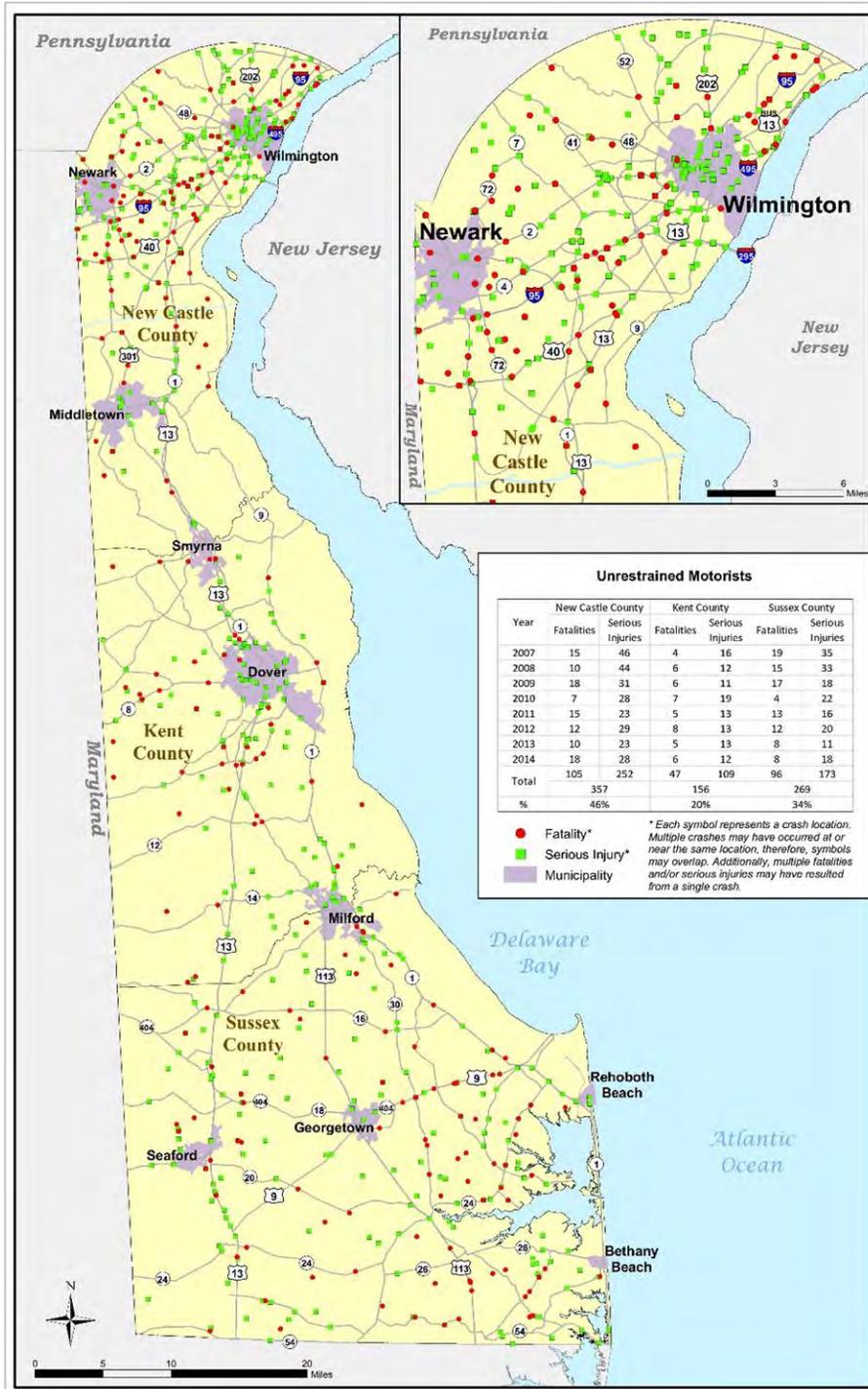
LOCATION



4

Unrestrained Motorists

CRASH DATA SUMMARY



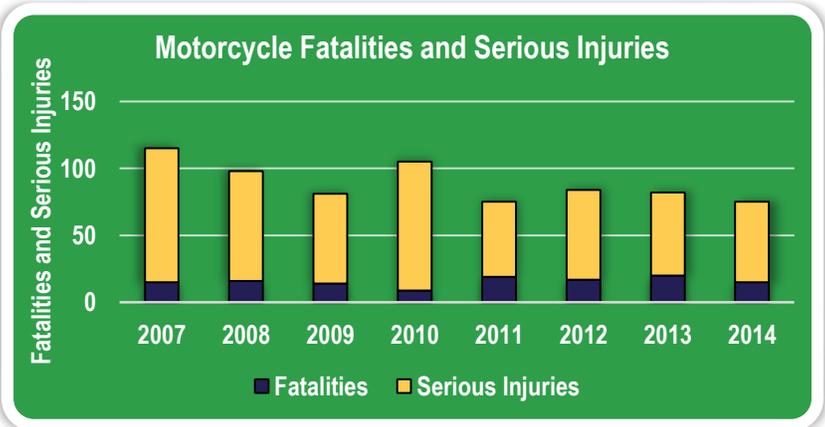
5

Motorcycles

EMPHASIS AREA GOAL: Reduce the combined number of motorcycle fatalities and serious injuries by 10 every 5 years (2 per year) to achieve the overall goal of a 50 percent reduction by 2035.

Background

In 2014, the death rate for motorcyclists was 6.6 per 10,000 registrations, whereas the death rate for all registered vehicles was 1.4. Compared to passenger vehicles, motorcycles tend to be more difficult to operate, are less visible to other motorists on the roadway, provide virtually no protection to their riders (particularly when riders are not wearing helmets), and are capable of traveling at high speeds; therefore, motorcyclists are susceptible to greater injury when involved in a crash. Nearly one out of every four motorcycle fatalities or serious injuries result from roadway departure crashes. In Delaware, motorcyclists account for 14 percent of all fatalities and 11 percent of all serious injuries from 2007 through 2014.



In Delaware, motorcyclists account for 14 percent of all fatalities and 11 percent of all serious injuries from 2007 through 2014.

Motorcycle drivers are required to obtain a special endorsement on their driver's license by passing both a written exam and a road skills test or by completing the approved motorcycle rider education program. Law enforcement may impound motorcycles of riders who are driving without a motorcycle endorsement. Delaware's helmet law requires all motorcycle riders to have a helmet in their possession; however, only requires those under the age of 19 to wear a helmet when riding.

Strategies to Reach Goal

- Develop and distribute consistent public information messages to increase public awareness of motorcycle safety
- Conduct high-visibility enforcement campaigns for high-risk driving behaviors
- Promote the use of reflective and protective clothing, including helmet use
- Enhance and support motorcycle training courses
- Support legislative action to strengthen motorcycle safety and endorsement laws and motorcycle enforcement efforts
- Improve infrastructure and consider motorcycles when installing improvements, such as high-friction surface treatments, Safety EdgeSM, and advance warning signs (e.g., Bump, Dip, etc.)



Data Trends: 2007 to 2014 Motorcycle Fatalities & Serious Injuries

- 88% were male
- 54% occurred on a Friday, Saturday or Sunday
- 47% occurred in June, July, or August
- 45% were not wearing a helmet
- 34% were in single-vehicle crashes
- 34% occurred at an intersection
- 32% occurred between 3 PM and 7 PM
- 28% occurred within a horizontal curve
- 26% occurred on principal arterial roadways
- 24% were 40 to 49 years old
- 24% were in roadway departure crashes
- 17% were impaired drivers (or riding with an impaired driver)



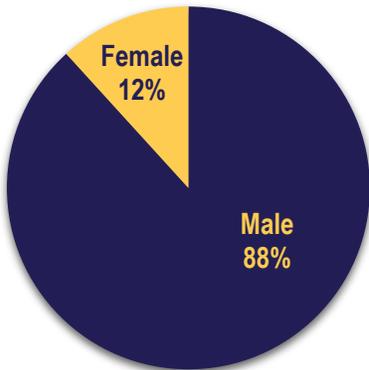
5

Motorcycles

CRASH DATA SUMMARY

Motorcycles – Motorcycle drivers or passengers fatally or seriously injured

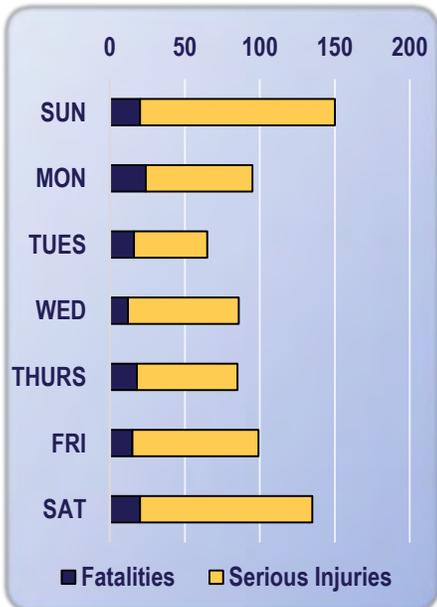
PERSON TYPE



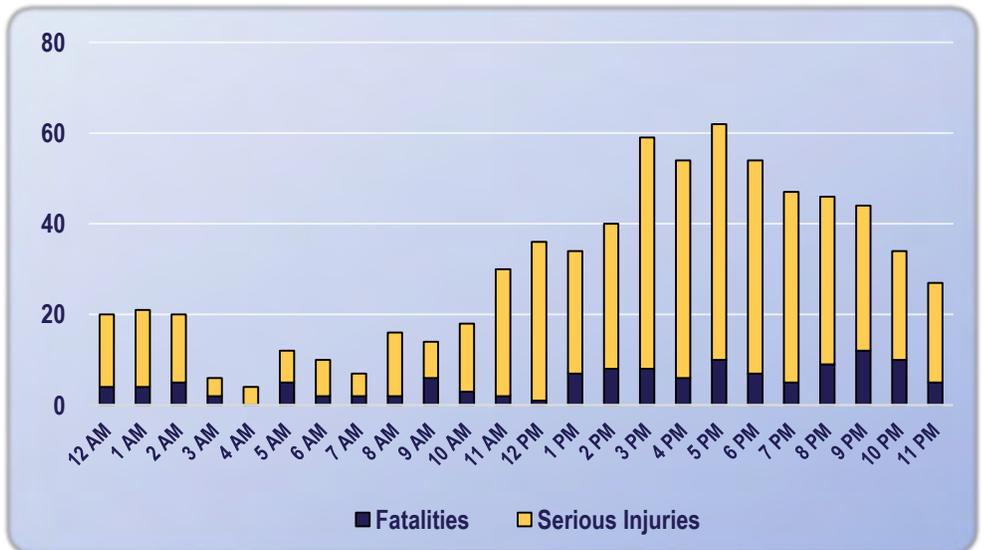
Motorcycle Fatalities and Serious Injuries



DAY OF WEEK



TIME OF DAY

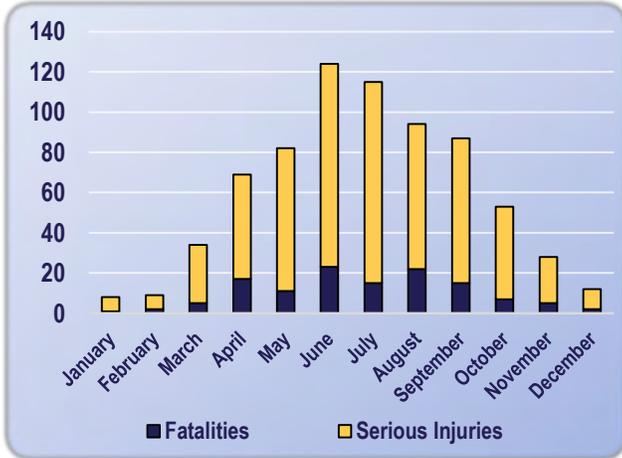


5

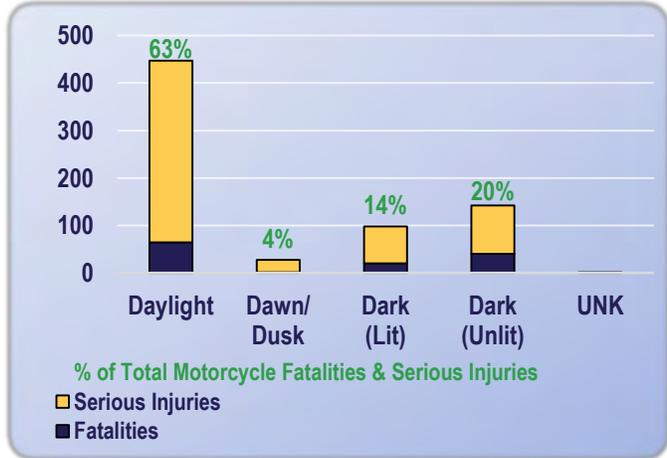
Motorcycles

CRASH DATA SUMMARY

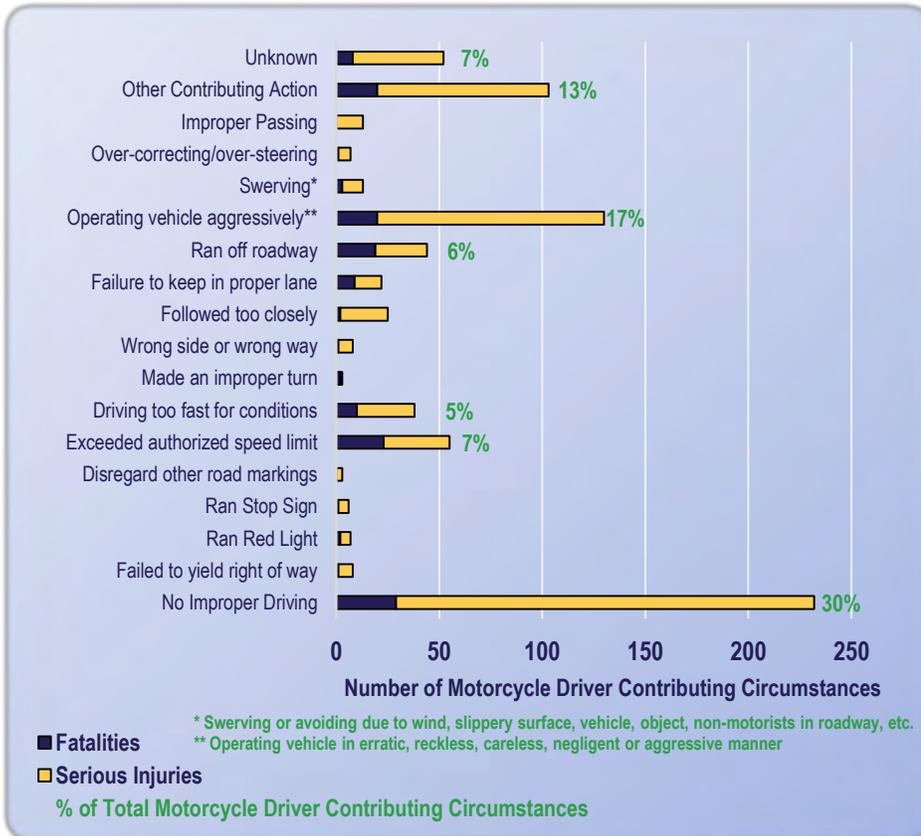
MONTH



LIGHTING CONDITION



DRIVER CONTRIBUTING CIRCUMSTANCE



HELMET USAGE

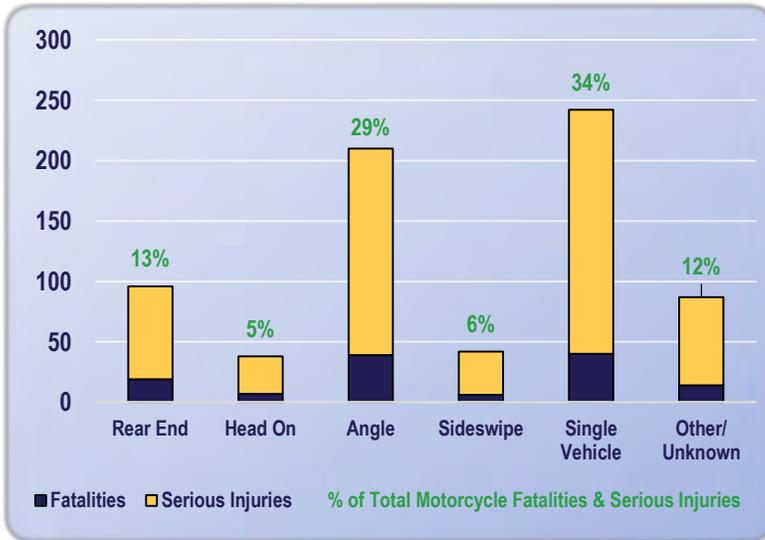


5

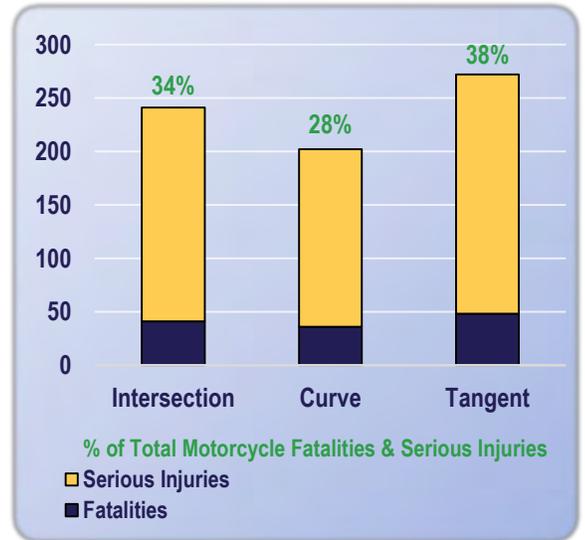
Motorcycles

CRASH DATA SUMMARY

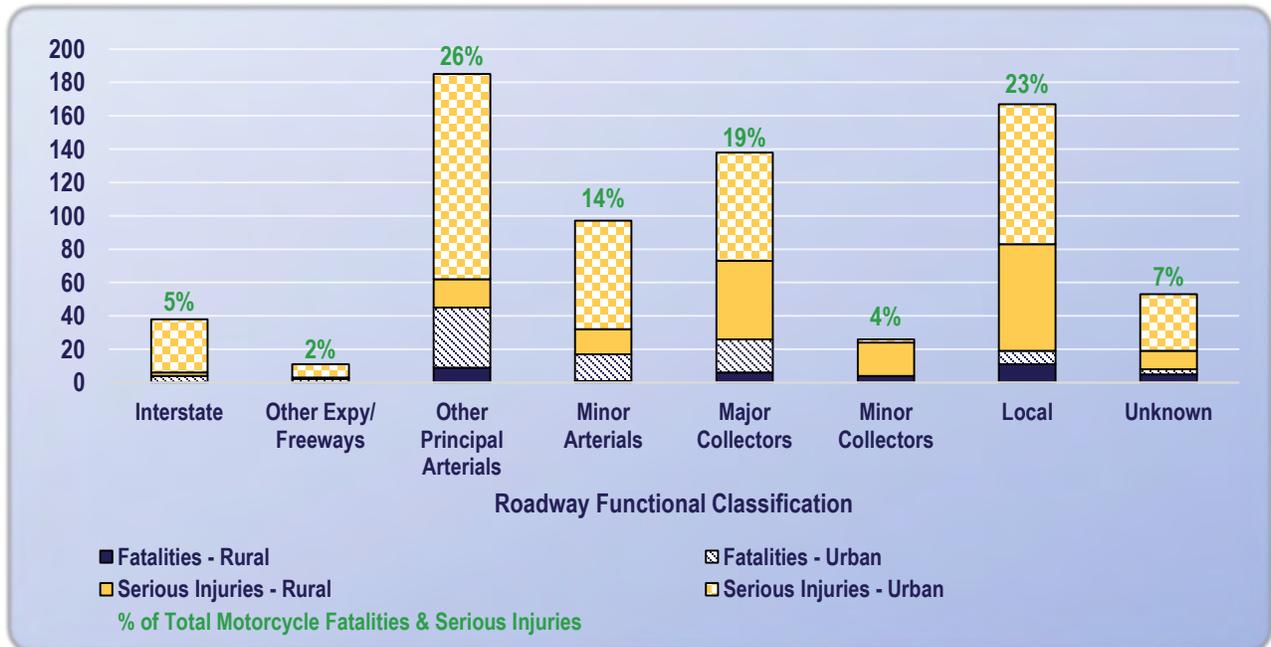
MANNER OF IMPACT



LOCATION



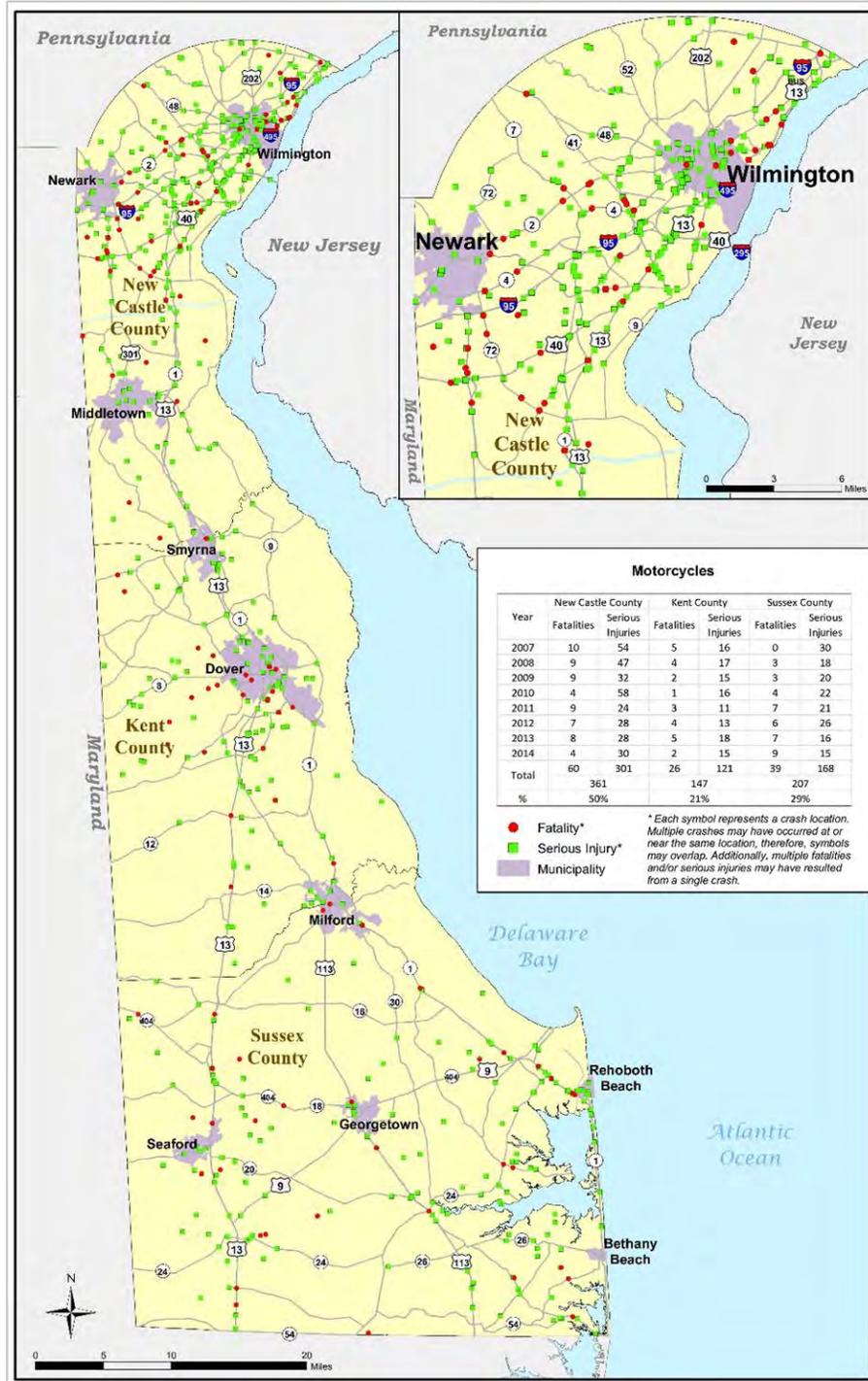
LOCATION



5

Motorcycles

CRASH DATA SUMMARY



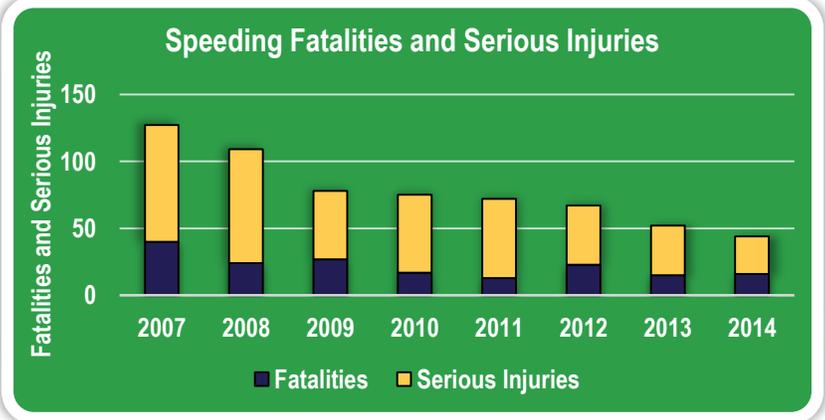
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Speeding

EMPHASIS AREA GOAL: Reduce the combined number of speeding fatalities and serious injuries by 10 every 5 years (2 per year) to achieve the overall goal of a 50 percent reduction by 2035.

Background

Fatalities and serious injuries involving speeding include crashes reported as involving at least one motorist exceeding the speed limit or driving too fast for conditions. Speeding, an aggressive driving behavior, is commonly associated with other adverse behaviors, such as impaired driving and not wearing a seat belt. In Delaware, 19 percent of fatalities and 9 percent of serious injuries involved speeding as a contributing factor from 2007 through 2014. However, speeding may potentially be underreported as a driver contributing circumstance or primary contributing circumstance. For example, when a crash involves impaired driving and speeding, impaired driving tends to become the focus of the reporting law enforcement officer.



Strategies to Reach Goal

- Develop and distribute consistent public information messages to increase public awareness of the law and consequences of speeding, especially among high-risk groups
- Conduct targeted high-visibility enforcement campaigns to decrease speeding
- Ensure drivers education instructors incorporate speeding laws and the benefits of driving at a safe and reasonable speed into their lesson plans
- Support legislation to develop and implement creative solutions to strengthen speeding laws and reduce the occurrence of speeding-related incidents
- Reduce driver frustration by providing consistent driver expectations regarding speed limits
- Improve highway engineering designs to reduce speed differentials and increase speed limit compliance

Data Trends: 2007 to 2014 Speeding Fatalities & Serious Injuries

- 68% were male
- 56% occurred in New Castle County
- 54% were roadway departure crashes
- 50% occurred on collector or local roads
- 50% occurred on a Friday, Saturday, or Sunday
- 42% occurred in rural areas
- 39% during dark, unlit conditions
- 34% were 20 to 29 years old
- 30% occurred on wet/snowy/icy roadways
- 32% involved impaired driving
- 24% were unrestrained motorists
- 27% occurred between 7 PM and 11 PM
- 18% were motorcyclists



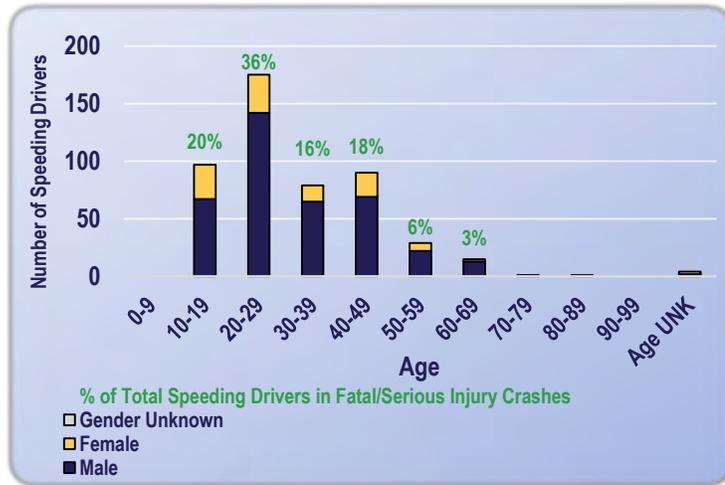
6

Speeding

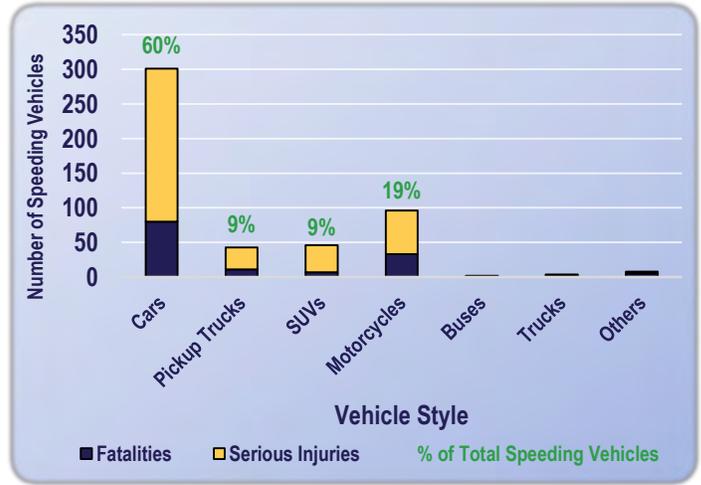
CRASH DATA SUMMARY

Speeding – Persons fatally or seriously injured in crashes that involved a speeding driver

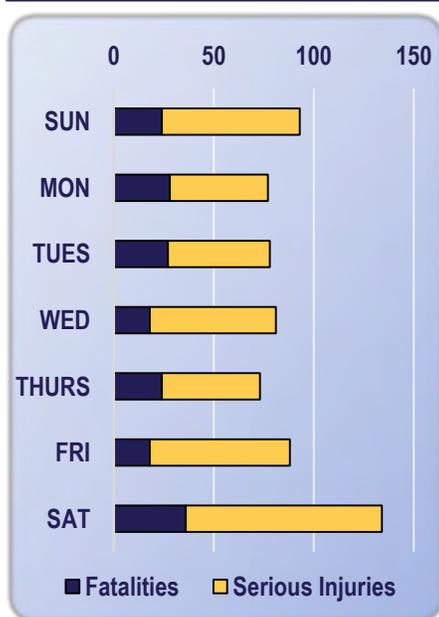
DRIVER TYPE



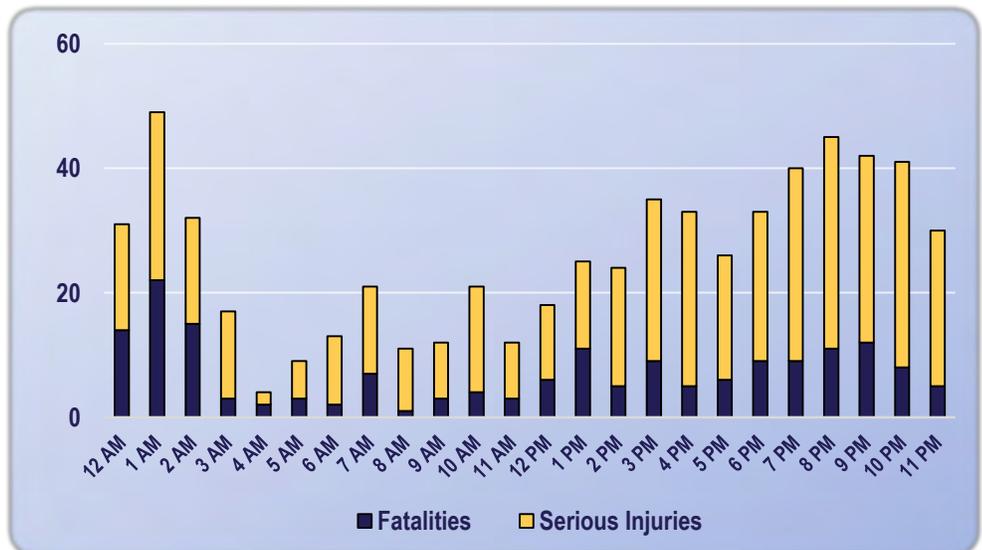
VEHICLE TYPE



DAY OF WEEK



TIME OF DAY

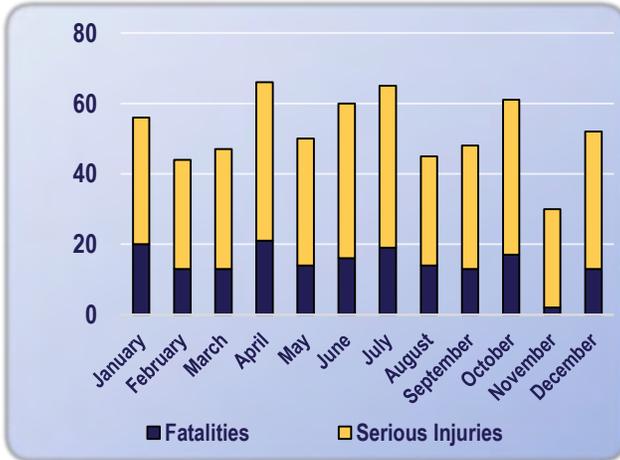


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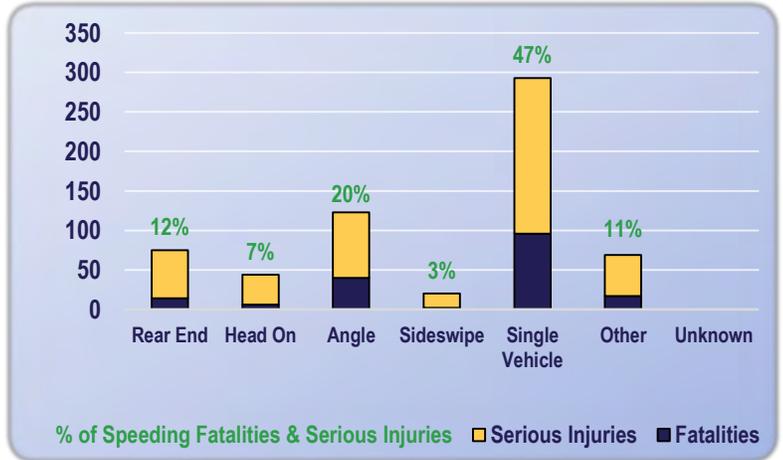
Speeding

CRASH DATA SUMMARY

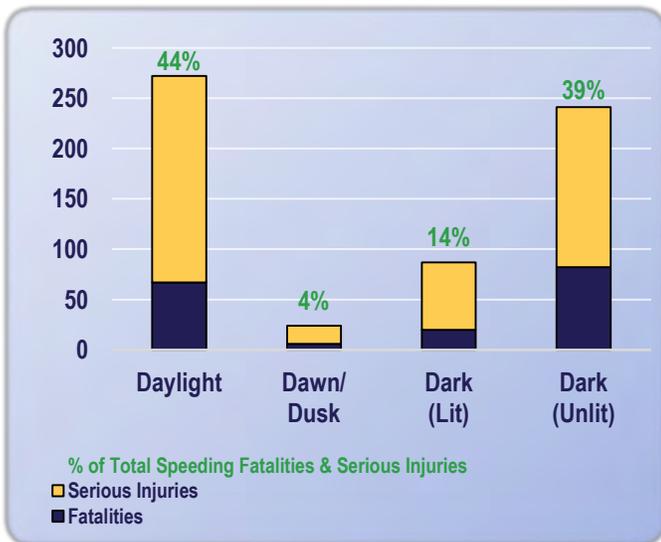
MONTH



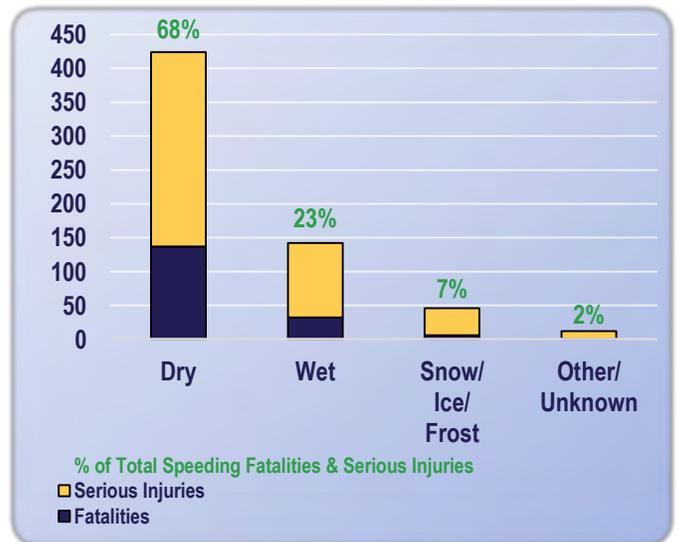
MANNER OF IMPACT



LIGHTING CONDITION



SURFACE CONDITION

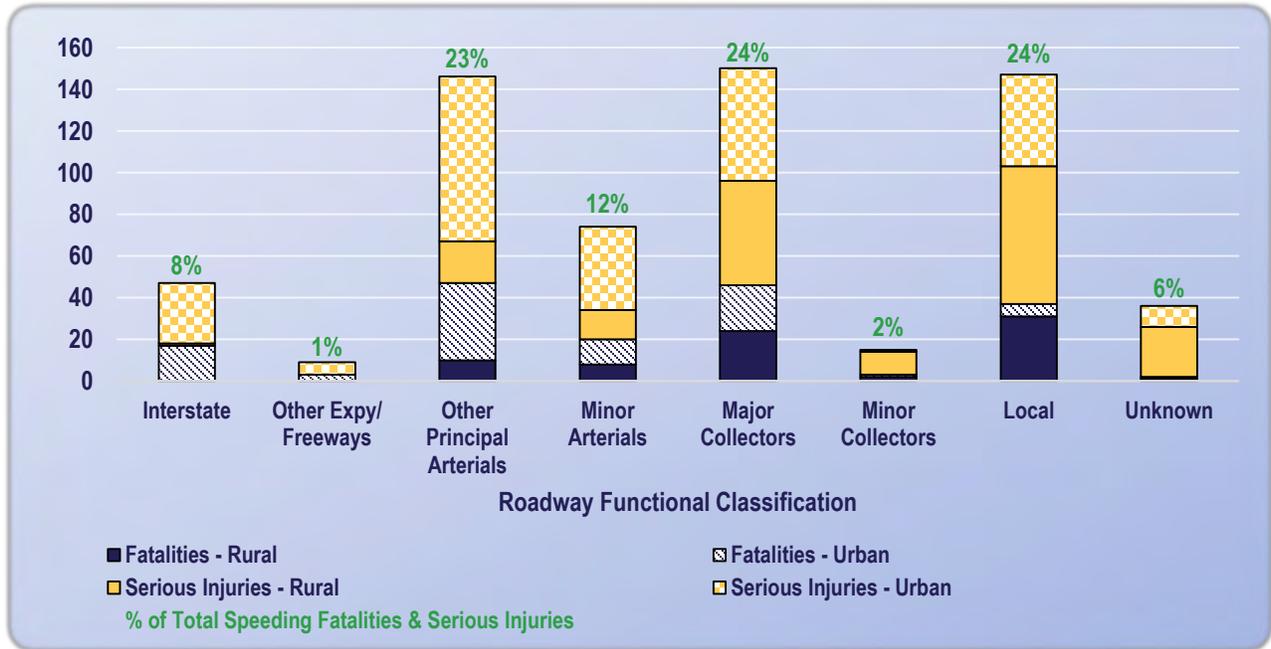


6

Speeding

CRASH DATA SUMMARY

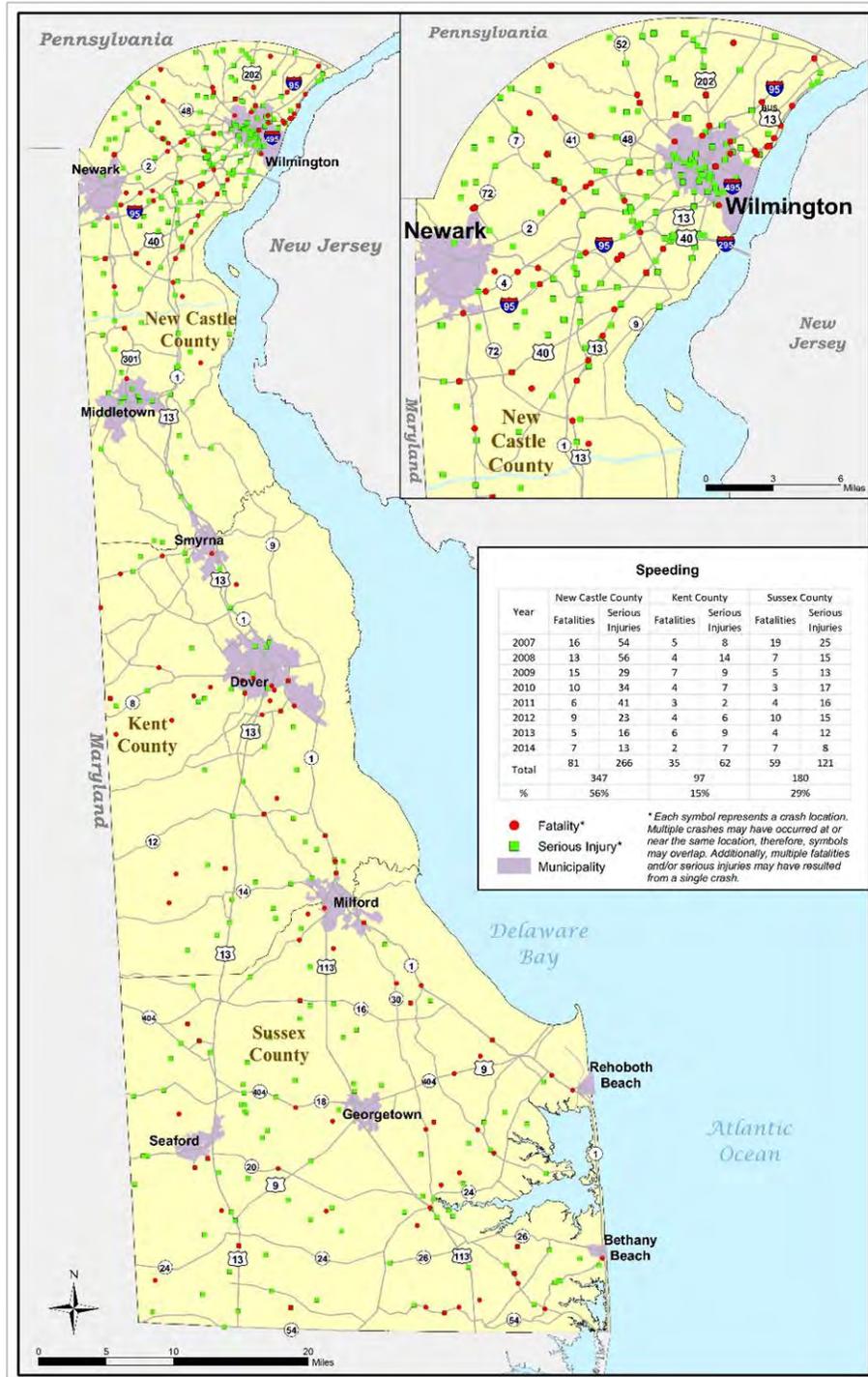
LOCATION



6

Speeding

CRASH DATA SUMMARY



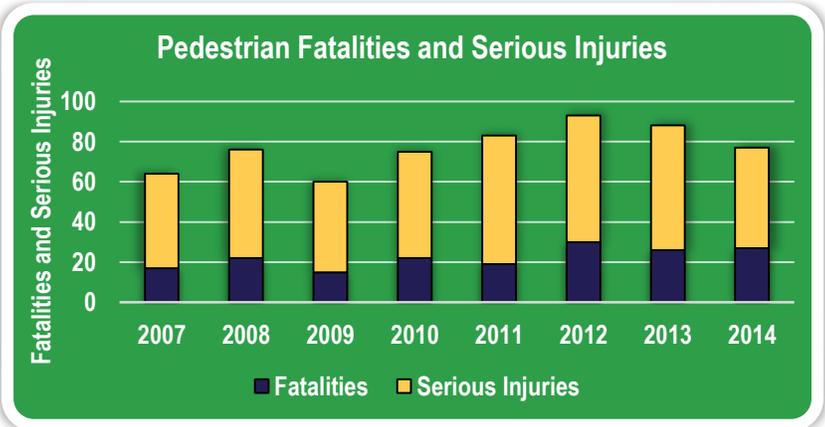
7

Pedestrians

EMPHASIS AREA GOAL: Reduce the combined number of pedestrian fatalities and serious injuries by 10 every 5 years (2 per year) to achieve the overall goal of a 50 percent reduction by 2035.

Background

Due to their complexity, addressing pedestrian-involved crashes is a challenge. In Delaware, a large portion of pedestrian crashes occur on high-speed, multi-lane suburban corridors that are surrounded by commercial and residential land uses and significant transit usage which combine to create an unsafe environment for pedestrian crossings. Pedestrian safety is evaluated and engineered as part of most transportation projects; however, infrastructure improvement projects require significant resources. Delaware officials recognize that the use of education and enforcement techniques may have the greatest potential for reductions in pedestrian fatalities and serious injuries. Improving driver awareness of pedestrians is critical to increasing pedestrian safety. In Delaware, pedestrian fatalities accounted for 20 percent of all fatalities and 8 percent of all serious injuries from 2007 through 2014. In 2012 and 2013, Delaware had the highest pedestrian fatality rate per 100,000 population of all the states.



Delaware officials recognize that the use of education and enforcement techniques may have the greatest potential for reductions in pedestrian fatalities and serious injuries. Improving driver awareness of pedestrians is critical to increasing pedestrian safety. In Delaware, pedestrian fatalities accounted for 20 percent of all fatalities and 8 percent of all serious injuries from 2007 through 2014. In 2012 and 2013, Delaware had the highest pedestrian fatality rate per 100,000 population of all the states.

Strategies to Reach Goal

- Continue a multi-agency approach to addressing pedestrian safety issues
- Develop and distribute consistent public information messages to increase public awareness and laws on pedestrian safety
- Conduct high-visibility enforcement campaigns targeting both pedestrians and drivers to promote pedestrian safety
- Improve infrastructure (e.g., sidewalks, crosswalks, lighting, transit facilities) to reduce pedestrian exposure and the potential for pedestrian/vehicle conflicts, and increase pedestrian visibility and awareness
- Research and implement the latest pedestrian safety “best practice” treatments and devices
- Conduct pedestrian safety audits at high-crash locations
- Install effective countermeasures to improve pedestrian safety at high crash locations and consider pedestrians when installing roadway improvements
- Perform before/after studies to evaluate and identify the most effective pedestrian safety treatments
- Ensure drivers education instructors emphasize vehicle-pedestrian laws in their lesson plans
- Support legislative action to strengthen pedestrian safety laws and enforcement efforts
- Develop policies and/or guidelines to support pedestrian safety measures

Data Trends: 2007 to 2014 Pedestrian Fatalities & Serious Injuries

- 90% occurred in urban areas
- 69% were in New Castle County
- 63% were male
- 58% involved no contributing factor on the part of the vehicle driver
- 52% were 20 to 49 years old
- 51% occurred between 4 PM and 11 PM
- 42% occurred along divided roadways
- 36% occurred on principal arterials
- 33% of pedestrian fatalities were impaired
- 33% occurred during dark (unlit) conditions
- 33% occurred on a Friday or Saturday
- 25% occurred at an intersection



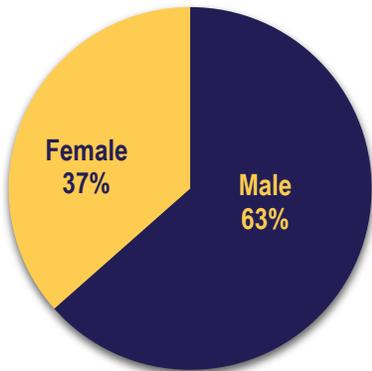
7

Pedestrians

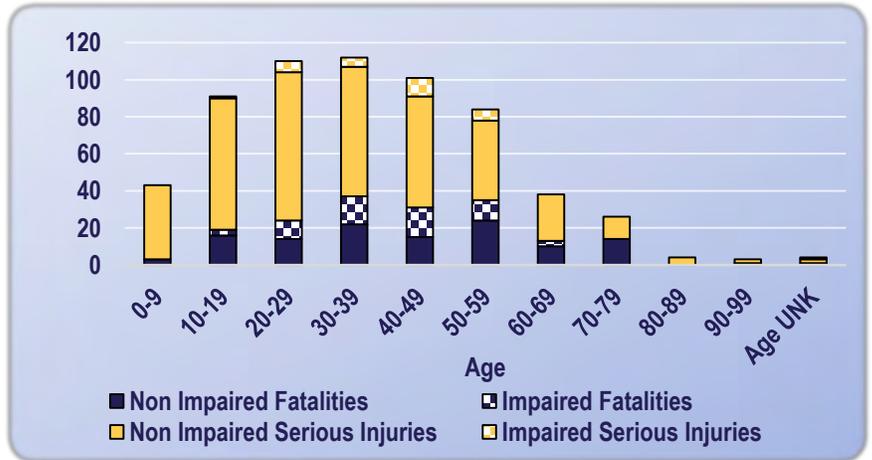
CRASH DATA SUMMARY

Pedestrians – Pedestrians fatally or seriously injured

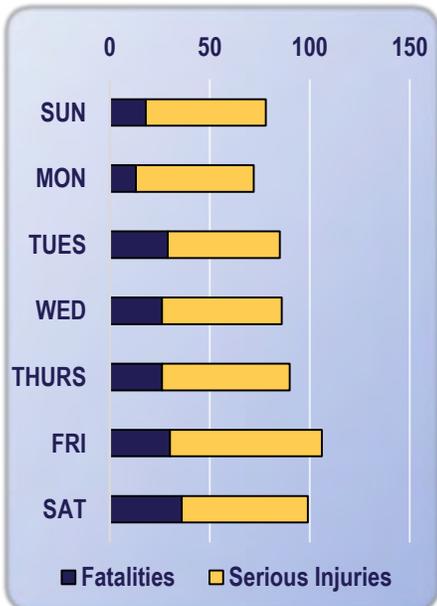
PERSON TYPE



Pedestrian Fatalities and Serious Injuries



DAY OF WEEK



TIME OF DAY

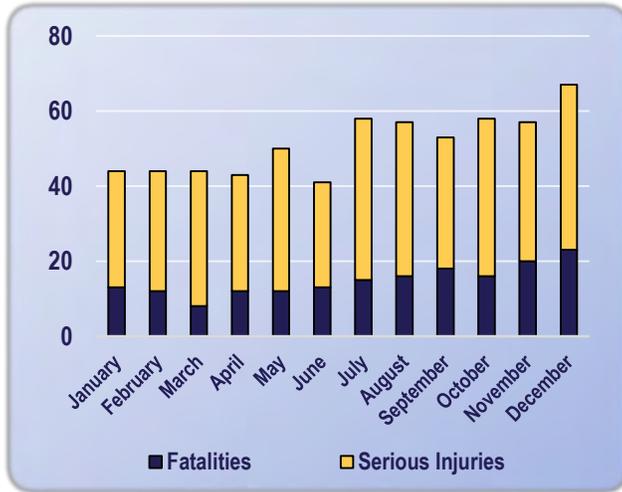


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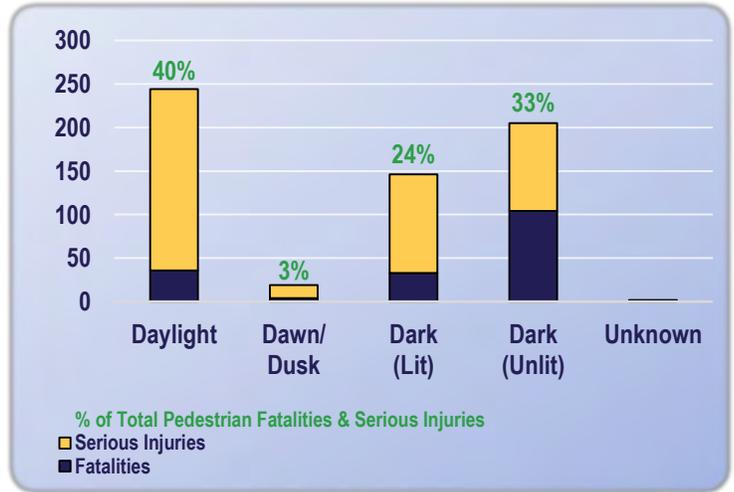
Pedestrians

CRASH DATA SUMMARY

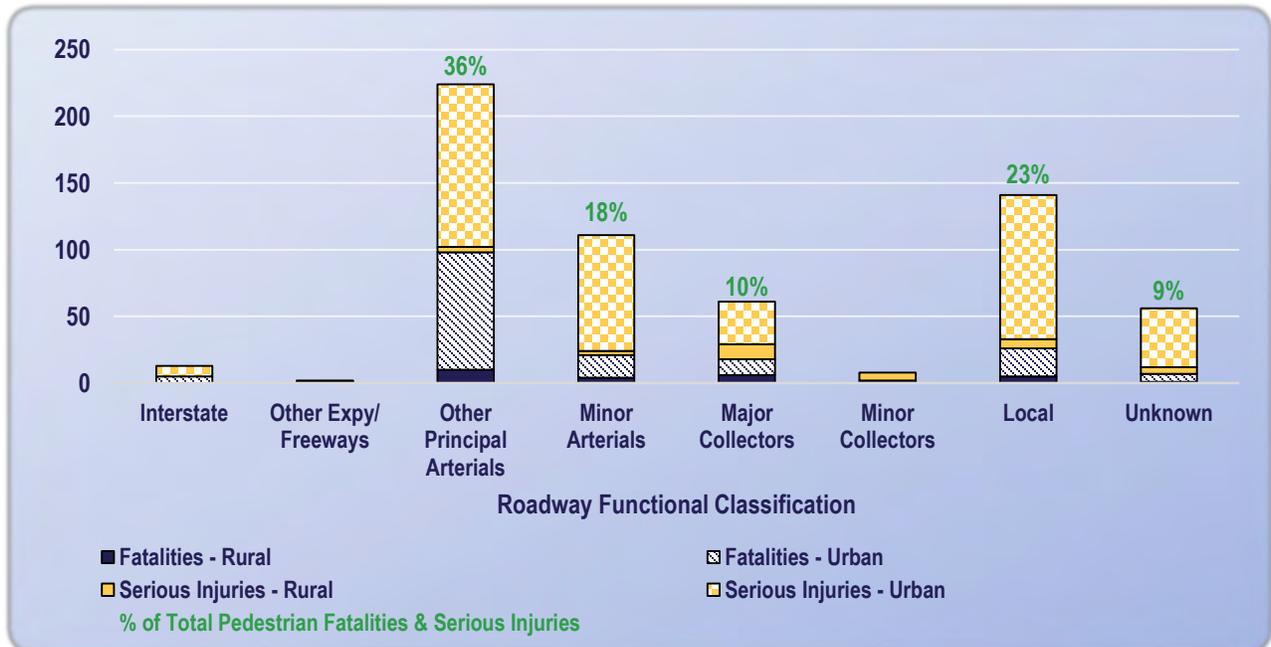
MONTH



LIGHTING CONDITION



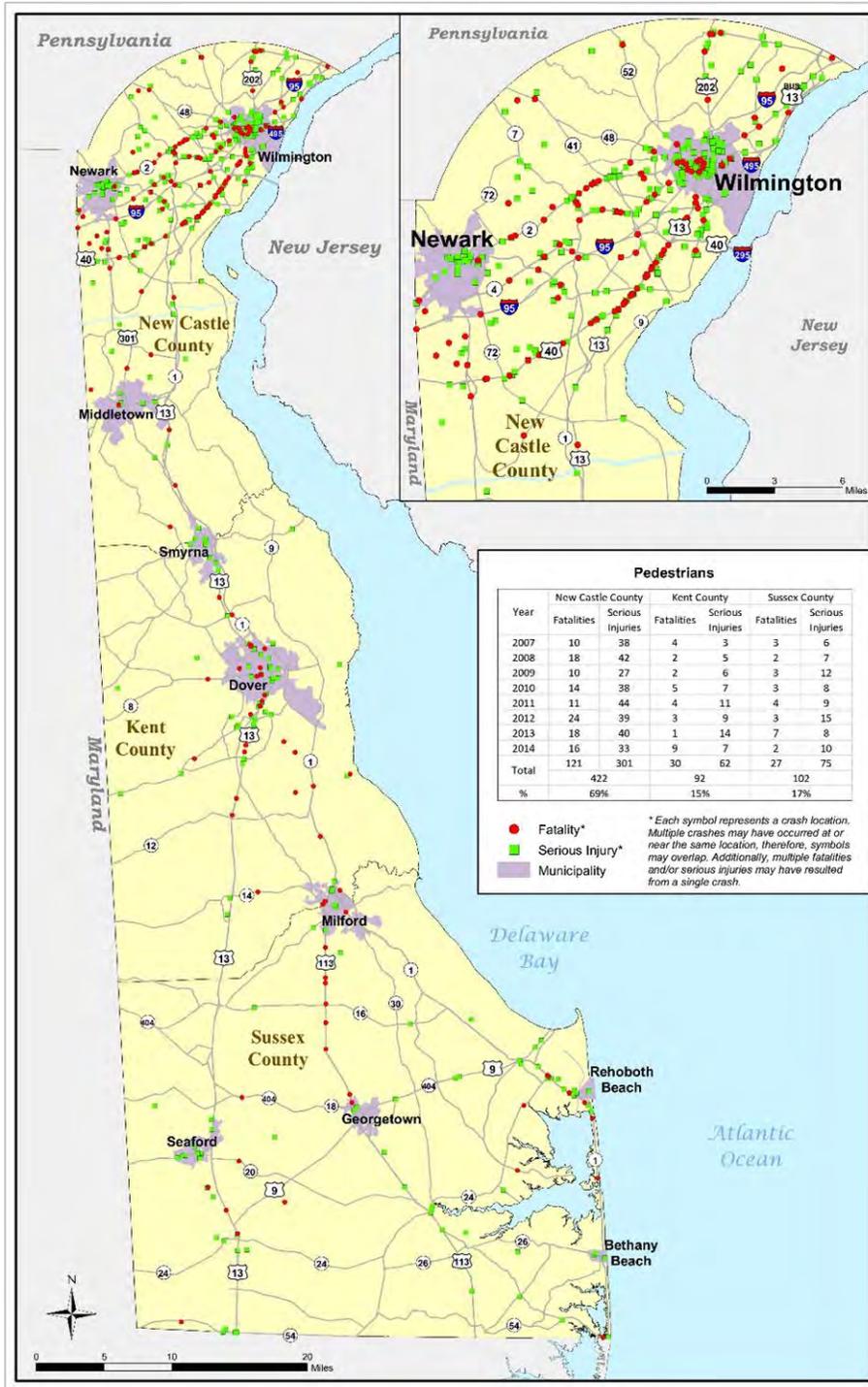
LOCATION



7

Pedestrians

CRASH DATA SUMMARY



8

Traffic Records

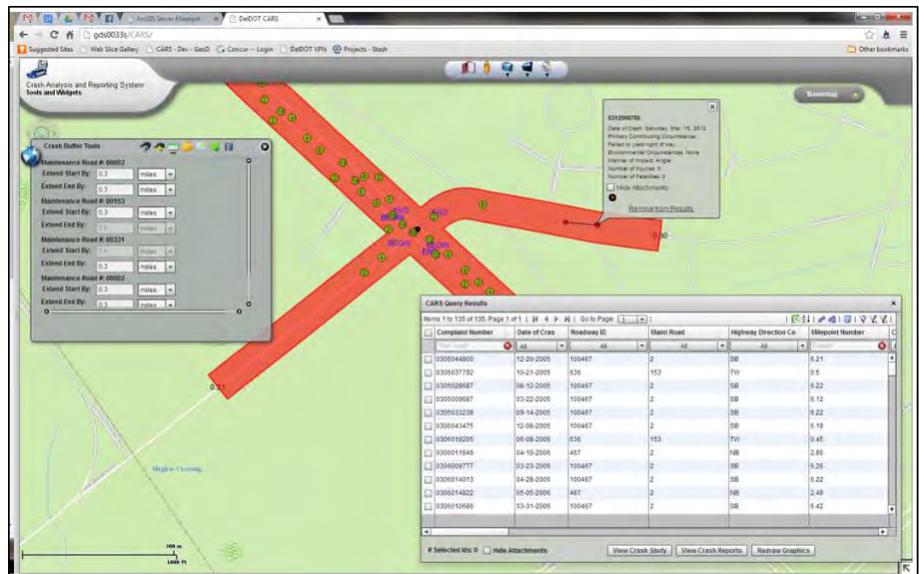
MISSION: Make information needed to effectively manage transportation safety available to the transportation safety community.

Background

Traffic safety data is the primary source of information about the environment, human behavior, and vehicle performance in a crash; therefore, the availability of timely, accurate, complete, uniform, integrated, and accessible traffic safety data is required to address safety problems. The effectiveness of informed decision making requires sound research, programs and policies, and is directly dependent on data availability and quality. Delaware's Traffic Records Coordinating Committee (TRCC) is the primary point of leadership, planning, policy setting, and accountability for Delaware's Traffic Safety Information System. The TRCC was established to coordinate actions among state agencies and to commit the resources necessary for the integration and sharing of safety-related data.

A comprehensive electronic traffic crash data collection system, E-Crash, was implemented in 2010 by the Delaware Criminal Justice Information System (DELJIS). E-Crash has allowed Delaware to customize its crash system to meet the state's needs, accommodate linkages with other traffic safety information systems, and make informed decisions regarding resource allocation.

In response to the development of E-Crash, DelDOT developed the Crash Analysis and Reporting System (CARS) which enables transportation safety professionals to query crash data using a map-based interface. Historic crash data can be queried based on any crash characteristics contained on the crash report. CARS supports Delaware's statewide safety programs including the Highway Safety Improvement Program and is accessible to various state agencies including Office of Highway Safety and Delaware State Police.



Strategies to Reach Goals

- Facilitate the comprehensive collection, maintenance, and dissemination of traffic safety-related data in order to set the direction for traffic safety improvement measures.
- Improve the timeliness, accuracy, completeness, uniformity, and accessibility of data that is needed to identify priorities for transportation and traffic safety programs.
- Strive to ensure that all Traffic Safety Information System (TSIS) projects funded by and under the direction of the TRCC, move forward on schedule and within budget. For projects outside of this scope, use the authority of the TRCC to ensure that these projects move forward in a timely manner in accordance with the goals of TSIS Strategic Plan, recognizing budgetary and staffing constraints.



Evaluation and Update Schedule

Statewide fatality and serious injury crash data is reviewed and reported annually in DeIDOT's Highway Safety Improvement Program (HSIP) Annual Report, the Office of Highway's Highway Safety Plan (HSP) and Annual Highway Safety Report, and Delaware State Police's Annual Traffic Statistical Report. In addition, statewide fatal crash trends are monitored throughout the year by OHS, DeIDOT, and DSP to target engineering, enforcement, education, and emergency medical services efforts.

The success of Delaware's SHSP is demonstrated by the combined number of fatalities and serious injuries (based on 5-year rolling averages) gradually decreasing from 2010 to 2013 and the number of fatalities (based on 5-year rolling averages) gradually decreasing from 2006 to 2013. In 2014, the total number of fatalities increased to 125, the highest annual number of fatalities reported since 2006. This recent increase in fatalities, in conjunction with the multi-agency coordination efforts required to develop this plan, have served to refocus efforts toward further reducing the number of fatalities and serious injuries resulting from motor vehicle crashes on Delaware's roadways. Moving forward, Delaware will continue to annually monitor fatal and serious injury crash data at both a state level and for the selected emphasis areas including the performance measures included in this plan.

This plan serves as the third update to Delaware's SHSP since the original plan in 2006. Factors affecting transportation safety evolve over time and the future may present a significantly different set of challenges than are experienced today. The SHSP is a dynamic, evolutionary document intended to be consulted frequently and updated when necessary. Accordingly, Delaware will update its plan when deemed necessary through the regular evaluation of its numerous safety initiatives, campaigns, and programs. The coordinating agencies of Delaware SHSP's will reconvene in 2020 to develop an updated plan and evaluate the validity of the selected emphasis areas.

Implementation

Delaware's relatively small size allows various opportunities for safety professionals from the coordinating agencies of the SHSP to communicate regularly through numerous established committees and groups. These established and ongoing initiatives allow the agencies to identify current crash trends, identify strategies, and implement countermeasures throughout the year. Additionally, each of the Core Committee agencies monitors crash trends annually through the publication of their respective annual reports. This method for monitoring progress in achieving the SHSP goals has served Delaware well since the first SHSP in 2006; however, previously, members of the larger Stakeholder Committee have not been engaged in these efforts on a regular basis. Therefore, Delaware's SHSP Core Committee intends to hold an annual SHSP meeting each spring beginning in 2017 (i.e., one full calendar year after adoption of this plan) to update members of the SHSP Stakeholder Committee on progress and share the latest trends and strategies being implemented towards reaching the plan's goal. The annual meeting will allow a forum for the stakeholders to provide further insight, expertise, and perspective from their respective agencies. In addition to the annual meeting, various established committees and groups will continue working towards this plan's mission.



List of Acronyms



AASHTO	American Association of State Highway and Transportation Officials
BAC	Blood Alcohol Content
CARS	Crash Analysis and Reporting System
CTP	Capital Transportation Program
CVSP	Commercial Vehicle Safety Plan
DeIDOT	Delaware Department of Transportation
DELJIS	Delaware Criminal Justice Information System
DMV	Division of Motor Vehicles
DOJ	Department of Justice
DSP	Delaware State Police
DTC	Delaware Transit Corporation
DUI	Driving Under the Influence
EA	Emphasis Area
EMS	Emergency Medical Services
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
HRRR	High Risk Rural Roads
HSIP	Highway Safety Improvement Program
HSP	Highway Safety Plan
IID	Ignition Interlock Device
LTAP	Local Technical Assistance Program
MAP-21	Moving Ahead for Progress in the 21 st Century Act
MPO	Metropolitan Planning Organization
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
OEMS	Office of Emergency Medical Services
OHS	Office of Highway Safety
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users
SHSP	Strategic Highway Safety Plan
STIP	Statewide Transportation Improvement Program
TEA-21	Transportation Equity Act for the 21 st Century
TIP	Transportation Improvement Program
TRCC	Traffic Records Coordinating Committee
TSIS	Traffic Safety Information System
TZD	Toward Zero Deaths
VMT	Vehicle Miles Traveled
WILMAPCO	Wilmington Area Planning Council



Crash Data for Data-Driven Emphasis Areas Not Selected

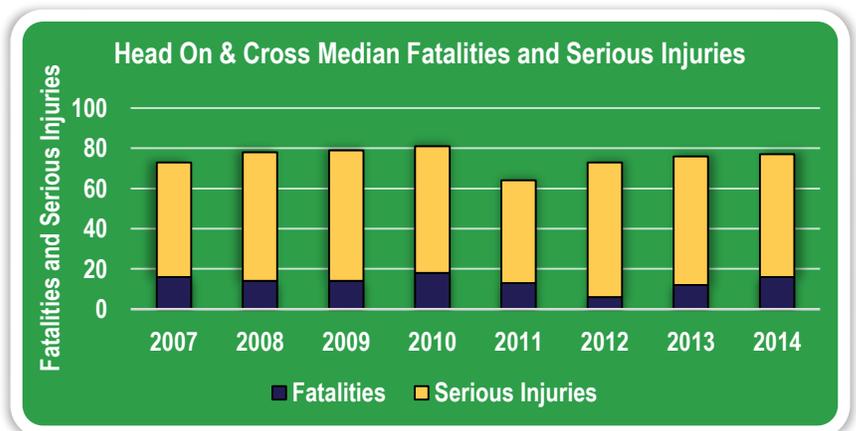


Crash Data for Data-Driven Emphasis Areas Not Selected

Crash data for data-driven EAs that were not selected for inclusion in the SHSP are summarized below including a discussion of distracted driving which has gained significant attention in the transportation safety community with the recent advancement and prevalence of cell phones and personal devices.

Head On & Cross Median

Any fatally or seriously injured person in a head-on crash or a crash where a vehicle crossed the median

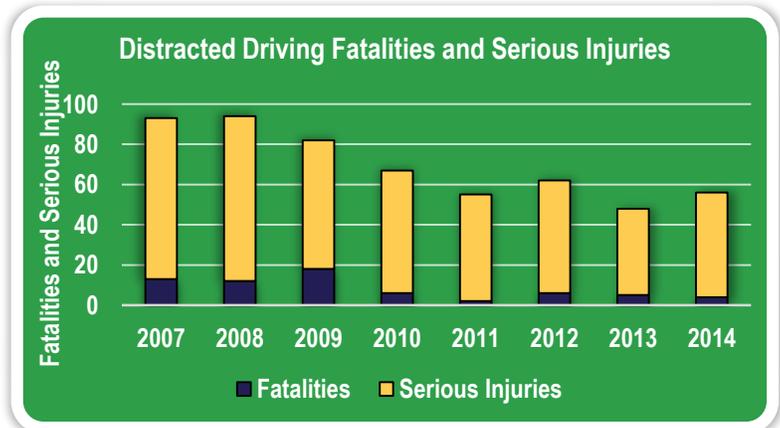


Injury Type	Head On & Cross Median									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	14%	11%	12%	17%	13%	5%	12%	14%	12%	8
% of total fatalities & serious injuries	9%	9%	11%	10%	9%	10%	10%	10%	10%	8



Distracted Driving

Any fatally or seriously injured person in a crash involving a driver distracted by a hand held cell phone, texting, grooming/applying makeup, attending to children within the vehicle, verbal dispute, head phones, other electronic device, eating, external distraction, or another distraction inside the vehicle



Injury Type	Distracted Driving									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	11%	10%	15%	6%	2%	5%	5%	3%	7%	11
% of total fatalities & serious injuries	11%	11%	11%	8%	7%	9%	7%	8%	9%	9

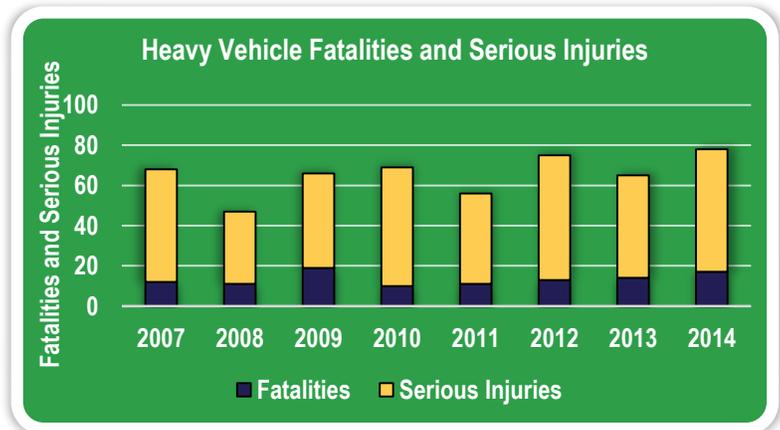
With the advancement of cell phones and personal devices, distracted driving has increasingly become a major safety concern. Distracted driving is frequently associated with texting or cell phone use; however, distracted driving also includes other distractions such as eating or grooming while driving, or any distraction that takes the drivers' attention away from the task of driving. The problem with distracted driving is that law enforcement officials often rely on drivers to self-report distracted driving behaviors, unless distractions are reported by a witness or cell phone records are obtained. Self-reporting is problematic to rely on because drivers are hesitant to self-report for the obvious fear of potential consequences. For these reasons, distracted driving is significantly underreported and the extent of the distracted driving problem is not fully understood. Improving crash data related to distracted driving has been, and continues to be, a focus of law enforcement officer training, which will improve data reliability and accuracy related to this crash type moving forward.

Distracted driving was not selected as a data-driven emphasis area by the SHSP committee as part of the 2015 SHSP because this emphasis area does not represent one of the largest percentages of the total fatalities and serious injuries in the state. However, it should be noted that nearly 75 percent of distracted driving fatalities and serious injuries overlap with at least one of the top seven data-driven emphasis areas that are included in this plan. Therefore, implementing strategies to address the selected emphasis areas also has the potential to indirectly reduce distracted driving fatalities and serious injuries. Nonetheless, the Delaware SHSP committee recognizes the need to proactively address distracted driving behaviors. As a result, Delaware's hands-free cell phone law went into effect on January 2, 2011 and distracted driving is included in Delaware Office of Highway Safety's *FY 16 Highway Safety Plan* with a focus on enforcement and educational campaigns to reduce the potential for distracted driving offenses and crashes.



Heavy Vehicles

Any fatally or seriously injured person in a crash involving a heavy vehicle (i.e., truck tractor/semi-trailer, other truck combo/commercial van, bus, school bus, ambulance, fire apparatus, recreational vehicle, construction vehicle)



Injury Type	Heavy Vehicles									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	10%	9%	16%	10%	11%	11%	14%	15%	12%	10
% of total fatalities & serious injuries	8%	6%	9%	8%	8%	10%	9%	11%	8%	10

Older Drivers & Older Pedestrians

Drivers or pedestrians 65 years of age or older fatally or seriously injured

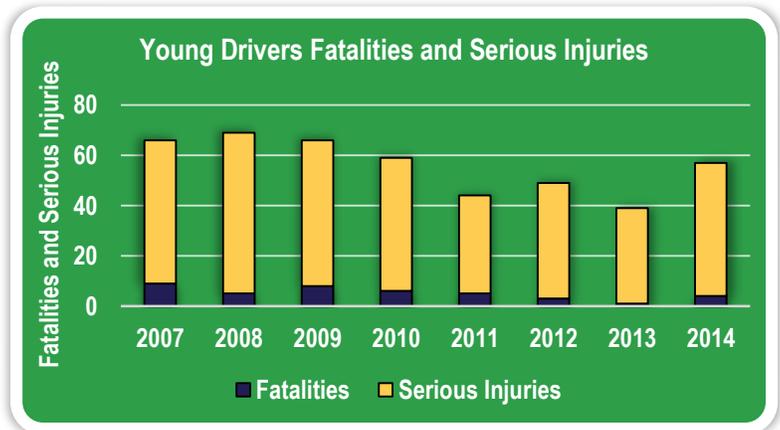


Injury Type	Older Drivers & Pedestrians									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	8%	9%	15%	11%	15%	9%	13%	17%	12%	9
% of total fatalities & serious injuries	8%	6%	9%	8%	8%	7%	9%	8%	8%	11



Young Drivers

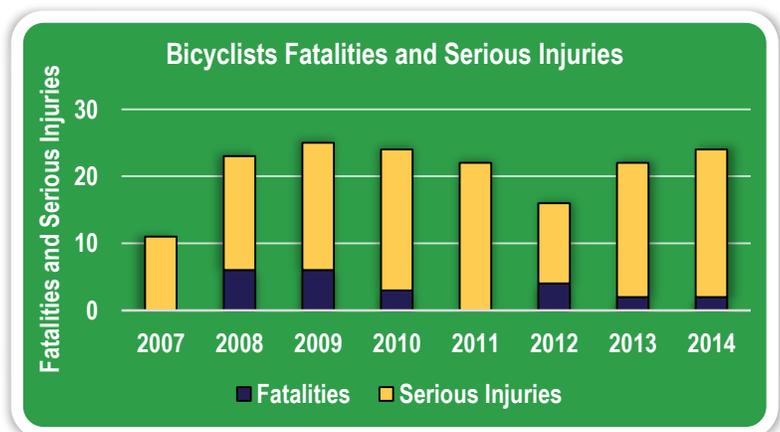
Drivers ages 15 through 20 fatally or seriously injured



Injury Type	Young Drivers									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	8%	4%	7%	6%	5%	3%	1%	3%	5%	12
% of total fatalities & serious injuries	8%	8%	9%	7%	6%	7%	5%	8%	7%	12

Bicyclists

Fatally or seriously injured bicyclists

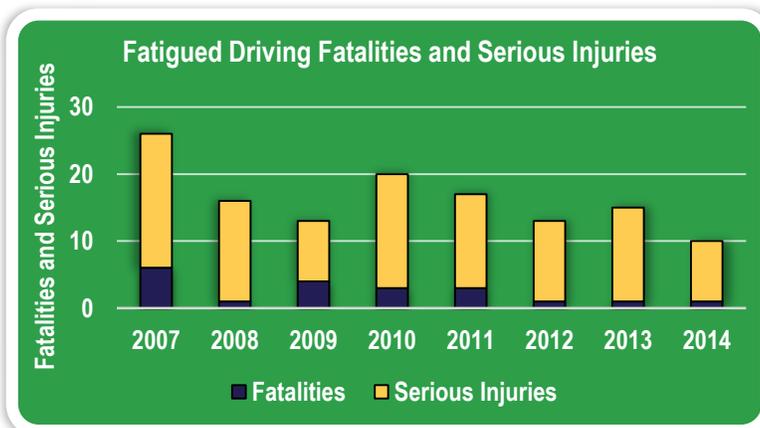


Injury Type	Bicyclists									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	0%	5%	5%	3%	0%	3%	2%	2%	3%	13
% of total fatalities & serious injuries	1%	3%	3%	3%	3%	2%	3%	3%	3%	13



Fatigued Driving

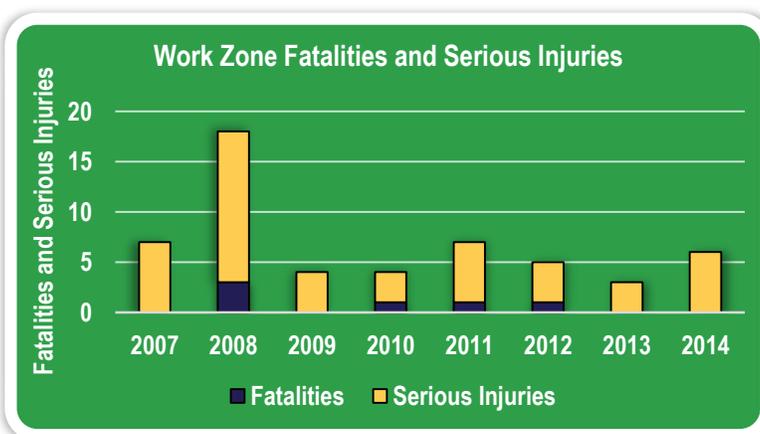
Any fatally or seriously injured person in a crash that involved a fatigued driver



Injury Type	Fatigued Driving									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	5%	1%	3%	3%	3%	1%	1%	1%	2%	14
% of total fatalities & serious injuries	3%	2%	2%	2%	2%	2%	2%	1%	2%	14

Work Zone

Any fatally or seriously injured person in a crash that occurred within or related to a work zone

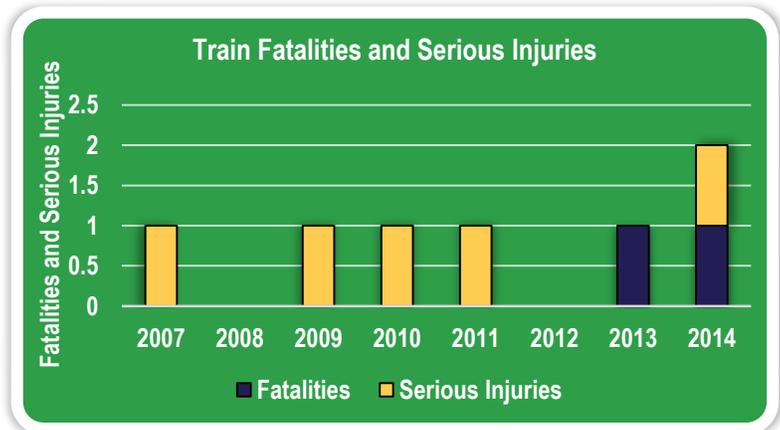


Injury Type	Work Zone									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	0%	2%	0%	1%	1%	1%	0%	0%	1%	15
% of total fatalities & serious injuries	1%	2%	1%	0%	1%	1%	0%	1%	1%	15



Trains

Any fatally or seriously injured person in a crash that involved a train



Injury Type	Trains									EA Rank
	2007	2008	2009	2010	2011	2012	2013	2014	TOTAL	
% of total fatalities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.9%	0.2%	16
% of total fatalities & serious injuries	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.3%	0.1%	16





**DELAWARE STRATEGIC
HIGHWAY SAFETY PLAN:
TOWARD ZERO DEATHS**