

**drive safe PA**  
Strategic Highway Safety Plan



## Pennsylvania's Strategic Highway Safety Plan

Pennsylvania has over 43,000 miles of state-maintained roadways and 78,000 miles of locally owned roadways. In fact, Pennsylvania has more miles of state roads than New York and all of the New England states combined. Nicknamed “the Keystone State” because of its central location among the original Thirteen Colonies, Pennsylvania is also located at a critical juncture between the major metropolitan areas of the Northeastern United States and the rest of the country. Because of this location, Pennsylvania receives a tremendous amount of passenger and freight traffic traveling through the state. The majority of the passenger vehicles include cars, trucks, vans and motorcycles. Freight traffic consists of a large amount of truck traffic (as high as 30% - 50% on certain interstate highways) and a significant amount of rail freight. Pennsylvania also has a substantial system of rural roadways, which exhibit fatality rates that are twice those on urban roadways.

Over the past several years, Pennsylvania has averaged approximately 1,500 highway fatalities annually. This translates to an average of four fatalities every day. In fact, motor vehicle crashes are the leading cause of death for all Americans between the ages of four and thirty-four. One of Pennsylvania's top initiatives is to provide a safe and secure transportation system. A combined effort among our safety stakeholders and partners is necessary to improve highway safety and reduce fatalities on our roadway system.

In 2008, leading national transportation organizations established the goal of halving motor vehicle related fatalities by 2030. This would translate to a reduction of 1,000 fatalities per year nationwide for each year until 2030. To contribute to this goal, Pennsylvania has set the ambitious objective of reducing 100 fatalities each year to reach 1,150 by 2011. Achieving this goal would reduce annual highway deaths to its lowest levels on record (Pennsylvania highway fatality statistics have been kept since 1928). The Strategic Highway Safety Plan (SHSP) is the blueprint to accomplish our goal.

To help spread the word about highway safety, The Pennsylvania Department of Transportation (PennDOT) has developed the “DriveSafePA.org” web site. This website is a starting point to help generate ideas and discussions to improve highway safety. Keys to successful implementation of this plan include a shared ownership with our stakeholders and partners, tracking the progress of our safety goals, and deploying strategies based on initial success.



---

*Over the past several years, Pennsylvania has averaged approximately 1,500 highway fatalities annually.*

*This translates to an average of four fatalities every day.*

## Thank You to All Highway Safety Partners

*The Pennsylvania Department of Transportation (PennDOT) would like to thank the following public and private sector organizations for contributing to the development of Pennsylvania's Strategic Highway Safety Plan (SHSP). These groups are working together to implement highway safety improvement strategies outlined in this plan. All involved parties remain committed to meeting or exceeding the statewide highway fatality reduction goal of 1,150 yearly fatalities by 2011.*

- AARP
- Administrative Office of Pennsylvania Courts
- Alliance of Bikers Aimed Toward Education
- American Academy of Pediatrics Pennsylvania Chapter
- American Trauma Society Pennsylvania Division
- BeaveRun Motorsports Complex
- Chester County Council on Addictive Diseases
- Community Traffic Safety Programs
- Delaware Valley Regional Planning Commission
- District Magistrates
- Federal Highway Administration
- Federal Motor Carrier Safety Administration
- Governor's Policy Office
- Governor's Press Office
- Hospital and Healthsystem Association of Pennsylvania
- Institute for Law Enforcement Education
- Lancaster County Planning Commission
- Lehigh Valley Planning Commission
- Mothers Against Drunk Driving
- Motorcycle Safety Foundation
- National Highway Traffic Safety Administration
- North Central Highway Safety Network
- North Central Regional Planning & Development Commission
- Northwest Pennsylvania Regional Planning & Development Commission
- Operation Lifesaver
- Pennsylvania American Automobiles Association Federation
- Pennsylvania Chiefs of Police Association
- Pennsylvania Commission on Crime and Delinquency
- Pennsylvania Department of Education
- Pennsylvania Department of Health
- Pennsylvania District Attorneys Institute
- Pennsylvania DUI Association
- Pennsylvania Emergency Management Agency
- Pennsylvania General Assembly
- Pennsylvania Liquor Control Board
- Pennsylvania Local Technical Assistance Program
- Pennsylvania Motor Trucking Association
- Pennsylvania Pedalcycle and Pedestrian Advisory Commission
- Pennsylvania Safe Kids Coalition
- Pennsylvania State Association of Boroughs
- Pennsylvania State Association of Township Supervisors
- Pennsylvania State Police
- Pennsylvania Trauma Systems Foundation
- Pennsylvania Turnpike Commission
- Peters Township Police
- Preservation Pennsylvania
- Public Utility Commission
- Seniors for Safe Driving
- Southwestern Pennsylvania Commission

## Executive Summary

**The Strategic Highway Safety Plan (SHSP)** has been developed in order to target priority Safety Focus Areas (SFAs) and strategies/actions to reduce highway fatalities on Pennsylvania’s roadways. For each recommended strategy, action items have been established to identify exactly what it will take to successfully implement safety in each SFA. An example SFA Action Plan is shown on page 47, including owners, goals, and due dates for each action item.

**This plan details** how, by 2011, we will reach our goal to reduce annual fatalities to 1,150 or less using a comprehensive approach to highway safety improvement that employs our best thinking, resources, and partners.

**Pennsylvania’s comprehensive approach** was to engage state and national experts by conducting a Highway Safety Summit to gather input and establish a Highway Safety Steering Committee to develop the plan. Safety stakeholders and partners from both the public and private sector, representing the 4 E’s of highway safety, contributed to the development of our plan. A complete list of organizations and agencies that assisted in the creation of the SHSP is shown on page ii of this document.



Engineering



Education



Enforcement



Emergency Medical Services

The **“Vital Seven” Safety Focus Areas** have been chosen because implementing improvements in these areas will have the most impact on overall highway fatalities. The Vital Seven Safety Focus Areas are: **Reducing Aggressive Driving, Reducing Impaired (DUI) Driving, Increasing Seatbelt Usage, Safety Infrastructure Improvements (Head-on Collisions, Roadway Departure, and Intersection Crashes), Improving Traffic Records Data, Motorcycle Safety, and Mature Driver Safety.** Recognition of these vital safety focus areas will help decide allocation of funding and resources. Improvements in these vital categories will help significantly to reach our goal.

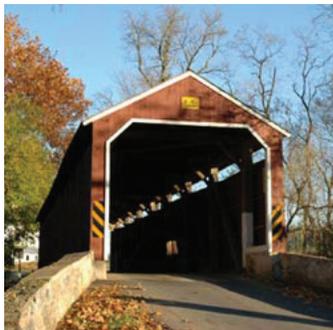
We have identified, analyzed, and prioritized these areas and related strategies based on their cost effectiveness, potential to save lives, proven success, and acceptability by the public. Besides these seven vital safety focus areas, we will continue to implement safety improvement strategies in the other important focus areas (see pages 24-44).

This plan is dynamic and will be revised as per direction of safety partner leadership.

## EEEE

*Safety stakeholders and partners from both the public and private sector representing the 4 E’s of highway safety (Engineering, Education, Enforcement, and Emergency Medical Services) contributed to the development of our plan.*

## Table of Contents



Introduction.....	i
Thank You to All Highway Safety Partners.....	ii
Executive Summary.....	iii
Vision, Mission, & Goal.....	I
Vital Seven Safety Focus Areas.....	2
Reducing Aggressive Driving.....	3
Reducing Impaired Driving (DUI).....	5
Increasing Seat Belt Usage.....	7
Infrastructure Improvements.....	9
Reducing Head-On and Cross-Median Crashes.....	9
Improving Intersection Safety.....	11
Reducing Run-Off-Road Crashes.....	13
Reducing the Severity and Frequency of Hit Fixed Object Crashes.....	15
Improving Traffic Records Data.....	17
Motorcycle Safety.....	19
Mature Driver Safety.....	21
Additional Safety Focus Areas.....	24
Improving Pedestrian Safety.....	25
Enhancing Safety on Local Roads.....	27
Improving Teen Driver Safety.....	29
Advancing Heavy Truck Safety.....	31
Reducing Crashes Involving Inattentive and Drowsy Drivers.....	33
Improving Bicycle Safety.....	35
Improving Emergency/Incident Response Time.....	37
Emergency Rural Services.....	37
Emergency Incident Management.....	39
Enhancing Safety in Work Zones.....	41
Reducing Vehicle-Train Crashes.....	43
Moving Forward (Implementation Process).....	45
Essential Eight Elements.....	45
Implementation Focus Areas.....	48
Organizational Structure.....	50
Performance Measures.....	53
Glossary of Acronyms and Abbreviations.....	55
Contact Information.....	56

## Vision, Mission, and Goal

### Our Vision

is to provide the safest roadways possible so that everyone arrives safely at their destinations.

### Our Mission

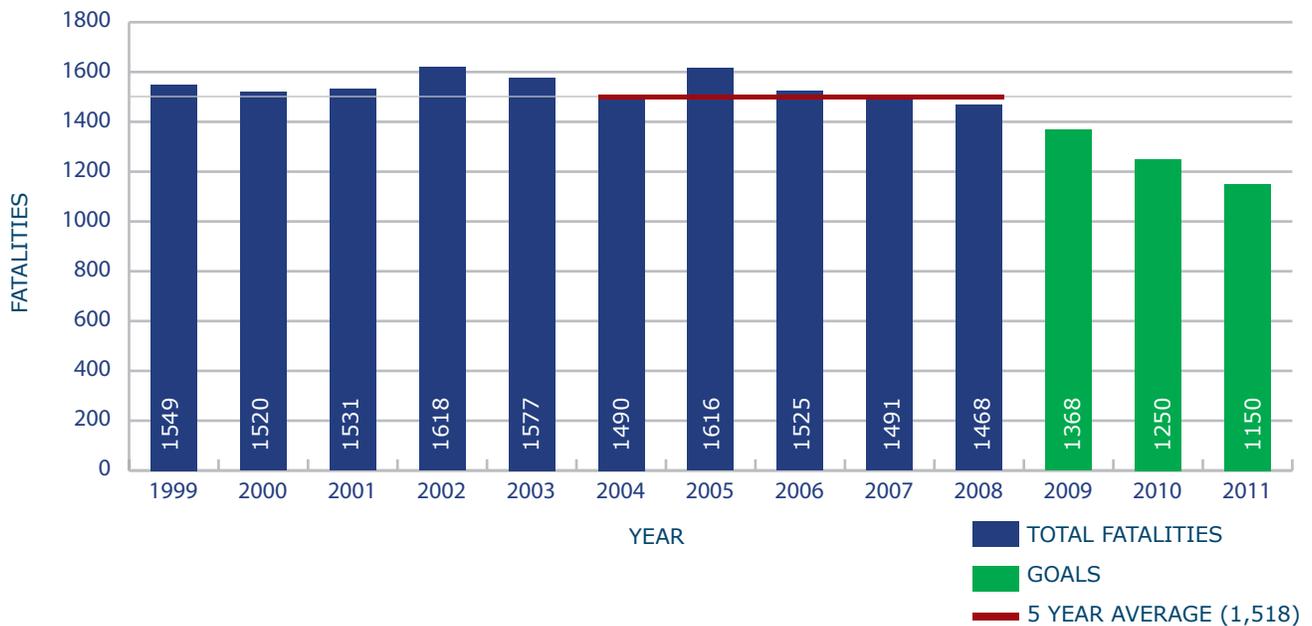
is to improve highway safety by developing, promoting, and implementing education, enforcement, engineering, and emergency medical service strategies.

### Our Goal

is to save at least 100 more lives each year on Pennsylvania roads, with the goal of reducing fatalities to 1,150 or less by 2011.

Pennsylvania has averaged more than 1,500 highway fatalities annually over the last ten years. Through a strategic and coordinated effort among safety stakeholders and partners, we will improve highway safety and reduce 100 highway fatalities annually to achieve our goal of 1,150 fatalities by 2011.

**Total Pennsylvania Traffic Fatalities  
Historical Fatality Data and Future Goals**



## Vital Seven Safety Focus Areas

These vital safety focus areas were selected in priority order using the following criteria:

Number of fatalities (based on historic 5-year average)

Potential for overall fatality reduction towards goal (with implementation of improvements)

Cost effectiveness (cost/benefit)

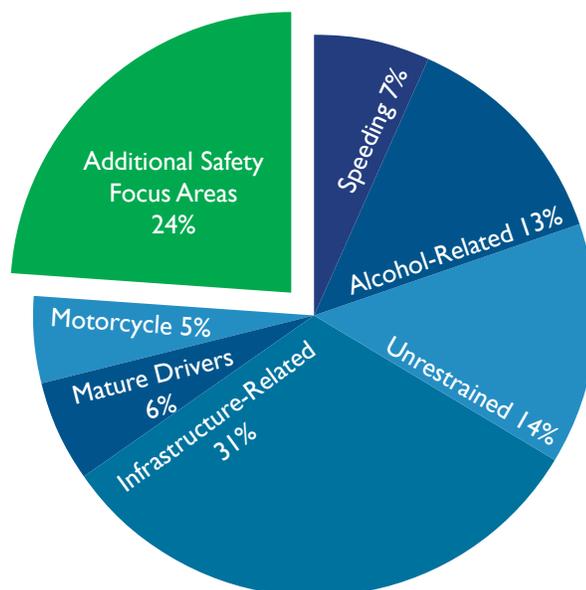
Ease of strategy implementation within focus area

Resources available (time, funding, partners)

The following chart represents the percentage of statewide fatalities associated with each of the Vital Seven Safety Focus Areas (not including Traffic Records Data). Fatalities related to these Vital Seven Safety Focus Areas account for approximately 76% of the total annual highway fatalities in Pennsylvania. Nine Additional Safety Focus Areas account for the remaining 24% of fatalities in our state. Implementing improvements to address the Vital Seven Safety Focus Areas will have the most impact on overall highway fatalities. Recognition of these vital safety focus areas will help to guide the allocation of funding and resources. Improvements in these vital categories will help us most to reach our goal.

- 1 Reducing Aggressive Driving
- 2 Reducing Impaired (DUI) Driving
- 3 Increasing Seat Belt Usage
- 4 Infrastructure Improvements
- 5 Improving Traffic Records Data
- 6 Motorcycle Safety
- 7 Mature Driver Safety

Vital Seven Safety Focus Areas\*



\*based on historic 5-year average

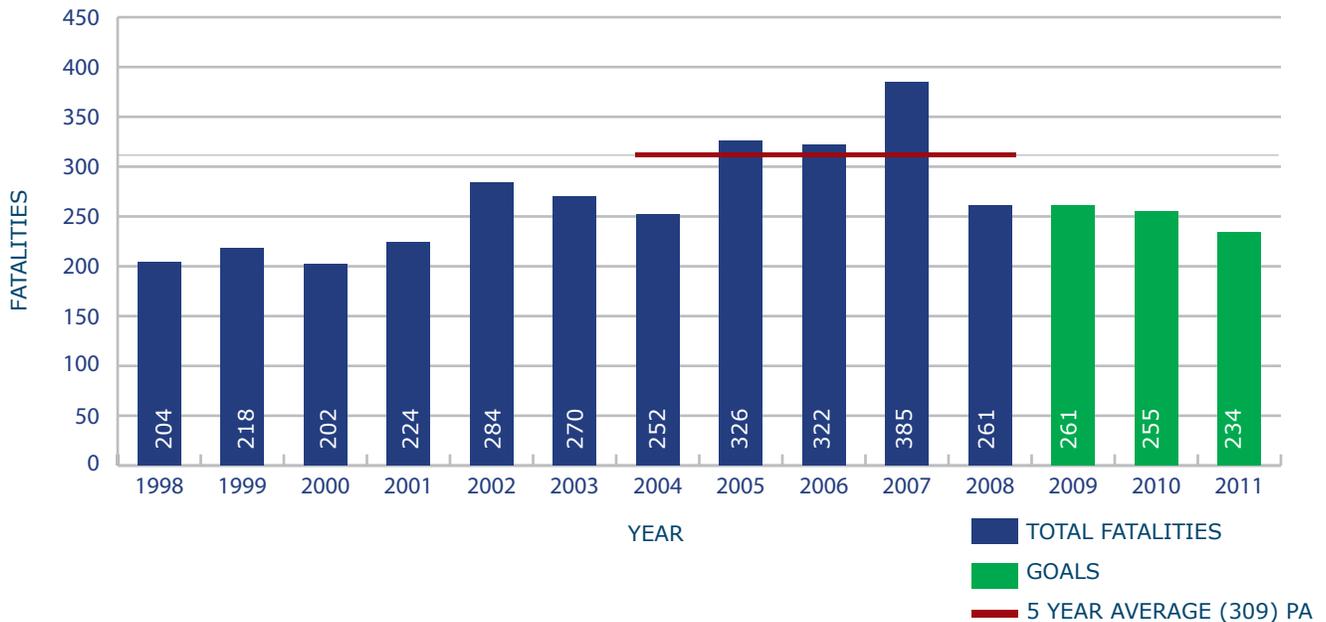
**1**

**Reducing Aggressive Driving**

**Goal:** To reduce annual speeding related fatalities to 234 or less by 2011.

Reducing aggressive driving is Pennsylvania’s top safety focus area because it contributes to more traffic related fatalities than any other single crash causation factor. Aggressive driving actions include speeding, red light running, tailgating, passing in a no passing zone, and many others. Speeding is the single most common aggressive driving action. Speeding related fatalities account for a fifth of total fatalities in Pennsylvania.

**Speeding Related Fatalities  
Historical Fatality Data and Future Goals**



# 1 Reducing Aggressive Driving

Many of the strategies to combat aggressive driving behaviors incorporate enforcement, education, and the use of technology. The following table identifies the top strategies and specific action items to address aggressive driving behaviors.

## Top Strategies

	Strategies <sup>1</sup>	Action Item
	Consider legislation that allows local police to use radar	Legislative symposium
	Consider legislation that defines aggressive driving as an enforceable offense	Legislative symposium
	Target enforcement in areas with a high rate of aggressive driving crashes <ul style="list-style-type: none"> <li>• Problem specific policing / selective traffic enforcement programs</li> <li>• Continue aggressive driving enforcement and public awareness program</li> </ul>	Target aggressive driving enforcement on corridors where there is an identified aggressive driving crash problem Enforcement outreach (“Aggressive Driving Enforcement & Education”) Prepare aggressive driving data reports for police departments in grant region
	Expand Intelligent Transportation System (ITS) technologies (automated enforcement) and inform public about technology deployment	Legislative symposium Work with local municipality/police to arrange deployment of “speed trailers” in cooperation with district SPO Use VMS boards for aggressive driving message
	Consider legislation that will allow for implementation of automated enforcement of red-light running and work zone speeds	Legislative symposium

<sup>1</sup>Legislative strategies are based on recommendations from the SHSP committees and are not an endorsement from the Governor’s office.

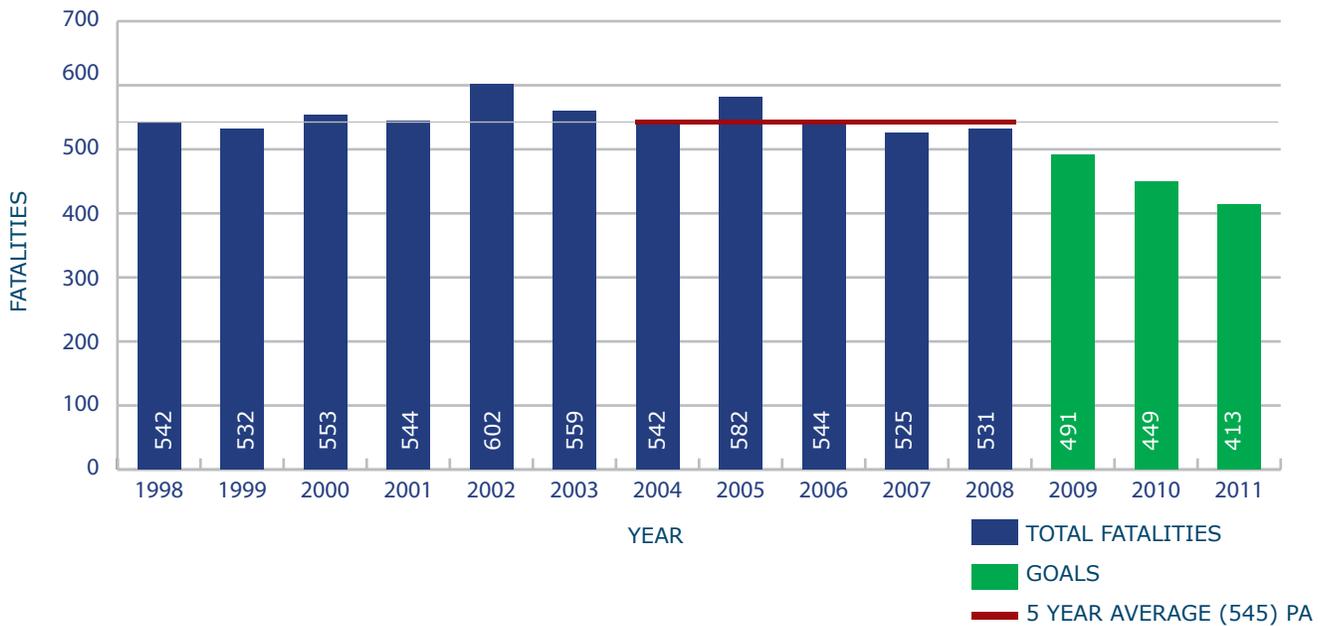
2

**Reducing Impaired Driving (DUI)**

*Goal: To reduce annual alcohol related fatalities to 413 or less by 2011.*

Pennsylvania ranks 19th nationally in the percentage of impaired driving fatalities. Nearly two-thirds of the impaired driving fatalities involved a driver with a BAC of 0.15 or higher. Strategies ranging from highly visible enforcement to prosecution and adjudication education will be utilized to reach our reduction goals.

**Alcohol Related Fatalities  
Historical Fatality Data and Future Goals**



## 2 Reducing Impaired Driving (DUI)

Strategies to combat impaired driving include enforcement, prosecution, and education. The following table identifies the top strategies and specific action items to address impaired driving behaviors.

### Top Strategies

	Strategies	Action Item
	High-visibility DUI enforcement	Increase the number of sobriety checkpoints
		Increase the number of roving patrols
		Increase motorist contacts
	Public information & education on DUI enforcement	Enhance police recognition (Cookies for Cops)
		Discourage underage drinking
		Use peer to peer techniques to discourage impaired riding
		Integrate lessons in school curriculum for reducing DUI
		Utilize paid media efforts
		Deploy earned media efforts
		Develop a strategic prevention framework
 	Underage drinking and driving enforcement / education	Host underage drinking forum
		Offer underage drinking classes
		Provide last drink data
		Visit establishments
		Implement responsible alcohol management program
		Implement cops in shops
 	Implement DUI prosecution and adjudication training through TSRP	Establish community groups involving police, judges, residents, etc.
		Deliver presentations (magisterial district judge)
		Maintain traffic safety resource prosecutor position
		Conduct basic prosecutor course
		Provide judicial education (vehicle code)
 	Police training on impaired driving enforcement	Officer update training
		Standardize field sobriety testing
		Utilize advanced roadside impaired driving enforcement
		Provide drug recognition expert certification
		Provide sobriety checkpoint training
		Provide training for cops in shops

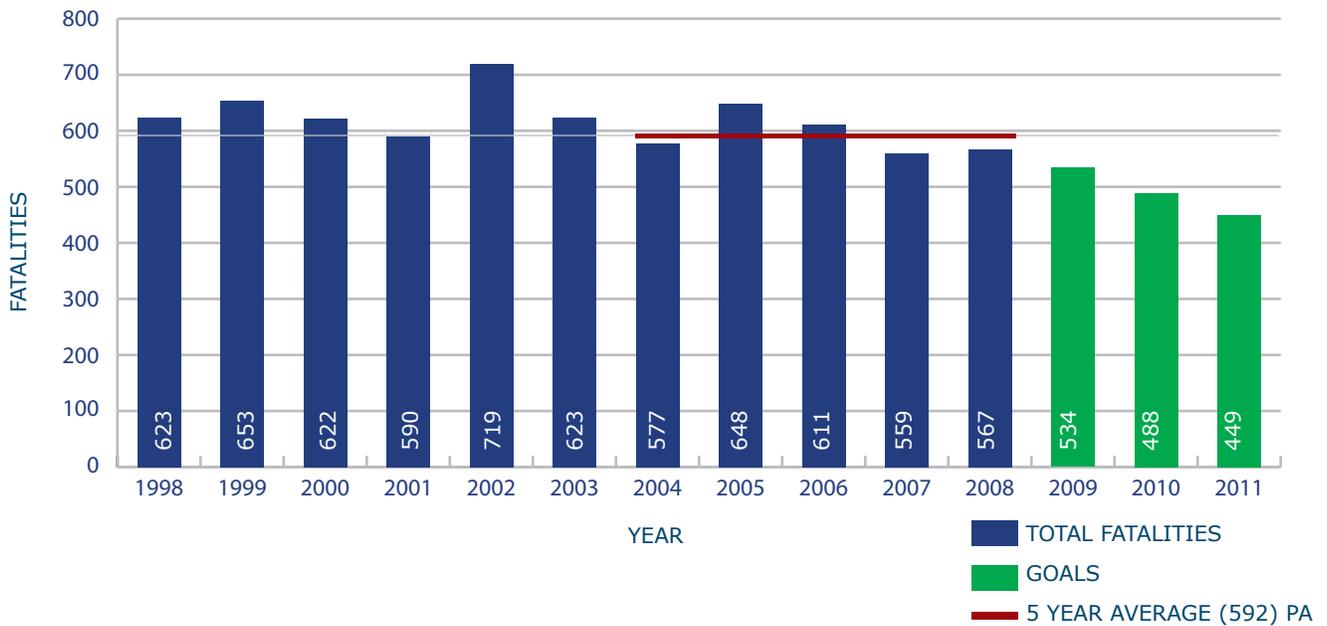
**3**

**Increasing Seat Belt Usage**

*Goal: To reduce annual unrestrained fatalities to 449 or less by 2011.*

Over 40% of total highway fatalities involved an unbelted occupant. For every 1% increase in seat belt usage in Pennsylvania, we can expect 8 to 12 lives to be saved annually. The 2008 statewide seat belt usage rate was 85.06%. Education and enforcement strategies will help us reach our seat belt usage rate goal of 90% by 2011.

**Unrestrained Fatalities  
Historical Fatality Data and Future Goals**



### Increasing Seat Belt Usage

Strategies to combat unrestrained fatalities include education and enforcement. The following table identifies the top strategies and specific action items to address unrestrained fatalities.

#### Top Strategies

	Strategies <sup>1</sup>	Action Item
	Consider enacting primary seat belt law	Legislative symposium Reference: NJ symposium Majority Vote
	Continue “Click It or Ticket” campaign	Conduct 1 enforcement campaign
	Conduct high-profile enforcement campaigns combined with public education	Conduct 1 additional enforcement wave
	Highlight the importance of complete and accurate crash reporting on safety belt use as a part of ongoing education programs for the enforcement community	Develop enforcement information and conduct educational campaigns
	Implement Child Passenger Safety (CPS) plans	Create CPS plans per county

<sup>1</sup>Legislative strategies are based on recommendations from the SHSP committees and are not an endorsement from the Governor’s office.

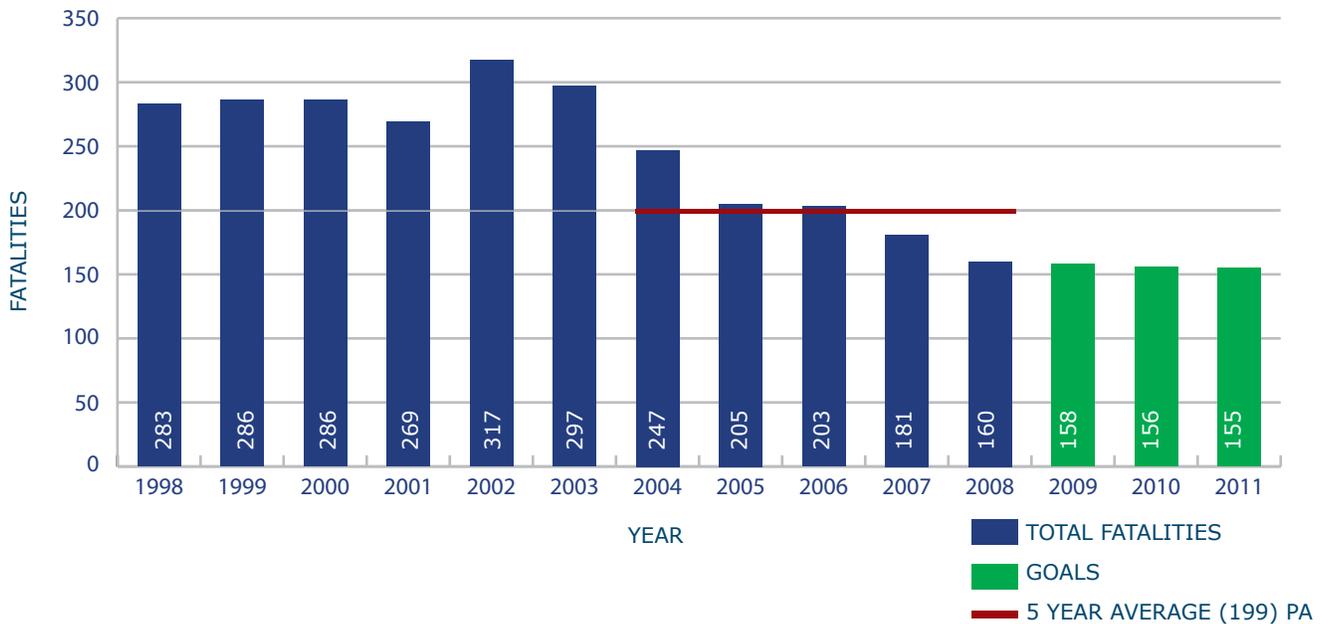
**4**

**Infrastructure Improvements** Reducing Head-On and Cross-Median Crashes

*Goal: To reduce annual head-on fatalities to 155 or less by 2011.*

Head-on crashes are the most severe type of collision. On average, head-on/cross-median crashes account for only 4% of all reportable crashes in Pennsylvania, but account for more than a tenth of total fatalities. Meeting our goal will require safety improvements that will help prevent vehicles from crossing the centerline or median. Installing centerline rumble strips, median barriers, and cable median guiderail will dramatically reduce the number of head-on and cross-median crashes.

**Head-On Fatalities  
Historical Fatality Data and Future Goals**





## Infrastructure Improvements Reducing Head-On and Cross-Median Crashes

Many of the strategies to combat head-on and cross-median fatalities incorporate engineering improvements. The following table identifies the top strategies and specific action items to address head-on and cross-median fatalities.

### Top Strategies

Strategies	Action Item
 Prevent vehicle crossover	Install centerline rumble strips Install cable median barrier Install concrete median barriers for 4 lane undivided roads
 Prevent run-off-road crashes	Enhance delineation on sharp curves (e.g., signing and marking) Widen lanes on curves

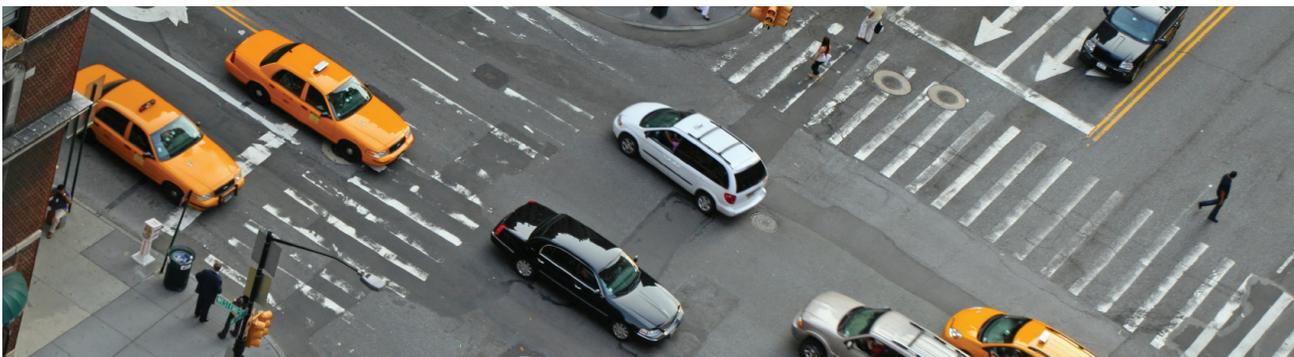
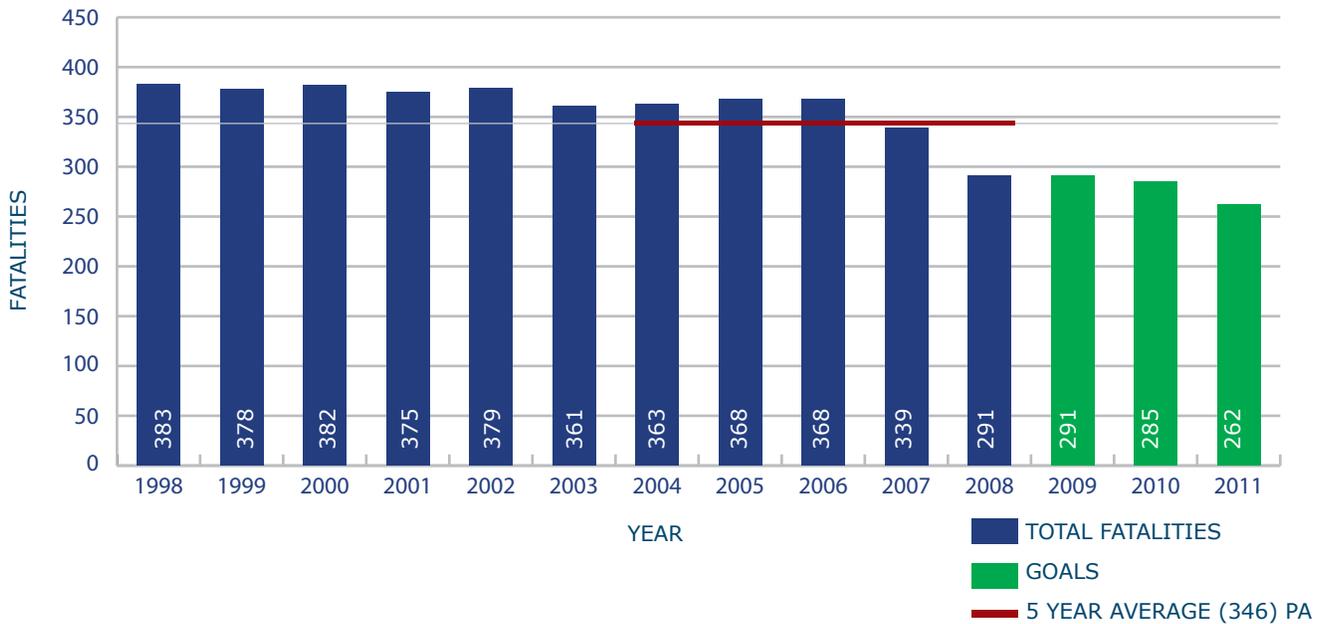
**4**

**Infrastructure Improvements** Improving Intersection Safety

*Goal: To reduce annual intersection related fatalities to 262 or less by 2011.*

On average, over 57,000 reportable crashes (40% of total) occur each year at intersections in Pennsylvania. These crashes account for approximately one quarter of total fatalities. Reducing conflict points and the likelihood of collisions within intersections will improve safety.

**Intersection Fatalities**  
Historical Fatality Data and Future Goals



**4**

**Infrastructure Improvements** Improving Intersection Safety

Many of the strategies to combat intersection related fatalities incorporate engineering improvements. The following table identifies the top strategies and specific action items to address intersection fatalities.

**Top Strategies**

	<b>Strategies</b>	<b>Action Item</b>
	Intersection Safety Action Plan	Implement FHWA Intersection Safety Action Plan
	Reduce signalized intersection crashes	Improve signal design and intersection geometry
		Implement low-cost improvements at signalized intersections (examples include LED bulbs, reflectorized backplates, turning lanes, larger signs and signal heads)
		Improve signal timing and phasing and optimize clearance intervals
	Reduce stop-controlled intersection crashes	Improve sight distance (vegetation and other objects) at stop-controlled intersections
		Improve signing and delineation at stop-controlled intersections

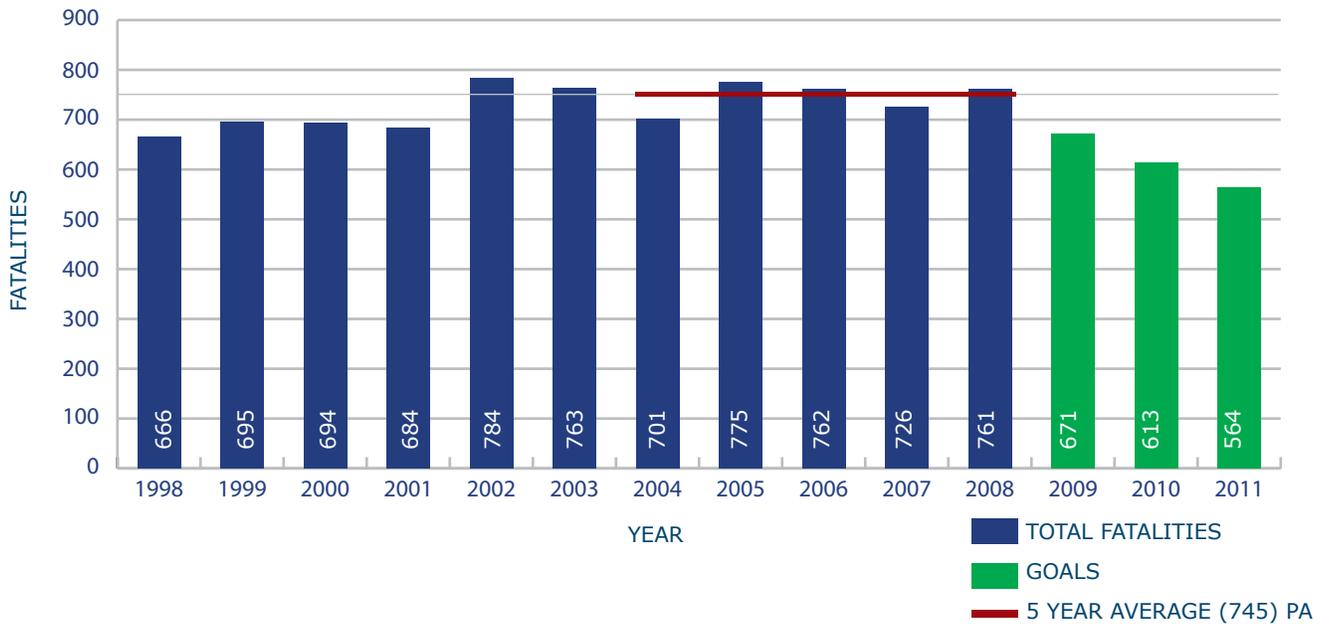
**4**

**Infrastructure Improvements** Reducing Run-Off-Road Crashes

*Goal: To reduce annual run-off-road fatalities to 564 or less by 2011.*

Every year, nearly half of total fatalities result (on average) from run-off-road crashes where the vehicle leaves its lane of travel. We will meet our goal by implementing a large number of low-cost safety improvements at targeted locations.

**Run-Off-Road Fatalities**  
Historical Fatality Data and Future Goals



**4**

**Infrastructure Improvements** Reducing Run-Off-Road Crashes

Many of the strategies to combat run-off-road fatalities incorporate engineering improvements. The following table identifies the top strategies and specific action items to address run-off-road fatalities.

**Top Strategies**



Strategies	Action Item
Reduce severity and frequency of run-off-road crashes	Install edgeline/shoulder rumble strips while allowing a minimum 4' clear width to the right of rumble strips
	Widen lanes on curves
	Enhance delineation on sharp curves (e.g., signing and markings)
	Eliminate high severity (severity 7-9) shoulder drop-offs
	Eliminate all substandard cable guiderail

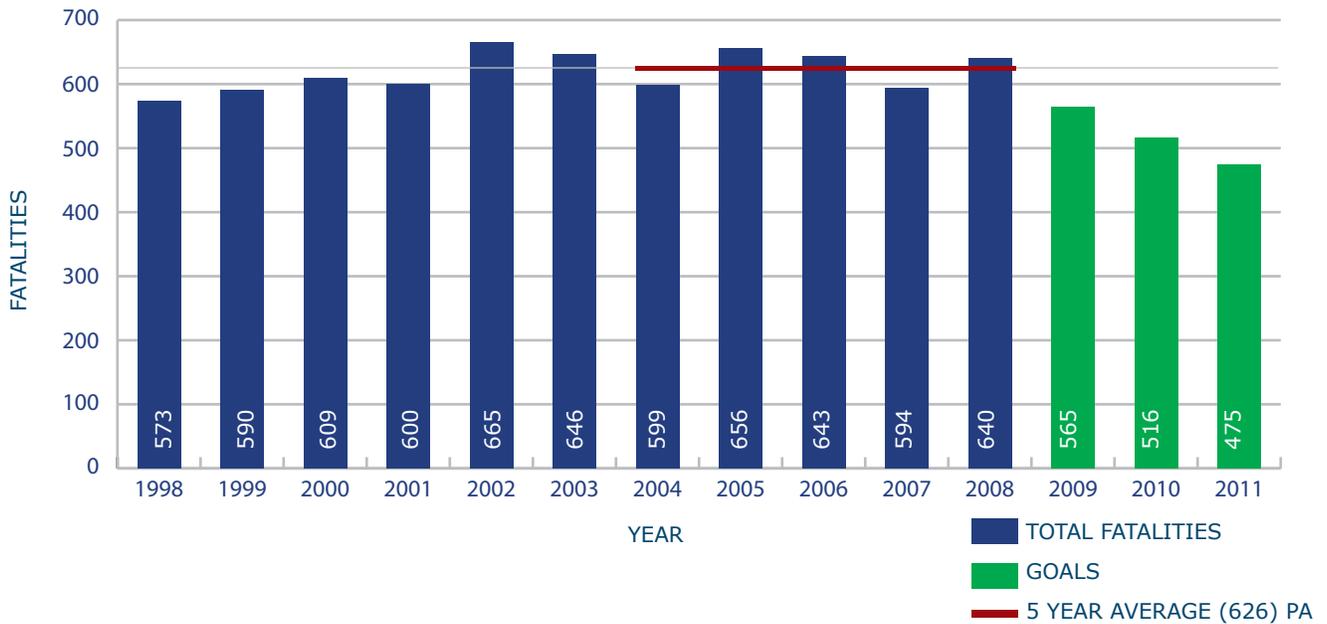
**4**

**Infrastructure Improvements** Reducing the Severity and Frequency of Hit Fixed Object Crashes

*Goal: To reduce annual fixed object related fatalities to 475 or less by 2011.*

An average of more than 40% of highway fatalities on Pennsylvania roadways are the result of collisions with fixed objects such as trees, utility poles, and guiderails. Our approach is to reduce or eliminate existing hazards, and to prevent the creation of new hazards.

**Hit Fixed Object Fatalities  
Historical Fatality Data and Future Goals**





## Infrastructure Improvements Reducing the Severity and Frequency of Hit Fixed Object Crashes

Many of the strategies to combat fixed object related fatalities incorporate engineering improvements. The following table identifies the top strategies and specific action items to address fixed object fatalities.

### Top Strategies



Strategies	Action Item
Reduce severity and frequency of hit fixed objects	Remove / relocate frequently hit utility poles
	Remove frequently hit trees and other objects in hazardous roadside locations and high-crash corridors
	Enhance delineation of fixed objects (utility poles, trees, etc.)
	Protect bridge end walls
	Install additional guiderail as a last resort to shield objects that can't be removed

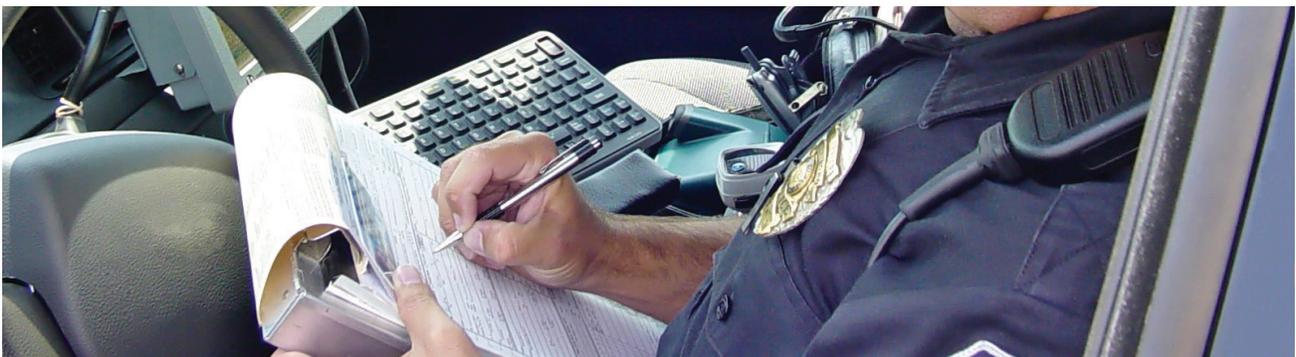
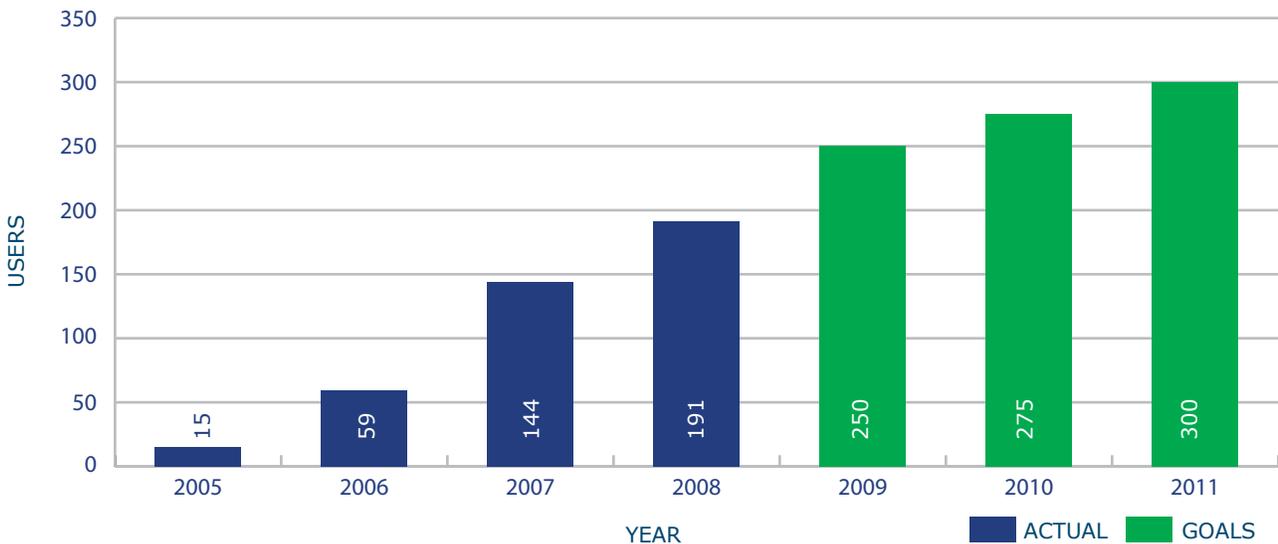
# 5

## Improving Traffic Records Data

*Goal: To improve traffic records data by 2011.*

Without good, accurate traffic records data, sound decisions about the direction of Pennsylvania’s highway safety programs cannot be made. Accurate traffic records data are the backbone of an effective safety management system. The statewide traffic records system provides the basic information that is necessary for efficient and successful highway safety efforts at the local, state, and federal levels of government. The statewide traffic records system is used to perform problem identification, establish goals and performance measures (results), allocate resources, determine the progress of specific programs, and support the development and evaluation of highway and vehicle safety countermeasures. Our goal is to make our traffic records data timely, consistent, complete, accurate, accessible, and portable (able to be integrated with other data sources). Increasing the number of transportation personnel who have access to our Crash Data Analysis Retrieval Tool (CDART) will make traffic records data more accessible and portable.

**CDART Users  
Historical Data and Future Goals**



## Improving Traffic Records Data

The following table identifies the top strategies and specific action items to improve traffic records data.

### Top Strategies

Strategies	Action Item
 Improve data accessibility by partners and data users (CDART - Crash Data Analysis Retrieval Tool, Prophecy, CODES - Crash Outcome Data Evaluation System, etc.)  	Consider the use of other agencies websites to post crash data Expand the use of CDART and create a new CDART2 tool for non-engineering partners (Project on hold due to lack of IT resources)
 Increase the electronic submission of crash records input by partners	Increase electronic submissions of crash reports
 Implement a program for improving the quality of police prepared data	Develop mechanism to call back police departments that do not submit diagrams with their crash reports Work with Safety Engineers and other partners to develop presentation for police agencies that explain why the data are so important Develop a reporting tool to track under-reporting agencies Develop a report to identify errors and report them back to the submitting police agency on a regular basis Develop metric to measure the error rate of police agencies submitting crash reports Establish crash data quality courses during MPOETC Training Present info at Chiefs of Police Conference Conduct face-to-face meetings between PennDOT and local police
 Implement TraCS and other compatible electronic systems for data collection	Develop a program to determine the size and scope of problems with incorrect crash locations Expand the use of TraCS/Crash to users outside of the PSP (Project on hold due to lack of IT resources) Develop TraCS Electronic Citation processing
 Increase the capabilities and capacity in data analysis and statistical evaluation for improving quality and timeliness of crash reports  	See Strategy 1 above

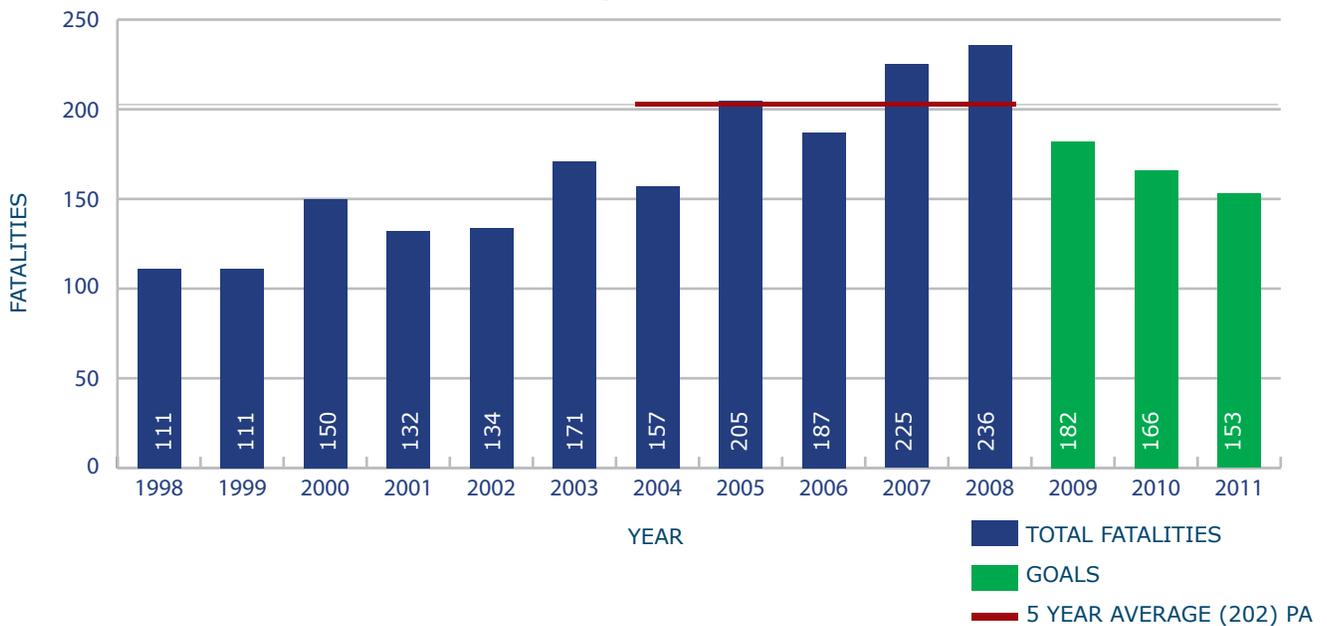
# 6

## Motorcycle Safety

*Goal: To reduce annual motorcycle related fatalities to 153 or less by 2011.*

Motorcycle safety has recently been a growing area of concern in Pennsylvania. Motorcycle fatalities have increased significantly over the past five years. Prime factors that have contributed to the rising number of fatalities include impaired riding, lack of training, and aggressive riding. Also, an increase in the number of motorcycle riders on the road has naturally increased the chances of a crash due to increased exposure.

**Motorcyclist Fatalities  
Historical Fatality Data and Future Goals**





## Motorcycle Safety

Strategies to combat motorcycle related fatalities incorporate education and enforcement. The following table identifies the top strategies and specific action items to address motorcycle fatalities.

### Top Strategies

	Strategies	Action Item
	Increase enrollment in motorcycle safety training course	Provide enough training to meet demand Through media campaign and PSA's, educate residents on where motorcycle training is held in their county
	Support peer-to-peer training and instruction through motorcycle groups	Fund a training position through a grant and create buddy and mentoring program within motorcycle groups.
	Educate motorcyclists statewide about the dangers of drinking and operating a motorcycle	Organize a motorcycle-specific public information and education program focused on increasing impaired riding awareness Use VMS Boards to display anti-DUI motorcycle message
	Support specialized law enforcement training in motorcycle DUI detection and motorcycle crash investigation	Contact and inform law enforcement about extra trainings and their importance in highway safety
	Utilize law enforcement agencies for intensified enforcement at or in the area of motorcycle events where alcohol may be served	Analyze impaired motorcycle crash data to plan enforcement in locations with more impaired driving crashes

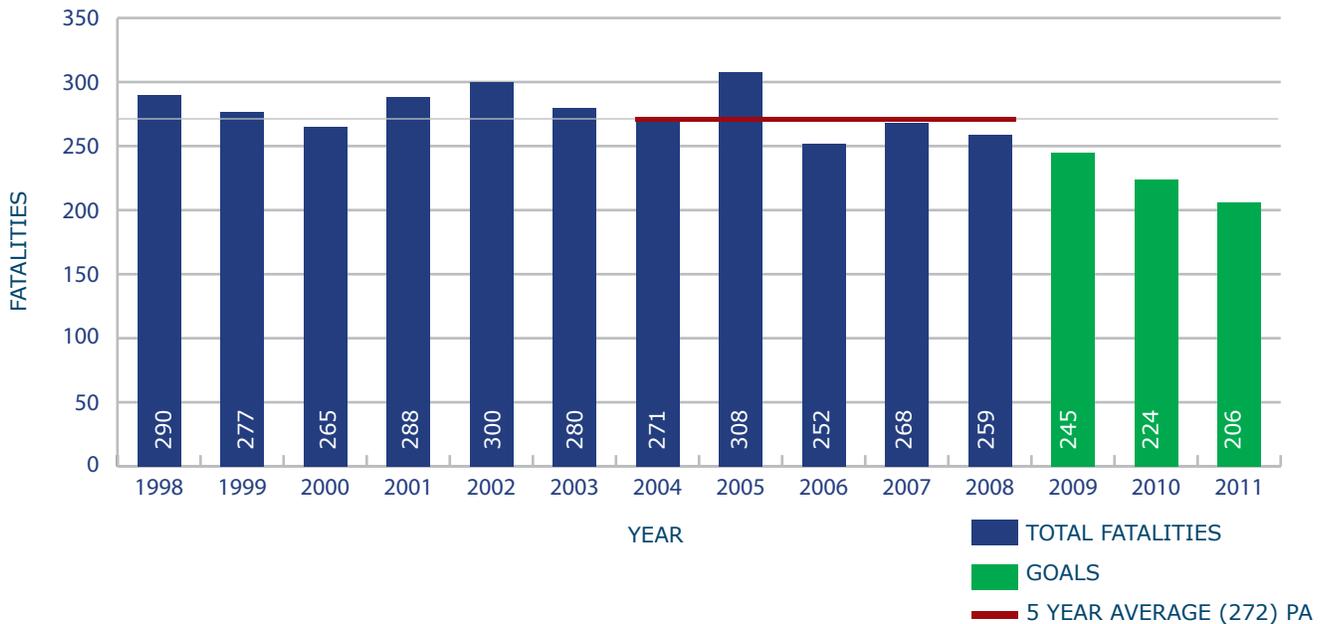
7

**Mature Driver Safety**

*Goal: To reduce annual older driver fatalities to 206 or less by 2011.*

Pennsylvania has nearly 1.5 million licensed drivers aged 65 and older who make up 17% of our driving population. Older citizens constitute the fastest growing segment of the population. Pennsylvania State Data Center statistics indicate that the number of residents 65 and older will increase 21% by 2020. Our state needs to address the safety concerns that come with a growing population that show trends to be over-represented in certain types of crashes involving more complex driving tasks. To address this issue a comprehensive approach will need to be developed that will promote our existing programs and incorporate other stakeholders throughout Pennsylvania.

**Older Driver (Age 65+) Fatalities  
Historical Fatality Data and Future Goals**





## Mature Driver Safety

Many of the strategies to combat older driver fatalities incorporate engineering improvements and education. The following table identifies the top strategies and specific action items to address older driver fatalities.

### Top Strategies

	Strategies <sup>1</sup>	Action Item
	Identify hazardous intersections and improve their safety for older drivers	Designate mature driver problem intersections and implement improvements
	Promote mature driver education classes (AAA/AARP/Seniors for Safe Driving) which inform older drivers about highway safety, including new laws, health requirements, and alternative travel methods	Grantees support 2 classes per year
		Increase the number of mature driver education classes / participants
	Create statewide partnerships with state and local agencies for more visible roadway signing, lighting, and efficient sidewalk design	Formulate formal conference calls / meetings to discuss improvements to our roadways
	Create more alternatives to driving and provide education and training to increase the public's awareness of mobility alternatives	Develop new ways to implement / increase / supply education and information to the older population
		
	Investigate enhanced driver's license testing procedures	Analyze successes in other states regarding older population driver licensing re-testing procedures

<sup>1</sup>Legislative strategies are based on recommendations from the SHSP committees and are not an endorsement from the Governor's office.



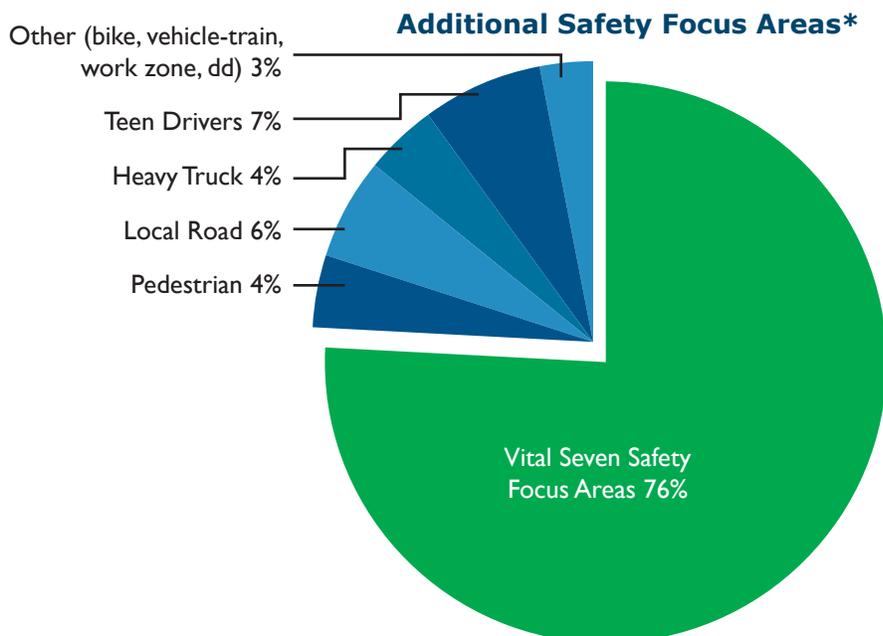
**This page was intentionally left blank**

## Additional Safety Focus Areas

Additional Safety Focus Areas were selected in priority order using the same criteria as the Vital Seven. Some areas have only recently become high safety concerns while others have declined in severity over the last few years. Addressing these focus areas is very important, even though they do not have as much of a severe safety need as the Vital Seven.

The following chart represents the percentage of statewide fatalities associated with each of the Additional Safety Focus Areas (not including Emergency/Incident Response Time). The Additional Safety Focus Areas accounted for 24% of fatalities in Pennsylvania over the last 5 years. The “Other” category includes Distracted/Drowsy (2%), Work Zone (1%), Bicycle (less than 1%) and Vehicle-Train (less than 1%). By implementing strategies and action items to address the Additional Safety Focus Areas we will be able to make significant safety improvements as we strive to reach our goal of 1,150 annual fatalities or less by 2011.

- Improving Pedestrian Safety
- Enhancing Safety on Local Roads
- Improving Teen Driver Safety
- Advancing Heavy Truck Safety
- Reducing Crashes Involving Inattentive or Drowsy Drivers
- Improving Bicycle Safety
- Improving Emergency/Incident Response Time
- Enhancing Safety in Work Zones
- Reducing Vehicle-Train Crashes



\*based on historic 5-year average

## Improving Pedestrian Safety

*Goal: To reduce annual pedestrian related fatalities to 118 or less by 2011.*

Pedestrian fatalities represent a significant number of highway fatalities in Pennsylvania. Pedestrians are legitimate roadway users but are sometimes overlooked in the building and remodeling of transportation systems. Although pedestrian mobility is often the chief planning goal, access is often not possible. Thus, access to the transportation system must be first achieved before pedestrian mobility can succeed. Whether building new infrastructure or renovating existing facilities, plans should consider pedestrians along with all other users as components of the transportation system.



## Improving Pedestrian Safety

Many of the strategies to combat pedestrian fatalities include engineering improvements as well as education. The following table identifies the top strategies and specific action items to address pedestrian fatalities.

### Top Strategies

Strategies	Action Item
 Implement safe-crossing designs for mid-block crossings	Install mid-block crossing facilities Reduce mid-block motor vehicle / pedestrian crashes at selected problem locations
 Continue to deploy yield-to-pedestrian channelizing devices to communities across the commonwealth and measure their effectiveness	Deploy yield-to-pedestrian units
 Continue to improve pedestrian safety in Transportation Enhancements (TE), Hometown Streets (HS), and Safe Routes to Schools (SRTS) programs	Deploy safety projects in TE, HS, and SRTS programs
 Continue to provide education, outreach, and training to motivate a change in specific behaviors that can lead to fewer pedestrian injuries	Monitor pedestrian crash/fatality rates Deploy walkable community programs Address pedestrian safety sites (LTAP) Integrate pedestrian questions on written driver's exam Educate PennDOT staff and consultants Expand safety programs to include pedestrians and taverns/bars/pubs
 Continue to improve signal hardware for pedestrians (pedestrian signals and timing, accessible pedestrian signals, right-turn-on-red restrictions, pedestrian countdown signals, etc.)	Review pedestrian signal timing Promote use of pedestrian signals such as pedestrian countdown signals Review pedestrian accessibility and associated features such as pedestrian pushbuttons Establish criteria on when to install accessible pedestrian signals (APS) Determine other benefits & criteria for strategies such as turn restrictions, leading pedestrian intervals, etc Monitor motor vehicle / pedestrian crash rate

## Enhancing Safety on Local Roads

*Goal: To reduce annual fatalities on local roads to 190 or less by 2011.*

Currently, more than a quarter of total crashes occur on locally owned roads in Pennsylvania, accounting for approximately one sixth of fatalities. These roads, owned by townships, boroughs, cities, and counties, experience the same types of crashes as state highways (run-off-road, intersection, pedestrian, etc.). Therefore, by identifying and prioritizing “top” local road segments and intersections from crash data and providing training, technical assistance, and road safety audits to identify countermeasures for the prioritized list of roadway segments and intersections, we can achieve the goal of reducing crashes on local roads and contribute to the overall reduction in crashes on Pennsylvania highways.



## Enhancing Safety on Local Roads

Strategies to combat fatalities on local roads include engineering improvements as well as many of the education and enforcement efforts discussed in previous focus areas. The following table identifies the top strategies and specific action items to address fatalities on local roads.

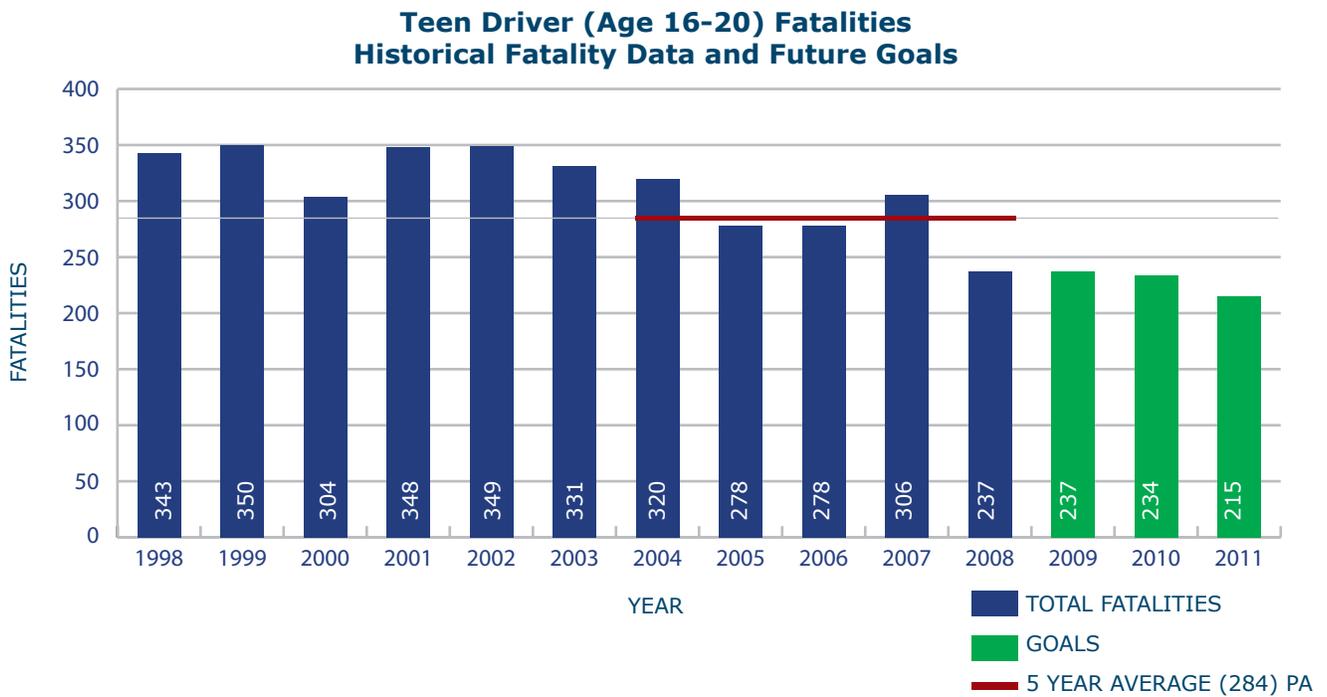
### Top Strategies

Strategies	Action Item
 Implement systematic local road safety improvements	Identify and prioritize “top” local road segments and intersections from crash data using same methodology as was used to identify top 5% of state roadway segments
  Implement local comprehensive programs to reduce aggressive driving, reduce DUI crashes, increase seatbelt use, etc.	Identify local roads with high crash numbers or rates by crash type: aggressive driving, DUI, unbelted, etc.  Work with local and state enforcement agencies to ensure targeted local roads are included in enforcement efforts
  Improve GIS reporting and capabilities for local roads (also see crash record system)	Provide local police with GPS capabilities Implement TRACS software for local police Train local police on importance for accurate crash reporting
   Improve quality of and access to local road crash data (also see crash records system)	Encourage local police to locate crashes with GPS Train local police on completing crash forms correctly and categorizing crashes correctly Provide CDART access to appropriate local law enforcement, MPO, and RPO personnel
 Improve database of traffic volume information on local roads	Collect traffic volume information on local roads Create system to track and catalog local road volume information

## Improving Teen Driver Safety

*Goal: To reduce annual teen driver fatalities to 215 or less by 2011.*

The legal driving age in the state of Pennsylvania is 16 and above. Teen driver safety refers to drivers between the ages of 16 and 20 years old. Out of all the drivers involved in single vehicle crashes in 2007, more than 40% were drivers aged 16 to 20. These teen driver-related crashes resulted in 306 fatalities in 2007. Education and enforcement strategies will allow us to reduce teen driver fatalities to the 2011 goal of 215.



## Improving Teen Driver Safety

Many of the strategies to combat teen driver fatalities incorporate legislation, education, and enforcement. The following table identifies the top strategies and specific action items to address teen driver fatalities.

### Top Strategies

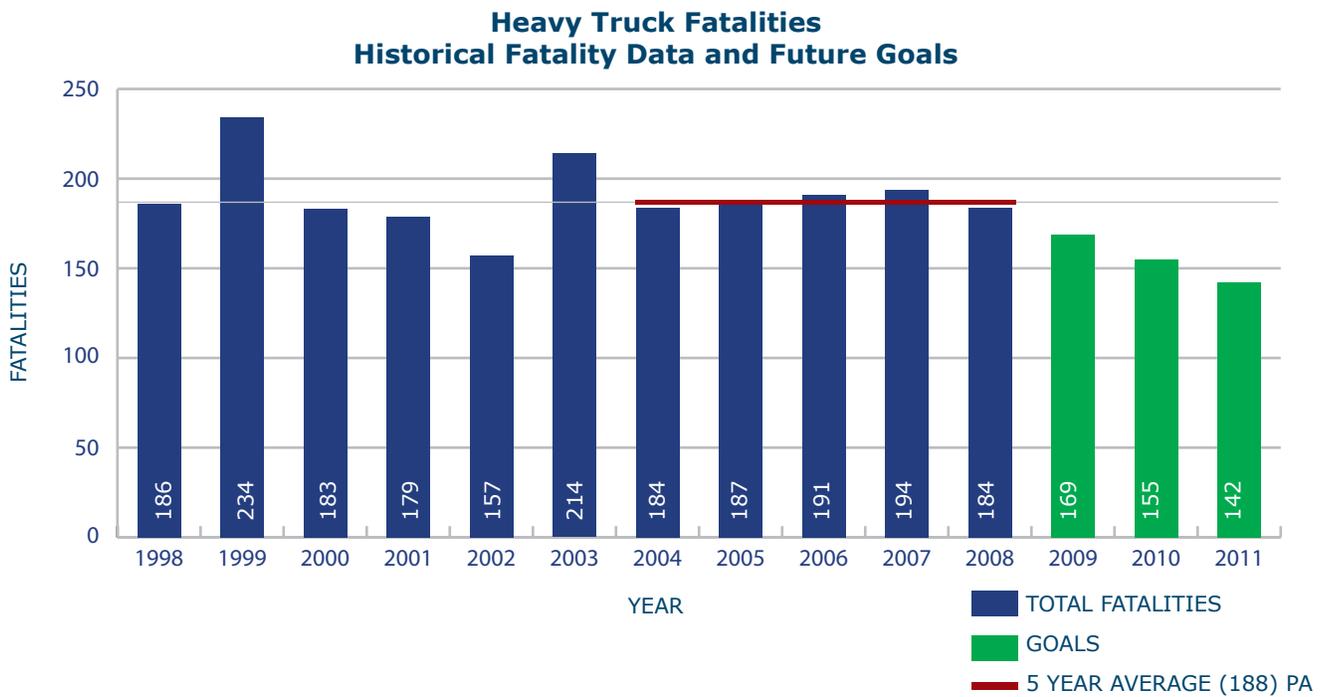
	Strategies <sup>1</sup>	Action Item
	Consider stricter GDL law requirements	Legislative symposium
	Consider safety legislation that will restrict the maximum number of passengers in vehicles of teen drivers	Legislative symposium
	Implement an evaluation system for drivers moving from the provisional to the regular license stage (junior to senior license)	Conduct knowledge surveys of potential drivers
	Expand enforcement targeting teen drivers	Conduct teen driver safety checkpoints
	Implement public information and education campaigns targeted at improving the safety of teen drivers	Create and deliver teen driver presentation

<sup>1</sup>Legislative strategies are based on recommendations from the SHSP committees and are not an endorsement from the Governor's office.

## Advancing Heavy Truck Safety

*Goal: To reduce annual heavy truck related fatalities to 142 or less by 2011.*

On average, heavy truck related fatalities represent more than a tenth of total fatalities in Pennsylvania. In 2008, the Pennsylvania State Police, with assistance from PennDOT, conducted a pilot campaign of the Ticketing Aggressive Cars and Trucks (TACT) program. From the research conducted during this program Pennsylvania has gained valuable insight into media techniques and enforcement efforts that are beneficial when addressing this very public opinionated topic. In conjunction with the Pennsylvania State Police and other law enforcement agencies PennDOT plans to help increase enforcement that targets aggressive driving by and around heavy trucks.



### Advancing Heavy Truck Safety

Many of the strategies to combat heavy truck related fatalities incorporate enforcement and education. The following table identifies the top strategies and specific action items to address heavy truck fatalities.

**Top Strategies**

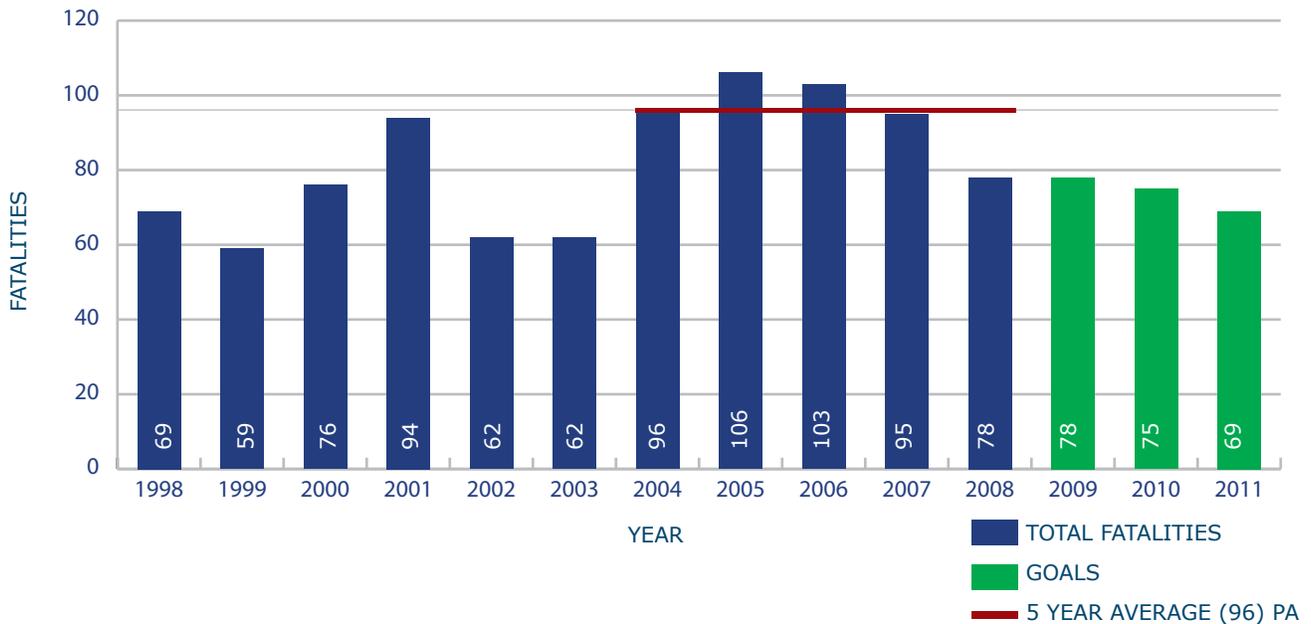
	Strategies	Action Item
	Expand highway corridors for enhanced enforcement	Increase number of corridors
	Continue to deploy advanced enforcement techniques and technologies	Deploy targeted commercial vehicle enforcement waves
	Enhance training for police officers to improve overall enforcement of moving violations	Increase MCSAP trainings
	Continue to expand roadside inspection programs and inspection sites on designated highways	Increase MCSAP inspections
	Improve driver awareness of heavy truck characteristics through distribution of public information and education materials with vehicle registration renewals	Increase the number of vehicle registration renewals with public information and education materials

## Reducing Crashes Involving Inattentive or Drowsy Drivers

*Goal: To reduce annual distracted and drowsy driving fatalities to 69 or less by 2011.*

In 2008, 78 highway fatalities were related to inattentive or drowsy drivers on Pennsylvania roadways, equating to approximately 5% of all motor vehicle related fatalities. This may be under-reported because drivers involved in a crash may not readily admit to being inattentive or drowsy. Our goal is to seek an approximate 10% reduction in these fatalities by 2011. We plan to reach this goal by implementing effective countermeasures, such as shoulder and edge line rumble strips, and providing public information and outreach programs to the commercial and residential communities.

**Distracted/Drowsy Driver Fatalities  
Historical Fatality Data and Future Goals**



## Reducing Crashes Involving Inattentive or Drowsy Drivers

Strategies to combat distracted and drowsy driving fatalities incorporate engineering improvements as well as education and enforcement. The following table identifies the top strategies and specific action items to address distracted and drowsy driving fatalities.

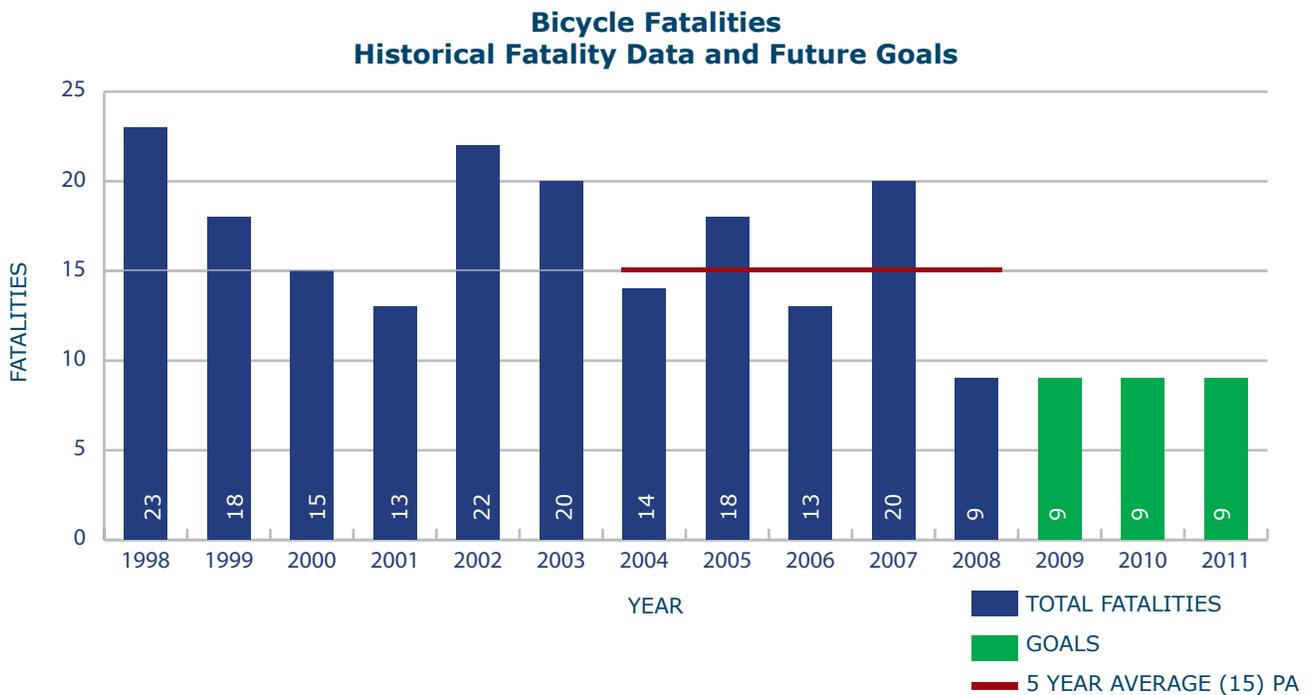
### Top Strategies

	Strategies	Action Item
	Implement centerline rumble strips (CLRS) on two-lane rural roadways (see head-on crashes)	Install CLRS
	Expand shoulder (SRS) or edge line rumble strips (ERS) on rural interstates, urban interstates, and other rural undivided roadways (with adequate shoulders) (see ROR)	Install SRS and ERS
	Use innovative road striping to improve driver alertness	Install striping
	Expand public information and education campaign to emphasize and raise the public's and commercial truck drivers' awareness of the dangers of drowsy driving	Develop and deliver drowsy driver presentations
	For trucking industry, implement fatigue management programs and driver work scheduling	Develop and deliver trucking company presentations

## Improving Bicycle Safety

*Goal: To reduce annual bicycle fatalities to 9 or less by 2011.*

Bicycle crashes and fatalities represent a small portion of the total crash picture in Pennsylvania. Nevertheless, they are a vulnerable group that is not ignored by PennDOT. The emphasis is on ensuring that bicyclists understand the rules of the road and that they are predictable, consistent, and blend easily and safely with other highway users. The attention begins with elementary school children, who are taught the basics of bicycling and the importance of wearing helmets, and continues with instructional publications and website information for teens and adults. “Share the road” messages are an important part of instruction for motorists.



## Improving Bicycle Safety

Many of the strategies to combat bicycle fatalities incorporate education. The following table identifies the top strategies and specific action items to address bicycle fatalities.

### Top Strategies

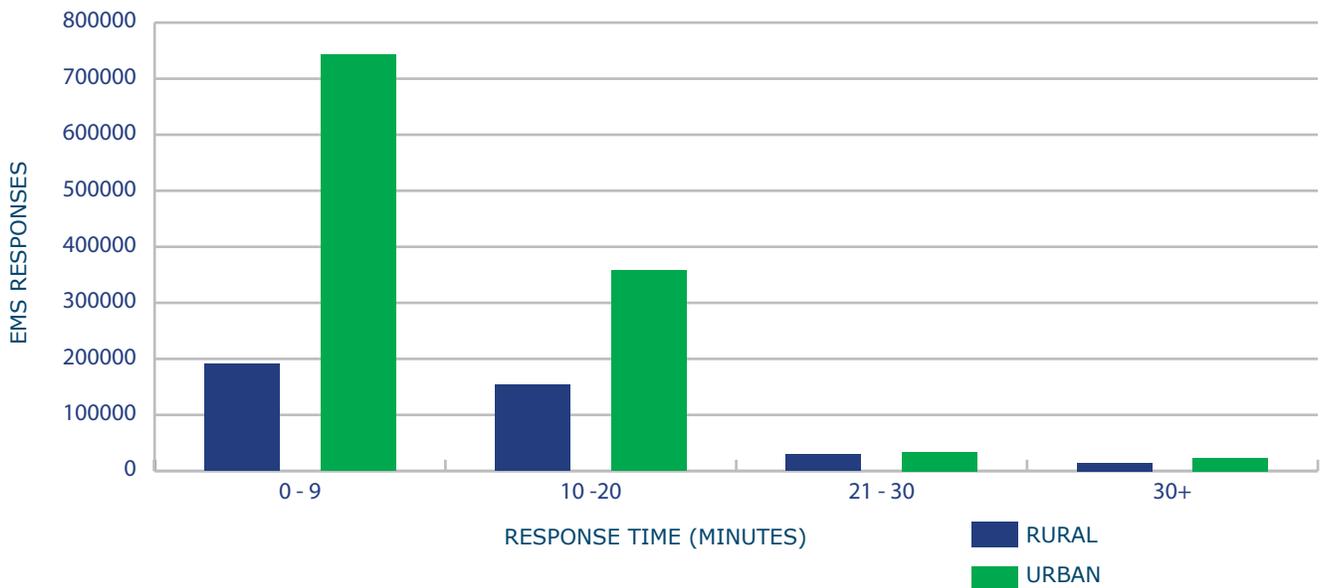
	Strategies	Action Item
	Increase public awareness through expanded public education and marketing campaigns	Identify Police departments that have officers on bikes to support community awareness Establish local bicyclist PI&E programs within communities
	Educate community professionals on effective ways to promote safe bicycling	Work with Safe Kids, PA TIPP, and AAA to promote bicycle safety at CPS events (e.g., car seat use and bike helmet use for older children) Establish share-the-road programs within communities Educate PennDOT staff and consultants
	Expand school and community programs that teach bicycle safety to children and adult bicyclists	Encourage CTSP to become involved in local bike events/races (e.g., bike rodeos or derbies) Teach bicycle safety in school districts (PennDOT has not come up with funding for a pilot of CEPA, which needs to be tested before employing to 501 districts)
	Include safe bicycling and sharing the road concepts in driver education programs	Teach share-the-road concepts in school districts Improve the correct response rate to bicycle/pedestrian questions on written driver's exam
 	Continue to create tools that can be used at the state and local levels to promote bicycle helmet use	Employ combination education/enforcement campaign to increase helmet use for children under age 12 Distribute information through libraries and schools on PA Law and how to select and fit a helmet

## Improving Emergency/Incident Response Time Emergency Rural Services

*Goal: To improve response time for emergency rural services.*

Pennsylvania has one of the nation’s largest rural populations with nearly 3 million residents or 23% of its population considered rural. Due to the remoteness and inaccessibility of rural areas, EMS agencies have more obstacles to respond to a patient in need than those in urban areas. Opportunities for improvement include inadequate financial resources, recruitment and retention difficulties, high reliance on increasingly hard-to-find volunteer personnel, aging infrastructure, communication technology problems, lack of access to qualified medical direction, lack of training opportunities close to home and continuing education.

**Emergency Rural vs Urban Services**



## Improving Emergency/Incident Response Time Emergency Rural Services

Strategies to improve response time for emergency rural services incorporate the use of technology. The following table identifies the top strategies and specific action items to improve emergency response time.

### Top Strategies

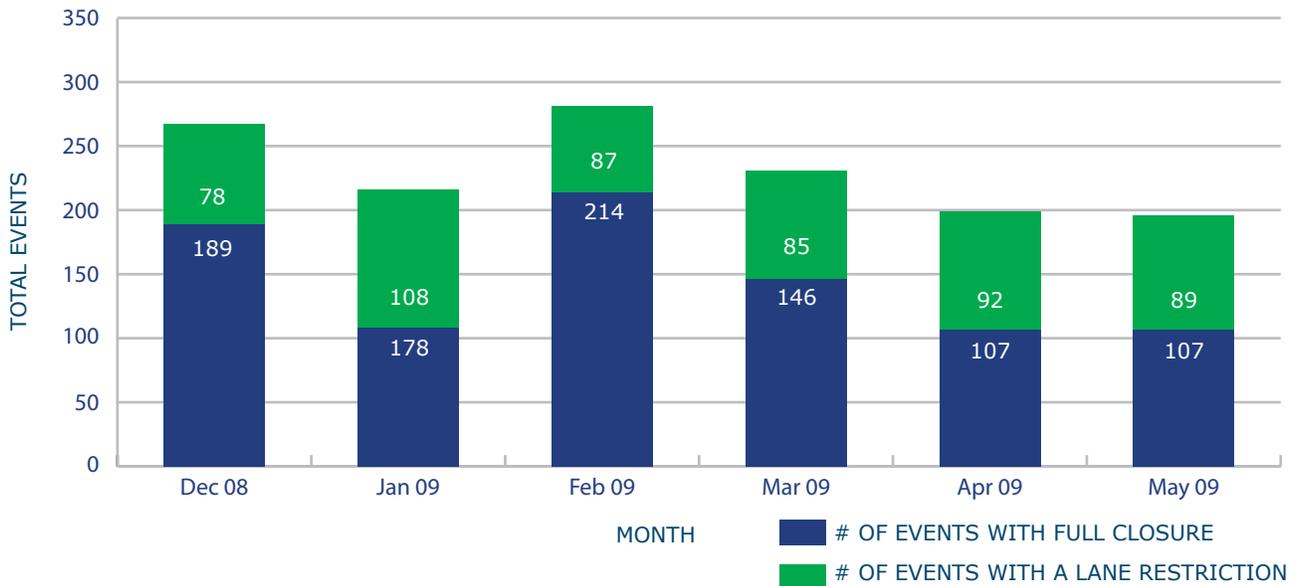
Strategies	Action Item
 Develop models to optimize EMS staffing patterns to include recruitment and retention strategies	Increase the number of new people certified Increase the percentage recertified Increase the percentage of calls that meet staffing requirements
 Install global positioning equipment on EMS vehicles to allow for quicker crash location identification, and implement a rural coordinate addressing system to improve emergency workers' ability to locate rural locations	Improve response time (en route to "on scene" – with no increase in speed) Increase number of vehicles with GPS
  Improve compliance of rural 911 centers with FCC wireless phase 2 capability	Increase the percentage of Public Safety Answering Points (PSAPs) that are compliant (95.5% (64/67) of PA counties possess Phase II capability) Decrease the time-to-dispatch of EMS unit
 Integrate support of EMS into rural hospital finance plans	Increase the number of hospitals with EMS support in finance plans
 Continue to include local EMS / 911 personnel when planning or implementing response plans	Reduce the response time Increase the number of communities including emergency personnel when forming response plans

## Improving Emergency/Incident Response Time Emergency Incident Management

*Goal: To improve incident response time.*

An Incident Management and Operations Program is crucial to responding to incidents and reducing incident duration. Although PennDOT is not a first response agency, its coordination and cooperation can be beneficial to successfully managing incidents and emergencies. Real-time information, Intelligent Transportation System (ITS) Devices, involvement with other agencies, training, and statewide connectivity of traffic management centers can help improve incident detection and response. Our goal is to reduce the overall incident time and duration and improve public safety through improved incident response.

**Statewide Total Number of Events**



**Improving Emergency/Incident Response Time** Emergency Incident Management

Many of the strategies to improve incident response time will require collaboration among several agencies and the use of technology. The following table identifies the top strategies and specific action items to improve incident response time.

**Top Strategies**

Strategies	Action Item
 Implement statewide center to center connectivity for Traffic Management Centers (TMCs) and Regional TMCs, and establish statewide Intelligent Transportation System (ITS) device command and control software	Connect TMCs to the department’s network Implement incident response plans
   Establish a statewide TMC collocated with other key emergency and incident management agencies (PEMA, PSP, PTC, etc.)	Implement incident response plans Complete Statewide TMC
 Implement Phase A of the ITS Statewide Mobility Program (interstate to interstate connections) to reduce the number/rate of secondary crashes.	Implement dynamic message signs (DMSs), highway advisory radios (HARs), and closed-circuit television cameras (CCTVs) Deploy ITS strategies at interchanges
 Implement an updated Emergency Transportation Operations (ETO) manual and associated training and exercise program	Train ETO staff
  Establish a freeway service patrol policy to define program and coverage area requirements for current and future expansions	Reduce incident duration Increase the number of responses
   Establish an incident management / operations strategic plan	Implement plan

## Enhancing Safety in Work Zones

*Goal: To reduce annual work zone fatalities to 18 or less by 2011.*

An average of 23 fatalities occurred each year from 2004 to 2008 in work zones in Pennsylvania. Expanding public awareness, increasing the presence of law enforcement, and implementing new safety products will help to reduce traffic queues and improve the traffic flow thru our work zones. In 2008, \$7.3 million was spent on law enforcement for the Department's construction projects.



### Enhancing Safety in Work Zones

Strategies to combat work zone fatalities include efforts from engineering, education, and enforcement. The following table identifies the top strategies and specific action items to address work zone fatalities.

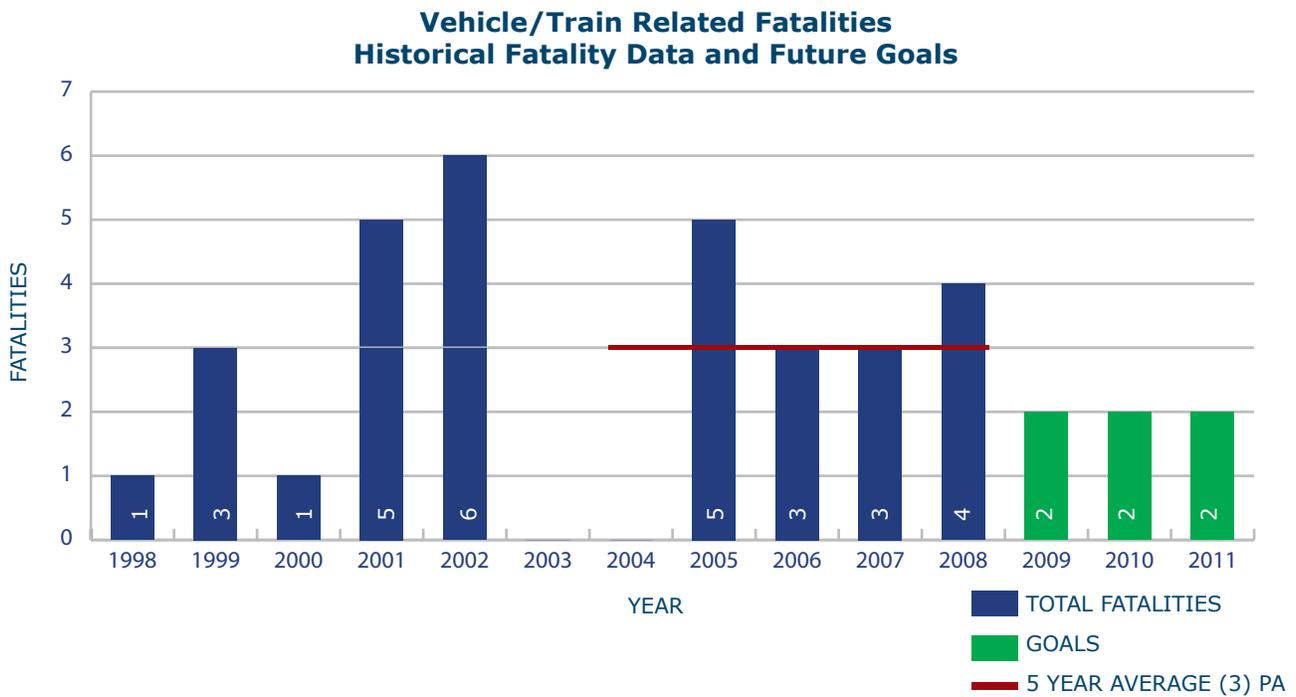
**Top Strategies**

	Strategies	Action Item
	Continue work zone enforcement	Maintain the number of projects with dedicated work zone enforcement
	Conduct annual work zone safety reviews and implement recommendations of review team	Conduct reviews (92 in 2008)
	Implement variable speed limits (VSL) pilot (NCHRP 3-59) – use these technologies to detect queues and improve traffic flow	Deploy VSL sites in work zones
		
	Add transverse rumble strips within and prior to work zones	Increase the number of sites improved with transverse rumble strips (5 in 2008)
	Include a more comprehensive public awareness campaign	Develop National Work Zone Awareness Week campaign

## Reducing Vehicle-Train Crashes

*Goal: To reduce annual vehicle-train fatalities to 2 or less by 2011.*

Less than 1% of all highway fatalities in Pennsylvania result from vehicle-train crashes. However, this area is still a high concern due to the fact that the majority of these crashes are very severe. A vehicle-train crash indicates that any vehicle involved in the crash was a train or trolley.



## Reducing Vehicle-Train Crashes

Many of the strategies to combat vehicle-train fatalities incorporate engineering and education. The following table identifies the top strategies and specific action items to address vehicle-train fatalities.

### Top Strategies

	Strategies	Action Item
	Develop a systematic program for SAFETEA-LU 148 grade crossing safety program to identify project location, funding formula, implementation priorities, and annual report for FHWA. Sustain aggressive federal-aid rail-highway crossing safety program	Upgrade passive warning devices to active devices
	Implement an “At Grade Crossing Closure” program	Partner with railroad to identify candidate crossing
		Promote closure as part of safety, highway, and bridge projects
		Provide matching funding up to \$7,500 and pay for construction
		Deliver Operation Lifesaver presentations (now required to be a minimum of 4/yr/person with 70 people certified to deliver)
		Increase number of participants on Operation Lifesaver presentations
		Increase number of PSAs
	Continue to publicize the dangers of highway-rail grade crossings using Operation Lifesaver’s materials and services. Improve information included in driver education, commercial driver’s license training, and licensing to reflect safe practices for approaching and traversing highway-rail crossings	Increase number of website hits in Operation Lifesaver organization
		Increase number of driver’s education classes and mature driver classes utilizing Operation Lifesaver materials

## Moving Forward Implementation Process

Pennsylvania's Strategic Highway Safety Plan (SHSP) was created to target priority Safety Focus Areas (SFAs) and promote strategies to reduce fatalities and crashes on Pennsylvania's roadways. The SHSP is a data-driven, long-term strategic plan that integrates the 4 E's of safety (Engineering, Education, Enforcement, and Emergency Medical Services). The goals, strategies, and action items comprised in the SHSP have been established in conjunction with federal, state, local, and private sector safety stakeholders.

This strategic plan is just the starting point toward saving more lives on Pennsylvania's roadways. To achieve the optimal results, the strategies and action items must be implemented. SHSP implementation has been an integral component from the very beginning of the planning process. This section briefly explains how Pennsylvania plans to successfully implement the SHSP. Complete information can be found in our SHSP Implementation Plan.

## Essential Eight Elements

The Essential Eight Elements for successful SHSP implementation refer to the four fundamental requirements and four effective steps identified by the Implementation Process Model. The four fundamental requirements are leadership, collaboration, communication, and data collection-analysis. The four effective steps include emphasis area action plans, linkage to other plans, marketing, and monitoring-evaluation and feedback. Objectives for each of the "essential eight" are outlined below.

### Leadership

*"Providing Leadership and Accountability for SHSP Implementation"*

- ▼ To secure a shared ownership of the safety goals, PennDOT along with four other high level agencies (Dept. of Health, Dept. of Education, Liquor Control Board, and the State Police) are the ultimate leaders in implementing the SHSP and make up the Multi-Agency Safety Team (MAST)
- ▼ Internally, PennDOT has a leader for each of our 20 safety focus areas
- ▼ Externally, we plan to establish one contact person from all of our stakeholders/partners who will be the owner of implementing the SHSP within their organization
- ▼ Action items for all of the strategies included in the SHSP have been established. These action items have specific owners who will drive the implementation process

## Essential Eight Elements continued

### Collaboration

*“Sharing Ownership of the Safety Goal”*

- Established over 40 organizations who qualify as our stakeholders and partners helping to develop our SHSP
- Action items have been identified for each stakeholder/partner
- PennDOT will work together with these agencies to implement highway safety improvement strategies from the SHSP
- MAST – Committee of high level agencies which come together to monitor and address highway safety issues
- Steering Committee

### Communication

*“Creating Effective Communication Mechanisms”*

- Quarterly update with all Steering Committee members to track progress and stay coordinated
- Annual Steering Committee meeting in person
- Quarterly MAST meetings
- Three initial Steering Committee meetings

### Data Collection and Analysis

*“Improving Traffic Records Data”*

- Safety Focus Area Action Plans (these plans are being outlined during the development of the SHSP)
- Tracking dials
- Quarterly email to all Steering Committee members to track progress and give updates
- Quarterly MAST meetings
- District specific crash data for each focus area (motorcycle crashes, head on collisions, etc.)
- Low cost safety improvement projects (quarterly reports)

### Emphasis Area Action Plans

*“Identifying Performance Measures for all Safety Focus Areas”*

- Safety Focus Area Action Plans (strategy tables)
- Tracking dials
- Safety Multi-Agency Roads Team (SMART) for 7 high level focus areas (Aggressive Driving, Reducing DUI, Seatbelt, Pedestrian Safety, Infrastructure Improvements, Improving Crash Data, and Motorcycle Safety - in progress)

## Essential Eight Elements continued

### Linkage to Other Plans

*“Integration of Other Transportation Plans and Programs”*

- ▼ District safety plans
- ▼ MPO/RPO priority list for safety projects
- ▼ Transportation Improvement Program (TIP) / Statewide Transportation Improvement Program (STIP)
- ▼ Long range transportation plans
- ▼ Highway safety improvement plan
- ▼ Stakeholders strategic plans
- ▼ Identify other agency Governor’s performance measures related to safety and link with their budget and action items

### Marketing

*“Marketing Safety Throughout Pennsylvania”*

- ▼ DriveSafePA.org website
- ▼ Provide information to general public about highway safety goals and programs
- ▼ Unify outreach efforts, media events, and educational programs to catch the attention of government organizations, public entities, and businesses
- ▼ Outreach to schools, senior organizations, Chambers of Commerce, and others to reach people one on one to promote highway safety and promote the new safety slogan
- ▼ Identify safety marketing strategies such as paid media, earned media, internal marketing, and others

### Monitoring, Evaluation, and Feedback

*“Sustaining and Measuring Safety Efforts”*

- ▼ Quarterly email to all Steering Committee members to track progress and give updates
- ▼ Quarterly MAST meetings
- ▼ Annual Steering Committee meetings
- ▼ DriveSafePA.org website - monitor data including fatality counts, safety improvements, and current issues

Successful SHSP implementation will result in transportation safety improvements that save lives and reduce crashes. For the state agencies, “Memoranda of Understanding” (MOUs) will be developed to clarify which agencies are accountable to achieve the prescribed results. It will take a collective effort from all Pennsylvanian’s to reach our goals and “Take Safety to the Next Level.”

## Implementation Focus Areas

Pennsylvania's 2006 Comprehensive Strategic Highway Safety Improvement Plan set the tone for identifying safety focus areas and developing strategies to improve highway safety in our state. The 2009 SHSP, however, will go far beyond its 2006 predecessor. Since our state already has a good picture of the areas we need to improve upon, it is now time to specifically identify what, who, when, and how we will complete each strategy. This step is known as "Taking Safety to the Next Level." In order to reach the next step, five over-arching emphasis areas have been established to implement safety and our strategies and goals. These five areas have been at the forefront during the entire SHSP process and will continue to be applied throughout implementation.

### **Sharing Ownership of Safety Goal**

Significant improvements in highway safety depend on a collective effort from all agencies and organizations that have a hand in working in this discipline. Achieving the best results for reducing fatalities and crashes must go beyond any single organization. One of the first steps in successfully developing and implementing an SHSP is to establish stakeholders and partners that will aid in this process. These stakeholders and partners make up a high level group known as the SHSP Steering Committee. The main goal of the Steering Committee is to establish ownership for all of the strategies and objectives identified in the SHSP.

### **Sustaining & Measuring Safety Efforts**

After strategies and action items are developed and ownership is established, it is very important to sustain these safety efforts well into the future. The best method to maintain our safety efforts is to create effective performance measures to track the progress of the strategies and action items and hold the responsible owners accountable for their objectives. To accomplish this, PennDOT has developed action plans and tracking dials explained in the next section (Performance Measures).

## Implementation Focus Areas continued

### **Marketing Safety**

Marketing the SHSP to individuals both internal and external of the transportation field builds support for what the SHSP is trying to achieve and sustains momentum. Marketing is also an effective approach to enhance the awareness of the SHSP to individuals, such as public information officers, who will not participate in implementation activities on a regular basis. Highway safety goes far beyond infrastructure improvements to the roadway.

When it comes to marketing safety in Pennsylvania, the main goal is to educate the public on both the dangers associated with unsafe driving behaviors (driving impaired, speeding, etc.) and the benefits associated with driving safely such as seat belt use and safe driving techniques. Since more than 80% of crashes in Pennsylvania are related to driver behavior, safety goals and strategies must be marketed in an effective way to encourage drivers to change their habits and increase safety for everyone on the highway. Pennsylvania plans to market the SHSP through its new website ([DriveSafePA.org](http://DriveSafePA.org)), newsletters, brochures, variable message signs, and other earned media channels.

### **Addressing the 4 E's of Safety**

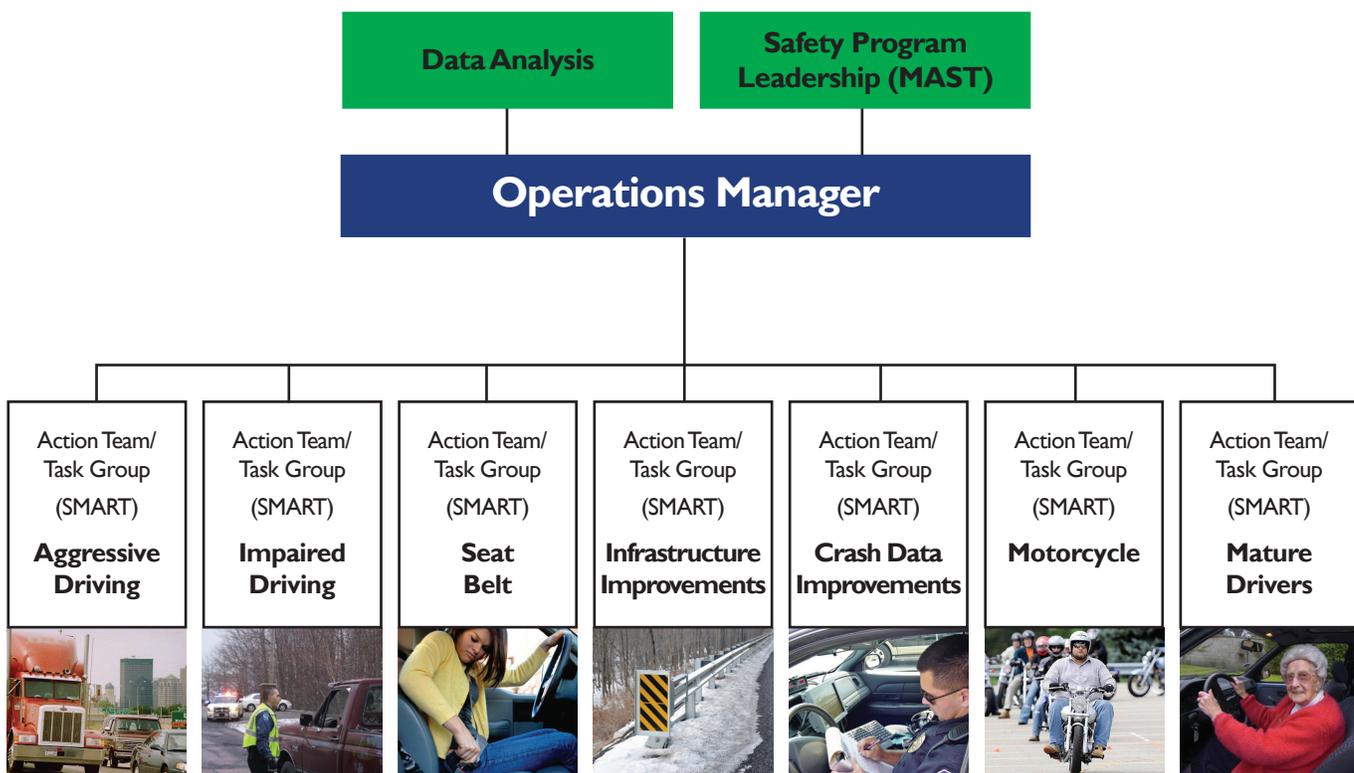
Human, roadway, environmental, and vehicle factors are the four components that contribute to traffic crashes. Considering these four components are very diverse, the approach to addressing highway safety must be multidisciplinary in nature. Addressing the 4 E's of Safety is widely recognized as the most common and efficient method to improve highway safety. The four E's of safety are Engineering, Enforcement, Education and Emergency Medical Services (EMS). Pennsylvania uses the four E's of safety as the foundation for establishing the partners and strategies involved in the SHSP. All of the strategies found in this plan fall under one of the four E's and are marked by symbols explained in the executive summary.

### **Establishing Standard of Care**

Many of the strategies found in the SHSP are already being implemented by the organizations involved. This is particularly true for the infrastructure projects that are routinely done throughout Pennsylvania's eleven engineering districts. To help monitor these strategies and assure they continue to be implemented, PennDOT has created a Standard of Care. The Standard of Care defines the projects, owners, and dates to be completed. This is an effective way to keep track of the standard procedures being done in all areas of highway safety and provides safety partners with a tool to precisely track their own strategies.

## Organizational Structure

The diagram below describes the organizational structure of the individuals and teams charged with implementation of the SHSP. The roles and responsibilities of the leadership team (MAST – Multi-Agency Safety Team) and the teams accountable for implementing specific actions (SMART – Safety Multi-Agency Roads Team) are described in more detail on the following pages. Based on analysis of crash data collected and maintained by PennDOT, strategies and action items were identified to address the Vital Seven Safety Focus Areas and are implemented through our safety stakeholders and partners. PennDOT meets quarterly with the MAST committee to discuss achievements and needs in highway safety. Each Action Team/Task Group consists of an internal owner for each safety focus area who brings expert knowledge and experience to the subject. Each owner works routinely with the other members of the Action Team which include the agencies and organizations who specialize in that particular focus area.



## Multi-Agency Safety Team (MAST)



The Multi-Agency Safety Team (MAST), which includes leadership from various state agencies, will fulfill the following functions:

- Approve the Strategic Highway Safety Plan prior to submission to FHWA
- Oversee implementation of the plan and Memoranda of Understanding (MOUs)
- Prepare quarterly summary of achievements and successes for the Governor's Office
- Enforce accountability for deficient areas by reviewing actions/reports from task groups (i.e. general oversight of task / action teams such as the Safety Multi-Agency Roads Teams - SMART)
- Evaluate plan, initiate redirection of priorities, and request revisions to the plan

Complete information can be found in our SHSP Implementation Plan

## Safety Multi-Agency Roads Teams (SMART)



The Safety Multi-Agency Roads Team (SMART) will comprise working level managers and representatives from various agencies encompassing the 4 E's of highway safety. The SMART groups will be responsible for implementing the strategies in the plan by functioning as the action teams / task groups. Cost effective strategies that greatly improve safety will be selected and managed by these teams. They will be provided with clear direction, funding, and human resources to accomplish their goals.

The primary responsibilities of the SMART groups are:

- Write detailed action plans with timelines and measures of success
- Implement aggressive highway safety countermeasures and confirm results
- Identify roadblocks to implementation of actions and report to MAST
- Incorporate additional proven strategies not included in CSHSIP
- Prepare quarterly progress reports for MAST
- Use pertinent data analysis and results to adjust action plans

A complete list of all possible strategies including the innovative strategies that were recorded during the highway safety steering committee meetings (for all SFA's) will be made available to the SMART groups.

## Performance Measures

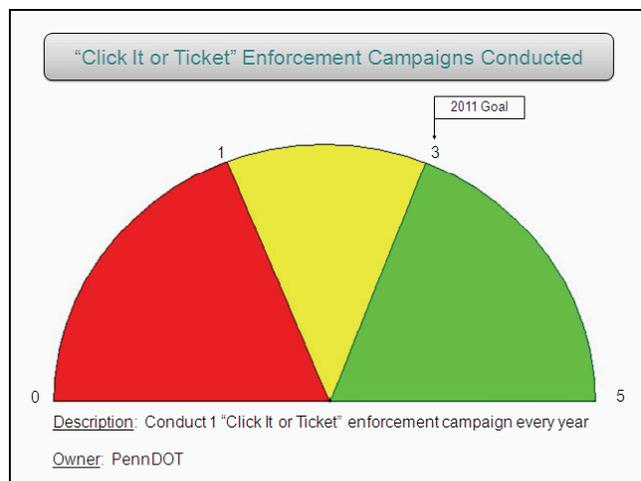
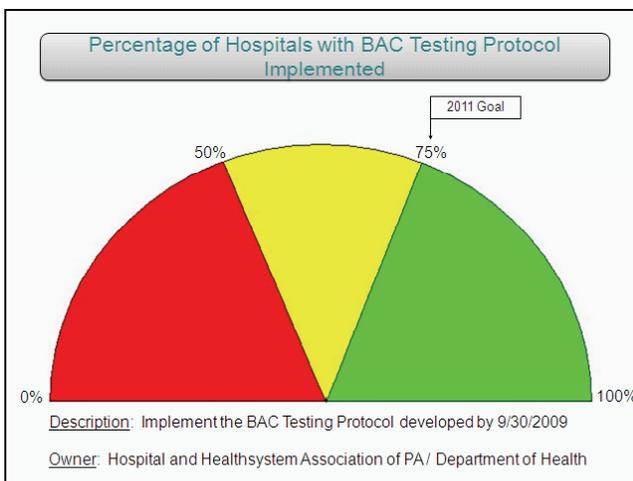
The SHSP identifies the safety focus areas and strategies for implementation or continued improvement. In addition, the plan helps coordinate the efforts of all agencies, organizations, and stakeholders that have a role in highway safety. In order for the plan to be successful, it must translate to accountable actions and be periodically evaluated for effectiveness and modified to continually improve performance. PennDOT has developed the following table format to systematically reserve these strategies and actions. This table format identifies responsible agencies, performance measures, deadlines, and resources for each action item. The following table provides an example for increasing seatbelt usage.

### Increasing Seatbelt Usage

Suggested Strategies	Action Item	Owner	Quantify	Due Date	Resources
Consider enacting primary seat belt law	Legislative Symposium Reference : NJ Symposium Majority Vote	DVRPC, MPO / RPO, Planning, BDL, BHSTE, MADD	1	12/31/2009	TBD
Continue "Click It or Ticket" campaign	Conduct 1 enforcement campaign	BHSTE	1/year	1/1/2011	BUPA Departments, DUI Assoc, MADD, Local Govt., Borough and Twp Assoc., Local Community Newsletters
Conduct high-profile enforcement campaigns combined with public education	Conduct 1 additional enforcement wave	BHSTE	1/year	1/1/2011	BUPA Departments, DUI Assoc, MADD, Local Govt., Borough and Twp Assoc., Local Community Newsletters
Highlight the importance of complete and accurate crash reporting on safety belt use as a part of ongoing education programs for the enforcement community.	Develop enforcement information and conduct educational campaigns	BHSTE	1/year	1/1/2011	BUPA Departments, EMS Services
Implement Child Passenger Safety Plans	Create CPS plans per county	BHSTE	67	1/1/2011	CPS Contract
Improve Public Information and Education (PI&E) programs to increase usage in communities with diverse populations	Target diverse populations in PA	CPS Contract	6/year	1/1/2011	CPS Contract
Continue high-profile "child restraint inspection" events at community locations	Increase child restraint inspections	CPS Contract	30/year	1/1/2011	Safe Kids Co. CPS Contract, PA State Police
Educate parents of young children who have outgrown child safety seats to advance them to booster seats	Provide parent programs	CPS Contract	13/year	1/1/2011	Safe Kids Co. CPS Contract
Improve crash reporting accuracy	Implement CR LEL Program	BHSTE	1/year	1/1/2011	BUPA Departments

## Performance Measures continued

PennDOT has also developed tracking dials to measure the progress of each action item. These dials will be updated quarterly to monitor results and can be modified at any time to improve performance. Below are two examples. Tracking dials can be used to measure the percent complete of long-term action items such as legislation or market saturation. Tracking dials can also be used to measure annual progress for more quantifiable actions such as the number of enforcement campaigns, educational programs, or engineering improvements.



## Glossary of Acronyms and Abbreviations

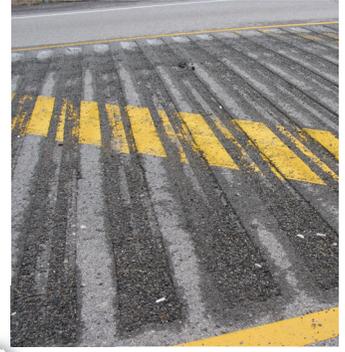
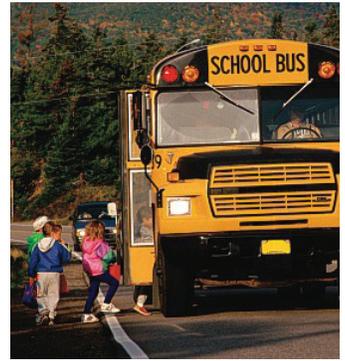
- 4 E's: Engineering, Education, Enforcement, Emergency Medical Services
- AAA: American Automobile Association
- AARP: American Association of Retired Persons
- BAC: Blood Alcohol Content
- BDL: Bureau of Driver Licensing
- BHSTE: Bureau Highway Safety & Traffic Engineering
- CDART: Crash Data Analysis Retrieval Tool
- CLRS: Center Line Rumble Strips
- CPS: Child Passenger Safety
- CSHSIP: Comprehensive Strategic Highway Safety Improvement Plan
- DUI: Driving Under the Influence
- DVRPC: Delaware Valley Regional Planning Commission
- EMS: Emergency Medical Services
- ERS: Edgeline Rumble Strips
- FHWA: Federal Highway Administration
- GDL: Graduated Driver Licensing
- GIS: Geographic Information Systems
- ITS: Intelligent Transportation Systems
- LED: Light Emitting Diode
- LTAP: Local Technical Assistance Program
- MAST: Multi-Agency Safety Team
- MCSAP: Motor Carrier Safety Assistance Program
- MOU: Memo Of Understanding
- MPO: Metropolitan Planning Organization
- MPOETC: Municipal Police Officers Education and Training Commission
- NCHRP: National Cooperative Highway Research Program
- PENNDOT: PA Department of Transportation
- PI&E: Public Information and Education
- PLCB: PA Liquor Control Board
- PPAC: PA Pedalcycle & Pedestrian Advisory Committee
- PSAP: Public Safety Answering Points
- PSP: PA State Police
- PTC: PA Turnpike Commission
- RLR: Red Light Running
- RPO: Rural Planning Organizations
- SFA: Safety Focus Area
- SHSP: Strategic Highway Safety Plan
- SMART: Safety Multi-Agency Roads Team
- SPO: Safety Press Officer
- SRS: Shoulder Rumble Strips
- STIP: Statewide Transportation Improvement Program
- TBD: To Be Decided
- TraCS: Traffic and Criminal Software
- TIP: Transportation Improvement Program
- TIPP: Traffic Injury Prevention Project
- TMC: Traffic Management Center
- TSRP: Traffic Safety Resource Prosecutor
- VMS/HAR: Variable Message Signs / Highway Advisory Radio
- VSL: Variable Speed Limit

For more information, please contact Pennsylvania's Strategic Highway Safety Plan (SHSP) Operations Manager:

Mr. Girish (Gary) N. Modi, P.E., Chief  
Safety Management Division  
Bureau of Highway Safety & Traffic Engineering  
Pennsylvania Department of Transportation  
400 North Street, 6th Floor, Harrisburg, PA 17120-0064

Phone: (717) 787-6853

Email: [gmodi@state.pa.us](mailto:gmodi@state.pa.us)



**pennsylvania**  
DEPARTMENT OF TRANSPORTATION

[www.dot.state.pa.us](http://www.dot.state.pa.us)

