



JULY 2016

2015 TRANSPORTATION SAFETY ACTION PLAN

**IMPROVING TRANSPORTATION SAFETY
IN THE DELAWARE VALLEY**



The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and

Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey.

DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.



The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

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Executive Summary

In just three years' time the Delaware Valley lost 1,141 people to traffic crashes, and over 120,000 more were injured. These numbers are the grim outcome of the more than 83,000 yearly traffic crashes that occurred between 2010 and 2012 in the nine-county DVRPC region. Although these numbers continue a recent decline, the human and societal costs resulting from traffic crashes underscore the need for safer roadway travel.

According to the National Highway Traffic Safety Administration (NHTSA), crash fatalities have been on a similar decline nationally with a near all-time low in 2014, also reflected in the Delaware Valley. However, an increase in estimated fatalities during the first six months of 2015 "reveals a need to reinvigorate the fight against deadly behavior on America's roads."¹

Implementing recommendations from the *2015 Transportation Safety Action Plan (TSAP)* supports the safety work of our partners at the state and county levels in pursuit of reducing vehicle-related crashes, injuries and fatalities in the region.

This Plan update marks the fourth installment of the TSAP that the Delaware Valley Regional Planning Commission (DVRPC)² Board has accepted since the first in 2006. The current 2015 document builds upon that work and continues to implement DVRPC's Long-Range *Connections 2040 Plan for Greater Philadelphia* (DVRPC Publication 13023). This report and the accompanying *Analysis of Crashes in the Delaware Valley, 2010–2012* (DVRPC Publication 14028) cover trends in the crash data and how to improve safety. As this document was being prepared, 2012 crash data was the most current available.

Following federal guidelines, the same analysis was performed for the 22 national safety emphasis areas promoted by the American Association of State Highway and Transportation Officials (AASHTO) as had been done for each previous edition. The same seven emphasis areas rose to the top as the leading contributing factors to fatalities, but in different order. New for this update was an examination of injuries. Specifically, when the emphasis area data was sorted by total injuries, the same seven emphasis areas rose to the top, but with an eighth in the mix: young drivers. The analysis was shared with the DVRPC's Regional Safety Task Force (RSTF) which voted to add "Ensure Young Driver Safety" as the eighth emphasis area for the 2015 TSAP.

Aggressive driving was a contributing factor in 48 percent of the crashes that resulted in traffic fatalities in the Delaware Valley, on average, from 2010 to 2012. It is again the most significant emphasis area to address to improve safety.

¹ NHTSA, www.nhtsa.gov/About+NHTSA/Press+Releases/2015/2014-traffic-deaths-drop-but-2015-trending-higher

² A full list of acronyms used in this report, with definitions, is provided in Appendix A.

Analysis for the bi-state region was compared with the Strategic Highway Safety Plans (SHSP) of both New Jersey and Pennsylvania, and the key emphasis areas are consistent with each state's plan.

The eight emphasis areas in the 2015 TSAP are contributing factors in **97** percent of the crash fatalities in the Delaware Valley based on analysis of 2010–2012 data, the Plan's analysis period. In descending order of contribution to crash fatalities they are:

1. Curb Aggressive Driving;
2. Keep Vehicles on the Roadway and Minimize the Consequences of Leaving the Roadway;
3. Improve the Design and Operation of Intersections;
4. Reduce Impaired and Distracted Driving;
5. Increase Seat Belt Usage;
6. Ensure Pedestrian Safety;
7. Sustain Safe Senior Mobility; and
8. Ensure Young Driver Safety.

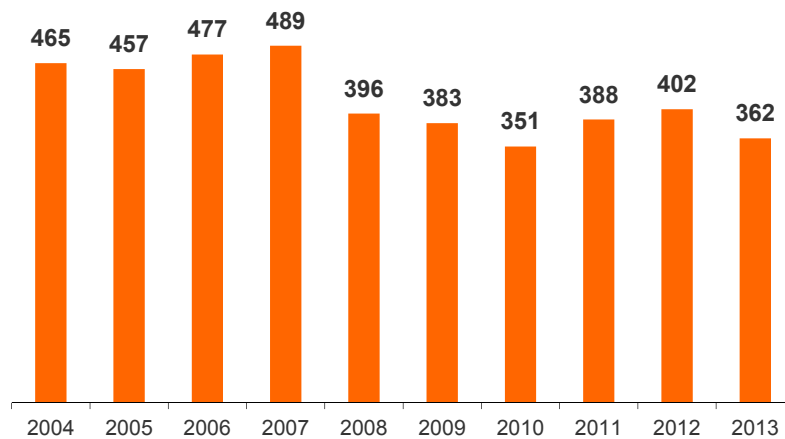
Many successful programs to address traffic safety already exist in the Delaware Valley. This Plan focuses on key emphasis areas, programs that are already helping, and new strategies to improve safety.

Reducing traffic fatalities in the Delaware Valley is an effort of many agencies, organizations, and individuals. The Plan was developed with and endorsed by the RSTF, a multidisciplinary group that also shaped the 2006, 2009, and 2012 plans. Member organizations include the Federal Highway Administration (FHWA), NHTSA, New Jersey Department of Transportation (NJDOT), Pennsylvania Department of Transportation (PennDOT), counties, municipalities, transportation management associations (TMAs), law enforcement agencies, and various other agencies and organizations. Participants are listed in Appendix B.

Why Have a Safety Plan?

The 2015 TSAP aims to reduce vehicle-related crashes, injuries, and fatalities in the Delaware Valley by focusing on key safety emphasis areas. There were over 83,000 reported crashes per year on average between 2010 and 2012 in the Delaware Valley—the most current data available at the time of this analysis—resulting in an average of 380 fatalities per year. In 2013, both injuries and fatalities dropped to near-2010 levels, and data from 2014 shows a continuation of that trend, though early estimates from 2015 hint at an increase. A successful TSAP benefits the entire region and, at a personal level, could save the life of a loved one or a neighbor. Figure 1 shows crash fatalities in the Delaware Valley from 2004 to 2013, demonstrating change over time.

Figure 1: Crash Fatalities in the Delaware Valley, 2004–2013



Source: NJDOT and PennDOT, 2014

There are many excellent safety programs underway in the region designed to improve transportation safety. The number of fatalities has decreased since 2007, influenced by various factors. The TSAP explains the key safety emphasis areas for the region, suggests strategies to improve safety in these emphasis areas, and highlights existing successful programs.

There are many ways to analyze crash data, these include by absolute numbers, rates, and federal emphasis areas. DVRPC also offers regional and county-specific crash summaries each year. The *Annual Crash Data Bulletin for the Delaware Valley* (DVRPC Publication 15023) and the *Annual County Crash Bulletin* (DVRPC Publication 15023 A-I) highlight crash trends from the most recently available data. In-depth, multiyear analysis is presented in a companion piece to

the 2015 TSAP called *Analysis of Crashes in the Delaware Valley, 2010–2012*. Summary data by county and municipality is also available to the public via DVRPC's Data Navigator (www.dvrpc.org/asp/DataNavigator/). Figure 2, which borrows from the *Analysis of Crashes in the Delaware Valley, 2010–2012* report, depicts crash rate by vehicle miles traveled (VMT) for the nine counties in New Jersey and Pennsylvania that constitute the DVRPC region.

Figure 2: Crash Fatalities Rate per Hundred Million VMT, 2005–2013



Source: Delaware Valley Regional Planning Commission, 2014

Figure 2 depicts crash fatalities per hundred million VMT for the region as a whole and broken out by the Pennsylvania and New Jersey subregions. This rate calculation—which puts safety in the context of exposure to crashes—is a widely accepted tool. Consistent with the drop in crash fatalities seen across the United States, the DVRPC region experienced a significant reduction since 2007. Despite increases in the five Pennsylvania counties in 2011 and 2012, and in the four New Jersey counties in 2011, the regional fatalities trend remains below the peak recorded in 2007. Fatalities dropped again in 2013 resulting in a crash rate decrease as well.

DVRPC has produced four transportation safety action plans, the first in 2006, the second in 2009, and the third in 2012. The current fourth edition builds upon that work and helps implement DVRPC's Long-Range Plan, *Connections 2040 Plan for Greater Philadelphia* (DVRPC Publication 13042). The TSAP supports and is closely coordinated with the Pennsylvania and New Jersey Strategic Highway Safety Plans (SHSPs).

Background

Federal Regulations

The 2012 passage of the Moving Ahead for Progress in the 21st Century Act (MAP-21) identified safety as a national goal area. For more information on MAP-21 refer to Chapter 4. The Fixing America's Surface Transportation (FAST) Act (December 2015) reinforced the safety priority articulated in MAP-21. In keeping with previous legislation, each state Department of Transportation (DOT) is required to develop a data-driven SHSP in coordination with their planning partners. DVRPC is a partner in planning for the Philadelphia metropolitan region with PennDOT and NJDOT.

The data-driven analysis required for every SHSP begins with the 22 national safety emphasis areas described in the AASHTO *Strategic Highway Safety Plan*³, published in 1997 and updated in 2004. The AASHTO report includes general strategies to address each emphasis area, but does not limit the emphasis areas or strategies that may be included in state SHSPs. Since the SHSP is a guide, states have the latitude to combine similar emphasis areas into larger categories, organize them into tiers defined by expected benefits, and even define new emphasis areas.

The emphasis area groupings and data analysis methods used in the TSAP are drawn from those employed by New Jersey and Pennsylvania. The TSAP is consistent with each state because the data analysis is done twice, once for DVRPC's New Jersey counties, then separately for DVRPC's Pennsylvania counties, then combined for regional results.

Pennsylvania's Approach

In 2012 Pennsylvania updated their SHSP with guidance and support from safety stakeholders and partners. Pennsylvania starts with a data-driven analysis of fatalities by AASHTO's 22 emphasis areas based on five-year rolling averages. These results drive the selection of a short set of vital focus areas which are then considered for their potential in reducing fatalities to achieve their goal, cost effectiveness of appropriate strategies, ease of strategy implementation, available resources (time, funding, partners), and proven countermeasures.

The vital seven safety focus areas in Pennsylvania's 2012 SHSP are:

1. Reducing Impaired Driving;

³ AASHTO *Strategic Highway Safety Plan*, <http://safety.transportation.org/doc/Safety-StrategicHighwaySafetyPlan.pdf>

2. Increasing Seat Belt Usage;
3. Infrastructure Improvements:
 - a. Reducing Head-On and Cross-Median Crashes
 - b. Improving Intersection Safety
 - c. Reducing Run-Off-Road Crashes
 - d. Reducing the Severity and Frequency of Hit Fixed-Object-Crashes
4. Reducing Speeding and Aggressive Driving;
5. Reducing Distracted Driving;
6. Mature Driver Safety; and
7. Motorcycle Safety.

According to Pennsylvania’s SHSP, fatalities associated with the vital seven account for approximately 79 percent of the total annual highway fatalities in Pennsylvania. The remaining 21 percent of annual fatalities is distributed among an additional nine focus areas, which include teen driver safety, bike and pedestrian safety, and safety on local roads.

New Jersey’s Approach

Similar to PennDOT’s approach, NJDOT began their SHSP update with a data analysis of AASHTO’s 22 emphasis areas for the five-year period of 2008 to 2012. This work was guided by a range of partners including MPOs, FHWA, law enforcement officials, and Rutgers University. Early in the process they facilitated a webinar to promote the SHSP among a wide group of stakeholders, and held a strategies development workshop. The final plan addresses 16 safety emphasis areas according to these categories: Drivers, Special Users, Vehicles, Highways, and Other (see Table 1). The following emphasis areas were identified as first priority (of three priority levels): Lane Departure, Drowsy and Distracted Driving, Aggressive Driving, Intersections, Pedestrians and Bicyclists, and Mature Drivers.

Table 1: New Jersey’s Safety Emphasis Areas

Categories	Safety Emphasis Areas
Drivers	Drowsy and Distracted Aggressive Driving (including speeding) Impaired Driving Mature Drivers Teen Drivers Unbelted Vehicle Occupants Unlicensed Drivers
Special Users	Pedestrians and Bicyclists
Vehicles	Motorcyclists Heavy Vehicles
Highways	Lane Departure Intersections Work Zones Vehicle-Train Collisions
Other	Improved Data Analysis Driver Safety Awareness

DVRPC's Approach

DVRPC is the MPO for the nine-county Greater Philadelphia Region, referred to as the Delaware Valley. This region consists of five Pennsylvania counties and four New Jersey counties (see Figure 3).

The Delaware Valley represents only five Pennsylvania counties which are just 5 percent of the state's land area, but 32 percent of the population and 27 percent of the crashes (based on 2012 Census and crash data). The four New Jersey counties represent 21 percent of the state's land area, about 18 percent of the population, and 17

percent of the crashes (based on 2012 Census and crash data). The DVRPC region shares many of the safety priority issues faced statewide by Pennsylvania and New Jersey but also has its own unique character and safety concerns. For this reason, DVRPC prepares a regional safety action plan that draws on the work of each state and also informs the states of specific safety needs in the Philadelphia metropolitan area.

The DVRPC Board had previously adopted three safety action plans. The most recent, *2012 Transportation Safety Action Plan*, addressed these seven emphasis areas:

1. Curb Aggressive Driving;
2. Reduce Impaired Driving;
3. Keep Vehicles on the Roadway;
4. Sustain Safe Senior Mobility;
5. Increase Seat Belt Usage;
6. Improve the Design and Operation of Intersections; and
7. Ensure Pedestrian Safety.

The RSTF, a multidisciplinary group that has been meeting since 2005, provided substantial guidance in the development of each TSAP to date. It has continued meeting quarterly to work together on how to proceed with implementing the TSAP and generally improving transportation safety. Members of the RSTF include federal partners, NJDOT, PennDOT, counties, municipalities, TMAs, law enforcement, and others. See Appendix B for the list of members and agencies actively involved in shaping the 2015 TSAP.

Advancements in Vehicle Safety

Professionals in the transportation safety community commonly say that more than 80 percent of traffic crashes are caused by human error. In response, automakers have for some time been advancing research and design efforts into vehicle technologies that assist drivers. According to NHTSA, there are currently "three distinct but related streams of technological change and development occurring simultaneously: (1) in-vehicle crash-avoidance systems that provide warnings and/or limited automated control of safety functions; (2) vehicle-to-vehicle (V2V)

Figure 3: DVRPC Region



communications that support various crash-avoidance applications; and (3) self-driving vehicles” (see 2016 Update to NHTSA’s *Preliminary Statement of Policy Concerning Automated Vehicles*, here: <http://www.nhtsa.gov/staticfiles/rulemaking/pdf/Autonomous-Vehicles-Policy-Update-2016.pdf>).

In-vehicle technologies such as crash-avoidance systems have been available on higher-end models for several years, but current costs keep it from widespread availability. Electronic stability control (ESC), a steering and braking assist technology that helps drivers maintain control of their cars, was once available to only a narrow segment of the market. Gradually the safety benefits of ESC became more well known, and by 2012 it had become required standard equipment on all vehicles under 10,000 pounds in the United States. It is likely that newer in-vehicle safety features like crash-avoidance systems could eventually be mainstreamed on a similar trajectory.

Even more exciting and more controversial are self-driving cars, also known as autonomous vehicles. These vehicles sense their surroundings using computers and Global Positioning Systems (GPS) and interpret this information to identify appropriate navigation paths, roadway signs, and obstacles like pedestrians and parked cars. These advancements have spurred extensive debate about the implications of a world where cars drive themselves. Automakers continue development in this area, and several states have allowed the testing of these vehicles on their public roadways. Most notably, Google has received significant press coverage for their self-driving prototypes, which use proprietary software called Google Chauffeur.

Although consideration of vehicle technologies may be integrated into a future update of the Plan, for now the Plan will continue to follow the SHSP process promoted by the American Association of State Highway and Transportation Officials (AASHTO), and we will continue to look to our state and federal partners for guidance on all safety considerations.

Updating Emphasis Areas for the Delaware Valley

The 2015 TSAP contains the same set of key emphasis areas identified in the 2012 TSAP, with one addition, “Ensure Young Driver Safety”. As discussed previously, this emphasis area was added based on work in the *report Analysis of Crashes in the Delaware Valley, 2010-2012*. The 8 safety emphasis areas are:

- ▶ Curb Aggressive Driving;
- ▶ Keep Vehicles on the Roadway and Minimize the Consequences of Leaving the Roadway;
- ▶ Improve the Design and Operation of Intersections;
- ▶ Reduce Impaired and Distracted Driving;
- ▶ Increase Seat Belt Usage;
- ▶ Ensure Pedestrian Safety;
- ▶ Sustain Safe Senior Mobility;
- ▶ Ensure Young Driver Safety.

Focus on these eight emphasis areas is shared by DVRPC’s two partner DOTs and all are in agreement that these are important emphasis areas for safety programming in the Delaware Valley Region. Analysis reported here and in the source documents has been developed in a clear, updatable manner.

The federal requirement of state DOTs is focused on reducing roadway fatalities. Many state’s safety programs, including New Jersey and Pennsylvania, incorporate a “Towards Zero Deaths” (TZD) safety campaign as a broad educational supplement to existing infrastructure and enforcement efforts. Though TZD is not included here, this plan is designed for consistency with the plans of our state partners, and seeks to support their work in moving toward zero deaths.

Safety planning does not end with highways. The Delaware Valley has among the highest levels of transit use in the nation with approximately one million trips per day⁴. Acknowledging this, the Plan also briefly addresses transit safety. Lastly, the TSAP includes safety for pedestrians, a mode preferred by an ever-growing number that make up a significant population in both Philadelphia and throughout the Delaware Valley.

⁴ *Implementation of the DVRPC Regional Travel Demand Model in VISUM*, <http://www.dvrpc.org/Products/TR10006/>

Methodology

The update began by contacting PennDOT and NJDOT to facilitate cooperation and communication. The next step was to review changes in data for the 22 national emphasis areas. The changes since the 2012 TSAP were presented to the RSTF at two meetings and finalized at the meeting in March of 2014. Key changes and trends are summarized in the companion document *Analysis of Crashes in the Delaware Valley, 2010–2012*.

As discussed earlier, the data analysis begins with the 22 national safety emphasis areas described in the AASHTO *Strategic Highway Safety Plan*, published in 1997 and updated in 2004. The AASHTO report includes general strategies to address each emphasis area, but does not limit the emphasis areas or strategies that may be included in state SHSPs.

Pennsylvania and New Jersey each started with analysis of the national emphasis areas, then worked with their partners to develop their own SHSPs. The key emphasis areas in each of the states' plans are listed in Chapter 2.

DVRPC analyzed data for the Pennsylvania and New Jersey counties separately then aggregated for regional totals, quantifying as many of the 22 emphasis areas as possible regarding fatalities, injuries, and total crashes. The analysis was sorted first by number of fatalities in descending order. The resulting hierarchy reflected the same seven priority emphasis areas as in the 2012 TSAP, though in somewhat different order.

New for this update, DVRPC re-sorted the emphasis area results by total injuries. AASHTO's SHSP acknowledges that improving crash safety requires a comprehensive approach that considers safety from various angles, and that considering fatalities alone may only tell part of the story. Injuries from crashes, unlike fatalities, have a greater tendency to trend by location, and may be reduced by location-specific improvements. Therefore, DVRPC sorted the emphasis areas by number of injuries to deepen our understanding of crash trends by emphasis area. The resulting priority emphasis areas remained the original seven identified in the fatalities-only analysis, plus one more: "young drivers" was the third highest-ranking emphasis area by total injuries.

This new priority list of eight was compared with the key emphasis areas in both the Pennsylvania and New Jersey SHSPs for consistency. All priority emphasis areas from both states' SHSPs fall within the eight emphasis areas from the DVRPC analysis. The RSTF was presented with these findings and voted to use them with the addition of "Ensure Young Driver Safety" as the eighth emphasis area in this TSAP update.

Conclusions about Updating Emphasis Areas

The set of key emphasis areas is based on a clear methodology that results in a manageable number of emphasis areas on which to take action and track. The eight identified emphasis areas were contributing factors in 97 percent of the fatalities and 89 percent of injuries in the Delaware Valley during the 2010–2012 analysis period. The emphasis areas may be updated in future

editions of the TSAP as Pennsylvania and New Jersey update their plans, but the basic methodology encourages coordinated, enhanced safety planning in the Delaware Valley region.

The continual evolution of safety work has identified a few areas of special interest for further investigation, including local road safety, safety relating to transit, and transportation security.

In New Jersey and Pennsylvania, a field in the crash database identifies whether the crash was on a local road, although the definition of that term differs between the states. Approximately one-third of all crashes occurred on county-owned or locally owned roads. DVRPC has published newsletters oriented to local road owners to provide analysis and resources to help reduce crashes on local and county roads.

It is estimated by the American Public Transportation Association that over one million people ride transit in the Delaware Valley each day, so it is important to recognize safety for transit riders. The pedestrian safety emphasis area specifically includes safety for transit riders going to or from their stops; safety and security planning for transit coincide in many ways.

Being prepared for major events goes beyond transit. All transportation modes in the region need to work together on preventing, preparing for, responding to, and recovering from major natural and man-made events. Coordination with other emergency support function annexes is also essential. This is largely within the purview of transit operators and transportation agencies, but DVRPC offers support where it would help improve overall transportation safety in the Delaware Valley. For further information, see *Fitting the Pieces Together: Improving Transportation Security Planning in the Delaware Valley* (DVRPC Publication #09018).

Performance Measures

Performance Measures and the Transportation Safety Action Plan

Why Do Performance Measures Matter?

Performance measures are part of a data-driven strategic approach to investment decision making. Use of performance measures and targets helps organizations progress toward their goals efficiently and effectively, and promotes sound investments of public funds.

FAST ACT Safety Measures

In 2012, President Obama signed into law transportation legislation called Moving Ahead for Progress in the 21st Century Act (MAP-21) as the successor to SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). According to the U.S. Department of Transportation (USDOT), this legislation “transforms the framework for investments to guide the growth and development of the country’s vital transportation infrastructure.” Then in December of 2015, MAP-21 was replaced by the FAST ACT— Fixing America's Surface Transportation Act, the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST ACT authorized \$305 billion over fiscal years 2016 through 2020.

The most transformative changes included in MAP-21 are the Performance Management (PM) requirements, which were carried forward in the FAST ACT and expanded. These changes put new emphasis on performance-based planning and programming within the federal-aid highway and transit programs, and also require the use of performance-based approaches in metropolitan and statewide transportation planning. PM uses real performance data about systems and infrastructure to measure if goals are being met.

Through these regulations, state DOTs, MPOs, and transit agencies will all be held to some level of performance accountability. These organizations will establish their own performance targets and will have to demonstrate acceptable progress in meeting their targets. These new rules will take the PM concept farther than currently used by NJDOT, PennDOT, or DVRPC, and will have implications for how federal funding decisions are made.

Performance Measures

The safety components of the rules largely promote consistency and transparency among roadway owners and funding partners, and improve data quality. They establish metrics for

improving safety. The rule requires state DOTs and MPOs to establish baseline safety data against which future safety performance will be measured using five-year rolling averages for:

- ◆ Number of Fatalities;
- ◆ Rate of Fatalities per 100 Million VMT;
- ◆ Number of Serious Injuries;
- ◆ Rate of Serious Injuries per 100 Million VMT;
- ◆ Number of Non-motorized Fatalities and Non-motorized Serious Injuries.

The data source for fatalities will be NHTSA's Fatality Analysis Reporting System (FARS), and each state will use their own data for serious injuries. States must establish targets applicable to all public roads, and do so within one year following the effective date of the rule, and then annually afterward. MPOs shall establish targets not later than 180 days after the respective State DOT establishes and reports targets in the state Highway Safety Improvement Program (HSIP) annual report. DVRPC's current thinking on target setting is to coordinate closely with state partners to ensure consistency in approach to improving safety.

The most practical approach for incorporating the performance measures in the TSAP is to calculate the five-year rolling averages for the region as a whole. In an effort to remain consistent with our state partners, this regional five-year rolling average data allows us to establish our own baseline in anticipation of the target-setting deadline in 2017. The following text and Figures 4-8 present this data.

Figure 4: Total Fatalities, Regional Five-Year Rolling Averages

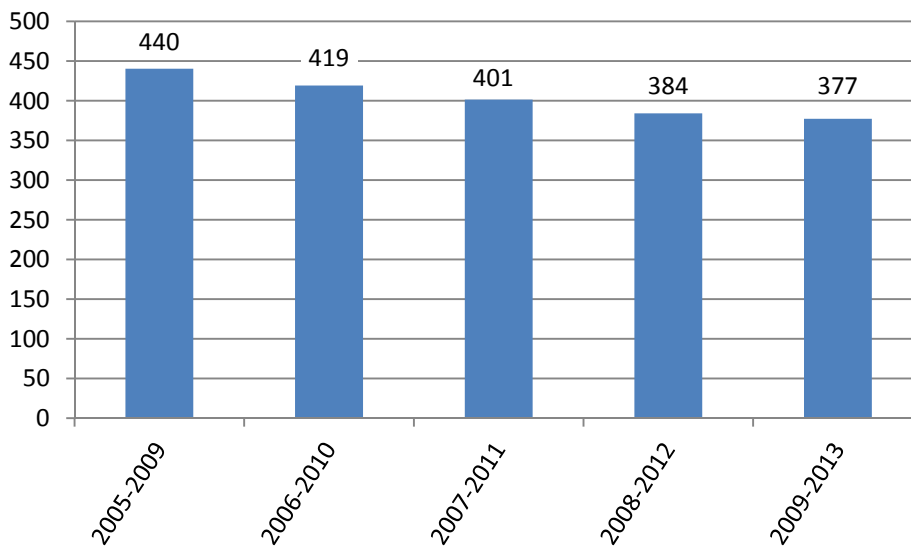


Figure 4 shows the average number of crash fatalities for each five-year period from 2005 to 2013 based on most recent data. Fatalities show a consistent downward trend.

Figure 5: Crash Fatalities Rate per Hundred Million Vehicle Miles Traveled, Regional Five-Year Rolling Averages

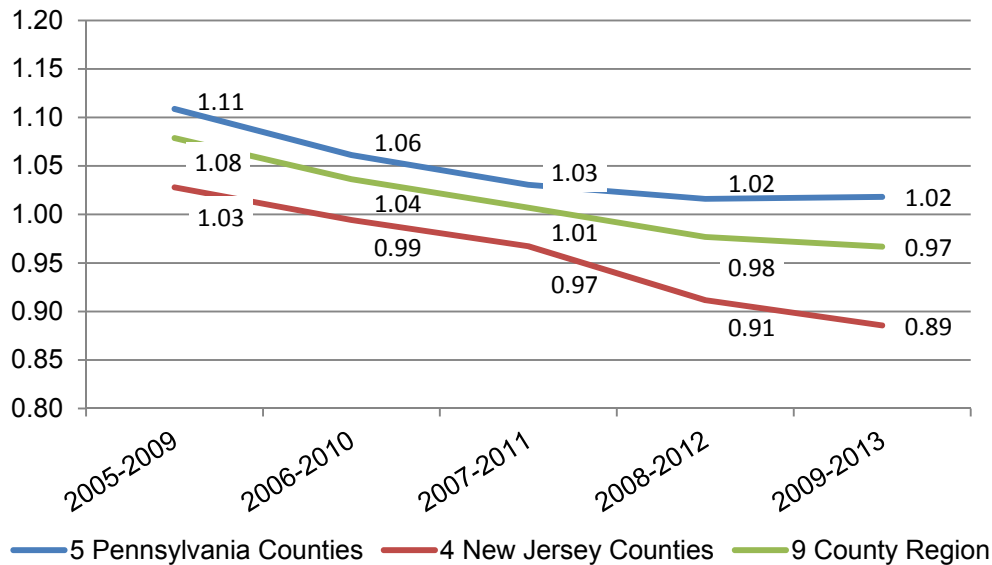


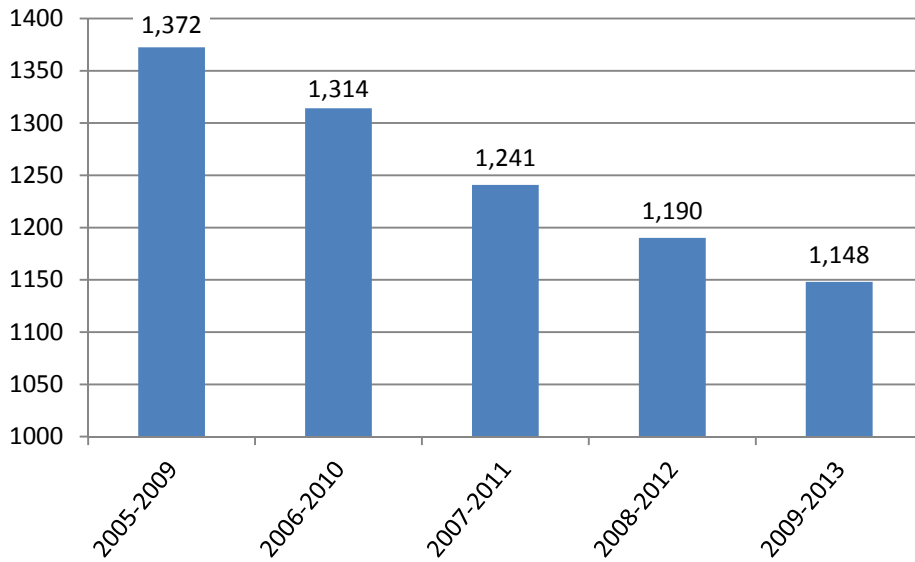
Figure 5 depicts the five-year rolling averages for crash fatality rates. The result shows a downward trend in the crash fatality rate that is consistent with the five-year rolling averages for total fatalities.

In addition to crash deaths, MAP-21 also requires measuring change in the number and rate of serious injuries. This category goes by different names: in New Jersey it is called *incapacitating injuries*, and in Pennsylvania it is called *major injuries*. Despite local differences, all serious injuries are considered incapacitating injuries in this analysis. A clear definition is provided in the *FARS Coding and Validation Manual (2006)*:

An incapacitating injury is any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred. This includes: severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness at or when taken from the accident scene, and unable to leave the accident scene without assistance. This does not include momentary unconsciousness. (Page 559)

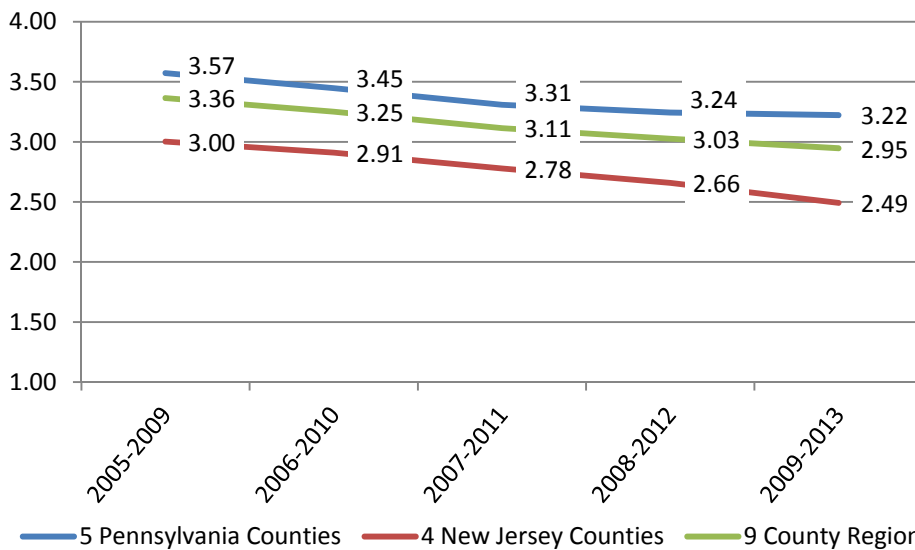
Figure 6 shows the five-year rolling averages for total serious injuries in the DVRPC region from 2005 to 2013. The average number of serious injuries has been declining steadily since 2005, a trend not dissimilar to the decline in crash fatalities.

Figure 6: Total Serious Crash Injuries, Regional Five-Year Rolling Averages



Following a similar downward trend as total serious injuries, the rate of serious injuries per hundred million VMT has also declined since 2005, albeit somewhat normalized when interpreted as five-year rolling averages (see Figure 7).

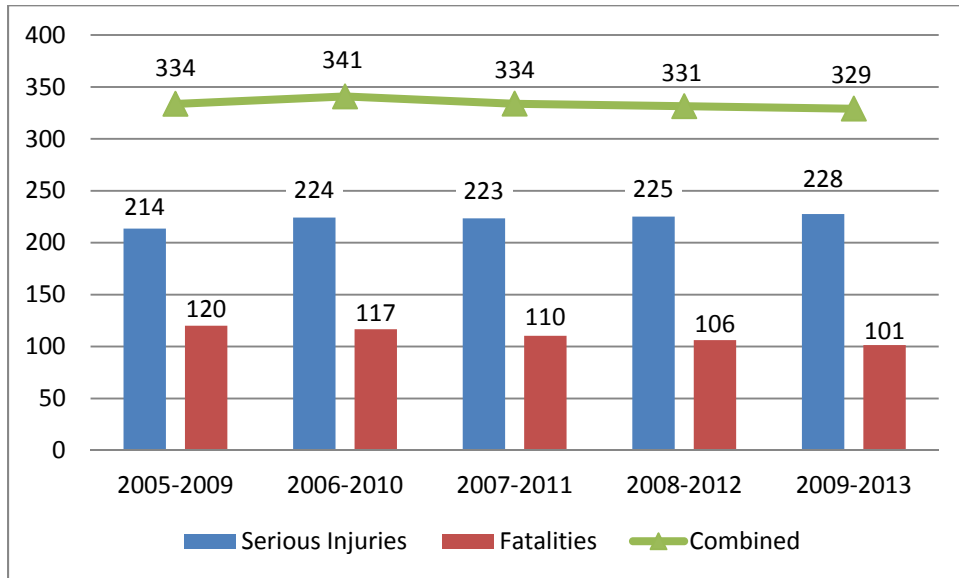
Figure 7: Serious Injury Rates per Hundred Million Vehicle Miles Traveled, Regional Five-Year Rolling Averages



The fifth performance measure, number of non-motorized fatalities and non-motorized serious injuries, was not included in the original MAP-21 performance measures, but added-in under the FAST ACT. This performance measure differs from the others in that it measures total numbers only, and has no rate component. The measure has two parts, 1) the number of pedestrian and bicyclist fatalities, and 2) the number of pedestrian and bicyclist serious injuries, both aggregated

into five-year rolling averages. Baseline non-motorized data for the DVRPC region is presented in Figure 8.

Figure 8: Number of Non-motorized Fatalities and Non-motorized Serious Injuries, Regional Five-Year Rolling Averages



According to the chart, non-motorized serious injuries have increased slightly, while fatalities have decreased notably. According to guidance on this measure, FHWA will be tracking progress on the combined data for fatal and serious injuries, which has declined slightly in the DVRPC region over the analysis period. Specifically tracking this data is important for both New Jersey and Pennsylvania since they are both designated Pedestrian Safety Focus states by FHWA. According to FHWA’s Focused Approach to Safety website, this program provides additional resources to eligible high priority states to address the nation’s most critical safety challenges. In 2015⁵, the pedestrian safety focus was expanded to include bicyclist fatalities. With this update to the criteria there are now 35 Pedestrian-Bicyclist Focus Cities in 17 states.

These five performance measures provide a sound approach to tracking progress and meeting objectives in the pursuit of lowering injuries and fatalities on our transportation system.

Measures of the Effectiveness of the RSTF

RSTF Mission, Goal, Objectives, and Measures

The RSTF continues to become more effective. It adopted a mission, goal, objectives, and measures in 2011 and updated them in 2014. The **mission** is: The RSTF is a multidisciplinary group of transportation safety professionals and stakeholders that enhances and promotes transportation safety in the Delaware Valley. The **goal** of the RSTF is: Reduce roadway crashes, injuries, and fatalities in the Delaware Valley.

⁵ http://safety.fhwa.dot.gov/fas/docs/signed_memo2015.pdf

The RSTF has two **objectives** that provide specifics about how to accomplish its goal and mission. They are:

- ◆ Build, maintain, and leverage partnerships among traditional and non-traditional transportation safety stakeholders;
- ◆ Increase the effectiveness of the RSTF through strategies and actions.

Table 2: RSTF Objectives and Measures

OBJECTIVES and MEASURES
BUILD, MAINTAIN, AND LEVERAGE PARTNERSHIPS
1. Maintain attendance at each RSTF meeting at least at the average of the previous cycle of meetings.
2. Have active participation by agencies representing Engineering, Enforcement, Education, and Emergency Response, as measured by at least two volunteer actions from agencies focused on each over a rolling four-meeting average.
3. Increase the number and effectiveness of partnerships fostered by participation in the RSTF as measured by a survey administered at the end of each meeting compared to a rolling four-meeting average.
INCREASE THE EFFECTIVENESS OF THE RSTF THROUGH STRATEGIES AND ACTIONS
4. Act on the strategies in the TSAP and the refinements of them developed at RSTF meetings. This is measured by each emphasis area meeting resulting in at least three volunteer actions and reporting on progress (shown in Tracking Progress table).
5. Market and promote safe transportation practices to a broader audience than RSTF participants: Seek a quarterly increase in the number of unique visitors to the RSTF webpages.
6. Increase the effectiveness of one project or program per cycle through RSTF coordination. RSTF members will assist with a project they would not usually be involved with and measure success, preferably using before-and-after analysis.

The RSTF uses specific measures to understand where it is making progress and where additional attention would be helpful. Measuring the effect of the RSTF on regional transportation safety is difficult. The RSTF measures its outputs and outcomes, and separately tracks the broader safety trends in crashes, injuries, and fatalities as discussed earlier in this chapter. Outputs include specific short-term process tasks, such as achieving diverse participation in meetings (see Appendix C for the RSTF Measurements and Status Table). Outcomes are direct effects on safety such as helping a project reduce crashes by more than it would have without the support of diverse RSTF members. The RSTF endeavors to follow the FHWA guidance on measures to make them SMART: Specific, Measurable, Achievable, Realistic, and Time-bound

(Integrating Demand Management into the Transportation Planning Process: A Desk Reference, FHWA, 2012: <http://ops.fhwa.dot.gov/publications/fhwahop12035/>).

Volunteer Actions

Each meeting of the RSTF that focuses on one emphasis area has been used as an opportunity to identify volunteer actions, an approach originally begun with the 2012 TSAP. The focus on one key emphasis area per quarterly meeting started with the 2009 Plan. The RSTF has become more results oriented with each update of the Plan.

The basic format of emphasis area-focused meetings is a brief presentation of data and strategies from the current Plan, presentations by experts, and discussion that builds on this focused attention to the emphasis area. The discussion starts with the recommended strategies in the Plan, refines them into doable actions, and invites participants to volunteer to take them on. The volunteers, their actions, and when they expect to report back are recorded in a companion spreadsheet to the RSTF measures called the Tracking Progress table.

In the 2012 TSAP cycle, the actions took many forms: participating on a steering committee, creating informational documents, and helping publicize an issue, among others. Table 3 provides highlights of volunteer actions agreed upon at each RSTF meeting in the 2012 cycle.

Table 3: Sample of RSTF Volunteer Actions Taken from 2012 TSAP Emphasis Areas

	2012 Emphasis Area	Activities Completed
1	Curb Aggressive Driving -10/4/12 meeting	<ul style="list-style-type: none"> Gathered existing aggressive driving messaging campaigns and explored how RSTF partners can use fewer, different messages in order to be more effective.
2	Reduce Impaired Driving -6/19/12 meeting	<ul style="list-style-type: none"> Provided a summary of a study conducted to determine the effectiveness of New Jersey's cell phone and texting laws.
3	Keep Vehicles on the Roadway / Reduce Run-off-road Crashes -12/4/12 meeting	<ul style="list-style-type: none"> Drafted and sent a letter to NJDOT Statewide Traffic Records Coordinating Committee (STRCC) to encourage changes in the NJTR-1 Form Field Manual and the Police Guide for Preparing Reports of Motor Vehicle Crashes in coding the first event.
4	Sustain Safe Senior Mobility -6/6/13 meeting	<ul style="list-style-type: none"> Created a regional map of senior populations and high crash rates/locations.
5	Increase Seat Belt Usage -11/29/11 meeting	<ul style="list-style-type: none"> Created a one-page summary of the "Increasing Seat Belt Usage" emphasis area meeting and shared it with county- and state-level policy makers, including per county seat belt statistics.
6	Improve the Design and Operations of Intersections -3/7/13 meeting	<ul style="list-style-type: none"> Developed a toolbox containing available safety improvement treatments for unsignalized and signalized intersections, and shared with stakeholders via DVRPC's webpage.
7	Ensure Pedestrian Safety -3/8/12	<ul style="list-style-type: none"> Provided an update on citations issued to drivers in pedestrian crashes.

Source: Delaware Valley Regional Planning Commission, 2014.

Below are two examples of actions that involved multiple partners, assisted by DVRPC staff, working together to leverage opportunities to help improve safety in the Delaware Valley through analysis, coordination, and networking. The full list of volunteer actions sorted by emphasis area meeting can be found in Appendix D.

Example 1: Senior Crash Location Map

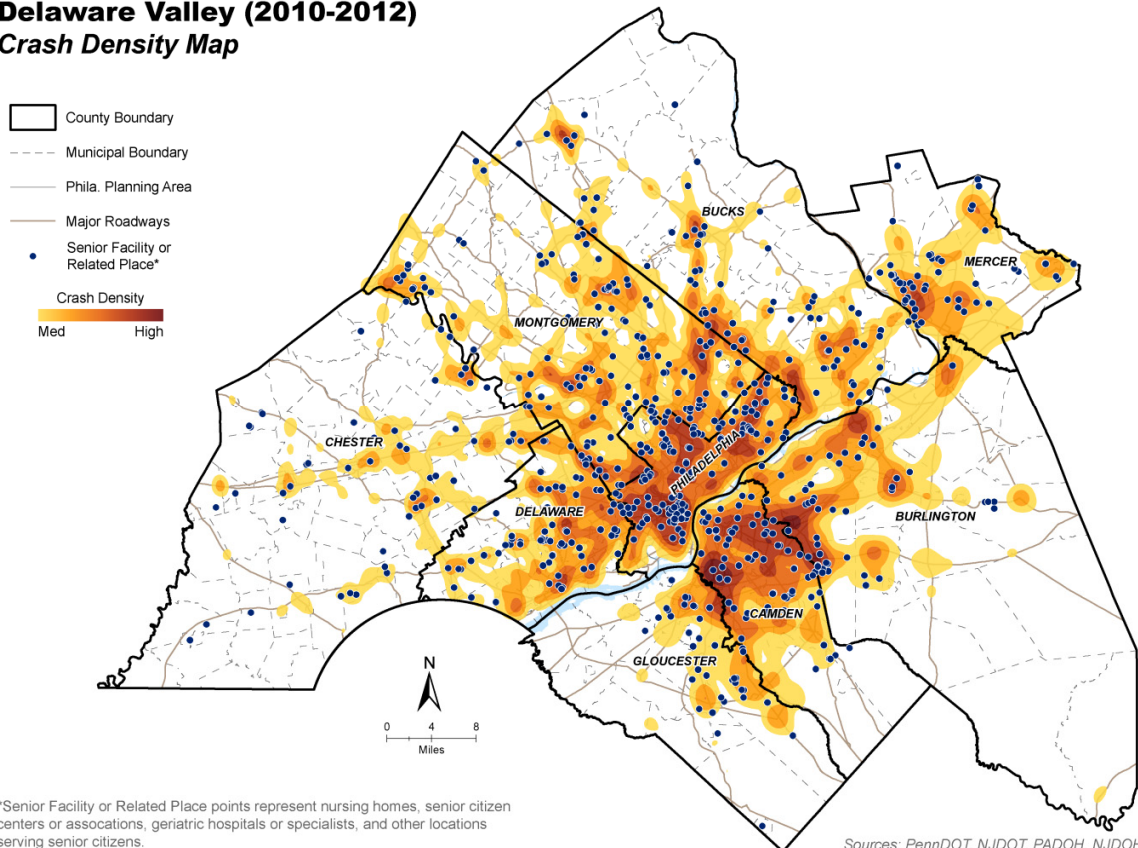
Emphasis Area: Sustain Safe Senior Mobility, RSTF meeting held June 6, 2013

- ◆ Recommended Strategy: Identify locations of high senior populations and crash rates for consideration of improvements
- ◆ Type of Action: Engineering
- ◆ Product: Map showing both senior populations and high crash locations
- ◆ Volunteers: American Automobile Association (AAA), American Association of Retired Persons (AARP), DVRPC Staff
- ◆ Status: Complete

DVRPC staff created a map showing the percentage of the senior population by township highlighting crash locations where at least one of the people involved in the crash (either as driver, passenger, or “other”) was 65 or older (Figure 8).

Figure 9: Volunteer Action Item Product from RSTF Meeting on Safe Senior Mobility

**Senior-Involved Crashes in the Delaware Valley (2010-2012)
Crash Density Map**



This map, intended to highlight engineering improvement opportunities for reducing senior crashes, was presented at the September 24, 2013 RSTF meeting. It was then used by RSTF partner AAA Mid-Atlantic in a press release that was picked up by local print news and news radio, thereby getting this information to hundreds of thousands of Delaware Valley residents.

Example 2: Prosecutorial Outreach Brochure for Aggressive Driving

Emphasis Area: Curb Aggressive Driving, RSTF meeting held October 4, 2012

- ◆ Recommended Strategy: Provide information and analysis to inform policy discussions focused on curbing aggressive driving behaviors.
- ◆ Type of Action: Policy
- ◆ Product: Informational brochure targeted to New Jersey prosecutors
- ◆ Volunteers: Pennsylvania District Attorney's Association, New Jersey Division of Highway Traffic Safety (NJDHTS), Cherry Hill Township (NJ) Law Enforcement, Rutgers University (TSRC), PennDOT, SJTPO, NJDOT, DVRPC Staff
- ◆ Status: Draft was submitted for review, no further action was taken

Over the course of five months DVRPC staff worked with a large group of committed RSTF volunteers from a variety of backgrounds to create an informational brochure targeted to prosecutors in New Jersey. The purpose was to document safety issues pertaining to repeated plea-bargain downgrading of citations for those actions considered to be aggressive, such as speeding and tailgating, among others, with the objective of reducing aggressive driving recidivism. Originally the brochure was focused on judges in both states, but it became evident during the development process that in New Jersey the true audience for this was township prosecutors. Unfortunately, the brochure did not go forward due to sensitivities at the state level.

Improving Safety in Emphasis Areas

How We Increase Transportation Safety in the Delaware Valley

Improving transportation safety in the Delaware Valley is an achievable goal, and the safety-focused agencies and organizations of the region are well poised to effect this change. The eight emphasis areas described in this analysis were contributing factors in 97 percent of traffic crash fatalities and 89 percent of related injuries between 2010 and 2012 in the Delaware Valley. The emphasis area “Aggressive Driving” was either a direct or a contributing factor in almost half of the fatalities.

By increasing attention on measuring outcomes, it can be demonstrated that education, policy, and infrastructure changes, combined with law enforcement’s commitment to keeping our highways safe, will make an impact on regional roadway safety.

Each of the eight key emphasis areas is presented individually in this chapter and includes the following for each:

- ◆ national-level statistics, websites, and documents for background;
- ◆ regional data as reported in the DVRPC 2014 publication *Analysis of Crashes in the Delaware Valley, 2010–2012*;
- ◆ RSTF partner programs already in place;
- ◆ a range of recommended strategies for the Delaware Valley to improve safety in each emphasis area based on national sources, RSTF partners’ work, and reviews by RSTF members; and
- ◆ information and resources for further research.

There is a range of potential strategies to consider for each emphasis area. For the 2015 TSAP, a workshop was held on May 14, 2014, for members of the RSTF to discuss each emphasis area and to recommend strategies in the “4Es” categories: education, enforcement, emergency responder, engineering, as well as policy.

Through the workshop and subsequent review a subset of strategies and specific actions that seemed most effective and doable resulted. These actions are included in the final chapter as Table 13: Recommended Strategies and How to Accomplish Them. This table will be the starting point for a detailed discussion at the RSTF meeting on that emphasis area and a request for commitments by various partners to undertake appropriate actions. The RSTF partners who commit to taking specific actions will report on their outcomes at a specified future meeting. This is part of implementing the Goal, Objectives, and Measures of the RSTF (see Chapter 4 Performance Measures). This process has been accepted by the RSTF partners.

Table 4 below summarizes the eight emphasis areas of the 2015 TSAP. These topic areas will each be the focus of an RSTF quarterly meeting at which specific actions that advance safety will be taken on by members of the RSTF and tracked for progress at subsequent meetings.

Table 4: 2015 Emphasis Areas for the Delaware Valley

	Emphasis Area	Brief Definition
1	Curb Aggressive Driving	Aggressive driving is a combination of dangerous, deliberate, and hostile behaviors or actions by a motor vehicle operator that endanger other persons and disregard public safety. Aggressive driving was a contributing factor for 48 percent of the traffic fatalities in the Delaware Valley on average for the period from 2010 to 2012. This is the most significant emphasis area to address in order to improve safety.
2	Keep Vehicles on the Roadway and Minimize the Consequences of Leaving the Roadway	Keeping vehicles on the roadway helps reduce crashes in which vehicles leave the roadway, as they often then hit fixed objects, overturn, and/or roll. Roadway departure crashes are often deadly.
3	Improve the Design and Operation of Intersections	Improving the design and operation of intersections means reducing crashes at both signalized and unsignalized intersections. In locations with pedestrians and bicyclists, it is important to also address their need to cross intersections.
4	Reduce Impaired and Distracted Driving	Impaired driving in this analysis refers specifically to driving under the influence of alcohol. It can also refer to driving while drug-impaired or sleep-deprived, but these are captured by the data. Distracted driving is included in this section because many strategies to reduce distracted driving are similar in nature to those for reducing impaired driving.
5	Increase Seat Belt Usage	Wearing a safety belt is highly effective in preventing injuries and death resulting from a crash. All occupants of a vehicle should wear seat belts.
6	Ensure Pedestrian Safety	Ensuring pedestrian safety involves improving the design and availability of pedestrian facilities on roadways, as well as increasing awareness of the risks and responsibilities both drivers and pedestrians must consider during their interactions.
7	Sustain Safe Senior Mobility	Sustaining safe senior mobility includes recognizing that although many older drivers are still capable, the effects of aging have negative consequences on the safe driving abilities of some seniors. It is important to also address the range of mobility alternatives for seniors.
8	Ensure Young Driver Safety	Although many younger drivers are capable, their relative lack of experience can have negative impacts on safe driving. It is important to address a range of young-driver-specific alternatives.

Source: Delaware Valley Regional Planning Commission, 2014

Emphasis Area 1: Curb Aggressive Driving

NHTSA defines aggressive driving as "when individuals commit a combination of moving traffic offenses so as to endanger other persons or property." Behaviors associated with aggressive driving include: speeding (either exceeding the posted speed limit or driving too fast for conditions), following too closely ("tailgating"), erratic or unsafe lane changes, improperly signaling lane changes, and running red lights or other traffic control devices. NHTSA considers red-light running one of the most dangerous forms of aggressive driving.

According to NHTSA, aggressive driving and road rage are different and should be classified as such. They define road rage as a criminal act described as "an assault with a vehicle or other dangerous weapon by a driver or passenger on the operator or passenger of another vehicle caused by an incident on the highway" (Source: NHTSA Aggressive Driving Fact Tip Sheet, nhtsa.gov). Although aggressive driving is not a criminal act, the associated driving behaviors are dangerous, ticket-able offenses that can have serious consequences.

Nationally, in 2012, speeding was a factor in 30 percent of fatal crashes (source: Insurance Institute for Highway Safety, iihs.org/statistics).

Sources: www.nhtsa.gov/aggressive, PennDOT, NJDOT

Aggressive driving behaviors contributed to the highest percentage of fatal crashes of all emphasis areas studied in this report, making it the most important emphasis area to address in order to improve safety.

In the Delaware Valley, aggressive driving was a contributing factor in 48 percent of the traffic fatalities on average for the period from 2010 to 2012. Although this represents a two percent decrease from the average reported in the 2012 TSAP (data years 2008–2010), no other emphasis area contributed to more fatalities. See the companion piece, *Analysis of Crashes in the Delaware Valley, 2010–2012*, for more background information.

PennDOT tracks a definition based on NHTSA guidance: "the operation of a motor vehicle involving two or more moving violations as part of a single continuous sequence of driving acts, which is likely to endanger any person or property." Some of these acts include illegal U-turns, running a stop sign, running a red light, tailgating, careless passing, passing in a no-passing zone, and speeding.

New Jersey's current definition of aggressive driving, as listed in the *New Jersey Motor Vehicle Commission Driver's Manual*, Chapter 5, p. 82, is "a progression of unlawful driving actions, such as speeding, improper passing, or improper or excessive lane-changing", where "drivers fail to consider how their actions behind the wheel may affect other motorists on the road." New Jersey will continue to address the need for a comprehensive definition using NHTSA's version as a guide. Until then, any one of the following actions constituted an aggressive driving crash in New Jersey in the *Analysis of Crashes* report: unsafe speed, failed to obey traffic control device, failed

to yield right-of-way to vehicle/pedestrian, improper passing, improper lane change, or following too closely.

Existing Programs

Table 5 lists a sample of the many programs in the Delaware Valley region that help curb aggressive driving, updated from the 2012 TSAP. Although programs are listed in a single category for the purposes of this document, they may have benefits in multiple categories.

Table 5: Programs in the Delaware Valley That Help Curb Aggressive Driving

<p><u>Engineering</u></p> <ul style="list-style-type: none"> • Pavement “Dot” treatments (PennDOT)
<p><u>Enforcement</u></p> <ul style="list-style-type: none"> • Red-Light Running Automated Enforcement (Philadelphia Parking Authority, Abington Township) • US 130 Burlington County aggressive driving enforcement project (NJDHTS) • #77 Aggressive Driving Hotline (New Jersey State Police) • Enhanced enforcement along Safe Corridors (New Jersey State Police) • Safe Corridors Program (NJDOT) • Speed Enforcement Program (Burlington County Traffic Safety Task Force) • PA Aggressive Driving Enforcement and Education Project (Pennsylvania State Police and PennDOT)
<p><u>Education</u></p> <ul style="list-style-type: none"> • Aggressive Driving Awareness Campaign (NJDOT) • Put the Brakes on Fatalities Day (NJDHTS) • Tips to Combat Aggressive Driving Behavior (AAA) • RSTF’s aggressive driving working group (DVRPC)

Source: Delaware Valley Regional Planning Commission, 2014

Notes: AAA = American Automobile Association; NJDHTS = New Jersey Division of Highway Traffic Safety; NJDOT = New Jersey Department of Transportation; PennDOT = Pennsylvania Department of Transportation.

Potential Strategies to Curb Aggressive Driving

The following strategies are a starting point to help curb aggressive driving in the Delaware Valley. Strategies were drawn from the 2012 Pennsylvania SHSP, the New Jersey 2007 and 2015 SHSP's, the AASHTO SHSP, DVRPC's *2012 Transportation Safety Action Plan*, the National Cooperative Highway Research Program's *NCHRP Report 500-1, A Guide for Addressing Aggressive Driving Collisions*, and input from participants in the RSTF.

Aggressive driving will best be reduced through a multidisciplinary approach that fixes the causes of aggressive driving, as well as addresses its symptoms. The approach should include enforcing all traffic laws, addressing traffic operations factors that apparently contribute to aggressive driving, and evaluating the results of actions (*NCHRP 500-1*).

Note that policy or legislative strategies recommended by safety partners do not constitute endorsement by specific agencies. Each strategy is usually only listed once in the category below that it most relates to, although there can be overlap.

Policy

- ▶ Promote legislative activities aimed at curbing aggressive driving, including considering legislation that:
 - ◆ defines aggressive driving as an enforceable offense and establishes stiff penalties (2012 PA SHSP);
 - ◆ allows local police in Pennsylvania to use radar in speed enforcement (2012 PA SHSP); and
 - ◆ considers use of red-light and speeding cameras (2015 NJ SHSP).
- ▶ Expand Intelligent Transportation Systems (ITS) technologies including automated enforcement, and inform the public about technology deployment (2012 PA SHSP).
- ▶ Provide analysis that supports adequate funding for enforcement programs (2012 TSAP).
- ▶ Provide information and analysis to inform policy discussions of aggressive driving and its elements, such as speeding, tailgating, and combinations of aggressive behaviors. Some specific focus areas could be:
 - ◆ Help New Jersey move toward the NHTSA definition and subsequently update the NJTR-1 crash reporting form to include necessary crash details
 - ◆ Help advance use of radar for local police in PA.
 - ◆ Promote use of automated enforcement in work zones.

Engineering Strategies

- ▶ Evaluate engineering practices, including signage, pavement markings, roadway striping, lane widths, signal timing, and speed limits for their potential to curb aggressive driving (2015 NJ SHSP).
- ▶ Evaluate and establish realistic speed limits and design speeds as a systematic approach for the region (2015 NJ SHSP).

- ▶ Identify and prioritize severely congested intersection and corridor improvement needs with a focus on reducing aggressive driving (2012 TSAP).
- ▶ Look for opportunities to implement, incentivize, and publicize engineering and technology strategies, such as traffic calming and road diets that can help reducing speeding and aggressive driving.
- ▶ Discuss criteria and use data to identify approximately five locations in Pennsylvania where road diets and other treatments to reduce speeding would make sense; coordinate with NJDOT regarding whether this would be helpful there too. There should be discussion about how this information will be used.

Enforcement Strategies

- ▶ Share information about areas with high rates of aggressive driving crashes and discuss how various agencies and organizations could further coordinate to improve safety (2015 NJ SHSP; 2012 TSAP).
- ▶ Publicize enforcement using saturation patrols and other displays of enforcement to make them more effective (2015 NJ SHSP).
- ▶ Develop a system to identify problem drivers based on repeated violations. Educate repeat offenders and strengthen sanctions against repeat offenders (NCHRP 500-1).
- ▶ Share information with prosecutors and judges to help have speed violations and other aggressive driving violations treated seriously and fairly. Particularly, promote the upholding of sanctions against repeat offenders (2012 TSAP).
- ▶ Promote the use of advanced technologies to support enforcement efforts (AASHTO SHSP).
- ▶ Continue to promote citizen reporting options, including cell phones and other methods.
 - ◆ Develop aggressive driving hotline for Pennsylvania (2012 PA SHSP).
- ▶ Highly publicize enforcement details to increase their effectiveness and help disseminate factual information about enforcement, including red-light-running cameras (consider local streets and school zones which tend to have high pedestrian activity).
- ▶ Explore engaging high level staff from enforcement agencies and federal agencies (FHWA, NHTSA, etc.) further for the RSTF's Aggressive Driving meeting this cycle, possibly leading to a future conference about declaring 2017 the year of aggressive driving enforcement in one or both states.
- ▶ Promote collaboration between law enforcement and planning agencies to help identify safe pull-off areas for roadside speeding enforcement.

Education Strategies

- ▶ Use variable message signs to increase driver awareness and reduce the frustration that may contribute to aggressive driving by some people (NCHRP 500-1).
- ▶ Develop a multifaceted educational program, including classroom training and a media campaign that raises awareness of aggressive driving and programs, such as Drive Safe PA (formerly Smooth Operator) and Obey the Signs or Pay the Fines (2015 NJ SHSP).
 - ◆ Highlight statutes in the vehicle code related to aggressive driving (2012 TSAP).
 - ◆ Include education at the testing level (2012 TSAP).
 - ◆ Focus on specific high-incidence demographic populations and geographic areas for targeted programs in an appropriate manner (2012 TSAP).

- ◆ Use all channels of media, such as newspapers, magazines, television, radio, social networking websites, etc. (2012 TSAP).
- ▶ Educate legislators, specifically those on transportation committees, on aggressive driving and their necessary support in helping to curb it by developing effective policies (2012 TSAP).
- ▶ Continue to communicate to the public what aggressive driving behaviors are and why they are so dangerous (promote: correlation between higher speeds and higher-severity crashes, the need to adjust driving to conditions/contexts).
- ▶ Provide clear information about the effects of different funding levels on how much enforcement is possible and the resulting effects on safety (2012 TSAP).
- ▶ Develop a working group on aggressive driving, either for the region or in one or both states, modeled after the incident management task forces. This group might work with people who have had personal experiences of loss from such crashes to communicate the emotional, personal impacts, as well as the data side.
- ▶ Consider ways to more effectively communicate with the public to manage driver expectations in congested areas.
- ▶ Try to address the longer-term need for culture change regarding aggressive driving, as well as shorter-term strategies.

Emergency Responder Strategies

- ▶ Educate about “Steer Clear” law, requiring motorists to move over or slow down when they encounter an emergency scene, traffic stop, or disabled vehicle (existing law in New Jersey and Pennsylvania).
- ▶ Utilize temporary safety zones to ensure the safety of emergency personnel during highway incidents by prohibiting unauthorized individuals and vehicles from entering the safety zones (2012 TSAP).
- ▶ Implement various levels of emergency response signal priority or preemption to assist in tracking and responding to aggressive driving before or after crashes (2012 TSAP).
- ▶ Increase use of Closed-Circuit Television (CCTV) to assist in tracking and responding to aggressive driving before or after crashes (2012 TSAP).
- ▶ Provide the highest level of training and performance standards for emergency responders for all situations, may be especially useful in tracking and responding to some aggressive driving situations before or after crashes (2015 NJ SHSP).

Additional Resources

- ▶ *NCHRP Report 500-1, A Guide for Addressing Aggressive Driving Collisions*
- ▶ *AAA Driver Stress Profile Quiz, www.aaafoundation.org/are-you-aggressive-driver*

Emphasis Area 2: Keep Vehicles on the Roadway and Minimize the Consequences of Leaving the Roadway

In crashes attributed to a vehicle leaving the roadway, the likelihood for serious injuries, fatalities, and high-cost damage is considerable. Nationally, in 2012, fatalities from roadway departure crashes (defined by NHTSA as ran-off-road either right or left, crossed the centerline or median, went airborne, or hit a fixed object) increased 3.4 percent from 2011. Run-off-road crashes also accounted for 32 percent of all injuries and were 30 percent of all property-damage-only crashes. Collisions with fixed objects were 18 percent of all crashes, but these crashes accounted for 45 percent of fatalities. Run-off-road crashes are most likely to involve only one vehicle; 61 percent of all fatal crashes involved only one vehicle.

To reduce the injuries and fatalities resulting from vehicles leaving the road, efforts can be focused on: (1) keeping vehicles on the road, (2) reducing the likelihood of vehicles overturning or crashing into fixed objects or work zones, and (3) minimizing the severity of an overturn or crash.

Sources: 2012 Motor Vehicle Crash Data from FARS and General Estimates System (NHTSA 2013) www-nrd.nhtsa.dot.gov/pubs/812032.pdf, Traffic Safety Facts Research Note (NHTSA 2013) www-nrd.nhtsa.dot.gov/pubs/811856.pdf, *Analysis of Crashes in the Delaware Valley 2010-2012* (DVRPC 2014)

In the Delaware Valley from 2010 to 2012, one or more vehicles left the roadway in 38 percent of traffic fatalities, an increase of 4 percent from the average for years 2008–2010.

Strategies to mitigate vehicles leaving the roadway are primarily engineering and focus on physical changes to the roadway that control speed and heighten drivers' awareness of their surroundings. Speed enforcement strategies can be effective in locations where hit-fixed-object crashes are common because slowing down allows drivers more time for error correction. In addition, educational efforts aimed at curbing impaired driving and informing young or new drivers can also contribute to increased safety in this emphasis area.

See the companion piece, *Analysis of Crashes in the Delaware Valley, 2010–2012*, for more background information.

Existing Programs

Table 6 lists a sample of the many programs in the Delaware Valley region that help keep vehicles on the roadway, updated from the 2012 TSAP. Although programs are listed in a single category for the purposes of this document, they may have benefits in multiple categories.

Table 6: Programs in the Delaware Valley That Help Keep Vehicles on the Roadway and Minimize the Consequences of Leaving the Roadway

<p>Engineering</p> <ul style="list-style-type: none"> • Statewide programs for median crossover barriers, raised pavement markers, wet weather skid crash reduction, and fixed objects (NJDOT) • Systemic centerline and edge line rumble strip initiative (NJDOT) • Roadway Departure Implementation Plan (RDIP), High Friction Surface Treatment Program, safety edge requirement on all 3R projects, and highway cable median barrier applications (PennDOT) • Use of the easiest-to-read “Clearview” font on guide signs (Burlington County Engineering Department) • Use of raised pavement markers as appropriate (Burlington County Engineering Department) • Guide rail reviewed annually and end treatments replaced with ET 2000 treatments as needed (Mercer County Engineering Department) • Install centerline rumble strips on horizontal curves (Mercer County Engineering Department) • Roadway segments identified for resurfacing on an annual basis (Burlington, Camden, Gloucester, and Mercer Counties Engineering Departments)
<p>Education</p> <ul style="list-style-type: none"> • Tips for Driving in inclement weather (AAA)

Source: Delaware Valley Regional Planning Commission, 2014

Notes: AAA = American Automobile Association; NJDOT = New Jersey Department of Transportation; PennDOT = Pennsylvania Department of Transportation.

Potential Strategies to Keep Vehicles on the Roadway and Minimize the Consequences of Leaving the Roadway

The following strategies are a starting point to consider what will help keep vehicles on the roadway in the Delaware Valley, and minimize the consequences of leaving the roadway. Strategies were drawn from the 2012 PA SHSP, the New Jersey 2007 SHSP and 2015 SHSP, the national SHSP (AASHTO), DVRPC’s 2012 TSAP, and input from participants in the RSTF.

In the listing of strategies that follow, strategies aimed at keeping vehicles on the roadway are listed first and denoted with a “K.” Strategies that also minimize the consequences of leaving the road are denoted with an “M.” Note that legislative strategies recommended by safety partners do not constitute endorsement by specific agencies.

Policy

- ▶ Refine policies to keep vehicles on the roadway to distinguish between the following two types of roads:
 - ◆ (K)(M) Those with speed limits under 50 miles per hour (MPH) (more city/urban, fewer fatalities, obstacles closer to road) (2012 TSAP).
 - ◆ (K)(M) Those with speed limits over 50 MPH (more rural, more fatalities, obstacles often farther from road) (2012 TSAP).

- ▶ Research and then promote legislation to require all tire manufacturers to provide an expiration date on their products as tires over ten years old seem to be far over-represented in tire blow-outs that cause vehicles to leave the road.

Engineering Strategies

- ▶ Identify, share, and implement engineering solutions to keep vehicles on the roadway, including a comprehensive program to improve driver guidance through pavement markings and reflectivity, shoulder accommodations, rumble strips and stripes, and improved roadway geometry, curvature, and delineation (2015 NJ SHSP; 2012 PA SHSP).
 - ◆ (K) Implement a targeted rumble strip and rumble stripe program (2015 NJ SHSP; AASHTO SHSP).
 - ◆ (K) Conduct a regionwide survey/study to pinpoint hotspots for shoulder enlargement (2012 TSAP). Reduce the number of lane miles with 10-foot travel lanes and posted speed limits of 40 MPH or above in the region. Increase the number of lane miles where the paved shoulder is a minimum of four feet wide where appropriate (2012 TSAP).
 - ◆ (M) Provide guide rails to shield motorists from striking fixed objects (2014 NJ SHSP – Draft; 2012 TSAP; *NCHRP 500-3*).
 - ◆ (K) Provide high friction surface treatments at identified problem locations (2012 TSAP; *NCHRP 500-6*).
 - ◆ (K) Develop better ways to maintain critical signage and ensure signs are location specific (2014 NJ SHSP – Draft).
 - ◆ Provide proper advisory signs for upcoming curves, road hazards, speed limit changes, etc. (2012 TSAP).
 - ◆ Lower speed limits in locations where wet/bad weather conditions contribute to crashes (2015 NJ SHSP).
- ▶ (K)(M) Improve the design process to explicitly incorporate safety considerations and facilitate better design decisions (2015 NJ SHSP; AASHTO SHSP).
- ▶ (K)(M) Make roadsides more “forgiving” while trying not to encourage speeding by flattening slopes, removing fixed objects, increasing offsets between utility poles, improving substandard guide rails, and trimming foliage (2015 NJ SHSP).
- ▶ (K) Develop better guidance to control driver’s speed variations through combinations of geometric and traffic control techniques (2015 NJ SHSP; AASHTO SHSP).
- ▶ (K)(M) Analyze crash data to identify:
 - ◆ Run-off-the-road locations in the region. Consider a focus on providing information on county and local roads. Where appropriate, consider systemic approaches.
 - ◆ Locations where pedestrians are victims of run-off-road crashes as especially important locations for safety improvements (2012 TSAP).
- ▶ Collect information about conditions that result in complaints about rumble strips/stripes and summarize it into guidelines to consider for the future; focus promotion on county and local road operators; develop guidance to consider factors of public impact (e.g., complaints about rumble strips due to noise.)

Enforcement Strategies

- ▶ (K)(M) Enforce realistic speed limits.

- ◆ Conduct a regional assessment of possible locations for speed limit changes (2012 TSAP).
- ▶ (K) Train law enforcement officers to recognize poor traffic control set-ups in work zones and at crash scenes and take action to shut down dangerous operations (2012 TSAP).

Education Strategies

- ▶ Develop, communicate, and implement a comprehensive educational program on the prevention and reduction of roadway departure crashes (2015 NJ SHSP).
 - ◆ (K) Identify and use educational material to enhance driver attentiveness (2012 TSAP).
 - ◆ (K) Encourage planning trips with enough time to allow for traffic, construction, weather, defects in the road, etc. (2012 TSAP).
- ▶ (K) Create safe work zones by educating crews about setting up road work areas as detailed in the Manual on Uniform Traffic Control Devices (MUTCD).
- ▶ Publicize the importance of vehicle maintenance to safely staying on the roadway, and the safety benefits of regular maintenance.
- ▶ Promote best practices used by Pennsylvania and New Jersey, as well as FHWA's proven countermeasures in keeping vehicles on the roadway and suggest other agencies incentivize use of them, and share information about resources such as grants and how to participate in the TIP process. x
- ▶ (K) Clarify how to report crash-prone locations and signage issues, by any citizen and by police (in Pennsylvania on the AA500 police reporting form, officers have a check box if maintenance is required) to departments of transportation (2012 TSAP).
- ▶ Keep abreast of technical advances for keeping vehicles on the roadway and share safety needs with auto manufacturers.

Emergency Responder Strategies

- ▶ Explore ways to support quicker emergency response to reduce secondary crashes.
- ▶ Continue to encourage use of mile-post markers for more effective reporting of crashes, and promote use on rural roadways for more effective crash and incident locating.

Additional Resources

- ▶ *NCHRP Report 500-3, A Guide for Addressing Collisions with Trees in Hazardous Locations*
- ▶ *NCHRP Report 500-6, A Guide for Addressing Run-Off-Road Collisions*
- ▶ *NCHRP Report 500-7, A Guide for Reducing Collisions on Horizontal Curves*
- ▶ *NCHRP Report 500-8, A Guide for Reducing Collisions Involving Utility Poles*

Emphasis Area 3: Improve the Design and Operation of Intersections

According to FHWA, over the last several years an average of one-quarter of traffic fatalities and roughly half of all traffic injuries can be attributed to intersections. Since intersections represent a very small percentage of surface mileage in the millions of miles of roads and streets in the United States, the design and operational function of intersections present good opportunities for reducing vehicle conflicts and crashes.

Nationally, in 2012, “angle” and “rear-end” collisions, which are common at intersections, accounted for more than half of all crashes and represented almost one-quarter of all fatalities.

Sources: FHWA, <http://safety.fhwa.dot.gov/intersection/>, 2012 Motor Vehicle Crash Data from FARS and GES (NHTSA 2013), www-nrd.nhtsa.dot.gov/Pubs/812032.pdf

Intersections were a contributing factor for 29 percent of the traffic fatalities in the Delaware Valley on average for each year from 2010 to 2012, a number unchanged from the analysis done for 2008–2010. Note that these numbers include drivers, passengers, pedestrians, and bicyclists. As with Emphasis Area 2, most of the recommended strategies are engineering-based, with educational efforts focused on supporting engineering fixes. See the companion piece, *Analysis of Crashes in the Delaware Valley, 2010–2012*, for more background information.

Existing Programs

Table 7 lists a sample of the many programs in the Delaware Valley region that help improve the design and operation of intersections (updated from the 2012 TSAP.) Although programs are listed in a single category for the purposes of this document, they may have benefits in multiple categories.

Table 7: Programs in the Delaware Valley That Help Improve the Design and Operation of Intersections

<p><u>Engineering</u></p> <ul style="list-style-type: none"> • Intersection Improvement programs: Left-Turn Crash and Right-Angle Crash programs, Pedestrian Safety Toolbox recommendations for crossing improvements, LTAP – research intersection-specific project (NJDOT) • Intersection Safety Implementation Plan [ISIP] (PennDOT) • Transit First signal prioritization program for busses and trolleys (SEPTA) • Locate bus stops on far side of intersection when possible (SEPTA) • Use of Clearview font on guide signs (Burlington County Engineering Department) • Roundabout intersection replacements (Burlington County Engineering Department) • Pedestrian Countdown Signals (Philadelphia Streets Department) • Citywide Traffic Signal Corridors timing/progression optimization (Philadelphia Streets Department) • HSIP with PennDOT District 6 (Philadelphia Streets Department) • Upgrade signals to optical detection, align lanes, implement left-turn phasing, and eliminate skewed intersections where possible (Mercer County Engineering Department) • Rail/highway grade crossing—upgrades and safety education (NJDOT) • Regional Systemic Pilot Roundabout Program (NJDOT)
<p><u>Enforcement</u></p> <ul style="list-style-type: none"> • Red-Light Running Automated Enforcement (Philadelphia Parking Authority; Abington Township, Pennsylvania) • GPS Emergency Responder Signal Preemption (Burlington County Engineering Department)
<p><u>Education</u></p> <ul style="list-style-type: none"> • City of Philadelphia, and the states of Pennsylvania and New Jersey intersection safety initiatives to support federal Pedestrian Focus City designation (FHWA) • RSTF (DVRPC) • Operation Life Saver program—Safety education for at-grade highway and rail grade crossings (NJDOT), (PennDOT)

Source: Delaware Valley Regional Planning Commission, 2014

Notes: DVRPC = Delaware Valley Regional Planning Commission; FHWA = Federal Highway Administration; GPS = Global Positioning System; NJDOT = New Jersey Department of Transportation; PennDOT = Pennsylvania Department of Transportation; SEPTA = Southeastern Pennsylvania Transportation Authority.

Potential Strategies to Improve the Design and Operation of Intersections

The following strategies are a starting point for considering what will help improve the design and operation of intersections in the Delaware Valley. Strategies were drawn from the 2012 Pennsylvania SHSP, the 2007 and 2015 New Jersey SHSP's, the national SHSP (AASHTO), DVRPC's 2012 TSAP, and input from participants in the RSTF. Note that legislative strategies recommended by safety partners do not constitute endorsement by specific agencies.

Policy

- ▶ Consider pursuing legislative changes necessary to use technology to monitor and increase safety at intersections (2012 TSAP).
- ▶ Enhance methodologies and standardization for problem identification, prioritization, and evaluation (2015 NJ SHSP).
 - ◆ Establish an Intersection Improvement Program (IIP) for the region to help with analysis, recommendations, and funding (2012 TSAP).
 - ◆ Implement IIPs on a municipal and county-wide basis (2012 TSAP).

Engineering Strategies

- ▶ Reduce signalized intersection crashes.
 - ◆ Provide and/or improve turn lanes (2015 NJ SHSP).
 - ◆ Increase the use of protected left-turn signals as appropriate (2015 NJ SHSP).
 - ◆ Improve intersection safety by upgrading signalized intersection controls that smooth traffic flow. Target intersections with high incident rates (2015 NJ SHSP; AASHTO SHSP).
 - ◆ Improve visibility of signals by using light-emitting diode (LED) bulbs, larger signal heads, and back plates (2015 NJ SHSP).
 - ◆ Time signals to accommodate pedestrians, install pedestrian countdown timers, and install Yield to Pedestrian Channelizing Devices (2015 NJ SHSP).
 - ◆ Spread the word to make roadway signage and signalized intersections as clear and simple as possible.
- ▶ Reduce stop-controlled intersection crashes (2015 NJ SHSP).
 - ◆ Expand the use of roundabouts as an effective intersection improvement (2012 TSAP).
 - ◆ Increase visibility of intersection and signage (2012 TSAP).
- ▶ Improve sight distance, visibility, and geometry of intersections (2015 NJ SHSP; 2012 TSAP).
- ▶ Locate bus pull-offs and transit stops on the far side of intersections (2012 TSAP).
- ▶ Utilize new technologies, including queue detection and video detection to improve intersection safety (2015 NJ SHSP; AASHTO, p. 29).
- ▶ Improve the PennDOT Crash Records System to create more complete and useable data to be shared with planning partners (2012 TSAP).
- ▶ Share data on intersections experiencing a high frequency of crashes that would benefit from capital improvements or low-cost safety measures to promote cooperative improvement approaches.

Enforcement Strategies

- ▶ Target enforcement at specific problem intersections including using automated methods to monitor and enforce intersection traffic control (2015 NJ SHSP; 2012 TSAP; AASHTO, p. 29).
 - ◆ Use automated enforcement to augment traditional enforcement (2015 NJ SHSP).
 - ◆ Implement photo radar where allowed (2015 NJ SHSP).
- ▶ Monitor travel speeds on approaches (2015 NJ SHSP).

- ▶ Further publicize to police departments that crash analysis can greatly increase effectiveness and that the data is available (2012 TSAP).
- ▶ Review intersection definitions used by Pennsylvania and New Jersey and promote regional consistency in identifying problem intersections for network screenings and eventual improvements.

Education Strategies

- ▶ Educate the public on intersection safety issues (2007 NJ SHSP).
 - ◆ Involve NJDOT, PennDOT, and other applicable agencies in media campaigns for intersection safety (2012 TSAP).
 - ◆ Include effective access management policies with a safety perspective (AASHTO, p. 29).
- ▶ Utilize mobile speed display boards to raise awareness of speed limits (2012 TSAP).
- ▶ Make strategies more effective through enhancing coordination of agencies (or agencies and land owners) (2012 TSAP).
- ▶ Review intersection definitions used by PA and NJ and promote regional consistency in identifying problem intersections for network screenings and eventual improvements.
- ▶ Research and promote educational programs that assist roadway owners in accessing HSIP (help with the federal process) funds for safety improvements at intersections.
- ▶ Promote and incentivize the use of FHWA's proven intersection safety countermeasures to local and county roadway owners, (e.g.: roundabouts, pedestrian crossing refuge islands, signal back plates with retro-reflective borders), and provide information on funding these improvements and promote best practices local success stories.

Emergency Responder Strategies

- ▶ Further coordinate emergency responses between neighboring municipalities and regional resources to speed clearance of crashes and improve speed of access to medical treatment (2012 TSAP).
- ▶ Educate the public and first responders on crash scene safe practices to maintain operations of intersections and improve speed of medical treatment.
- ▶ Collaborate with emergency response services on future Transit First signal prioritization efforts to develop a hierarchy of signal preemption (2012 TSAP).

Additional Resources

- ▶ *NCHRP Report 500-5, A Guide for Addressing Unsignalized Intersection Collisions*
- ▶ *NCHRP Report 500-12, A Guide for Reducing Collisions at Signalized Intersections*

Emphasis Area 4: Reduce Impaired and Distracted Driving

The likelihood of involvement in a crash of any severity increases steadily with increasing driver blood alcohol content (BAC). Nationally, alcohol-impaired driving fatalities accounted for 31 percent of all crash fatalities in 2012. This rate has remained fairly steady over the past decade after declining from a high of 50 percent in 1982. Alcohol-impaired drivers younger than 21 are more than seven times as likely to crash as an unimpaired driver of similar age.

Although the consequences of alcohol-impaired driving continue to be highly publicized and legislated against, law enforcement and research both acknowledge that there are other forms of impaired driving, including driving while under the influence of illegal, prescription, or over-the-counter drugs, as well as driving while drowsy or sleep-deprived.

Distracted driving is any activity that could divert a person's attention away from the primary task of driving. Text messaging gets a significant amount of press, research, and legislative attention, but all distractions endanger the driver, passenger, and bystander safety. In addition to texting, distractions can include: using a phone, eating and drinking, grooming, reading, using a navigation system, adjusting a radio, tending to a child or pet, looking at billboards—virtually any activity that distracts a driver's attention from operating their vehicle. In 2012, an estimated 421,000 people were injured in motor vehicle crashes involving a distracted driver; this was a nine percent increase from the estimated 387,000 people injured in 2011.

Sources: Insurance Institute for Highway Safety (<http://www.iihs.org/iihs/topics/t/alcohol-impaired-driving/qanda>); NHTSA Traffic Safety Facts (DOT HS 811856, November 2013) www-nrd.nhtsa.dot.gov/Pubs/811856.pdf; NHTSA Distraction.gov website www.distraction.gov/content/get-the-facts/facts-and-statistics.htm; Insurance Institute for Highway Safety website: iihs.org/iihs/topics/t/alcohol-impaired-driving/topicoverview (updated March 2014); www.textinganddrivingsafety.com/texting-and-driving-stats/

The impaired driving statistics tracked by NJDOT and PennDOT covered in this report only consider alcohol-related crashes. Driving while impaired by prescription or illegal drugs is a growing concern. Because of increased Pennsylvania and New Jersey law enforcement training in recognition of drug-related impairments, better-quality data will become available. Therefore, integrating drugged-driving into the definition of impaired driving should be a consideration in the future.

Reliable data is not yet available at the state level for distracted driving, which mostly consists of texting while driving information. Once this data is determined to be reliable it should be included in this analysis.

Impaired driving was a contributing factor for 27 percent of the traffic fatalities in the Delaware Valley on average for the period from 2010 to 2012, a slight decrease (one percent) from the 2008–2010 average. While the percentages for most emphasis areas are similar across the region, impaired driving was a contributing factor in many more fatalities in the region's Pennsylvania counties than in the New Jersey counties.

In New Jersey, Driving under the Influence (DUI) is not a criminal offense as it is in Pennsylvania and most other states, which may possibly affect the reported number of DUI crashes. Impaired driving in New Jersey is a serious motor vehicle (traffic) violation; although there are serious consequences for a driver found guilty of impaired driving, it does not become part of the driver's criminal record.

In regard to distracted driving, in 2012 the New Jersey Senate and Assembly passed the Kulesh, Kubert and Bolis' Law which makes it a criminal offense to injure or kill a person due to use of a cell phone while driving. In addition, in New Jersey it is a primary offense for motorists to talk on or text message with a hand-held wireless telephone or electronic communication device while driving, carrying a \$100 fine.

Lastly, it should be noted that while pedestrians and bicyclists under the influence of alcohol put themselves and others at risk for injury (see Emphasis Area 6), the associated fatalities have not been examined in this report.

See the companion piece, *Analysis of Crashes in the Delaware Valley, 2010–2012*, for more background information.

Existing Programs

Table 8 lists a sample of the many programs in the Delaware Valley region that help reduce impaired driving (updated from the 2012 TSAP). Although programs are confined to a single category for the purposes of this document, they may have benefits in multiple categories.

Table 8: Programs in the Delaware Valley That Help Reduce Impaired Driving

<p><u>Engineering/ Enforcement</u></p> <ul style="list-style-type: none"> • Ignition interlock contract with PA DUI Association (PennDOT) • Ignition interlock quality assurance program (PA DUI Association)
<p><u>Enforcement</u></p> <ul style="list-style-type: none"> • Weekly sobriety checkpoints (Pennsylvania State Police) • Participation in NHTSA Drive Sober or Get Pulled Over Labor Day mobilization and other state mobilizations (Pennsylvania State Police), (New Jersey State and Local Police) • Drug Recognition Expert training for police (Pennsylvania State Police, New Jersey State and local police) • Participation in NHTSA “Over the Limit. Under Arrest program” (New Jersey State and Local Police) • Sobriety checkpoints (New Jersey State and Local Police) • Provide funding for municipal DUI Task Forces (PennDOT) • Contract with the PA DUI Association to provide support for enforcement and adjudication (PennDOT)
<p><u>Education</u></p> <ul style="list-style-type: none"> • Defensive driving course (includes DUI in curriculum) through counties, DUI training for law enforcement, college campus programs, Distracted Driving Mobilization (NJDHTS) • Increased police officers trained in ARIDE (PennDOT) • Cruisin’ SMART: young driver peer-to-peer DUI program (Bryn Mawr Rehab Hospital) • RSTF (DVRPC) • Alcohol awareness program (Mid-Atlantic Foundation for Safety and Education) • Distracted and drowsy driving program (Mid-Atlantic Foundation for Safety and Education) • Enforcement collaboration and education classes, alcohol safe driving classes, services for people charged with DUI, Sobriety Checkpoint Program (Chester County Highway Safety Project) • Alcohol server education program for businesses that serve alcohol (Gloucester Township NJ Police) • DWI pre-prom high school education program (Gloucester Township NJ Police) • Comprehensive alcohol traffic education and enforcement program (Rutgers University) • Impaired Driver Simulation Program (Cherry Hill Township NJ Police) • Policy kit for companies interested in banning cell phone use for their employees (NSC) • New Jersey Teen Driver Program to educate teens on the consequences of DWI (New Jersey State Police) • Funding for Matt Maher DUI presentation to South Jersey high schools (State Farm Insurance) • Adolescent Substance Awareness Program (CCHSP)

Source: Delaware Valley Regional Planning Commission, 2014

Notes: DUI = Driving Under the Influence; DWI = Driving While Intoxicated; NJDHTS = New Jersey Division of Highway Traffic Safety; NSC = National Safety Council; PennDOT = Pennsylvania Department of Transportation; ARIDE=Advanced Roadside Impaired Driving Enforcement

Potential Strategies to Reduce Impaired and Distracted Driving

The following strategies are a starting point to consider what will help reduce impaired or distracted driving in the Delaware Valley. Strategies were drawn from the 2012 PA SHSP, the

New Jersey 2007 SHSP and 2015 SHSP, the national SHSP (AASHTO), DVRPC's 2012 TSAP, and input from participants in the RSTF. Note that legislative strategies recommended by safety partners do not constitute endorsement by specific agencies.

There is some overlap in strategies to address distracted driving. In the range of strategies listed below, (I) refers to strategies to reduce impaired driving, (D) refers to strategies to reduce distracted driving, and (ID) indicates benefit in both categories.

Policy

- ▶ (I) Strengthen the effectiveness of laws against DUI. Push for legislation change in New Jersey, where impaired driving is not a criminal offense (2007 NJ SHSP).
- ▶ (ID) Update, strengthen, and implement legislation pertaining to impaired driving, including drugged, drowsy, and distracted driving (2015 NJ SHSP; AASHTO, p. 13).
- ▶ (ID) Promote alternative transportation, such as public transit (2015 NJ SHSP).
- ▶ (ID) Provide information to increase the rate of conviction and reduce plea bargaining for impaired and distracted driving violations. The low rate of conviction as ticketed and lack of point violations undermines enforcement (2015 NJ SHSP; 2012 TSAP).
- ▶ Provide information for informed policy action on responsibilities of drivers, walkers, and bicyclists; make DUI a criminal offense in New Jersey.

Engineering Strategies

- ▶ (ID) Utilize signage, variable message signs, and analysis of problem areas combined with targeted engineering approaches, including rumble strips, signage, guide rails, etc. (2012 TSAP).
- ▶ Coordinate with appropriate road owners on analysis to identify opportunities to create and promote safe pull-over areas for people to text/talk.
- ▶ Encourage traffic calming and other engineering treatments to reduce crashes from distracted, drowsy, or impaired driving.

Enforcement Strategies

- ▶ Require responsible beverage service policies, increase vigilance at bars, and push for legislation to increase responsibility of bars/bartenders (2015 NJ SHSP).
 - ◆ (I) DUI arrests currently track where the person was drinking—use this to target bars for education (2012 TSAP).
- ▶ Reduce plea-bargaining and exploitation of loopholes in prosecution (2012 TSAP).
 - ◆ (ID) Create stricter penalties for multiple offenders in addition to better treatment programs (2015 NJ SHSP; AASHTO, p. 13).
 - ◆ (ID) Increase prosecution and adjudication outreach (2012 PA SHSP).
- ▶ Increase manpower and funding for checkpoint programs, including the addition of roving patrols and high visibility enforcement efforts (2015 NJ SHSP; 2010 PA SHSP).
- ▶ (I) Enforce and publicize zero-tolerance laws for underage drinkers who drive (2015 NJ SHSP).
- ▶ (ID) Enhance enforcement of commercial motor vehicle hours-of-service regulations, including for transit to reduce drowsy driving (2012 TSAP).

- ▶ (I) Build state programs that target drug-impaired driving (AASHTO, p. 13).
- ▶ Support development of standards for what constitutes impaired by definition for commonly abused controlled substances in New Jersey and Pennsylvania (e.g., cocaine, heroin, etc.).

Education Strategies

- ▶ Increase public awareness of Impaired Driving and DUI enforcement (2015 NJ SHSP; AASHTO, p. 13); also could be applied to distracted driving.
 - ◆ (ID) Use social media, such as YouTube and Facebook, to reach a mass audience (2012 TSAP).
 - ◆ (ID) Participate in national campaigns, such as Over the Limit. Under Arrest program, formerly You Drink, You Drive, You Lose (2015 NJ SHSP).
- ▶ Encourage and promote designated driver programs and alternatives to impaired driving (2015 NJ SHSP).
 - ◆ (I) Use mass transit advertising to raise awareness and promote transit as a safe way to travel if one has been drinking (or is otherwise impaired) (2012 TSAP).
 - ◆ (ID) Support additional funding for prevention programs (2012 TSAP).
 - ◆ (I) Work with colleges to provide and to market means of transportation other than driving, especially for younger students, such as shuttle bus/safe ride home programs (2012 TSAP).
- ▶ Seek opportunities to coordinate Drug Abuse Resistance Education (DARE) programs with Teen Driver Education programs, especially in New Jersey with the new laws for teen drivers (2015 NJ SHSP).
 - ◆ (ID) Use fatal vision goggles as an educational tool in schools; a similar approach can also be used with texting (2012 TSAP).
 - ◆ (I) Promote awareness of sleep deprivation as a form of impaired driving (2012 TSAP).
- ▶ (I) Work with the enforcement community, commercial drivers, and their organizations to:
 - ◆ (I) conduct education campaign oriented to alerting bus and/or truck drivers to the dangers of various kinds of impaired driving (2012 TSAP).
- ▶ (I) Partner with stores and pharmacists to identify over-the-counter medications and prescription drugs that cause impairment (2012 TSAP). This may be especially important for mature drivers, based on RSTF discussions.
- ▶ Reduce the incidence of drinking and driving in the 21–34 age group. This age group has the highest incidence of impaired driving and has not been directly targeted nationally in the past (AASHTO, p. 13).
- ▶ (ID) Continue to educate the public effectively by focusing on fewer messages that are clear, consistent, and coordinated; research indicates people only absorb three messages and respond to repetition (2012 TSAP).
- ▶ Coordinate with vehicle manufacturers and insurance companies on technological, policy, and outreach solutions. Share crash analysis they can use to understand and communicate the extent of the problem.
- ▶ Look for ways to coordinate with private-sector programs that reduce impaired driving, possibly starting by inviting them to participate in the meeting this cycle. Such existing programs include outreach to bar owners/staff and programs run by the Pennsylvania Liquor Control Board and NJ Alcohol Beverage Control Division.

- ▶ Track effectiveness of laws and outreach campaigns implemented to reduce impaired and distracted driving (including information on level of enforcement and covering both national and local examples). The analysis should include effect on fatalities and crashes (2012 TSAP). Identify and promote the most effective campaigns for our region and promote them.
- ▶ Promote organizations with successful bans on cell phone use while driving, and share model policy guidelines that others may use. Share information about cell phone safety programs run by groups like AT&T. Working with TMAs, encourage employers to institute distracted driving policies (bans on cell phone use while driving).

Emergency Responder Strategies

- ▶ (ID) Continue to install mile markers on roadways, and especially ramps where needed, to make it easier for a person under the influence, tired, or confused to communicate the location of a crash in order to speed up responses (2012 TSAP),

Additional Resources

- ▶ New Jersey Intoxicated Driver Resource Center:
www.state.nj.us/humanservices/das/idrcshel.htm
- ▶ NHTSA resources, including National Drunk Driver Database: www.stopimpaireddriving.org

Emphasis Area 5: Increase Seat Belt Usage

NHTSA estimates that in 2012, the nationwide rate of actual seat belt use, by either driver or front seat passenger determined through observational seat belt usage studies was 86 percent, an increase of 1 percent from what was reported in 2010. In 2011, NHTSA established new uniform criteria for data collection for the National Occupant Protection Use Survey (NOPUS) beginning in 2013, meaning data for 2011 and 2012 may have been collected differently by states.

Nationally, more than half of those killed in crashes were unrestrained. The combination of lap and shoulder safety belts supplemented by air bags remains the most effective safety protection available for passenger vehicle occupants. In 2012 seat belt use in the United States ranged from a low of 67 percent in South Dakota to the high of 97 percent in the State of Washington. Sixteen states achieved seat belt use of 90 percent or higher. Jurisdictions with stronger seat belt enforcement laws continue to exhibit generally higher usage rates over those with weaker laws. As of 2015, 34 states, the District of Columbia, American Samoa, Guam, the Northern Mariana Islands, Puerto Rico and the Virgin Islands have primary seat belt laws, and 15 have secondary laws (New Hampshire has neither).

Sources: "Traffic Safety Facts, Seat Belt Use in 2012" (NHTSA # DOT HS 811 809, Revised June 2014); "Traffic Safety Facts, 2012 Motor Vehicle Crashes: Overview" (NHTSA # DOT HS 811856, November 2013) New Jersey Motor Vehicle Commission; Governors Highway Safety Association website (updated July 2014), www.ghsa.org/html/stateinfo/laws/seatbelt_laws.html

Not using seat belts was a contributing factor for 29 percent of the traffic fatalities in the Delaware Valley on average for each year from 2010 to 2012, a decrease of three percent from the 2008–2010 data reported in the *2012 TSAP*. This statistic uses analysis of whether persons in an involved vehicle were or were not wearing their seat belt. See the companion piece, *Analysis of Crashes in the Delaware Valley, 2010–2012*, for more background information.

In New Jersey, failure of a driver, front seat passenger, or child under 18 in rear seats to wear seat belts is considered a primary offense. In Pennsylvania, not wearing a seat belt in the front seat is a secondary offense for those 18 years and older, and it is a primary offense for children to be unbelted in the rear seats. Pennsylvania's seat belt use declined slightly in 2012, from just over 84 percent in 2011 to just over 83 percent in 2012. New Jersey's 2012 reported rate of use also declined from the 2011 high of 95 percent to 88 percent.

Existing Programs

Table 9 lists a sample of the many programs in the Delaware Valley region that help increase seat belt usage, updated from the *2012 TSAP*. Although programs are confined to a single category for the purposes of this document, they may have benefits in multiple categories.

Table 9: Programs in the Delaware Valley That Help Increase Seat Belt Usage

<p><u>Enforcement</u></p> <ul style="list-style-type: none"> • Grant funds available to conduct nighttime enforcement (NJDHTS) • Click It or Ticket Mobilization (NJDHTS) • Participate in Click It or Ticket campaign (New Jersey and Pennsylvania State Police; Local Police) • Legislative efforts in Pennsylvania regarding passenger restraint (AAA Mid-Atlantic) • Route 130 Traffic Enforcement (Burlington County Sheriff’s Department and NJDHTS)
<p><u>Education</u></p> <ul style="list-style-type: none"> • Child Safety Seat checkpoints and educational programs (Camden County Highway Traffic Safety Task Force, Burlington County Traffic Safety Committee) • High School Seat Belt Safety Challenge (TMA Bucks) • Traffic Safety Surveys (SJTPO) • Booster Seat Education Program (Burlington County Traffic Safety Committee) • Seat Belt and Safe Driver presentation (New Jersey State Police) • Grant funds to provide Buckle Up PA seat belt safety programs (PennDOT) • “The Back is Where It’s At” youth educational program (Buckle Up PA) • Buckle Up South Jersey (Cherry Hill Police – Traffic Safety Squad) • Child Passenger Safety Seat technician training and sponsored checkpoints (NJDHTS) • Statewide seat belt surveys (NJDHTS, PennDOT) • High School Teen Seat Belt Minicades, Cops In Crosswalks, Teen Safe Driving Competition (Chester County Highway Safety Project)

Source: Delaware Valley Regional Planning Commission, 2014

Notes: AAA = American Automobile Association; NJDHTS = New Jersey Division of Highway Traffic Safety; SJTPO=South Jersey Transportation Planning Organization; TMA = Transportation Management Association.

Potential Strategies to Increase Seat Belt Usage

The following strategies are a starting point to consider what will help increase seat belt usage in the Delaware Valley. Strategies were drawn from the 2012 PA SHSP, the NJ 2007 SHSP and 2015 SHSP, the national SHSP (AASHTO), DVRPC’s 2012 TSAP, and input from participants in the RSTF. Note that legislative strategies recommended by safety partners do not constitute endorsement by specific agencies.

Policy

- ▶ Provide analysis and information to help legislators consider a primary law for seat belt usage in Pennsylvania for adults over 18; help people know about relevant bills (2015 NJ SHSP).
- ▶ Support improved seat belt use legislation to cover all ages, seat positions, and vehicles.

Engineering Strategies

- ▶ Create official (MUTCD-approved) “buckle-up” roadway signs or stencils and locate them strategically to serve as reminders; e.g., when leaving parking lots (2012 TSAP).

Enforcement Strategies (also see Policy)

- ▶ Continue highly publicized enforcement campaigns, such as Click It or Ticket (2015 NJ SHSP; 2012 PA SHSP).
- ▶ Consider working with schools to establish periodic checkpoints (2015 NJ SHSP).
- ▶ Encourage increased use of seat belts at night through focused investment of grants and enforcement activities.

Education Strategies

- ▶ Implement periodic, coordinated public information and education initiatives (2015 NJ SHSP; AASHTO, p. 16).
 - ◆ Conduct public education and increase visibility to complement high-profile enforcement campaigns, such as the Click It or Ticket program (2015 NJ SHSP).
 - ◆ Target public agencies and large employers to disseminate safety information about the benefits of wearing a seat belt to their employees; one way to do this is through a seat belt survey and distribution of results within the organization (2015 NJ SHSP).
 - ◆ Coordinate efforts and resources of agencies to have more impact (2012 TSAP).
 - ◆ Raise awareness of the dangers that unbelted passengers pose to other vehicle occupants; this phenomenon is referred to as the “back seat bullet” (2012 TSAP).
 - ◆ Help increase the continued visibility of enforcement (Click It or Ticket), education (Graduated Driver Licensing [GDL] outreach) and Buckle-Up messaging campaigns beyond enforcement deployments.
- ▶ Implement child passenger safety plans (2015 NJ SHSP).
 - ◆ Train daycare providers to review proper usage and installation; provide current information on car seat recalls and technological improvements (2012 TSAP).
 - ◆ Better educate law enforcement staff regarding child safety restraints (2012 TSAP).
 - ◆ Coordinate and publicize child passenger safety programs (2012 TSAP).
 - ◆ Increase use of social media for outreach.
 - ◆ Support more training and deployment of car seat technicians.
 - ◆ Publicize importance of use of car seats (including by age, and not using after expiration dates or if they have been in crashes) with non-traditional partners, such as at ball games, preschool centers, and before movies.
 - ◆ Help get information out about free or low-cost sources for car seats.
 - ◆ Support ways to educate children throughout the region about safe booster seat and seat belt use (such as in schools) as they can be effective advocates. Coordinate with SJTPO’S Belts on Bones program.
 - ◆
 - ◆ Find ways to help get safety videos shown in more locations such as at highway rest areas, DMVs.
 - ◆ Promote and share Buckle Up messaging.
 - ◆ Share information about teen seat belt challenge programs.
- ▶ Educate regarding potential changes to seat belt laws. Coordinate a continuous campaign in media and social media to keep the issues current, and identify people with personal stories to help champion the message.

- ▶ Get safety videos shown in more locations such as at highway rest areas, DMVs, etc.
- ▶ Highlight the importance of complete and accurate crash reporting on safety belt use as a part of ongoing education programs for the enforcement community (2015 NJ SHSP).

Additional Resource

- ▶ *NCHRP Report 500-11, A Guide for Increasing Seat Belt Use*
- ▶ NHTSA Strategies to Increase Seat Belt Use: An Analysis of Levels of Fines and the Type of Law

Emphasis Area 6: Ensure Pedestrian Safety

Nationally, pedestrian fatalities due to traffic crashes are on the rise. According to NHTSA, pedestrians comprised 14 percent of traffic crash fatalities in 2012, the highest percentage in the last ten years. And, in 2012, there were 4,743 pedestrian fatalities, a six percent increase from 2011. Seventy percent of these fatalities were in urban settings (as opposed to rural), 80 percent were at non-intersection locations, and 70 percent occurred at night (between 8:00 PM and 11:59 PM). The lack of separate facilities for pedestrians is often a key issue.

The City of Philadelphia and the State of New Jersey are included in the FHWA's Pedestrian Safety Focus States and Cities program. In an effort to aggressively reduce pedestrian deaths, FHWA provides extra resources to cities and states with pedestrian fatalities and injuries higher than the national average, currently 2.33 per 100,000 population.

Sources: "Traffic Safety Facts, Pedestrians, 2012 Data" (NHTSA # DOT HS 811888, April 2014); "Traffic Safety Facts, Research Note" (NHTSA #DOT HS 811 856, November 2013); "Traffic Safety Facts, Bicyclists and other Cyclists, 2012 Data" (NHTSA # DOT HS 812 018, April 2014) www.pedbikeinfo.org/data/factsheet_crash.cfm; Analysis of Crashes in the Delaware Valley 2010-2012 (DVRPC, May, 2014); <http://cityroom.blog.nytimes.com/2011/09/19/study-finds-that-higher-number-of-pedestrians-hurt-by-bikes>; http://safety.fhwa.dot.gov/ped_bike/ped_focus/

In the Delaware Valley, on average for each year from 2010 to 2012, crashes involving pedestrians were a contributing factor in an average of 23 percent of the traffic fatalities, an increase of one percent from the average reported in the years 2008-2010. Almost all of the fatalities were pedestrians, but drivers, passengers, bicyclists, and anyone else involved in the crash are included in this data. See the companion piece, *Analysis of Crashes in the Delaware Valley, 2010–2012*, for more background information.

Although bicyclist safety is not an emphasis area in this plan, pedestrians and bicyclists are similarly vulnerable, and bicyclist fatalities are also on the rise. In 2012, nationally there were 726 bicyclist fatalities, a six percent increase from 2011. There were also 49,000 injuries, with the most frequent source of injury (29 percent) being "hit by a car." Though somewhat rare, pedestrian-bicyclist conflicts are not captured on the Pennsylvania or New Jersey police crash reporting forms.

As with the national statistic, in the Delaware Valley only a fraction as many bicyclists die in crashes involving motor vehicles as do pedestrians, but any motor vehicle/bicycle conflict is likely to result in bicyclist injuries, sometimes fatal. This is further evidence that improving safety for bicyclists is an important part of transportation safety. While bicyclist safety is not a featured emphasis area in this report, many of the strategies and programs that improve safety for those walking also benefit bicyclists.

Existing Programs

Table 10 lists a sample of the many programs in the Delaware Valley region that help promote pedestrian safety. Although programs are confined to a single category for the purposes of this document, they may have benefits in multiple categories.

Table 10: Programs in the Delaware Valley That Help Ensure Pedestrian Safety

<p><u>Engineering</u></p> <ul style="list-style-type: none"> • Funding for pedestrian safety projects and improvements (NJDOT and NJDHTS) • LTAP Walkable Communities program (NJDOT, NJDHTS, PennDOT) • YPCDs (PennDOT) • Pedestrian countdown signals (PennDOT, Philadelphia Streets Department, NJDOT) • Pedestrian devices at railroad stations, including at-grade crosswalks with inter-track fencing, dedicated over- or underpasses, and audio/visual warning devices (SEPTA) • Retiming intersections for pedestrian walk times (Philadelphia Streets Department) • Citywide Bump-out Project (Philadelphia Streets Department) • School Safety Program (Philadelphia Streets Department) • Safe Routes to School Program (Philadelphia Streets Department, NJDOT, NJDHTS, Greater Mercer TMA, Burlington, Camden, and Gloucester Counties Traffic Safety Task Force) • Pedestrian designs and traffic calming (Princeton, Princeton University) • Walkability audits for schools, infrastructure funding assistance (Greater Mercer TMA) • Funding for pedestrian projects and improvements (NJDHTS) • Installation of mid-block crosswalks where appropriate (Mercer County Engineering Department) • No Turn on Red signs considered at intersections with exclusive pedestrian phase (Mercer County Engineering Department)
<p><u>Enforcement</u></p> <ul style="list-style-type: none"> • Pedestrian Safety program, Safe Streets to Transit program, Pedestrian Safety Corridor program (NJDOT and NJDHTS) • Pedestrian Decoy Program (NJDHTS) • Safe Routes to School program in cooperation with local police departments funded by grants from NJDHTS (Burlington, Camden, Gloucester County Traffic Safety Task Force) • School crossing guards (general)
<p><u>Education</u></p> <ul style="list-style-type: none"> • FHWA-designated Pedestrian Focus City [Philadelphia] and State (NJDOT, PennDOT, and NJDHTS) • Walk Smart and Bike Safe programs and websites (PennDOT) • Youth leadership safety program, including the Pedestrian Safety Lesson; (New Jersey State Police) • Statewide driver education curriculum with emphasis on rights and responsibilities of drivers regarding pedestrians (NJDHTS) • Street Smart Pedestrian Safety Program (NJDHTS) • Crossing guard training (Burlington County Traffic Safety Task Force) • Bike and pedestrian safety public awareness campaign funded by grants from NJDHTS (Burlington County Traffic Safety Task Force, Camden County Highway Traffic Safety Task Force) • “Otto the Auto” —talking robot car used for elementary school safety programs (Mid-Atlantic Foundation for Safety and Education/AAA) • Safe Crossings programs (Mid-Atlantic Foundation for Safety and Education/AAA) • Senior Safety Pedestrian Program (Greater Mercer TMA, CCCTMA, NJDHTS, and Burlington County Sheriff’s Department) • Pedestrian Safety presentations for children and seniors (Greater Mercer TMA and CCCTMA) • Child Walk to School Day, school guidance on both operation and safety efforts of “Walking School Bus” (CCCTMA) • Cops In Crosswalks (Chester County Highway Safety Project)

Source: Delaware Valley Regional Planning Commission, 2014.

Notes: AAA = American Automobile Association; CCCTMA Cross County Connection TMA; NJDHTS = New Jersey Division of Highway Traffic Safety; NJDOT = New Jersey Department of Transportation; PennDOT = Pennsylvania Department of Transportation; TMA = Transportation Management Association; YPCD= Yield to Pedestrian Channelizing Device.

Potential Strategies to Improve Pedestrian

The following strategies are a starting point to consider what will help improve pedestrian safety in the Delaware Valley. Strategies were drawn from the 2012 Pennsylvania SHSP, the 2007 NJ SHSP and 2015 SHSP, the national SHSP (AASHTO), DVRPC's 2012 TSAP, and input from participants in the RSTF. In the following range of strategies, "P" denotes a strategy for pedestrian safety, while "Both" denotes a strategy that is applicable for both pedestrian and bicycle safety. Note that legislative strategies recommended by safety partners do not constitute endorsement by specific agencies.

Policy

- ▶ (P) Make the law in Pennsylvania clear that "yield" means vehicles must stop for pedestrians, and increase penalties for failing to stop (2012 TSAP).
- ▶ (Both) Design, develop, and implement a transportation system that accommodates all users in both states (2007 NJ SHSP).
- ▶ (P) Enhance local ordinances to complete sidewalk network, including through future land development or other means; ensure that safety is addressed in policy, planning, and land use decisions (2012 TSAP).
- ▶ (Both) Promote adoption of Livable Communities and Complete Streets policies. This is a shared strategy with Sustain Safe Senior Mobility. [Education]
- ▶ (Both) Promote the capture of pedestrian and bicyclist crashes on police forms where a motor vehicle was not involved (currently neither state does this, but New York City has a new model policy).

Engineering Strategies

- ▶ (Both) Maintain clear crosswalk markings and other pedestrian crossing safety devices, such as cones, yield to pedestrians placards, raised crosswalks, adequate lighting, and chevrons painted on the road that give the optical effect of raised crosswalks (2015 NJ SHSP; *NCHRP 500-10*).
- ▶ (Both) Implement safe-crossing designs for mid-block crossings, including curb extensions and refuge islands as appropriate (2015 NJ SHSP).
- ▶ (Both) Improve signal hardware for pedestrians, including pedestrian signals and timing, accessible pedestrian signals, right-turn-on-red restrictions, pedestrian countdown signals, etc. (2015 NJ SHSP).
- ▶ (P) Work with 55+ communities that may not have been designed for needs of older people (shared item with Sustain Safe Senior Mobility emphasis area) (2012 TSAP).
- ▶ (P) Eliminate on-street parking near intersections to improve pedestrian visibility (2012 TSAP).
- ▶ (P) Promote and expand LTAP Walkable Communities Program (2012 TSAP).

- ▶ (Both) Implement measures to reduce traffic speed, such as road narrowing and traffic calming devices at intersection and road segments to create safer pedestrian environments (2015 NJ SHSP; 2012 TSAP; *NCHRP 500-10*).
- ▶ (P) Analyze pedestrian crash trends at transit stops especially on multi-lane roadways in search of locations for potential safety projects.
- ▶ (P) Share experiences and evaluate the effectiveness of engineering approaches to improving pedestrian safety in the region.
 - ◆ Identify Delaware Valley locations where best practices have been implemented (e.g., Lead Pedestrian Interval, crossing refuges, no turn on red, etc.) and analyze data to measure effectiveness.

Enforcement Strategies (also see Education Strategies)

- ▶ (P) Enforce pedestrian-in-crosswalk laws more strictly (2015 NJ SHSP).
- ▶ (Both) Enforce speed limits, especially in school zones (2012 TSAP).
- ▶ (Both) Increase the effectiveness of enforcement by studying a few areas in the region in terms of violations issued and tickets upheld (2012 TSAP).
- ▶ (P) Research and track the effects of pedestrian safety enforcement programs like New Jersey's Pedestrian Decoy program and distribute to other police and planning agencies in the region.

Education Strategies

- ▶ (Both) Enhance education of law enforcement officials about pedestrian and bicyclist safety laws where appropriate (2015 NJ SHSP).
- ▶ Provide education, outreach, and training to motivate change in specific behaviors that can lead to fewer pedestrian injuries by drivers and walkers (2015 NJ SHSP).
 - ◆ (Both) Educate pedestrians and bicyclists about wearing reflective materials to increase nighttime visibility (2012 TSAP).
 - ◆ (P) Build driver respect and knowledge of laws regarding pedestrians (2012 TSAP).
 - ◆ (Both) Include pedestrian and bicyclist questions on written driving exams (2012 TSAP).
- ▶ (P) Run the New Jersey Pedestrian Decoy Training Program regularly in high pedestrian crash areas, such as the City of Camden (Education and Enforcement) (2012 TSAP); adopt a program like New Jersey's Pedestrian Decoy Program in Pennsylvania (Education and Enforcement) (2012 TSAP).
- ▶ (Both) Continue and emphasize programs to reduce train crashes or near misses with pedestrians, such as Operation Lifesaver (2012 TSAP).
- ▶ (Both) Educate, train, and market resources to contractors, legislators and municipalities to increase awareness of required codes and best practices (2012 TSAP).
 - ◆ (Both) Market pedestrian safety resources to municipal officials (2012 TSAP).
 - ◆ (Both) Establish or distribute walkability checklist for local governments (2012 TSAP).
- ▶ (Both) Share experiences and evaluate the effectiveness of engineering approaches to improving pedestrian safety in the region (2015 NJ SHSP).
- ▶ (Both) Explore data trends by age and other demographic characteristics, and share with the public.

- ▶ (P) Identify urban areas (or any municipality) where pedestrian crash trends are regionally significant, but not worthy of federal Pedestrian Focus State status; promote findings and improvement opportunities with locals.
- ▶ (Both) Research and track the effects of pedestrian safety education programs like New Jersey's Street Smart program, and New York City's Vision Zero program.

Emergency Responder Strategies

- ▶ (Both) Encourage better coordination among emergency services to clarify who can respond (focusing on speed rather than geographic boundaries) and on sharing specialized services; especially important in that pedestrians hit by vehicles have a high rate of serious injuries (2012 TSAP).
- ▶ (Both) Explore additional data sets (e.g., hospital data) to better capture the complete picture of pedestrian and bicyclist crashes, and consider causes.

Additional Resources

- ▶ *NCHRP Report 500-10, A Guide for Reducing Collisions Involving Pedestrians*

Emphasis Area 7: Sustain Safe Senior Mobility

According to NHTSA in 2012, 17 percent of all traffic fatalities in the US were people aged 65 and older, a loss of 5,560 seniors. This age group represented 14 percent of the total US resident population (43.1 million people) in 2012. Male drivers in this age group killed in car crashes were 14.9 percent, lower than female drivers at 20.4 percent. In the same year, 214,000 older drivers were injured. There were 36.8 million licensed older drivers in 2013—a 27-percent increase from 2004 (a 10-year span).

Transportation Research Board (TRB) research found that “a senior's risk of crashing may be increased due to the normal physiological changes that accompany aging, including slower reaction times, poorer night time vision, reduced depth perception, reduced visual contrast sensitivity, and reduced ability to divide attention time.”

The IIHS reports that 75 percent of people 70 and older killed in motor vehicle crashes in 2012 were passenger vehicle occupants, and 17 percent were pedestrians.

Sources: Insurance Institute for Highway Safety website, www.iihs.org/iihs/topics/t/older-drivers/fatalityfacts/older-people/2012; TRB: safety.transportation.org/guides, “Traffic Safety Facts 2012—Older Driver” (NHTSA # 812 005 May, 2014); NHTSA Traffic Safety Facts, 2013: <http://www-nrd.nhtsa.dot.gov/Pubs/812199.pdf>; TRB *National Cooperative Highway Research Program Implementation Guide 500-09, 2004*

On average, senior-driver-related fatalities in the Delaware Valley remained at 18 percent between 2010 and 2012, no change from the 2008 to 2010 analysis period. In this analysis it means that at least one of the drivers was a person 65 years of age or older, and includes everyone who died, regardless of age, when a senior driver was involved as a vehicle operator in a crash.

The majority of programs to sustain safe senior mobility are educational. As the population of the region ages and medicine advances, people are likely to be driving even later in life. An opportunity for better dissemination of safety knowledge will likely be realized as tech-savvy baby boomers (those born between 1946 and 1964) will be moving into this age cohort, increasing educators’ opportunities to connect with seniors on driving alternatives and safe senior driving practices electronically. See the companion piece, *Analysis of Crashes in the Delaware Valley, 2010–2012*, for more background information.

Existing Programs

Table 11 lists a sample of the many programs in the Delaware Valley region that help sustain safe senior mobility, updated from the 2012 TSAP. Although programs are confined to a single category for the purposes of this document, they may have benefits in multiple categories.

Table 11: Programs in the Delaware Valley That Help Sustain Safe Senior Mobility

<p><u>Engineering</u></p> <ul style="list-style-type: none"> • Sign Improvements—Clearview font; larger, higher, advance warning signs (PennDOT, Burlington County Engineering Department) • CCT Connect Services (SEPTA) • Senior ID cards, senior discounts, shared-ride program (SEPTA) • Courtesy transportation for seniors (New Jersey Transit) • Reduced fare program (New Jersey Transit, PATCO, SEPTA) • Diamond-grade sheeting to improve sign visibility, raised pavement markers (Burlington County Engineering Department) • Sign reflectivity maintenance program, TRADE demand-responsive transit for seniors, staff support for local Community Human Service Transportation Coordination Committee (Mercer County Engineering Department) • Ride Provide personal transportation for seniors, transit travel training program at senior centers (Greater Mercer TMA) •
<p><u>Enforcement</u></p> <ul style="list-style-type: none"> • Encourage physicians' reporting of their patients' capability to drive (PennDOT) • Medical board review screening assessment for older drivers (NJMVC)
<p><u>Education</u></p> <ul style="list-style-type: none"> • Program to encourage family members in assisting the surrender of licenses (PennDOT) • Car Fit Program (AAA, AARP, Burlington County Sheriff's Department, Chester County Highway Safety Project, and NJDHTS) • Senior driver evaluation tools, Roadwise Rx; defensive driving refresher courses (AAA, AARP) • Ambassador program: personnel located at each station to provide assistance (PATCO) • AARP Driver Safety Program, yellow DOT program (Chester County Highway Safety Project) • Driver simulation program, Fitness-to-Drive screening tool, Smart Driver Course, Safe Driver Videos, Livable Communities Campaign (AARP) • Roadwise Review" DVD (Mid-Atlantic Foundation for Safety and Education) • Mature Operator programs (Mid-Atlantic Foundation for Safety and Education) • Skill testing for seniors to check for alertness, eye sight, etc. (Virtua Hospital and other local hospitals) • Group travel training program (Greater Mercer TMA) • Senior Defensive Driver Program, Senior Safety Task Force (NJDHTS) • Senior Pedestrian Safety Program (CCCTMA, NJDHTS, Burlington County Sheriff's Department, and Greater Mercer TMA)

Source: Delaware Valley Regional Planning Commission, 2014

Notes: AAA = American Automobile Association; AARP = American Association of Retired Persons; CCT = Customized Community Transportation; NJDOT = New Jersey Department of Transportation; NJDHTS = New Jersey Division of Highway Traffic Safety; NJMVC = New Jersey Motor Vehicle Commission; PATCO = Port Authority Transit Corporation; PennDOT = Pennsylvania Department of Transportation; SEPTA = Southeastern Pennsylvania Transportation Authority; TMA = Transportation Management Association.

Potential Strategies to Sustain Safe Senior Mobility

The following strategies are a starting point to consider what will help sustain safe senior mobility in the Delaware Valley. Strategies were drawn from the 2012 PA SHSP, the 2015 NJ SHSP, the

national SHSP (AASHTO), and input from participants in the RSTF. Note that legislative strategies recommended by safety partners do not constitute endorsement by specific agencies.

Policy

- ▶ Partner more closely with the insurance and medical communities for safety planning, especially oriented to seniors.
- ▶ Develop a system to address at-risk drivers' roadway safety (2007 NJ SHSP).
- ▶ Provide adequate/efficient mobility alternatives (2009 TSAP).
 - ◆ Identify and promote existing alternative transportation services (2007 NJ SHSP; 2012 PA SHSP).
 - ◆ Develop public transportation alternatives for older drivers, especially in suburban and rural areas (2007 NJ SHSP, p. 62).
 - ◆ Increase opportunities for carpooling.
- ▶ Investigate enhanced driver's license testing procedures.

Engineering Strategies

- ▶ Improve highway infrastructure to safely accommodate older drivers according to guidelines in the FHWA Older Drivers Highway Design Handbook (AASHTO, p. 11):
 - ◆ Upgrade signs, pavement markings, lighting, and sidewalk design according to Older Driver Design Guidelines (2007 NJ SHSP; 2012 PA SHSP; 2009 TSAP).
 - ◆ Utilize advance warning pavement markings and intersection signs, especially on higher-speed roadways (2009 TSAP).
 - ◆ Improve design for nighttime and inclement weather conditions (2009 TSAP).
- ▶ Identify locations with high senior populations and high senior-driver crash rates for consideration of improvements.
- ▶ Improve maintenance where there are high senior populations, such as snow plowing of bus stops.
- ▶ Train engineers on highway design concepts for older drivers (FHWA Older Driver Highway Design Workshop).

Education Strategies

- ▶ Develop a comprehensive senior-driver educational plan (2007 NJ SHSP).
 - ◆ Recruit members of the senior community and organizations providing senior services (2007 NJ SHSP).
- ▶ Promote mature driver education classes (AAA/AARP/Seniors for Safe Driving) that inform older drivers about new laws, health requirements, mobility alternatives, and emphasize how the classes can save people money on insurance (2010 PA SHSP).
- ▶ Implement an educational approach to assist older driver safety that considers individual capabilities and needs in a fair manner (AASHTO SHSP).
- ▶ Publicize services and coordinate to improve mobility alternatives to driving alone.

Additional Resources

- ▶ *American Medical Association—Physician’s Guide to Assessing and Counseling Older Drivers*
- ▶ *NCHRP Report 500-9, A Guide for Reducing Collisions Involving Older Drivers*
- ▶ *Transportation Research Record 2078, Investigation of Actual and Perceived Behavior of Older Drivers on Freeways*
- ▶ *Transportation Research Record 2078, Simulation Framework for Analysis of Elderly Mobility Policies*

Emphasis Area 8: Ensure Young Driver Safety

According to the Centers for Disease Control and Prevention, motor vehicle crashes are the leading cause of death for 15–20-year-olds in the United States.

Risky behaviors like speeding, not using seat belts, and drinking alcohol are common among young drivers: almost half (49 percent) of sober teen driver fatalities in 2012 were unrestrained, and 71 percent of impaired teen drivers were unrestrained. Safety data also shows that a young driver's crash risk increases when one or more peers are passengers.

Texting is the number one driving distraction reported by teen drivers. NHTSA documents that ten percent of all drivers under the age of 20 involved in fatal crashes were reported as distracted at the time of the crash.

Sources: "Traffic Safety Facts Young Drivers, 2012 Data" (NHTSA # DOT HS 812 019, April 2014); Centers for Disease Control and Prevention website: http://www.cdc.gov/motorvehiclesafety/teen_drivers/teendrivers_factsheet.html

As reported in DVRPC's *Analysis of Crashes in the Delaware Valley Region, 2010–2012*, there were over 14,000 crashes in the region involving drivers aged 16 to 20 years old on average per year. In 2009 (most recently available data), people aged 16–20 years—potential young drivers—constituted only nine percent of the Delaware Valley's total population, but were involved in 18 percent of crashes on average per year from 2010 to 2012. Given that the actual number of licensed drivers in this age group is undoubtedly lower than the total population, young-driver crashes are overrepresented.

Young-driver related fatalities have been steadily decreasing since 2008. This decline is anecdotally attributed towards better enforcement, integration of Graduated Drivers Licensing (GDL) programs, and robust education programs targeted to young drivers and their parents.

Existing Programs

Table 12 lists a sample of the many programs in the Delaware Valley region that help ensure young driver safety. Although programs are confined to a single category for the purposes of this document, they may have benefits in multiple categories.

Table 12: Programs in the Delaware Valley That Help Ensure Young Driver Safety

<p><u>Enforcement</u></p> <ul style="list-style-type: none"> • Graduated Driver Licensing Decal Program (New Jersey State Police) • Graduated Driver Licensing Program (Pennsylvania, New Jersey)
<p><u>Education</u></p> <ul style="list-style-type: none"> • New Jersey Drive: educates young drivers on the consequences of DUI (New Jersey State Police) • Share the Keys: parent/child contract seminar (NJDHTS) • Teen Driver Safety Video PSA Challenge (TMA Bucks) • <i>How to Park: The Must Read Manual for Teen Drivers</i> (Mid-Atlantic Foundation for Safety and Education) • Consumer safety brochure on choosing the best vehicle for your teen (IIHS) • Celebrate My Drive (State Farm Insurance) • Grant funding for Matt Maher DUI presentation to South Jersey high school students (State Farm Insurance) • Teen driver safety videos (PennDOT) • “Survival 101” youth program, “16 Minutes” youth program (Buckle Up PA) • Cruisin’ SMART: young driver peer-to-peer DUI program (Bryn Mawr Rehab Hospital) • Teen Safe Driving Competition (CCHSP) • High School Teen Driver Safety Annual Video Contest (Gloucester County Highway Safety Task Force) • Adolescent Substance Awareness Program (CCHSP)

Source: Delaware Valley Regional Planning Commission, 2014

Notes: DUI = Driving Under the Influence; IHIS = Insurance Institute for Highway Safety; PennDOT = Pennsylvania Department of Transportation; PSA = Public Service Announcement; TMA = Transportation Management Association; CCHSP= Chester County Highway Safety Project.

Potential Strategies to Ensure Young Driver Safety

The following strategies are a starting point to consider what will help ensure young driver safety in the Delaware Valley. Strategies were drawn from the 2012 PA SHSP, the 2015 NJ SHSP and related safety programs, and input from participants in the RSTF. Note that legislative strategies recommended by safety partners do not constitute endorsement by specific agencies.

Policy Strategies

- ▶ Partner more closely with the insurance and medical communities for safety planning, especially oriented to young drivers.
- ▶ Promote the benefits of increasing the learner’s permit supervised driving phase to 12 months (2015 NJ SHSP).
- ▶ Promote the benefits of learner’s permit holders to complete 50 hours of supervised practice driving (2015 NJ SHSP).
- ▶ Research the correlation between nighttime driving and young-driver crashes to support driving restrictions for GDL holders beginning at 10:01 PM (2015 NJ SHSP).
- ▶ Implement an evaluation system for drivers moving from the provisional to the regular license stage (junior to senior license) (PA 2012 SHSP).

- ▶ Consider GDL requirements and educational opportunities for all “new” drivers regardless of age.
- ▶ Compare Pennsylvania and New Jersey GDL requirements and promote consistency.
- ▶ Dedicate and sustain funding for driver education through the GDL-mandated Driver Education Fund (2015 NJ SHSP).

Engineering Strategies

- ▶ Utilize advance warning pavement markings and intersection signs, especially on higher speed roadways (2009 TSAP).
- ▶ Identify locations with high young-driver populations and crash trends for consideration of improvements, share this information with municipalities and school districts to promote safety awareness and advance a safety culture.
- ▶ Research young driver crash data in search of characteristics and trends unique to young drivers to draw upon for development of new educational and engineering opportunities.

Enforcement Strategies (also see Education Strategies)

- ▶ Expand enforcement on GDL compliance and track progress with compliance and reduction in related crashes (including texting) (PA SHSP 2012).
- ▶ Strengthen enforcement of, and supporting media outreach for GDL compliance (2015 NJ SHSP).

Education Strategies

- ▶ Partner with school and community educators to increase required parent involvement in safe young-driver programs (2015 NJ SHSP).
- ▶ Promote peer-to-peer outreach programs that address social norms/shared behaviors regarding safe young-driver practices (2015 NJ SHSP).
- ▶ Support continuing education and on-going professional development for driver educators (2015 NJ SHSP).
- ▶ Support and spread the word about teen-driving safety education and media campaigns like AASHTO's annual Global Youth Traffic Safety Month campaign each May 1st.
- ▶ Partner with hospitals to access their young-driver crash data for additional research.

Additional Resources

- ▶ *NCHRP Report 500-19, Volume 19: A Guide for Reducing Collisions Involving Young Drivers*
- ▶ *GAO Report 10-544: Teen Driver Safety - Additional Research Could Help States Strengthen Graduated Driver Licensing Systems*

Recommendations

The RSTF endorsed the draft plan at its meeting on December 16, 2014. Participants agree that for the *2015 Transportation Safety Action Plan* to accomplish the goal of reducing traffic fatalities in the Delaware Valley, the recommended strategies must result in action. This requires that partners take ownership of the Plan and assume responsibility for implementing the strategies their organization or agency is best suited to handle. There are many partner organizations that share the responsibility of reducing fatalities in the Delaware Valley, including federal, regional, state, county, and local agencies, as well as other safety stakeholders. Forming strategic partnerships is essential to the success of the Plan. The RSTF helps coordinate the implementation effort by refining tasks and providing a forum for partners to take on manageable items. It tracks completed actions, successes and lessons learned, and steps that remain to be taken.

Recommended Strategies and Actions

In Table 13: Recommended Strategies and How to Accomplish Them, there are manageable strategies and actions for members of the RSTF and its partners in the Delaware Valley to take on (see Appendix A for a list of acronyms). These recommended strategies build on the existing programs and potential strategies discussed throughout this report. Because improving safety requires a multipronged approach, each strategy is assigned one of the following primary categories that helps identify the most likely champions (shown in brackets in the table): engineering, enforcement, education, emergency response, or policy. The agencies listed are generally partner organizations with existing programs or expertise relevant to the recommended strategies. They have either specifically volunteered themselves or reviewed drafts of this table. This is not an exclusive or complete list, but rather a starting point for refinements at RSTF meetings. Additional participants are always welcome.

Table 13: Recommended Strategies and How to Accomplish Them

CURB AGGRESSIVE DRIVING	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<p>1. Provide information and analysis to inform policy discussions of aggressive driving and its elements, such as speeding, tailgating, and combinations of aggressive behaviors. [Policy]</p> <ul style="list-style-type: none"> a. Help NJ move toward NHTSA definition. b. Help advance use of radar for local police in PA. c. Promote use of automated enforcement in work zones. d. Help enhance communication between safety practitioners and legislators 	<p>1. Provide information as requested or if appropriate, and explore the following:</p> <ul style="list-style-type: none"> a. Continue to work with NJ STRCC and others on revising the TR-1 form, training, and updating the definition. (RSTF, NJDOT, STRCC members) b. Continue work begun at the 2014 PA Safety Symposium through a session at the Penn State Transportation Engineering and Safety Conference in December, 2014, and other actions. (PennDOT, DVRPC) c. Coordinate with PA STIC initiative and related efforts in NJ. d. Coordinate with NJ partners on a NJ legislative symposium to follow-up the 2008 initiative; participate with partners on a follow-up to the 2014 PA Safety Symposium. (NJDOT, NJDHTS, PennDOT, TMAs, counties, DVRPC)
<p>2. Further publicize enforcement details to increase their effectiveness and help disseminate factual information about enforcement, including in PA red-light running cameras (consider local streets and school zones which tend to have high pedestrian activity). [Enforcement]</p>	<p>2. Agencies doing specific visible enforcement programs (PA and NJ state police, local police) provide a few sentences, and RSTF agencies (as many as possible) will put on websites or in newsletters (DVRPC).</p>
<p>3. Engage high-level staff from enforcement agencies and federal agencies (FHWA, NHTSA, etc.) for the aggressive driving meeting this cycle. [Enforcement]</p>	<p>3. Work with enforcement partners to explore a future conference focused on aggressive driving; collaborate on declaring a specific year for driving down aggressive driving in the region or in one state (RSTF, local and state police, DVRPC)</p>
<p>4. Continue to communicate to the public what aggressive driving behaviors are and why they are so dangerous, including correlation between higher speeds and higher severity crashes, as well as the need to adjust driving to conditions/contexts. [Education]</p>	<p>4. Actions include:</p> <ul style="list-style-type: none"> a. Devise creative messaging approaches for different audiences. Include the concept of a car as a deadly weapon. (RSTF) b. Reach out to non-traditional safety partners (media, transit agencies, employment centers) to help spread the word about the danger of aggressive driving to the public. (RSTF) c. Study effective campaigns from other countries for lessons learned (go beyond the message of “it’s the law.”)

Table 13: Recommended Strategies and How to Accomplish Them (continued)

CURB AGGRESSIVE DRIVING	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<p>5. Look for opportunities to implement, incentivize, and publicize engineering and technology strategies such as traffic calming and road diets that can help reducing aggressive driving. [Engineering/Education]</p>	<p>5. Promote and share FHWA’s Nine Proven Safety Countermeasures (includes road diets and roundabouts) with local roadway owners and explain the multifaceted benefits; promote the HSIP as a funding source for safety improvements that address speed, like traffic calming and rumble strips. (DVRPC, RSTF, NJDOT and PennDOT)</p> <p style="margin-left: 40px;">a. Develop criteria to identify a few locations where road diets and other treatments to reduce speeding would make sense (discuss how this information will be used.) (DVRPC, counties, NJDOT, PennDOT, and Rutgers TSRC)</p>
<p>6. Consider ways to more effectively communicate with the public to manage driver expectations in congested areas. [Engineering/Education]</p>	<p>6. Identify congested locations where signs, VMS, or other communication technologies would be useful in educating drivers on managing congestion-related stress. (TMAs, RSTF, NJDOT and PennDOT)</p>
<p>7. Gather together people who address aggressive driving who don’t normally collaborate to build upon individual programs/efforts. This group might work with people who had personal experiences of loss from such crashes to communicate the emotional, personal impacts as well as the data side. [Education]</p>	<p>7. Develop a working group on aggressive driving, either for the region or in one or both states, modeled after the incident management task forces. (NJDOT, NHTSA Region 2, PennDOT Operations and Maintenance, NJDOT Transportation Data and Safety).</p>
<p>8. Try to address the longer-term need for culture change regarding aggressive driving as well as shorter-term strategies. [Policy]</p>	<p>8. Promote and share information on safety culture, share national and international success stories, and highlight examples of behavior change that advance long-term change (e.g., seek transit alternative to driving). (RSTF and partners)</p>

Table 13: Recommended Strategies and How to Accomplish Them (continued)

KEEP VEHICLES ON THE ROADWAY AND MINIMIZE THE CONSEQUENCES OF LEAVING THE ROADWAY	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<ol style="list-style-type: none"> 1. Promote engineering best practices used by NJDOT and PennDOT, or recommended by FHWA (including proven countermeasures) in keeping vehicles on the roadway and suggest other agencies incentivize use of them. Share information about resources such as grants and how to participate in the TIP process. Focus promotion on county and local road operators. [Education] 2. Analyze crash data to identify: <ol style="list-style-type: none"> a. Run-off-the-road locations in the region - consider a focus on providing information on county and local roads and where appropriate, consider systemic approaches. [Education/ Engineering] b. Crash trends and causes to draw more attention to these conditions so that appropriate agencies can address them. [Engineering] 3. Publicize the importance of vehicle maintenance for safely staying on the roadway, and the safety benefits of regular maintenance. [Education] 4. Promote use of mile-post markers on rural roadways for more effective crash and incident locating. [Engineering/Emergency Response] 5. Gather and share analysis to figure out how to refine policies to keep vehicles on the roadway, perhaps differentiating between urban and rural conditions. [Engineering] 	<ol style="list-style-type: none"> 1. Disseminate materials on best practices, highlight the NCHRP series, and deliver to roadway owners that have high frequency locations of run-off-road and hit-fixed object crashes, (DVRPC, Rutgers, TMAs); work with DOTs on a list of pitfalls related to use of new technologies identified through their experience and share guidance with county and local road owners (e.g., complaints about rumble-strips due to noise). (DVRPC, NJDOT and PennDOT) 2. Prepare analysis (PennDOT, NJDOT, DVRPC, and Rutgers TSRC), share locations and methodologies used, and discuss with RSTF to decide what the group might be able to do to improve safety (RSTF). RSTF analysis should also specifically identify locations where people are being hit by vehicles leaving the roadway. Discussion should include a range of countermeasures, including FHWA proven countermeasures. 3. Encourage an agency to research whether crashes in which maintenance was an issue increased after NJ dropped required inspections. (NJDOT, Rutgers) 4. Research best practices from around the nation and share with local/rural roadway owners, and provide information on potential funding sources for adding mile markers. (RSTF and partners, counties, NJDOT and PennDOT) 5. Review state and local guidelines governing use of rumble strips, edge-line striping, roadway pavement markers (RPMs), clear zones, etc. to identify best practices that promote most efficient and economical implementation practices. (counties, RSTF, NJDOT and PennDOT)

Table 13: Recommended Strategies and How to Accomplish Them (continued)

IMPROVE THE DESIGN AND OPERATION OF INTERSECTIONS	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<p>1. Spread the word to make roadway signage and signalized intersections as clear and simple as possible. [Engineering/Education]</p> <p>2. Promote and incentivize the use of FHWA’s proven intersection safety countermeasures to local and county roadway owners, (e.g., roundabouts, pedestrian crossing refuge islands, signal back plates with retro-reflective borders), and provide information on funding these improvements. [Education/Engineering]</p> <p>3. Educate the public and first responders on crash scene safe practices to maintain operations of intersections and improve speed of medical treatment. [Emergency Response/Education]</p> <p>4. Review intersection definitions used by NJDOT and PennDOT and promote regional consistency in identifying problem intersections for network screenings and eventual improvements. [Education/Engineering]</p> <p>5. Research and promote educational programs that assist roadway owners in accessing HSIP funds for safety improvements at intersections. [Education]</p>	<p>1. Actions to promote include (NJDOT and PennDOT, counties):</p> <ul style="list-style-type: none"> a. Improve signage and place it properly in advance of the intersection as per MUTCD recommendations. b. One overhead signal head per lane with a back plate. c. Re-time signals with every project. d. Perform regular, routine maintenance on traffic signals and signage. <p>2. Research and assemble regional examples of installations of these improvements with information on the funding process, especially the HSIP, and from it create a short handout for distribution to local and county roadway owners (e.g., good examples are Burlington County’s two recent roundabout projects). (counties, DVRPC)</p> <p>3. Actions include:</p> <ul style="list-style-type: none"> a. Based on RSTF discussion, add appropriate links or information to websites. (first responders, RSTF and partners) b. Educate the motoring public about the laws with an emphasis on driver’s responsibilities in Move It and Move Over laws. (RSTF and partners) <p>4. Research NJDOT and PennDOT engineering practices regarding intersection safety diagnosis and improvement strategies (ISIP, NJ’s intersection list), prepare a summary, and share with RSTF at subsequent meeting. (NJDOT and PennDOT)</p> <p>5. Partner with state and federal agencies for information on best practices from throughout the nation; compile model program examples and share with local roadway owners. (NHTSA, RSTF partners)</p>

Table 13: Recommended Strategies and How to Accomplish Them (continued)

REDUCE IMPAIRED AND DISTRACTED DRIVING	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<p>1. Provide information for policy action on responsibilities of drivers, walkers, and bicyclists; making DUI a criminal offense in NJ; and exploring ways to support use of interlock devices after fewer offenses in NJ and after one offense in PA in cases where blood alcohol content (BAC) was greater than 0.16. [Policy]</p>	<p>1. Explore future legislative symposia (DVRPC with partners); when asked or appropriate, provide information to legislators (RSTF, PennDOT, NJDOT, NJDHTS, MADD, others). This is coordinated with the Curbing Aggressive Driving emphasis area.</p>
<p>2. Promote and evaluate effectiveness of laws and outreach campaigns implemented to reduce impaired and distracted driving (include information on level of enforcement covering both national and local examples). [Education/Policy]</p>	<p>2. Gather success stories (NHTSA Region 2) ; create and maintain a toolbox of existing programs and laws (RSTF, DVRPC); analyze safety effects of programs and laws in the region (one in PA and one in NJ) and share findings through RSTF. (state police, NJDHTS, PennDOT, DVRPC)</p>
<p>3. Promote organizations with successful bans on cell phone use while driving, and share model policy guidelines. Share information about cell phone safety programs run by private sector (e.g., AT&T). Encourage employers to institute bans on cell phone use while driving. [Education]</p>	<p>3. Survey regional employers to establish a baseline of policies regarding cell phone use while driving; promote best practices and model policy guidelines. (TMA's, RSTF)</p>
<p>4. Coordinate with appropriate road owners on analysis to identify opportunities to create and promote safe pull-over areas for people to text/talk. [Engineering]</p>	<p>4. Identify corridors demonstrating a concentration of distracted-driving related crashes to begin conversations about facilities to accommodate short-term staging for cell phone use. (Rutgers, PennDOT, NJDOT, counties, DVRPC)</p>
<p>5. Encourage traffic calming, rumble strips, and other engineering treatments to reduce crashes from distracted, drowsy, or impaired driving. [Engineering]</p>	<p>5. Work with counties (NJDOT and PennDOT) to identify roadway sections suitable for center-line and edge-line rumble strips. (Rutgers, PennDOT, NJDOT, counties, DVRPC)</p>
<p>6. Look for ways to coordinate with private sector on programs that address impaired driving. [Education]</p>	<p>6. Invite PA Liquor Control Board and NJ Alcohol Beverage Control Division to discuss programs to identify and curb impaired driving. (DVRPC)</p>
<p>7. Support drug recognition expert (DRE) training to identify impaired driving. [Enforcement]</p>	<p>7. Share information on DRE training programs through websites and email. (RSTF and partners)</p>
<p>8. Support development of standards for what constitutes impaired by definition for additional commonly abused controlled substances in NJ and PA (e.g., cocaine, heroin, etc.) [Policy/Enforcement]</p>	<p>8. Provide information to legislators, as appropriate and others on the need for and benefit of standards. (RSTF, DVRPC)</p>

Table 13: Recommended Strategies and How to Accomplish Them (continued)

INCREASE SEAT BELT USAGE	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<ol style="list-style-type: none"> 1. Support improved seat belt use legislation to cover all ages, seat positions, and vehicles. [Policy] <ol style="list-style-type: none"> a. Provide analysis and information suitable for use by a range of people with legislators regarding a primary law for seat belt usage in PA for adults over 18, including societal costs. b. Provide analysis and information to show benefits of changing NJ law to require all passengers to wear seat belts. 2. Coordinate continuous media and social media campaigns about the benefits of seat belt laws to keep the issue in peoples' minds. Consider adding personal stories to help champion the message, get safety videos shown in more locations such as at highway rest areas, DMVs, etc. [Education] 3. Coordinate and publicize child passenger safety programs through traditional and less traditional means, such as social media. [Education] 4. Help increase the continued visibility of enforcement (Click It or Ticket), education (GDL outreach) and Buckle-Up messaging campaigns beyond enforcement deployments. [Education] 5. Share information about teen seat belt challenge programs. [Education] 6. Encourage increased use of seat belts at night through focused investment of grants and enforcement activities. [Enforcement] 	<ol style="list-style-type: none"> 1. Analyze differences in number of crashes where not wearing a seat belt was a contributing factor in NJ and PA, distribute and include in symposia; try to inform parents of bills that would make their children safer. (RSTF) 2. Provide updates at each RSTF meeting regarding changes to seat belt laws; survey RSTF members regarding their use of social and news media to educate the public about the importance of using a seat belt. (AAA, TMAs, NJDHTS, NJ Brain Injury Alliance) 3. Create a calendar of seat belt safety events and maintain on RSTF member websites (including DVRPC) and share with area elementary schools, include funding support for seats and boosters (perhaps through insurance companies). Also, coordinate with SJTPO'S Belts on Bones program. (CHOP, Safe Kids, county sheriff's departments, TMAs, SJTPO, RSTF partners) 4. Add to websites and newsletters (RSTF partners); emphasize the need for people to wear seat belts at night. 5. Promote the work of the region's TMAs and other agencies administering seat belt programs via websites and newsletters, share same information with high school parent-teacher groups and administrators; keep a tally of the schools participating in high school seat belt safety programs. (TMAs, RSTF) 6. Analyze data to identify places or corridors, etc. where unbelted nighttime crashes are frequent, and share with local police departments. (DVRPC, NJDOT and PennDOT)

Table 13: Recommended Strategies and How to Accomplish Them (continued)

ENSURE PEDESTRIAN SAFETY	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<p>1. Share experiences and evaluate the effectiveness of engineering approaches to improving pedestrian safety in the region. [Engineering]</p> <p>2. Gather new or share data on the effects of pedestrian safety programs such as MOTU's Focus City activities, NJTPA's Street Smart program, or NYC's Vision Zero program. [Education]</p> <p>3. Promote adoption of Livable Communities and Complete Streets policies. This is a shared strategy with Sustain Safe Senior Mobility. [Policy/Education]</p> <p>4. Explore additional data sets (e.g., hospital data) to better capture the complete picture of pedestrian and bicyclist crashes, and consider causes. [Emergency Response/Education]</p> <p>5. Analyze pedestrian crash trends that relate to transit usage, especially on multilane roadways. [Engineering]</p> <p>6. Compile summary information about pedestrian crashes trends for jurisdictions in the region, present at RSTF meeting and disseminate to partners to raise awareness of trends and problems. [Education]</p> <p>7. Promote the capture of pedestrian and bicyclist crashes on police forms where a motor vehicle was not involved (currently neither state does this, but NYC has a new model policy). [Policy/Enforcement]</p> <p>8. Identify areas where pedestrian crash trends are regionally significant, but not worthy of federal pedestrian focus state status; promote findings and improvement opportunities. [Education/Engineering]</p>	<p>1. Identify locations where best practices have been implemented (e.g., Lead Pedestrian Interval, crossing refuges, no turn on red, etc.) and analyze data to measure effectiveness. (City of Philadelphia, City of Camden)</p> <p>2. Prepare brief study to discuss and distribute at subsequent RSTF meeting when further actions will be discussed. (NJTPA, RSTF and partners)</p> <p>3. Actions include (NJDOT and PennDOT, RSTF, partners):</p> <ul style="list-style-type: none"> a. Share list of states, counties, and municipalities in the region that have adopted such policies. b. Present best practices from regional Complete Streets policies. c. Reach out to municipalities and counties to share resources and encourage next steps. <p>4. Work with partners to assess data sets and how to analyze; discuss findings and next steps. (TMAs, CHOP, NJDOT and PennDOT)</p> <p>5. Collaborate with RSTF partners on details for a spatial analysis of pedestrian crashes within a given radius of transit stops, choose a short list of locations in PA and NJ for further study. (SEPTA, NJ Transit, RSTF, DVRPC)</p> <p>6. Explore pedestrian crash data trends by age and other demographic characteristics. Prepare summary for discussion at RSTF. Decide how and to whom to further disseminate it. (DVRPC, NJDOT, PennDOT)</p> <p>7. Present NYC's new model policy to the RSTF, form a subcommittee to explore the issue, and coordinate with NJ STRCC and PA equivalent on developing recommendations on capturing the crashes and details, such as whether a helmet was worn in a bicycle crash. (DVRPC)</p> <p>8. Collaborate with RSTF and partners on analysis approach; gather data and present findings to RSTF collaborate with partners on next steps to advance safety projects. (DVRPC, NJDOT, PennDOT, NHTSA, Rutgers)</p>

Table 13: Recommended Strategies and How to Accomplish Them (continued)

SUSTAIN SAFE SENIOR MOBILITY	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<ol style="list-style-type: none"> 1. Partner more closely with the insurance and medical communities for safety planning, especially oriented to seniors. [Policy] 2. Publicize services and coordinate to improve mobility alternatives to driving alone. [Education] 3. Promote Livable Communities and Complete Streets policies with regards to senior safety and mobility options, especially to promote the placement of new senior living facilities/communities in walking/transit-accessible locations that are close to services and resources. This is a shared strategy with Pedestrian Safety. [Policy/Engineering] 4. Promote use of FHWA's <i>Highway Design Handbook for Older Drivers and Pedestrians</i> which includes best practices that promote senior-safe design elements. [Engineering/Education] 5. Explore other states' senior driver license re-testing requirements to inform a change to current policy. [Education/Policy] 	<ol style="list-style-type: none"> 1. Strategies include: (RSTF and partners) <ol style="list-style-type: none"> a. Bring in at least one member each of the insurance and medical communities to an RSTF meeting to promote dialogue and cooperation. b. Publicize existing insurance rate reductions for completing safety training courses and ask if they can be increased; seek a discount on insurance at any age for taking a safety class in PA, similar to NJ. c. Reach out to major drug store chains to provide information to pharmacists, or otherwise coordinate with some pharmacists on issues of medication and driving. Report lessons learned for use by other RSTF members. d. Help distribute information on steps family members, friends, and neighbors can take if they are concerned about a senior person's driving. 2. Update and refine the existing senior services toolbox (include information on senior driving-related legislation and new local senior safety initiatives such as "Safe Routes for Seniors" and Elder District Designations) and share with RSTF to post on members' agency websites and/or newsletters. (DVRPC) 3. Prepare list of states, counties, and municipalities in the region that have adopted such policies, share with counties and municipalities (zoning officials), and developers for consideration in where to zone and build senior living communities. (NJDOT, PennDOT, counties, RSTF partners) 4. Research successful regional implementations of the design elements and present findings to RSTF at subsequent meeting. (NJDOT and PennDOT, RSTF and partners) 5. Review other states' license re-testing requirements for seniors. Note data-driven approaches (e.g., crash characteristics unique to mature drivers). Present findings at subsequent RSTF meeting, determine next steps. (RSTF and partners)

Table 13: Recommended Strategies and How to Accomplish Them (continued)

ENSURE YOUNG DRIVER SAFETY	
Recommended Strategies	Actions and Lead Agencies (to be refined at RSTF meetings)
<p>1. Ensure GDL violations and penalties are enforced and tracked. [Enforcement]</p> <p>2. Encourage parent/young driver orientation as a condition for learner's permit. [Education]</p> <p>3. Compare PA and NJ GDL requirements and promote consistency; consider GDL requirements and educational opportunities for all "new" drivers regardless of age. [Policy/Education]</p> <p>4. Support and spread the word about young driver safety education and media campaigns such as the National Organizations for Youth Safety (NOYS) Global Youth Traffic Safety Month campaign. [Education]</p> <p>5. Identify locations with high young driver populations and significant crash trends for consideration of improvements; share this information with municipalities and school districts to advance a safety culture. [Engineering/Education]</p> <p>6. Gather research on young driver crash trends developed through work with hospitals, and partner with hospitals to access their young driver crash data for additional research in search of characteristics and trends unique to young drivers to draw upon for development of new educational and engineering opportunities. [Engineering/Education]</p>	<p>1. Work with local and state police to gather data on GDL violations in the region and each state and report findings at a future RSTF meeting. (Police, NJDHTS, PA and NJ young driver groups)</p> <p>2. Help distribute information about and promote NJ's Share the Keys program, make available in driver testing centers and through social media, and make available to NJ and PA state officials and legislators to advance as a requirement for obtaining a learner's permit. (NJDOT and PennDOT, NJDHTS, AAA, CHOP, RSTF)</p> <p>3. Research PA and NJ policies for consistency, as well as other states, and if the issue is not being addressed RSTF will discuss next steps. (RSTF and partners)</p> <p>4. Gather known young driver safety education and media campaigns into a single resource, share with RSTF and partners for posting on websites and social media. (RSTF and partners, DVRPC)</p> <p>5. Refine criteria with the RSTF, prepare a draft map and data summary of findings, present to RSTF and discuss next steps at a subsequent RSTF meeting. (RSTF, DVRPC)</p> <p>6. Invite a speaker from CHOP to explore needs, and then discuss forming an RSTF subcommittee to help meet them, possibly by conducting additional analysis for discussion at a subsequent RSTF meeting. (NJDHTS, DVRPC, NJDOT and PennDOT)</p>

APPENDIX A



Abbreviations and Acronyms

AAA	American Automobile Association
AARP	American Association of Retired Persons
AASHTO	American Association of State Highway and Transportation Officials
ARIDE	Advanced Roadside Impaired Driving Enforcement (NHTSA)
ARLE	Automated Red Light Enforcement
BAC	Blood Alcohol Content
BOMO	Bureau of Maintenance and Operations (PennDOT)
CAIT	Center for Advanced Infrastructure and Transportation (Rutgers University)
CCCTMA	Cross County Connection Transportation Management Association
CCHSP	Chester County Highway Safety Project
CCT	Customized Community Transportation
CHOP	Children's Hospital of Philadelphia
DARE	Drug Abuse Resistance Education
DMV	Division of Motor Vehicles
DOT	Department of Transportation
DRPA	Delaware River Port Authority
DRE	Drug Recognition Expert
DUI	Driving Under the Influence
DVRPC	Delaware Valley Regional Planning Commission
DWI	Driving While Intoxicated
EMS	Emergency Medical Services
ESC	Electronic Stability Control
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
GDL	Graduated Driver Licensing
GPS	Global Positioning Systems
GVFTMA	Greater Valley Forge Transportation Management Association
HSIP	Highway Safety Improvement Program
IIHS	Insurance Institute for Highway Safety
ISIP	Intersection Safety Implementation Plan
IIP	Intersection Improvement Program
ITS	Intelligent Transportation Systems
LED	Light-Emitting Diode
LHT	Lawrence Hopewell Trail
LTAP	Local Technical Assistance Program
MADD	Mothers Against Drunk Driving
MAP-21	Moving Ahead for Progress in the 21st Century
MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NJDHTS	New Jersey Division of Highway Traffic Safety
NJDOT	New Jersey Department of Transportation
NJMVC	New Jersey Motor Vehicle Commission
NJPTOA	New Jersey Police Traffic Officers Association
NJTPA	North Jersey Transportation Planning Authority
NSC	National Safety Council

PAADEEP	Pennsylvania Aggressive Driving Enforcement and Education Project
PATCO	Port Authority Transit Corporation
PennDOT	Pennsylvania Department of Transportation
PM	Performance Management
PSA	Public Service Announcement
RDIP	Roadway Departure Implementation Plan (PennDOT)
RSA	Road Safety Audit
RSTF	Regional Safety Task Force
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SEPTA	Southeastern Pennsylvania Transportation Authority
SHSP	Strategic Highway Safety Plan
SJTPO	South Jersey Transportation Planning Organization
STRCC	Statewide Traffic Records Coordinating Committee (New Jersey)
TMA	Transportation Management Association
TRB	Transportation Research Board
TSAP	Transportation Safety Action Plan
TSRC	Transportation Safety Resource Center (Rutgers University)
TZD	Toward Zero Deaths
VMT	Vehicle Miles Traveled
USDOT	U.S. Department of Transportation
YPCD	Yield to Pedestrian Channelizing Device

APPENDIX B



Regional Safety Task Force

Members Participating in the Update of the Plan

The list that follows includes active participants in shaping the *2015 Transportation Safety Action Plan*. It does not include everyone who receives the Regional Safety Task Force e-mails.

Highlighting honors participants who have served as co-chairs over the years when work was underway.

Organization	Website	Representative(s)
3M	www.3m.com	Leah Picone
AAA Mid-Atlantic	www.aaamidatlantic.com	Tracy Noble, Jenny Robinson , Jana Tidwell
AARP–Pennsylvania (Montgomery County)	www.aarp.org/states/pa	Ray Rauanheimo
AutoBase	www.autobasecorp.com	Alex Rodriguez
Bicycle Access Council		Joe Stafford
Brain Injury Association of New Jersey	www.bianj.org	Susan Quick
Buckle-Up Pennsylvania	www.buckleuppa.org	Gordon Beck
Burlington County Engineering Department	www.co.burlington.nj.us/281/Engineering	Marty Livingston, Carol Ann Thomas
Burlington County Sheriff's Department	www.co.burlington.nj.us/130/Sheriffs-Department	Sheriff Jean Stanfield
Camden County Highway Traffic Safety	www.camdencounty.com/health/safety/traffic/safety.html	Diane Kozak, Sam Spino
Cherry Hill Township Police Department	www.cherryhillpolice.com	Officer James Philbin
Chester County Highway Safety Project	www.coadgroup.com/highwaySafety.asp	Lori Aguilera, Charles Vilotti
Chester County Planning Commission	www.chesco.org/planning	Bill Deguffroy
Citizen		Warren Strumpfer
City of Philadelphia Mayor's Office of Transportation and Utilities	www.phila.gov/motu/initiatives-transportation.html	Gus Scheerbaum, Ema Yamamoto
City of Philadelphia Streets Department	www.phila.gov/streets	Kasim Ali, Patrice Nuble
Clean Air Council	www.cleanair.org	Dennis Winters
Cross County Connection Transportation Management Association	www.driveless.com	Bill Ragozine
Delaware County Transportation Management Association	www.dctma.org	Lauren Amway
Delaware Valley Regional Planning Commission	www.dvrpc.org	Jesse Buerk, Regina Moore, Kevin Murphy, Zoe Neaderland, Sarah Oaks, John Ward

Organization	Website	Representative(s)
Delaware Valley Regional Planning Commission Goods Movement Task Force	www.dvrpc.org/Committees/DVGMTF/	Kelvin MacKavanagh
Federal Highway Administration–New Jersey	www.fhwa.dot.gov/njdiv	Caroline Trueman
Fiocco Engineering	www.fioccoengineering.com	Joe Fiocco
Gloucester County Planning Department	www.gloucestercountynj.gov/depts/p/pw/planning/	Christina Velazquez
MBO Engineering, LLC	www.mboengineering.com	Bill Beans, Pat Ott
Mercer County Engineering Department	www.state.nj.us/counties/mercer/departments/transportation/eng	George Fallat
Mercer County Planning Division	www.state.nj.us/counties/mercer/departments/planning	Matthew Lawson
National Highway Traffic Safety Administration–Region 2	www.nhtsa.gov	Richard Simon
New Jersey Department of Transportation	www.state.nj.us/transportation	Sophia Azam
New Jersey Division of Highway Traffic Safety	www.nj.gov/oag/hts	Violet Marrero, Ray Reeve
New Jersey Office of Emergency Medical Services	www.nj.gov/health/ems/	Eric Hicken
North Jersey Transportation Planning Authority	www.njtpa.org/Planning/Regional-Studies.aspx	Lois Goldman
Pam Fischer Consulting	www.linkedin.com/pub/dir/Pam/Fischer	Pam Fischer
Partnership TMA of Montgomery County	www.ptma-mc.org/	Peggy Schmidt
Pennsylvania Department of Transportation–Central Office	www.dot.state.pa.us	Ryan McNary, Gary Modi (retired),
Pennsylvania Department of Transportation–District 6	www.dot.state.pa.us/PennDOT/Districts/district6.nsf/District%206-0%20Homepage	Larry Bucci (retired), Vince Cerbone, Darrell Merritt, Ashwin Patel, Brad Rudolph
Pennsylvania District Attorneys Association	www.pdaa.org	Max Little (retired)
Pennsylvania State Police	www.psp.pa.gov	Com. Anthony Sivo, Sgt. Stephen U'Selis
PROvuncular, LLC	www.provuncular.com	Mike Dennis
Public Health Management Corp.–Street Smarts	www.phmc.org	Donna Ferraro
Rutgers University–Transportation Safety Resource Center	http://cait.rutgers.edu/tsrc	Andy Kaplan,
Safe Kids Southern New Jersey–Cooper Hospital	www.cooperhealth.org/departments-programs/safe-kids-southern-new-jersey	Maureen Donnelly
South Jersey Transportation Planning Organization	www.sjtpo.org	Tina Arcaro, Tim Chelius, Alan Huff, Jennifer Marandino
TMA Bucks	www.bctma.com	Bill Brady, Kathy Olsen
TMA of Chester County	www.tmacc.org	Amanda Lozinak
Villanova University	www1.villanova.edu/villanova/engineering	Seri Park PhD.
Washington Township Police Department	www.washingtontwpolice.org	Cpl. Preston Forchion

Source: DVRPC

APPENDIX C



RSTF Measurements and Status Table

Green = Met goal Red = Needs attention

OBJECTIVES and MEASURES	November 29, 2011 Increase Seat Belt Usage	March 8, 2012 Pedestrian Safety	June 19, 2012 Reduce Impaired and Distracted Driving	October 4, 2012 Curb Aggressive Driving	December 4, 2012 Keep Vehicles on the Roadway and Minimize Consequences of Leaving the Roadway	March 7, 2013 Improve the Design and Operation of Intersections	June 6, 2013 Sustain Safe Senior Mobility
BUILD, MAINTAIN, AND LEVERAGE PARTNERSHIPS							
Retain and increase attendance at RSTF meetings by having more people at each meeting	Attendance = 44 ↑(+9) Avg. of last 4 meetings = 40	Attendance = 47 ↑(+3) Avg. of last 4 meetings = 42	Attendance = 38 ↓(-9) <i>(first off site meeting in Cherry Hill)</i> Avg. of last 4 meetings = 41	Attendance = 36 ↓(-2) Avg. of last 4 meetings = 42	Attendance = 36 (0) Avg. of last 4 meetings = 41	Attendance = 50 ↑(+14) Avg. of last 4 meetings = 42	Attendance = 34 ↓(-16) Avg. of last 4 meetings = 40
Recruit and retain participants from at least two agencies involved in each of the four E's and policy/legislative at each meeting	Education = 15 Enforcement = 2 Engineering = 7 Emg. Response = 0 Policy/Legislative = 7	Education = 11 Enforcement = 4 Engineering = 9 Emg. Response = 0 Policy/Legislative = 9	Education = 10 Enforcement = 4 Engineering = 4 Emg. Response = 0 Policy/Legislative = 8	Education = 12 Enforcement = 4 Engineering = 4 Emg. Response = 0 Policy/Legislative = 5	Education = 9 Enforcement = 3 Engineering = 6 Emg. Response = 0 Policy/Legislative = 8	Education = 8 Enforcement = 5 Engineering = 7 Emg. Response = 1 Policy/Legislative = 7	Education = 10 Enforcement = 2 Engineering = 4 Emg. Response = 0 Policy/Legislative = 4
Active participation in each meeting by more than one agency in each of the four E's and policy/legislative, measured by substantial points in the meeting summaries	Education = 9 Enforcement = 2 Engineering = 6 Emergency Response = 0 Policy/Legislative = 5	Education = 6 Enforcement = 3 Engineering = 4 Emergency Response = 0 Policy/Legislative = 6	Education = 6 Enforcement = 4 Engineering = 2 Emergency Response = 0 Policy/Legislative = 7	Education = 9 Enforcement = 3 Engineering = 4 Emergency Response = 0 Policy/Legislative = 5	Education = 4 Enforcement = 3 Engineering = 5 Emergency Response = 0 Policy/Legislative = 6	Education = 4 Enforcement = 4 Engineering = 4 Emergency Response = 0 Policy/Legislative = 5	Education = 7 Enforcement = 2 Engineering = 3 Emergency Response = 0 Policy/Legislative = 3
Survey to find out what percent of participants report increased and effective partnerships as a result of RSTF meetings	Meeting surveys to begin in 2014						
INCREASE THE EFFECTIVENESS OF THE RSTF THROUGH STRATEGIES AND ACTIONS							
Continue to refine Safety Action Plan strategies into doable actions at each RSTF meeting and document progress in Tracking Progress Table	Did at least two agencies report on actions? (no actions carried over from the previous TSAP emphasis area cycle)	Did at least two agencies report on actions? YES – 4 agencies: NJDOT, Chester Co. Highway Safety, Delaware Co. TMA, and Bucks Co. TMA	Did at least two agencies report on actions? YES – 3 agencies: Rutgers Univ. – CAIT, Cherry Hill Twp Police, and PennDOT	Did at least two agencies report on actions? YES – 4 agencies: MBO Engineering, LLC; Cherry Hill Twp Police; ProVuncular LLC; and DRPA	Did at least two agencies report on actions? YES – 4 agencies: PA District Attorney's Association; MBO Engineering LLC; Rutgers CAIT; DVRPC; and ProVuncular LLC	Did at least two agencies report on actions? YES – 4 agencies: Mercer County Engineering Department, Cherry Hill Township Police, MBO Engineering LLC, and DVRPC	Did at least two agencies report on actions? YES – 3 agencies: Clean Air Council, MBO Engineering LLC, and DVRPC
Market and promote safe transportation practices to a broader audience than RSTF participants. This may include the one-page emphasis area summary, agency newsletter, website posting, etc.	YES – DVRPC, Chester Co. Highway Safety, Delaware and Bucks Co. TMAs and Rutgers Univ. CAIT distributed information to over 10,000 people	YES, DVRPC distributed information to over 10,000 people	YES, DVRPC and NJ Police Traffic Officers Association (NJPTOA) distributed information to over 10,000 people	YES, DVRPC distributed information to over 10,000 people; NJDHTS and Fiocco Engineering, LLC promoted the RSTF to the EMS and enforcement communities	YES, DVRPC distributed information to over 10,000 people; NJDHTS and Fiocco Engineering, LLC promoted the RSTF to the EMS and enforcement communities	YES, DVRPC distributed information to over 10,000 people	YES, Philadelphia City Planning Commission shared information with Phila. Complete Streets Committee and DVRPC distributed information out to over 10,000 people
List of the effects of actions taken as a result of the RSTF based on the Tracking Safety Actions Table	See Appendix C for the 2012 TSAP Cycle – Volunteer Action Updates						
The RSTF or volunteer members will assist with one program or project being done by others with the result being a measurable reduction in fatalities, injuries, or crashes at the location.	The Center City District and DVRPC conducted a before and after analysis of an effort to reduce congestion and improve safety for all modes between Broad and 23 rd Streets in Philadelphia. Crash data, GPS, and blue tooth technology were used to identify key issues. Improvements from this effort included dedicated parking for bikes, restriping and repaving to reduce travel time, limited truck delivery hours, space for delivery trucks to park (to eliminate double parking), and several operational strategies for SEPTA to consider.						

APPENDIX D



2012 TSAP Cycle – Volunteer Action Updates from November 2011 to June 2013 RSTF Meetings

The Regional Safety Task Force (RSTF) will track implementation of a small number of straightforward tasks defined at RSTF meetings for each of the key emphasis areas in the *Transportation Safety Action Plan*. This is a shared task force, in which all members have a role. This participatory approach will help make the RSTF more effective and it will provide helpful input for the next transportation safety action plan.

INCREASE SEAT BELT USAGE – 11/29/11			
<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
1. Share a one-page summary of the Increasing Seat Belt Usage emphasis area meeting with county and state-level policy makers, including the county by county seat belt statistics.	<ul style="list-style-type: none"> • Lori Aguilera (Chester County Highway Safety) • Trish McFarland (Delaware County TMA) • Ray Rauanheimo (AARP Montgomery Co.) • Bill Rickett (TMA Bucks) 	<ul style="list-style-type: none"> • Next meeting (3/8/12) 	<ul style="list-style-type: none"> • Action completed. Ms. Aguilera and Ms. McFarland shared information with policy makers; Mr. Beans specifically shared information with county commissioners, legislators, and PennDOT officials; Ray was unable to share information with policy makers.
2. Add information about the National seat belt campaign conducted in May to agency websites.	<ul style="list-style-type: none"> • Janet Hansen (Rutgers University – CAIT) • Trish McFarland (Delaware County TMA) 	<ul style="list-style-type: none"> • 6 months (6/19/12 meeting) 	<ul style="list-style-type: none"> • Action completed. Information was added to Rutgers University and Delaware County TMA websites.
3. Investigate incorporating a “Buckle Up” roadway stencil program at driveway exits from NJDOT facilities statewide. If program is implemented, conduct a press event with policy makers to mark the event	<ul style="list-style-type: none"> • Bill Beans (NJDOT) 	<ul style="list-style-type: none"> • Next meeting (3/8/12) 	<ul style="list-style-type: none"> • Action completed. Mr. Beans was able to draft an outline of a seat belt program for NJDOT and submitted it to the Assistant Commissioner for review and comment.
4. Investigate a seat belt survey of NJDOT employees at headquarters to measure seat belt usage.	<ul style="list-style-type: none"> • Bill Beans (NJDOT) 	<ul style="list-style-type: none"> • Next meeting (3/8/12) 	<ul style="list-style-type: none"> • Action completed. Same action update as #3 above.
5. Conduct seat belt surveys at county high schools.	<ul style="list-style-type: none"> • Lori Aguilera (Chester County Highway Safety) 	<ul style="list-style-type: none"> • 6 months (6/19/12 meeting) 	<ul style="list-style-type: none"> • Action completed. Six high schools participated in the Chester County Teen Seat Belt Initiative (CCTSBI). Results from survey conducted from 2/22/12 through 4/27/12 revealed 85% drivers belted and 83% of passengers belted. Survey will end on 6/8/12.

ENSURING PEDESTRIAN SAFETY – 3/8/12

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
1. Conduct analysis to determine the effectiveness of rapid flashing beacons in Mercer County.	<ul style="list-style-type: none"> • George Fallat (Mercer County Engineering Department) 	<ul style="list-style-type: none"> • 6 months (10/4/12 meeting) 	<ul style="list-style-type: none"> • Action completed. Mr. Fallat coordinated with Lawrence Hopewell Trail (LHT) and Hopewell Borough officials on two projects to determine the effectiveness of rapid flashing beacons. Unfortunately, he did not receive any feedback from the LHT effort. However, the response was extremely positive from Hopewell Borough where beacons were installed in front of their library.
2. Conduct an analysis to determine the effectiveness of road diets built in the City of Philadelphia.	<ul style="list-style-type: none"> • Charles Denny (Philadelphia Streets Department) 	<ul style="list-style-type: none"> • Next meeting (6/19/12) 	<ul style="list-style-type: none"> • Action not completed.
3. Provide an update on citations issued to drivers in pedestrian crashes.	<ul style="list-style-type: none"> • Sgt. Michael Rann (Cherry Hill Township Police Department) 	<ul style="list-style-type: none"> • Next meeting (6/19/12) 	<ul style="list-style-type: none"> • Action completed. Since 2010 there were 70 pedestrian crashes; 24% of summonses were issued to pedestrians.
4. Distribute information about the RSTF to other state police offices.	<ul style="list-style-type: none"> • Capt. Tina Arcaro (NJ State Police) 	<ul style="list-style-type: none"> • Next meeting (6/19/12) 	<ul style="list-style-type: none"> • Action completed. Chief Tony Parenti (retired) Executive Director of NJ Police Traffic Officers Association (NJPTOA) shared information about RTSF at NJPTOA held on September 5, 2012.
5. Provide a summary on the Cherry Hill Township pedestrian safety efforts, including lessons learned from other municipalities.	<ul style="list-style-type: none"> • Sgt. Michael Rann (Cherry Hill Township Police Department) 	<ul style="list-style-type: none"> • 6 months (10/4/12 meeting) 	<ul style="list-style-type: none"> • Action completed. There were numerous violations reported of pedestrians not crossing at crosswalks, particularly along Route 70. The program started as an awareness campaign for pedestrians, but has expanded to educate and enforce motorists in targeted areas.
6. Reach out to the emergency services community to attend future RSTF meetings.	<ul style="list-style-type: none"> • Brad Rudolph (PennDOT District 6) 	<ul style="list-style-type: none"> • Next meeting (6/19/12) 	<ul style="list-style-type: none"> • Action completed. Mr. Rudolph reached out to paramedics and EMTs in the PA region.

REDUCE IMPAIRED AND DISTRACTED DRIVING – 6/19/12

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
1. Publicize other agencies' impaired and distracted driving programs on agency's website.	<ul style="list-style-type: none"> • Fran O'Brien (DRPA) 	<ul style="list-style-type: none"> • Next meeting (10/4/12) 	<ul style="list-style-type: none"> • Action not completed. DRPA will not be able to publicize the safety plans of other organizations on their website or e-alert system. Their site is strictly to inform the public about their facilities, traffic reports and board actions.
2. Provide a summary from study conducted to determine the effectiveness of New Jersey's cell phone and texting laws.	<ul style="list-style-type: none"> • Pat Ott (MBO Engineering, LLC) 	<ul style="list-style-type: none"> • Next meeting (10/4/12) 	<ul style="list-style-type: none"> • Action not completed. There was a delay in launching the survey. Preliminary results were not shared.
3. Summarize existing messaging campaigns for reducing impaired and distracted driving, and look for opportunities to collaborate, resulting in more effective communication.	<ul style="list-style-type: none"> • Mike Dennis (ProVuncular, LLC) 	<ul style="list-style-type: none"> • Next meeting (10/4/12) 	<ul style="list-style-type: none"> • Action completed. Mr. Dennis discovered that Delaware has a great website with many national messaging programs. NHTSA's "Are You That Guy" has several marketing tools available including brochures, billboards, and bumper stickers. He developed a grid, which lists agencies and their respective messaging campaigns.
4. DVRPC will work with partners to prepare a two-page summary of what happens after a police officer writes an impaired driving ticket in Pennsylvania and New Jersey.	<ul style="list-style-type: none"> • Troy Love (PennDOT – Central Office) • Robyn Mitchell (NJ Division of Criminal Justice) • DVRPC 	<ul style="list-style-type: none"> • 6 months (12/4/12 meeting) 	<ul style="list-style-type: none"> • Action is completed. Draft summary was completed. After the meeting discussion followed which led into additional tasks. See Action Item #1 in the Curb Aggressive Driving 10/4/12 summary table.

CURB AGGRESSIVE DRIVING – 10/4/12

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
<p>1. Draft the following publications for further discussion, then finalize and distribute in the future:</p> <p>a) Public information brochure based on the handout on why outreach to judges and prosecutors is important; it will be oriented to potential future jury members, and also available in Spanish.</p> <p>b) Letter to legislators to share the Safety Action Plan cards, and also the public brochure</p> <p>c) Letter and checklist for prosecutors and judges to use as a reference when handling aggressive driving related cases, and include brochure. At the 10/4/12 meeting, DVRPC staff led a discussion over lunch to gather consensus on a previous follow-up action to draft a brochure and other materials. Various activities are ongoing.</p>	<ul style="list-style-type: none"> • Max Little (PA District Attorney's Association) • Violet Marrero (NJDHHS) • DVRPC <p><u>For 1c. only</u></p> <ul style="list-style-type: none"> • Max Little (PA District Attorney's Association) • DVRPC 	<ul style="list-style-type: none"> • Next meeting (12/4/12) <p><u>For 1c. only</u></p> <ul style="list-style-type: none"> • 6 months (6/6/13 meeting) 	<ul style="list-style-type: none"> • Action completed. Mr. Little drafted a cover letter to judges and prosecutors. Draft brochures will be discussed at the December meeting. The other items will build on this work and follow at the next meeting. <p><u>For 1c. only</u></p> <ul style="list-style-type: none"> • Action completed. Members of the RSTF met over several months to develop a brochure. The brochure specifically tailored for NJ is currently under review with NJ state authorities.
<p>2. Explore the idea of distributing aggressive driving information (i.e. posters or brochures) at PA magistrate district judges' offices and NJ municipal court judges' offices. Check if NJDOT or other agencies already have an appropriate poster, such as "do you do two or more of these activities?"</p>	<ul style="list-style-type: none"> • Bill Beans (MBO Engineering, LLC) 	<ul style="list-style-type: none"> • Next meeting (12/4/12) 	<ul style="list-style-type: none"> • Action completed. Mr. Beans followed up on this effort by contacting the NJ Administrative Office of the Courts. It was suggested to reach out to prosecutors' offices. Mr. Beans plans to set up meeting with county prosecutors to determine the best approach in delivering educational materials to members of the judicial system.

CURB AGGRESSIVE DRIVING – 10/4/12 (continued)

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
3. Publicize enforcement activities on agency websites. DVRPC to ask enforcement agencies for activities planned in near future and distribute for posting.	<ul style="list-style-type: none"> • Janet Hansen (Rutgers University – CAIT) • DVRPC 	<ul style="list-style-type: none"> • Next meeting (12/4/12) 	<ul style="list-style-type: none"> • Action completed. Enforcement activities were put on the Rutgers University website. Regina Moore reached out to appropriate agencies. Enforcement updates were shared via email to RSTF to post to their agency websites. These included “Operation Safe Holiday”, “Drive Sober or Get Pulled Over” impaired and aggressive driving enforcement waves.
4. Gather existing aggressive driving messaging campaigns and explore how RSTF partners can use fewer different messages in order to be more effective.	<ul style="list-style-type: none"> • Mike Dennis (ProVuncular, LLC) • Violet Marrero (NJDHTS) 	<ul style="list-style-type: none"> • Next meeting (12/4/12) 	<ul style="list-style-type: none"> • Action completed. The aggressive driving messaging campaigns have been gathered. A brief update was provided at the December meeting.
5. Develop a one-page summary on who to reach and ideas on how to go about conveying the importance of filling out crash reports to officers when reporting aggressive driving related incidents.	<ul style="list-style-type: none"> • Ryan McNary (PennDOT – Central Office) • Bill Beans (MBO Engineering, LLC) • Pat Ott (MBO Engineering, LLC) • Larry Bucci (PennDOT – District 6) • Ray Reeve (NJDHTS) • Violet Marrero (NJDHTS) • Janet Hansen (Rutgers University – CAIT) • DVRPC 	<ul style="list-style-type: none"> • Next meeting (12/4/12) 	<ul style="list-style-type: none"> • Action not completed. Currently, there is no code on the NJ TR-1 crash report form to record aggressive driving. NJDOT has done analysis and campaigns for years using the definition of any of a set of contributing circumstances such as speeding. PA uses this approach and also the NHTSA definition of two or more items from such a list. DVRPC has helped NJDOT evaluate whether they could switch to this approach. Unfortunately, this is a difficult task. The short-term step is to educate officers in NJ to fill-in more than one action.

KEEP VEHICLES ON THE ROADWAY AND MINIMIZE THE CONSEQUENCES OF LEAVING THE ROADWAY – 12/4/12

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
<p>1. Draft letter to NJDOT Statewide Traffic Records Coordinating Committee (STRCC) to encourage changes in the NJTR-1 Form Field Manual and the Police Guide for Preparing Reports of Motor Vehicle Crashes in coding the first event. This important change will lead to more accurate crash coding regarding lane-departure related crashes. Kevin Conover also suggested this important correction be announced via bulletin to all state and municipal police forces to help with compliance.</p>	<ul style="list-style-type: none"> • Kevin Conover (NJDOT) • Kevin Murphy (DVRPC) 	<ul style="list-style-type: none"> • Next meeting (3/7/13) 	<ul style="list-style-type: none"> • Action completed. Members of DVRPC staff reported on draft RSTF letters to the STRCC, requesting their assistance in moving towards more accurate reporting of crash-related events on the NJTR-1 form to better identify Run-Off-Road (ROR) and aggressive driving crashes. The RSTF endorsed both letters, which were sent to the STRCC.
<p>2. NJDOT distributes their crash lists to MPOs every two to three years. DVRPC will work with NJDOT to acquire the most recent lists and then distribute them to the counties.</p>	<ul style="list-style-type: none"> • Kevin Conover (NJDOT) • Kevin Murphy (DVRPC) 	<ul style="list-style-type: none"> • Next meeting (3/7/13) 	<ul style="list-style-type: none"> • Action completed. Mr. Murphy reported DVRPC is working to provided NJDOT cluster location lists to counties. There were issues of county locations to appear on the lists. This effort is ongoing.

IMPROVE THE DESIGN AND OPERATION OF INTERSECTIONS – 3/7/13

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
<p>1. Develop a toolbox containing all available safety improvement treatments for unsignalized and signalized intersections.</p>	<ul style="list-style-type: none"> • Dennis Winters (Clean Air Council) 	<ul style="list-style-type: none"> • Next meeting (6/6/13) 	<ul style="list-style-type: none"> • Action completed. A toolbox was created. Mr. Winters provided a brief update at the June meeting. The toolbox is located on the DVRPC Safety Website.
<p>2. Provide status of the letters re: Run-Off-Road (ROR) and aggressive driving crashes to the NJ Statewide Traffic Records Coordinating Committee (STRCC).</p>	<ul style="list-style-type: none"> • Pat Ott (MBO Engineering, LLC) 	<ul style="list-style-type: none"> • Next meeting (6/6/13) 	<ul style="list-style-type: none"> • Action completed. Ms. Ott reported on the letters: ROR letter – NJDOT is working on with the Police Traffic Officers Association to develop more guidance to officers on proper coding of ROR crashes. These changes will be included as part of the update to the manual and TR-1 form. Aggressive driving letter – This is a difficult issue with various opinions on how to properly define aggressive driving. Adopting a definition will remain on the radar, however for the time being STRCC has agreed to table the issue to a future meeting.

SUSTAIN SAFE SENIOR MOBILITY – 6/6/13

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
1. Share PennDOT's draft brochure on mobility alternatives for senior drivers.	<ul style="list-style-type: none"> • Ryan McNary (PennDOT – Central Office) 	<ul style="list-style-type: none"> • 6 months (12/4/13 meeting) 	<ul style="list-style-type: none"> • Action is ongoing. PennDOT will revisit development of the brochure in FY'16.
2. Create a regional map of senior populations and high crash rates/locations.	<ul style="list-style-type: none"> • Ryan McNary (PennDOT – Central Office) • DVRPC 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action completed. DVRPC staff presented maps at the 9/24/13 AAA meeting. A press release was later issued which resulted in good media coverage, including three newspaper follow-up stories and two segments on KYW radio.
3. Share map (action #2) with Bucks County Police Chief Association and possibly coordinate with Montgomery County police agencies.	<ul style="list-style-type: none"> • Chief Mark Schmidt (Upper Makefield Twp Police) • Ray Rauanheimo (AARP – Pennsylvania) 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action completed. Chief Schmidt sent an email to 25 peers in Bucks and Montgomery Counties. He received 11 responses.
4. Share information on a previous NJDOT pilot Road Safety Audit (RSA) program targeted for seniors	<ul style="list-style-type: none"> • Pat Ott (MBO Engineering, LLC) 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action completed. Ms. Ott reported that NJDOT developed a senior safety intersection pilot project years ago. Three sites were selected for RSAs. The RSAs were successful.
5. Share information on pedestrian crashes by age group to see what the implications are for the aging population.	<ul style="list-style-type: none"> • DVRPC 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action completed. DVRPC presented findings at the 9/24/13 RSTF meeting.
6. Share senior driver resources on agency websites (especially AAA Senior Driver website and Roadwise Rx program)	<ul style="list-style-type: none"> • Alex Felts (GVFTMA) • Janet Hansen (Rutgers University – CAIT) • Violet Marrero (NJDHTS) • Ryan McNary (PennDOT – Central Office) • DVRPC 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action partially completed. Information was placed on the GVFTMA website.
7. Share senior driver resources with senior and community groups. This is an ongoing effort by AAA Mid-Atlantic	<ul style="list-style-type: none"> • Jenny Robinson and Tracy Noble (AAA Mid-Atlantic) • Warren Strumpfer (Citizen) 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action completed. On August 13th, AAA Press Release promoted National Senior Citizens Day. • Mr. Strumpfer distributed articles to two local newsletters and sent information to his personal e-mail list.

SUSTAIN SAFE SENIOR MOBILITY – 6/6/13 (continued)

<i>Volunteer Action Items</i>	<i>Lead Person or Agency</i>	<i>Timeframe to Report</i>	<i>Action Update</i>
8. Share senior driver resources with county medical societies and insurance companies (especially AAA Senior Driver website and Roadwise Rx program)	<ul style="list-style-type: none"> • Jenny Robinson and Tracy Noble (AAA Mid-Atlantic) 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action not completed.
9. Act as liaison between Philadelphia's Complete Streets committee and the RSTF to promote RSTF efforts	<ul style="list-style-type: none"> • Debby Schaaf (Philadelphia City Planning Commission) 	<ul style="list-style-type: none"> • Next meeting (9/24/13) 	<ul style="list-style-type: none"> • Action completed. The Complete Streets checklist was finalized in July. Regulations are in the process of being developed.
10. Develop a toolbox (2 to 3 pages) on available senior driver resources (especially AAA Senior Driver website and Roadwise Rx program)	<ul style="list-style-type: none"> • Suzanne Kubiak (Public Health Management Corp) • Dennis Winters (Clean Air Council) • DVRPC 	<ul style="list-style-type: none"> • 6 months (12/4/13 meeting) 	<ul style="list-style-type: none"> • Action completed. Ms. Kubiak and Mr. Winters created a two-page list of senior driver resources in the region. DVRPC added the toolbox to their safety website.
11. Share information on Pennsylvania's progress in adopting a "Silver Alert" program. The RSTF could endorse this effort with a letter of support	<ul style="list-style-type: none"> • Ryan McNary (PennDOT – Central Office) 	<ul style="list-style-type: none"> • 6 months (12/4/13 meeting) 	<ul style="list-style-type: none"> • Action is ongoing. To date, the "Silver Alert" program has not been implemented. PennDOT will revisit this effort in FY'16.

Overall Summary Results of Performance Measures

** = Agency volunteered for multiple actions

11/29/11 – Increase Seat Belt Usage (5 Volunteer Actions and 5 Actions Completed)

- Volunteer Agencies (6) include Chester County Highway Traffic Safety**; Delaware TMA**; AARP Montgomery County; TMA Bucks; Rutgers University – CAIT; and NJDOT**

3/8/12 – Ensuring Pedestrian Safety (5 Volunteer Actions; 4 Actions Completed; 1 Action Not Completed)

- Volunteer Agencies (5) include Mercer County Engineering Department; Cherry Hill Township Police Department**; NJ State Police; PennDOT District 6; and Philadelphia Streets Department

6/19/12 – Reduce Impaired and Distracted Driving (4 Volunteer Actions; 2 Actions Completed; 2 Action Not Completed)

- Volunteer Agencies (6) include DRPA; MBO Engineering, LLC; ProVuncular, LLC; PennDOT – Central Office; NJ Division of Criminal Justice; and DVRPC

10/4/12 – Curb Aggressive Driving (6 Volunteer Actions; 5 Actions Completed; 1 Action Not Completed)

- Volunteer Agencies (7) include PA District Attorney's Association**; NJDHTS**; MBO Engineering, LLC**; Rutgers University – CAIT**; ProVuncular, LLC; PennDOT District 6, and DVRPC**

12/4/12 – Keep Vehicles on the Roadway and Minimize the Consequences of Leaving the Roadway (2 Volunteer Actions; 2 Actions Completed)

- Volunteer Agencies (2) include NJDOT** and DVRPC**

3/7/13 – Improve the Design and Operation of Intersections (2 Volunteer Actions; 2 Actions Completed)

- Volunteer Agencies (2) include Clean Air Council and MBO Engineering, LLC

6/6/13 – Sustain Safe Senior Mobility (11 Volunteer Actions; 7 Actions Completed; 2 Actions Ongoing; 1 Action Partially Completed; 1 Action Not Completed)

- Volunteer Agencies (13) include PennDOT Central Office**; Upper Makefield Township Police Department; AARP – Montgomery County; MBO Engineering, LLC; GVFTMA; Rutgers University – CAIT; NJDHTS; AAA Mid-Atlantic**; Citizen; Philadelphia City Planning Commission; Public Health Management Corp.; Clean Air Council; DVRPC**

GRAND TOTAL for the 2012 SAP Cycle

- **35 Volunteer Actions**
 - 27 Actions Completed
 - 5 Actions Not Completed
 - 2 Actions Ongoing
 - 1 Action Partially Completed
- **26 RSTF Agencies Volunteered to Take on Actions**

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Key Words: Traffic Fatalities, Crashes, Safety, Emphasis Areas, Aggressive Driving, Impaired Driving, Roadway Departure, Senior Mobility, Seat Belt Usage, Intersections, Walking, Pedestrians, Young Drivers, Regional Safety Task Force, Strategic Highway Safety Plan.

Abstract: In just three years' time the Delaware Valley lost 1,141 people to traffic crashes, and over 120,000 more were injured. These numbers are the grim outcome of the more than 83,000 yearly traffic crashes that occurred between 2010 and 2012 in the nine-county DVRPC region. The *2015 Transportation Safety Action Plan* defines key safety emphasis areas, a range of strategies for each of the eight key emphasis areas, and specific actions to reduce the number of fatalities.

The *2015 Transportation Safety Action Plan* was developed with guidance from the multidisciplinary Regional Safety Task Force (RSTF). The table of recommended strategies and how to accomplish them is an agreed-upon starting point for how partners will work together to improve transportation safety in the region. Each meeting of the RSTF includes refining a set of actions and reporting back on progress. Analysis of crash data for the region is provided in *Analysis of Crashes in the Delaware Valley, 2010–2012* (DVRPC Publication 14028).

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