

LOCAL & COUNTY

ROADS SAFETY

NEWSLETTER



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DVRPC is the metropolitan planning organization for the Philadelphia metropolitan region. Some of DVRPC's relevant safety work includes:

- ▶ Regional Safety Task Force – Multi-disciplinary group that meets quarterly to identify safety goals and resources
- ▶ *Safety Action Plan* – identifies key emphasis areas and strategies to reduce crash fatalities in the region
- ▶ Road safety audits and intersection audits through the Congestion and Crash Site Analysis Program
- ▶ Municipal implementation guides on various planning topics
- ▶ Planning to improve transportation and increase safety—see www.dvrpc.org for information and free downloads of all publications



Welcome to DVRPC's inaugural safety newsletter aimed at helping counties and municipalities improve the safety of local roadways.

DVRPC has prepared a summary of some analysis and resources for municipal and county staff who work to improve safety on local roads. Feel free to advise us on how we can provide additional information and resources to help reduce fatalities and crashes on local roads.

The term “**local roads**” in this newsletter refers to roads owned or maintained by counties or municipalities. These facilities represent approximately 80% of the linear road miles in the Delaware Valley. These roads include a range of situations, but it is important to address them as many fatalities in the region occur on local roads.

HOW MANY CRASHES OCCUR ON LOCAL ROADS?

In an average year, 133 people die in crashes on local roads in the Delaware Valley. That is the most heart-rending element of the over 36,000 crashes that occur on these roads. The data used for this analysis covers 2007 through 2009, the latest full years available from PennDOT and NJDOT.

TABLE 1: CRASH FATALITIES ON LOCAL ROADS IN THE DELAWARE VALLEY, 2007-2009

	PA FATALITIES	NJ FATALITIES	REGION FATALITIES
Average Fatalities per Year on Local Roads, 2007-2009	64	69	133
Total Fatalities on Local Roads, 2007-2009	193	206	399
Total Crash Fatalities on All Roads, 2007-2009	822	446	1,268
Local Road Fatalities as Percent of All Road Fatalities	23%	46%	31%

Source: PennDOT and NJDOT

WHY ARE THERE SIGNIFICANT DIFFERENCES IN NUMBERS OF FATALITIES BETWEEN STATES?

In New Jersey, the four Delaware Valley counties are responsible for approximately 18% of linear road miles. Municipalities are responsible for approximately 72% of linear road miles. Combined with the 3% of roads that are the responsibility of parks, this adds up to approximately 93% of road miles. All crashes on any of these roads would be classified as local.

In Pennsylvania, the five Delaware Valley counties are responsible for very limited road miles. Municipalities are responsible for approximately 75% of linear road miles. The total number of fatalities is still higher in the five Pennsylvania counties partly because there are almost twice as many linear miles of road than in the New Jersey counties.

For more related data, see:

- ▶ Pennsylvania: ftp://ftp.dot.state.pa.us/public/pdf/BPR_pdf_files/Documents/Traffic/Highway_Statistics/Annual_Report
- ▶ New Jersey: www.state.nj.us/transportation/refdata/roadway/vmt.shtm

WHY ARE CRASHES OCCURRING?

There are many approaches to analyzing why crashes occur and to figuring out appropriate countermeasures. These approaches include where total crashes or fatalities are highest, where the crash rate per vehicle miles travelled is highest, by type of crash (such as head-on or rear-end), and by emphasis area.



Emphasis area analysis helps determine how to reduce crashes. The national approach is to assess the 22 emphasis areas defined by the American Association of State Highway and Transportation Officials (AASHTO) *Strategic Highway Safety Plan*. Pennsylvania and New Jersey use these emphasis areas in their required strategic highway safety plans. DVRPC works with both states to perform this analysis for just the Delaware Valley in preparing updates to the regional *Safety Action Plan*.

For all roads in the region, there are seven emphasis areas that are contributing factors in 98% of roadway fatalities. For county and municipal roads they are contributing factors in 97% of fatalities. Table 2 shows the analysis for only local roads. This table has emphasis areas sorted by the number of fatalities to which they contribute on local roads in the region. Multiple emphasis areas can contribute to a crash.

TABLE 2: EMPHASIS AREAS THAT CONTRIBUTE TO FATALITIES ON LOCAL ROADS (AVERAGE, 2007-2009)

EMPHASIS AREA	NJ FATALITIES	PA FATALITIES	REGION FATALITIES
Curbing Aggressive Driving	100	109	209
Keeping Vehicles on the Roadway*	70	99	169
Minimizing the Consequences of Leaving the Road*	88	80	168
Reducing Impaired Driving	70	70	140
Increasing Seat Belt Usage and Improving Air Bag Effectiveness	50	68	118
Improving the Design and Operation of Highway Intersections	53	51	104
Making Walking and Street Crossing Safer	39	44	83
Sustaining Proficiency in Older Drivers	41	26	67

*These related emphasis areas are combined in the *Safety Action Plan*
Source: PennDOT and NJDOT

HOW DO WE REDUCE CRASHES?

Using an objectives-based, data-driven approach is widely recommended in transportation planning by the Federal Highway Administration (FHWA).

For example, your goal might be to reduce the number of people dying in crashes. If aggressive driving is the leading contributing factor, reducing it would be an effective objective. It's natural to want to address the problem behind a single tragic crash, but using analysis is likely to do the most toward addressing the goal.

Strategies to address each emphasis area are included in the *Safety Action Plan*. Strategies specifically for local roads are identified at http://safety.fhwa.dot.gov/local_rural.

The FHWA has identified nine countermeasures that have proven highly safety- and cost-effective. They are:

1. Road Safety Audits
2. Rumble Strips and Rumble Stripes
3. Median Barriers
4. Safety Edge
5. Roundabouts
6. Left and Right Turn Lanes at Stop-Controlled Intersections
7. Yellow Change Intervals
8. Medians and Pedestrian Refuge Areas in Urban and Suburban Areas
9. Walkways

Source: <http://safety.fhwa.dot.gov/policy/memo071008>

FUNDING SAFETY IMPROVEMENTS

Research shows safety projects have a high economic return for investment as well as saving lives and reducing crashes. For example, recent analysis by the American Traffic Safety Services Association indicates that the national Highway Safety Improvement Program is providing a benefit-cost ratio of over 40 to 1 (ATSSA, p. ii).

A summary of safety funding sources will be available in Summer 2011 from DVRPC. A few important sources to start with are:

- ▶ PennDOT Bureau of Municipal Services - www.dot.state.pa.us/internet/bureaus/pdbms.nsf
- ▶ NJDOT Local Aid and Economic Development Funding Programs - www.state.nj.us/transportation/business/localaid/funding.shtm
- ▶ DVRPC Municipal Resource Guide - www.dvrpc.org/asp/pubs/publicationabstract.asp?pub_id=09061



High Risk Rural Roads (HRRRs)

Rural roads have a higher fatality rate per million vehicle miles travelled than urban roads. One source of this analysis is the *Highway Safety Improvement Program (HSIP) Obligations and Fatalities on U.S. Highways: Final Report* (American Traffic Safety Services Association, 2010: www.atssa.com/galleries/default-file/HSIP%20Obli_7-09-10.pdf). While there are many local roads that are not rural, it is an area with some overlap.

It is important to know that each state has access to HRRR federal funds and would like to work with you to use them for appropriate projects to improve safety on qualifying roads. HRRR provides funds for construction of low-cost safety improvements. Costs for planning, design, and right-of-way are the responsibility of the applicant. The improvements may be specific, such as for an intersection, or programmatic, such as to install rumble stripes along roadway segments. DVRPC is working with NJDOT on accepted typical designs for several widely recommended safety countermeasures to reduce the up-front costs to counties and municipalities. DVRPC, PennDOT, and NJDOT staff are available to work with you on these projects. A DVRPC publication facilitating investment in these roads will be available in Spring, 2011.

There are significant differences in how the federal HRRR program is managed in Pennsylvania and New Jersey. In Pennsylvania it is managed within PennDOT-District 6. In New Jersey it is a competitive program. New Jersey also has the competitive Local Federal Aid Safety Program, and those funds may be used for rural or local roads.

A FEW OTHER RESOURCES

NATIONAL/REGIONAL

- ▶ Local rural road owners' manuals on *Intersection Safety*, *Roadway Departure Safety*, and *Safety Information Analysis* (FHWA, 2010: http://safety.fhwa.dot.gov/local_rural/training)
- ▶ FHWA e-mail update subscription on local and rural roads: <http://safety.fhwa.dot.gov/esubscribe.cfm#local>
- ▶ FHWA Local and Rural Roads Safety Peer-to-Peer Program: http://safety.fhwa.dot.gov/local_rural/training/p2p
- ▶ Local Technical Assistance Programs - National: www.ltap.org, Pennsylvania: www.dot7.state.pa.us/LTAP, New Jersey: <http://cait.rutgers.edu/njltap>
- ▶ *Toolbox of Countermeasures and Their Potential Effectiveness* (FHWA, 2008: http://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_tctpepc)
- ▶ *Highway Safety Manual* (AASHTO, 2010: <http://safety.fhwa.dot.gov/hsm>)
- ▶ *Horizontal Curves—A New Method for Identifying At-Risk Locations for Safety Investment* (CH2M HILL, Inc., 2009: www.intrans.iastate.edu/pubs/midcon2009/PrestonHorizontal.pdf)
- ▶ *Safety Action Plan for the Delaware Valley and Traffic Crash Analysis of the Delaware Valley* (2009 publications available through web site, updates starting in Spring 2011)
- ▶ *Using Crash Data to Improve Safety in the Delaware Valley* (DVRPC, 2010: www.dvrpc.org/asp/pubs/publicationabstract.asp?pub_id=09020)

PENNSYLVANIA

- ▶ *Pennsylvania's Strategic Highway Safety Plan* (PennDOT, 2009: <http://www.nhtsa.gov/nhtsa/whatsup/safeteaweb/FY10/HSPs/PAFY10HSP.pdf>)

NEW JERSEY

- ▶ Plan4Safety Crash Analysis Program: <http://cait.rutgers.edu/tsrc/plan4safety> – This crash analysis tool is available for free to all governmental and educational entities in New Jersey
- ▶ *New Jersey's Comprehensive Strategic Highway Safety Plan* (NJDOT, 2007: www.dvrpc.org/transportation/safety/pdf/2008-07_Comprehensive.pdf) – This plan is currently being updated.



Working together, we can improve safety on local roads

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The Delaware Valley
Regional Planning
Commission is

dedicated to uniting the region's elected officials, planning professionals and the public with the 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.

DVRPC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. DVRPC documents and publications can be translated into alternate formats or languages, if requested. For more information, visit the DVRPC website at www.dvrpc.org or call 215.238.2871.



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