

Spotlight on
Highway Safety



Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Prepared for
Governors Highway Safety Association

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Pedestrian Traffic Fatalities by State

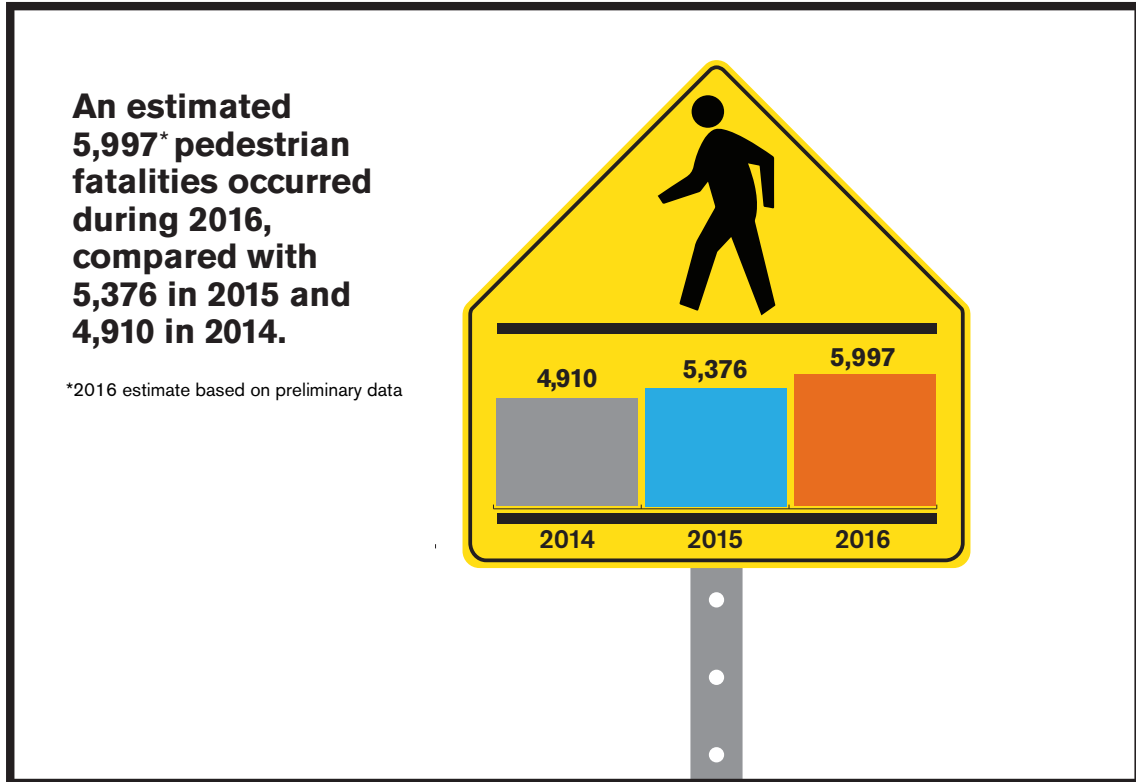
2016 PRELIMINARY DATA

CONTENTS

- 3 SUMMARY
- 5 INTRODUCTION/BACKGROUND
- 10 THE PRESENT STUDY
- 16 WHAT ABOUT CITIES?
- 17 EFFORTS TO REDUCE PEDESTRIAN FATALITIES AND INJURIES
- 19 FEDERAL SAFETY PROGRAMS AND RESOURCES
- 20 WHAT STATES ARE DOING
- 36 DISCUSSION
- 38 ACKNOWLEDGEMENTS

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



SUMMARY

The number of pedestrian fatalities in the United States (U.S.) increased 25 percent from 2010 to 2015, while at the same time, total traffic deaths increased by about six (6) percent. Pedestrians now account for the largest proportion of traffic fatalities recorded in the past 25 years. Earlier studies by the Governors Highway Safety Association (GHSA), based on preliminary data reported by State Highway Safety Offices (SHSOs), were the first to predict recent increases in pedestrian fatalities.

The present study, based on preliminary data from all states and the District of Columbia (DC) for the first six months of 2016, found an increase of seven percent in the reported number of fatalities compared with the first six months of 2015. More than twice as many states had increases (34) than had decreases (15 plus DC) compared with 2015.

After adjusting for anticipated underreporting in the preliminary state data, **GHSA estimates the number of pedestrians killed in 2016 increased by 11 percent compared with 2015.** This was the largest annual increase in both the number and percentage of pedestrian fatalities in the 40 years that national records have been kept, with the second largest increase occurring in 2015. In addition, pedestrian deaths as a percent of total motor vehicle crash deaths have increased steadily, from 11 percent in 2006 to 15 percent in 2015.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

The number of nationwide pedestrian fatalities for all of 2016 was estimated based on preliminary data provided by State Highway Safety Offices (SHSOs) for the first six months of 2016, taking into account historic data regarding the relative proportions of pedestrian fatalities that occurred in the first and second halves of the year. **About 6,000 pedestrian fatalities are estimated to have occurred in 2016, which could make 2016 the first year in more than two decades with more than 6,000 pedestrian deaths.**

GHSA's latest survey indicates the following:

- States reported a range of changes in the number of pedestrian fatalities in the first half of 2016 compared with the same period in 2015:
 - ◆ 34 states had increases;
 - ◆ 15 states and DC had decreases in pedestrian fatalities; and
 - ◆ One state – Maine – remained the same.
- States differ widely in fatality numbers:
 - ◆ The number of pedestrian deaths for the first half of 2016 ranged from one in Wyoming to 359 in California;
 - ◆ Five states (California, Florida, Georgia, Texas, and New York) each had more than 100 pedestrian deaths, while 10 states (Alaska, Idaho, Maine, Montana, Nebraska, New Hampshire, North Dakota, Rhode Island, South Dakota, and Vermont) and DC each had fewer than 10;
 - ◆ Four states (California, Florida, Texas, and New York) accounted for 42 percent of all pedestrian deaths; and
 - ◆ Delaware, Florida, and Arizona, respectively, had the highest rates of pedestrian deaths per resident population, while North Dakota, South Dakota, and Wyoming had the lowest.
- States use various combinations of engineering, enforcement, and education countermeasures to address pedestrian safety, including targeted enforcement in conjunction with public outreach and education.

Many factors contribute to changes in the number of pedestrian fatalities, including economic conditions, demographics, weather, fuel prices, vehicle miles traveled, and the amount of time people spend walking. Travel monitoring data published by the Federal Highway Administration (FHWA) indicate that motor vehicle travel on all roads and streets increased 3.3% (50.5 billion vehicle miles) for the first half of 2016 as compared with the same period in 2015.¹ A more recent contributing factor may be the rapidly growing use of smart phones to access wireless data while walking and driving, which can be a significant source of distraction for both pedestrians and motorists.

¹ FHWA. 2016. Traffic Volume Trends, June 2016.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

INTRODUCTION/BACKGROUND

Walking is the oldest, most basic, and arguably the most beneficial form of human transportation. Walking provides many important personal and societal benefits:

- **Health:** The Centers for Disease Control and Prevention notes that “walking is a great way to get the physical activity needed to obtain health benefits.”² Along with the important benefit of social engagement, walking can reduce the risk of obesity, heart disease, diabetes, and stroke.
- **Transportation:** The 2009 National Household Travel Survey found that 28 percent of trips are less than one mile in length, and 40 percent are less than two miles in length, representing 15-30 minute walks. Moving from a vehicle to the sidewalk can help reduce congestion.³
- **Economic:** AAA estimated in 2016 that the cost of operating a car for one year is approximately \$8,558,⁴ while walking is free.
- **Environmental:** According to the U.S. Environmental Protection Agency, motor vehicles are responsible for more than one-half of nitrogen oxide and toxic air pollutant emissions, and one-half of smog-forming volatile organic compounds.⁵ Walking, on the other hand, does not negatively impact the environment.
- **Transit:** Walking is intrinsically linked with public transit, which provides a vital alternative to travel by private automobile. Many transit users do not drive cars, including children, older adults, people with disabilities, and the economically disadvantaged. Safe access to transit, including appropriate design and placement of bus stops, is important.

The good news is walking is becoming an increasingly popular mode of transportation. A 2015 report by the Government Accountability Office (GAO) noted that nearly one million more people reported walking or biking to work in 2013 than in 2005.⁶

According to the U.S. Census Bureau's American Community Survey (ACS), in 2015 an estimated 4.1 million Americans reported walking to work in the past week. This number has risen about 4 percent since 2006, when an estimated 3.9 million people reported their primary method of commuting to work in the past week was walking. The percentage of Americans who walk to work may be higher than reported by the ACS, which asks respondents to choose their primary means of travel to work in the previous week. By allowing respondents to select only a single transportation mode, ACS undercounts trips in which more than one mode is used. In addition, ACS does not count trips other than traveling to work, which therefore omits walking trips associated with school, shopping, social engagement, and exercise.

2 Centers for Disease Control and Prevention, Division of Nutrition, Physical Activity, and Obesity. Walking: Why Walk? Why Not? <http://www.cdc.gov/physicalactivity/walking/> Accessed November 2, 2015.

3 Pedestrian and Bicycle Information Center. Facts about Walking and Bicycling. <http://www.pedbikeinfo.org/data/factsheet.cfm> Accessed November 2, 2015.

4 AAA. Your Driving Costs. <http://newsroom.aaa.com/auto/your-driving-costs/> Accessed February 18, 2017.

5 Environmental Protection Agency: Cars, Trucks, Buses, and “Nonroad” Equipment. http://www3.epa.gov/airquality/peg_caa/carstrucks.html Accessed November 2, 2015.

6 General Accounting Office. 2015. Pedestrians and Cyclists: Cities, States, and DOT Are Implementing Actions to Improve Safety. GAO Report No. GAO-16-66.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Unfortunately, pedestrians represent a growing percentage of total traffic fatalities and injuries. For example, pedestrian fatalities comprised 11 percent of all traffic deaths nationwide in 2006 and 2007, but 15 percent in 2014 and 2015, as detailed below.

Table 1 and Figures 1 through 5 provide analysis of the most recent pedestrian fatality data from the Fatality Analysis Reporting System (FARS) as published by the National Highway Traffic Safety Administration (NHTSA).⁷ Although the number of pedestrian fatalities has fluctuated within a relatively narrow range over the past 10 years (4,795 in 2006 to 5,376 in 2015), with no consistent pattern of annual increases or decreases, pedestrian fatalities accounted for a steadily increasing percentage of total traffic fatalities.

Table 1 Pedestrian Fatalities and Percent of Total Traffic Fatalities, 2006–2015

Year	Pedestrian Fatalities	Total Traffic Fatalities	Pedestrian Deaths as a Percent of Total Traffic Fatalities
2006	4,795	42,708	11%
2007	4,699	41,259	11%
2008	4,414	37,423	12%
2009	4,109	33,883	12%
2010	4,302	32,999	13%
2011	4,457	32,479	14%
2012	4,818	33,782	14%
2013	4,779	32,894	15%
2014	4,910	32,744	15%
2015	5,376	35,092	15%

Source: FARS

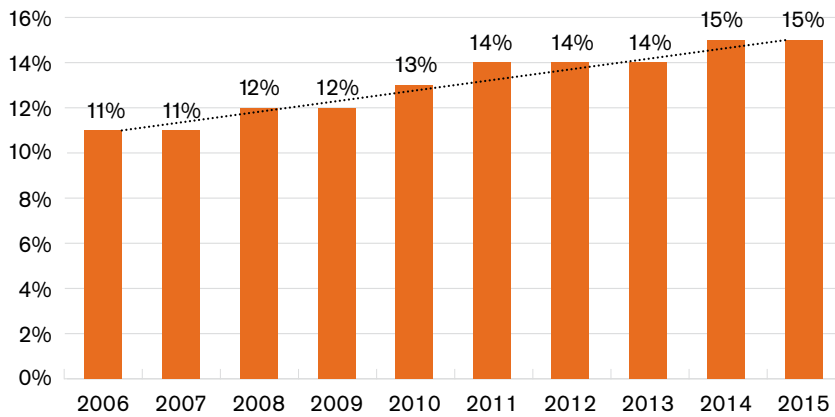
⁷ NHTSA. 2015. Traffic Safety Facts 2013 Data – Pedestrians. USDOT Publication No. DOT HS 812 124. <http://www.nrd.nhtsa.dot.gov/Pubs/812124.pdf> Accessed December 21, 2015.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

During this ten year period, pedestrian deaths as a percentage of total motor vehicle crash deaths increased from 11 percent to 15 percent (Figure 1). 2015 was the second consecutive year in which pedestrians accounted for 15 percent of total traffic fatalities. Prior to this, it had been 25 years (1990) since such a large proportion of traffic deaths involved pedestrians. In addition to the role that increased walking may play in the increasing number of pedestrian fatalities as a proportion of total traffic deaths, another factor may be the larger and more consistent declines in occupant fatalities, attributed in part to steady enhancements in vehicle crashworthiness and crash avoidance technology. By contrast, pedestrians remain just as susceptible to sustaining serious or fatal injuries when struck by a motor vehicle.

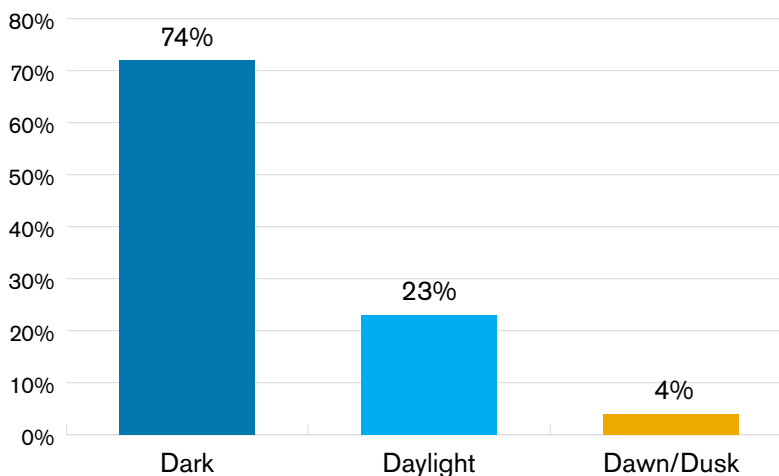
Figure 1 Pedestrian Deaths as a Percent of Total Motor Vehicle Deaths, 2006 - 2015



Source: FARS

Evening/late night hours pose an especially high risk for those traveling by foot. About half of the pedestrian fatalities in 2015 occurred between 6 p.m. and midnight, with 74 percent occurring after dark (Figure 2).

Figure 2 2015 Pedestrian Fatalities by Light Level



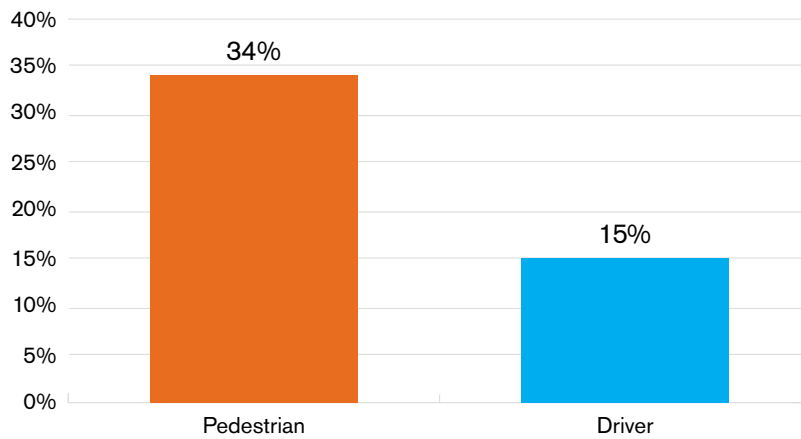
Source: FARS

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Alcohol involvement for the driver and/or pedestrian was reported in about half of traffic crashes that resulted in pedestrian fatalities in 2015. An estimated 34 percent of fatal pedestrian crashes involved a pedestrian with a Blood Alcohol Concentration (BAC) of 0.08 grams per deciliter (g/dL) or higher; an estimated 15 percent of drivers involved in these crashes had a BAC of 0.08 g/dL or higher (Figure 3). Even in cases where the pedestrian's alcohol consumption may not be identified by police as a contributing factor to the crash, a pedestrian with a BAC of .08 or higher clearly has diminished faculties that would impact decision-making and reaction time.

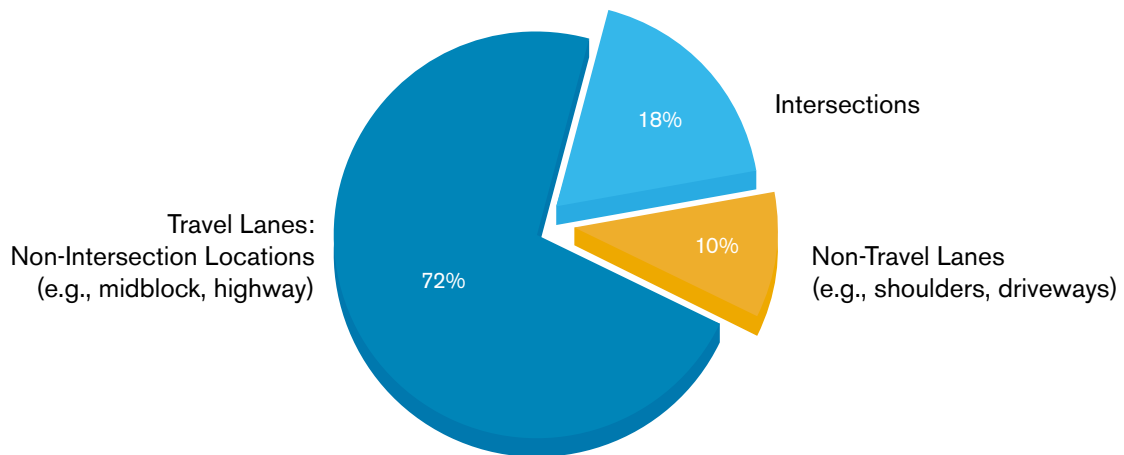
Figure 3 % of Pedestrians/Drivers with BACs > 0.08 g/dL in Fatal Pedestrian Crashes in 2015



Source: FARS

Fewer than 20 percent of pedestrian fatalities in 2015 occurred at intersections (Figure 4). The majority occurred either in travel lanes away from intersections (72 percent), or in locations outside of travel lanes, such as shoulders and driveways (10 percent).

Figure 4 2015 Pedestrian Deaths in Relation to Location Type



Source: FARS

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Table 2

Pedestrian Fatalities by State per 100,000 Population, 2015

Source: State Highway Safety Offices and U.S. Census Bureau

Table 2 shows the rate of pedestrian fatalities per 100,000 population by state for 2015 based on the number of pedestrian fatalities reported by the states and U.S. Census population data.

Delaware had the highest pedestrian fatality rate (3.38), while Idaho had the lowest (0.48).

Ten states (Arizona, California, Delaware, Florida, Louisiana, Mississippi, Nevada, New Mexico, South Carolina, and Texas) plus DC had pedestrian fatality rates per 100,000 population greater than 2.0. By comparison, seven states had fatality rates this high in 2014.

Sorted by State

State	Pedestrian Fatalities per 100K Population - 2015
Alabama	1.98
Alaska	1.63
Arizona	2.39
Arkansas	1.44
California	2.18
Colorado	1.17
Connecticut	1.34
Delaware	3.38
DC	2.23
Florida	3.12
Georgia	1.99
Hawaii	1.75
Idaho	0.48
Illinois	1.17
Indiana	1.37
Iowa	0.86
Kansas	1.06
Kentucky	1.51
Louisiana	2.33
Maine	1.43
Maryland	1.65
Massachusetts	1.06
Michigan	1.71
Minnesota	0.75
Mississippi	2.11
Missouri	1.71
Montana	1.36
Nebraska	1.00
Nevada	2.25
New Hampshire	0.75
New Jersey	1.93
New Mexico	2.49
New York	1.62
North Carolina	1.98
North Dakota	0.92
Ohio	1.02
Oklahoma	1.74
Oregon	1.84
Pennsylvania	1.20
Rhode Island	0.76
South Carolina	2.55
South Dakota	0.70
Tennessee	1.64
Texas	2.04
Utah	1.64
Vermont	0.80
Virginia	0.93
Washington	1.20
West Virginia	1.08
Wisconsin	0.94
Wyoming	0.85
U.S. Average	1.75

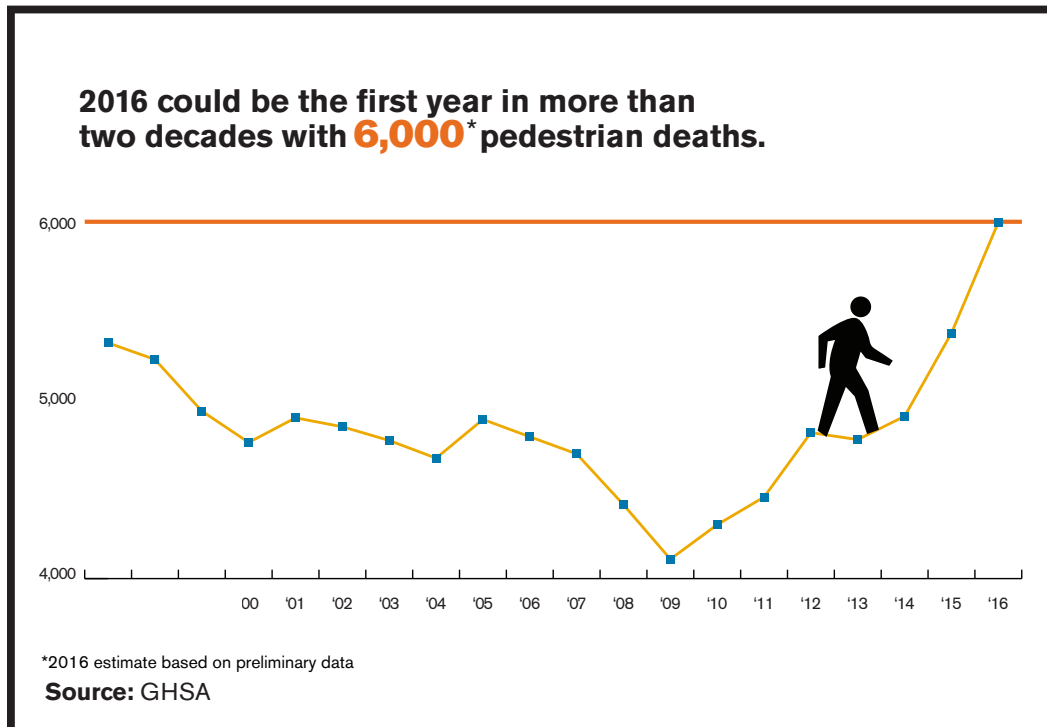
Sorted by Fatality Rate

State	Pedestrian Fatalities per 100K Population - 2015
Delaware	3.38
Florida	3.12
South Carolina	2.55
New Mexico	2.49
Arizona	2.39
Louisiana	2.33
Nevada	2.25
DC	2.23
California	2.18
Mississippi	2.11
Texas	2.04
Georgia	1.99
Alabama	1.98
North Carolina	1.98
New Jersey	1.93
Oregon	1.84
Hawaii	1.75
Oklahoma	1.74
Michigan	1.71
Missouri	1.71
Maryland	1.65
Tennessee	1.64
Utah	1.64
Alaska	1.63
New York	1.62
Kentucky	1.51
Arkansas	1.44
Maine	1.43
Indiana	1.37
Montana	1.36
Connecticut	1.34
Pennsylvania	1.20
Washington	1.20
Colorado	1.17
Illinois	1.17
West Virginia	1.08
Kansas	1.06
Massachusetts	1.06
Ohio	1.02
Nebraska	1.00
Wisconsin	0.94
Virginia	0.93
North Dakota	0.92
Iowa	0.86
Wyoming	0.85
Vermont	0.80
Rhode Island	0.76
Minnesota	0.75
New Hampshire	0.75
South Dakota	0.70
Idaho	0.48
U.S. Average	1.75

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

THE PRESENT STUDY



The growing number of pedestrian fatalities prompted GHSA to undertake the present study for the first half of 2016. Using the same methods as in four prior pedestrian fatality studies, State Highway Safety Offices (SHSOs) were asked to provide preliminary counts of pedestrian deaths that had occurred in the first half of 2016. This is intended to provide an early look at 2016 trends many months before FARS data are available. (Annual FARS data are typically released near the end of the following year.)

Note that the reported state data are preliminary and in some cases incomplete. All 50 states and DC provided information. Comparing these results with the first six months of 2015, as reported by SHSOs, pedestrian deaths increased by seven percent, as summarized in Table 3.

Tables 4 and 5 show the same numbers of pedestrian fatalities for the first six months of 2016, but are sorted by number of fatalities (Table 4) and the percent change from 2015 to 2016 (Table 5).

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Table 3

Pedestrian Fatalities by State for First Six Months of 2015 and 2016

Source: State Highway Safety Offices

State	Jan-June 2015	Jan-June 2016 (Preliminary)	% Change from 2015 to 2016	
			#	%
Alabama	39	56	17	43.6%
Alaska	3	6	3	100%
Arizona	86	97	11	12.8%
Arkansas	15	21	6	40%
California	405	359	-46	-11.4%
Colorado	30	32	2	6.7%
Connecticut	21	28	7	33.3%
Delaware	9	18	9	100%
DC	7	3	-4	-57.1%
Florida	277	301	24	8.7%
Georgia	90	109	19	21.1%
Hawaii	11	15	4	36.4%
Idaho	2	7	5	250%
Illinois	81	70	-11	-13.6%
Indiana	49	41	-8	-16.3%
Iowa	8	11	3	37.5%
Kansas	11	17	6	54.5%
Kentucky	36	37	1	2.8%
Louisiana	48	53	5	10.4%
Maine	5	5	0	0%
Maryland	45	39	-6	-13.3%
Massachusetts	35	38	3	8.6%
Michigan	62	59	-3	-4.8%
Minnesota	14	23	9	64.3%
Mississippi	33	22	-11	-33.3%
Missouri	43	36	-7	-16.3%
Montana	6	8	2	33.3%
Nebraska	9	7	-2	-22.2%
Nevada	25	31	6	24%
New Hampshire	2	8	6	300%
New Jersey	77	71	-6	-7.8%
New Mexico	21	26	5	23.8%
New York	137	127	-10	-7.3%
North Carolina	77	96	19	24.7%
North Dakota	1	2	1	100%
Ohio	54	55	1	1.9%
Oklahoma	32	35	3	9.4%
Oregon	42	29	-13	-31%
Pennsylvania	59	77	18	30.5%
Rhode Island	2	7	5	250%
South Carolina	57	66	9	15.8%
South Dakota	1	2	1	100%
Tennessee	43	46	3	7%
Texas	242	322	80	33.1%
Utah	21	19	-2	-9.5%
Vermont	0	4	4	-
Virginia	37	50	13	35.1%
Washington	40	36	-4	-10%
West Virginia	11	10	-1	-9.1%
Wisconsin	21	22	1	4.8%
Wyoming	4	1	-3	-75%
U.S. Total	2,486	2,660	+174	Average +7%

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Table 4 (left table)
Pedestrian Fatalities for First Six Months of 2016 Sorted by Number

Source: State Highway Safety Offices

Table 5 (right table)
Percent Change in Pedestrian Fatalities, First Half of 2016 vs. 2015

Source: State Highway Safety Offices

State	Jan-Jun 2015 Pedestrian Fatalities	State	Percentage Change from 2015 to 2016
California	359	Vermont	-
Texas	322	New Hampshire	300%
Florida	301	Idaho	250%
New York	127	Rhode Island	250%
Georgia	109	Alaska	100%
Arizona	97	Delaware	100%
North Carolina	96	North Dakota	100%
Pennsylvania	77	South Dakota	100%
New Jersey	71	Minnesota	64.3%
Illinois	70	Kansas	54.5%
South Carolina	66	Alabama	43.6%
Michigan	59	Arkansas	40%
Alabama	56	Iowa	37.5%
Ohio	55	Hawaii	36.4%
Louisiana	53	Virginia	35.1%
Virginia	50	Connecticut	33.3%
Tennessee	46	Montana	33.3%
Indiana	41	Texas	33.1%
Maryland	39	Pennsylvania	30.5%
Massachusetts	38	North Carolina	24.7%
Kentucky	37	Nevada	24%
Missouri	36	New Mexico	23.8%
Washington	36	Georgia	21.1%
Oklahoma	35	South Carolina	15.8%
Colorado	32	Arizona	12.8%
Nevada	31	Louisiana	10.4%
Oregon	29	Oklahoma	9.4%
Connecticut	28	Florida	8.7%
New Mexico	26	Massachusetts	8.6%
Minnesota	23	Tennessee	7%
Mississippi	22	Colorado	6.7%
Wisconsin	22	Wisconsin	4.8%
Arkansas	21	Kentucky	2.8%
Utah	19	Ohio	1.9%
Delaware	18	Maine	0%
Kansas	17	Michigan	-4.8%
Hawaii	15	New York	-7.3%
Iowa	11	New Jersey	-7.8%
West Virginia	10	West Virginia	-9.1%
Montana	8	Utah	-9.5%
New Hampshire	8	Washington	-10%
Idaho	7	California	-11.4%
Nebraska	7	Maryland	-13.3%
Rhode Island	7	Illinois	-13.6%
Alaska	6	Indiana	-16.3%
Maine	5	Missouri	-16.3%
Vermont	4	Nebraska	-22.2%
DC	3	Oregon	-31%
North Dakota	2	Mississippi	-33.3%
South Dakota	2	DC	-57.1%
Wyoming	1	Wyoming	-75%
U.S. Total	2,660	U.S. Average	+7%

Percentage Change Up

Percentage Change Down

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

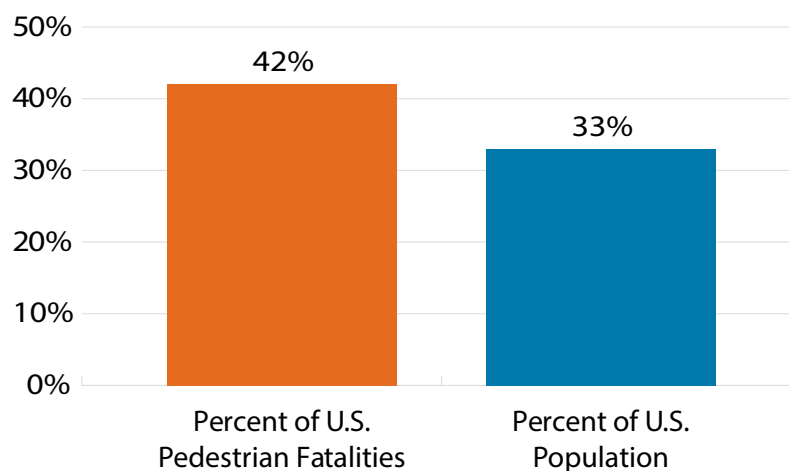
The actual increase in the number of U.S. pedestrian deaths in 2016 is expected to be more than the 7 percent reported in Table 2 because some deaths are likely not yet recorded in state traffic records systems.

- Compared to the preliminary fatality data provided by states for 2013 and 2014, the final FARS-reported number of overall pedestrian fatalities was 4.8% higher.
- This same situation occurred in prior GHSA Motorcycle Spotlight reports, which found a consistent pattern of underreporting, averaging about 4 percent in recent years.
- Compared to the preliminary number of pedestrian fatalities for January-June 2015 provided by states for last year's GHSA Pedestrian Spotlight report, the final number provided in the current survey for the same time period was 5 percent higher.

It is therefore reasonable and somewhat conservative to assume an undercount of 4 percent in the preliminary data provided by the states. Increasing the preliminary 2016 count by 4 percent would mean there were an estimated 2,766 pedestrian deaths in the first half of 2016 ($2,660 \times 1.04$), compared with 2,486 reported for the first half of 2015. This leads to the conclusion that **there has been an estimated 11 percent increase in the number of pedestrian fatalities between 2015 and 2016, based on analysis of preliminary data for the first half of 2016.**

As illustrated in Figure 5, **four states (California, Florida, Texas and New York) accounted for 42 percent of all pedestrian deaths during the first six months of 2016.** By comparison, these four states represent approximately 33 percent of the U.S. population according to the 2016 U.S. Census.

Figure 5 % of Pedestrian Fatalities versus Population (CA, FL, NY, TX)



Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Table 6

Pedestrian Fatalities by State per 100,000 Population, Jan. - June 2016

Source: State Highway Safety Offices and U.S. Census Bureau

Table 6 shows the rate of pedestrian fatalities per 100,000 population by state for the first six months of 2016.

Delaware had the highest rate (1.89), while Wyoming had the lowest (0.17).

Eleven states – (Alabama, Arizona, Delaware, Florida, Georgia, Hawaii, Louisiana, Nevada, New Mexico, South Carolina, and Texas) had pedestrian fatality rates of 1.0 or higher per 100,000 population.

Sorted by State

State	Pedestrian Fatalities per 100K Pop. - Jan-Jun 2016
Alabama	1.15
Alaska	0.81
Arizona	1.40
Arkansas	0.70
California	0.91
Colorado	0.58
Connecticut	0.78
Delaware	1.89
DC	0.44
Florida	1.46
Georgia	1.06
Hawaii	1.05
Idaho	0.42
Illinois	0.55
Indiana	0.62
Iowa	0.35
Kansas	0.58
Kentucky	0.83
Louisiana	1.13
Maine	0.38
Maryland	0.65
Massachusetts	0.56
Michigan	0.59
Minnesota	0.42
Mississippi	0.74
Missouri	0.59
Montana	0.77
Nebraska	0.37
Nevada	1.05
New Hampshire	0.60
New Jersey	0.79
New Mexico	1.25
New York	0.64
North Carolina	0.95
North Dakota	0.26
Ohio	0.47
Oklahoma	0.89
Oregon	0.71
Pennsylvania	0.60
Rhode Island	0.66
South Carolina	1.33
South Dakota	0.23
Tennessee	0.69
Texas	1.16
Utah	0.62
Vermont	0.64
Virginia	0.59
Washington	0.49
West Virginia	0.55
Wisconsin	0.38
Wyoming	0.17
U.S. Average	0.82

Sorted by Fatality Rate

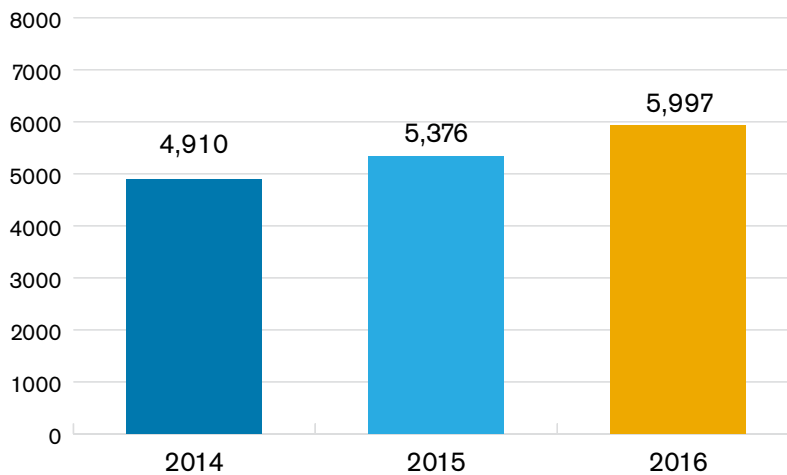
State	Pedestrian Fatalities per 100K Pop. - Jan-Jun 2016
Delaware	1.89
Florida	1.46
Arizona	1.40
South Carolina	1.33
New Mexico	1.25
Texas	1.16
Alabama	1.15
Louisiana	1.13
Georgia	1.06
Hawaii	1.05
Nevada	1.05
North Carolina	0.95
California	0.91
Oklahoma	0.89
Kentucky	0.83
Alaska	0.81
New Jersey	0.79
Connecticut	0.78
Montana	0.77
Mississippi	0.74
Oregon	0.71
Arkansas	0.70
Tennessee	0.69
Rhode Island	0.66
Maryland	0.65
New York	0.64
Vermont	0.64
Indiana	0.62
Utah	0.62
New Hampshire	0.60
Pennsylvania	0.60
Michigan	0.59
Missouri	0.59
Virginia	0.59
Colorado	0.58
Kansas	0.58
Massachusetts	0.56
Illinois	0.55
West Virginia	0.55
Washington	0.49
Ohio	0.47
DC	0.44
Idaho	0.42
Minnesota	0.42
Maine	0.38
Wisconsin	0.38
Nebraska	0.37
Iowa	0.35
North Dakota	0.26
South Dakota	0.23
Wyoming	0.17
U.S. Average	0.82

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

The number of U.S. pedestrian fatalities for 2016 was estimated based on preliminary data provided by SHSOs for the first six months of 2016, along with historic FARS data regarding the annual number of pedestrian deaths and proportions of pedestrian fatalities that occurred in the first and second half of the year. As shown in Figure 6, nearly 6,000 pedestrian fatalities occurred during in 2016, compared with 5,376 in 2015 and 4,910 in 2014.

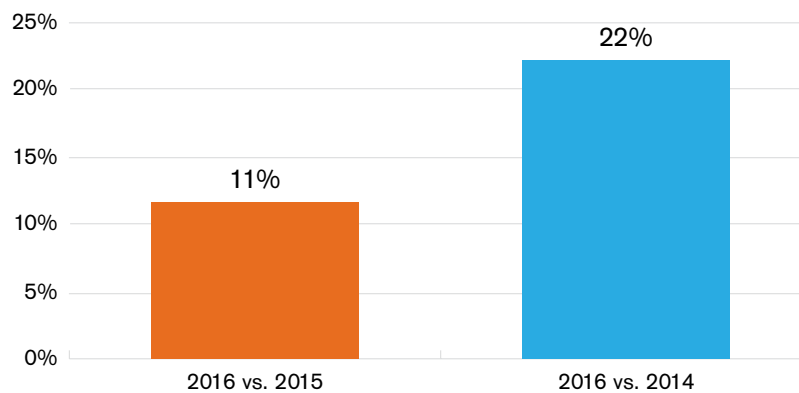
Figure 6 Pedestrian Fatalities, 2014-2016



* 2014 and 2015 – FARS
2016 – estimate based on SHSO preliminary data for 2016 and observed differences between FARS and SHSOs for 2014 and 2015

As shown in Figure 7, the estimated number of pedestrian fatalities in 2016 was 11% higher than 2015, and 22% higher than 2014.

Figure 7 Percent Increase in Number of Pedestrian Fatalities, 2016 vs. 2014 and 2015



* 2014 and 2015 – FARS
2016 – estimate based on SHSO preliminary data for 2016 and observed differences between FARS and SHSOs for 2014 and 2015

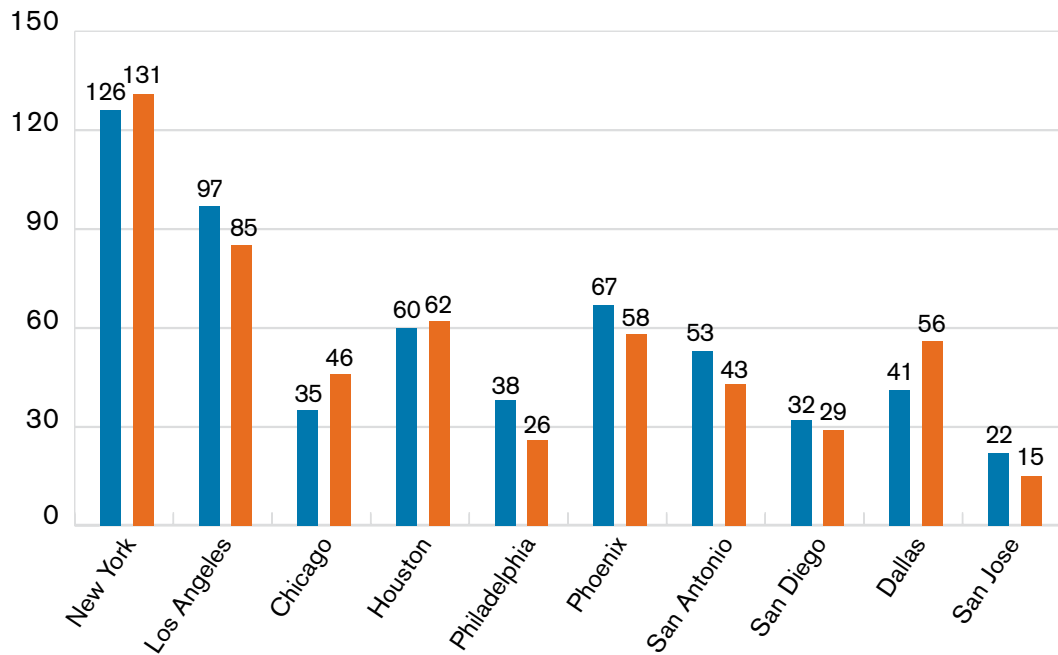
Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

WHAT ABOUT CITIES?

Because most pedestrian fatalities occur in urban areas, GHSA also examined changes in the number of pedestrian deaths for the ten U.S. cities with the largest populations. City-level data were only available from FARS, and thus are only provided through 2015. The total number of pedestrian fatalities decreased 3.5 percent, from 571 fatalities in 2014 to 551 in 2015. By comparison, the nationwide number of pedestrian fatalities increased by nearly 10 percent. From 2014 to 2015, the number of pedestrian fatalities declined in six cities and increased in four cities.

Figure 8 Number of Pedestrian Fatalities in 10 Largest U.S. Cities | ■ 2014 ■ 2015



Source: FARS

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

EFFORTS TO REDUCE PEDESTRIAN FATALITIES AND INJURIES

The frequency and severity of motor vehicle-pedestrian crashes can be reduced through a broad range of approaches, including targeted enforcement, engineering countermeasures, public education, and vehicle design changes. Some noteworthy examples are provided below.

Evidence-based strategies to **Increase Separation of Pedestrians from Motor Vehicles** include:

- Refuge islands
- Sidewalks and pedestrian overpasses/underpasses
- Provision of ample crossing time, and countdown pedestrian signals
- Pedestrian Hybrid Beacons
- New traffic signals where warranted

Evidence-based strategies to **Make Pedestrians More Visible to Drivers** include:

- Improved street lighting
- High-visibility crosswalks
- Rectangular rapid-flashing beacons (RRFBs) mounted to pedestrian crossing signs

Higher vehicle speeds are strongly associated with both a greater likelihood of pedestrian crashes and more serious and fatal pedestrian injuries. For this reason, efforts to reduce speeding on streets with pedestrian activity are a major focus of many municipal Vision Zero programs.⁸ Evidence-based **Engineering and Enforcement Measures to Reduce Speeds** include:

- Road diets that create space for other uses (e.g., bicycle lanes, sidewalks, turn lanes)
- Roundabouts in place of stop signs and traffic signals
- Traffic calming devices such as speed humps and curb extensions where appropriate
- Automated enforcement as a supplement to traditional enforcement

⁸ Vision Zero Network. 2017. Moving From Vision To Action: Fundamental Principles, Policies & Practices to Advance Vision Zero in the U.S. Available at: http://visionzeronetwork.org/wp-content/uploads/2017/01/MinimumElements_Final.pdf

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Public Education has always been a component of efforts to reduce pedestrian/motor vehicle collisions. Pedestrians and motorists need to know about the risk factors associated with sharing the road, but studies have indicated that many have limited understanding of right-of-way rules they are legally obligated to follow at crosswalks and other locations.^{9,10} Although standalone public education programs generally have not been effective in reducing pedestrian crashes, there is a role for public education in supporting speed management activities.

- NHTSA developed a speed campaign toolkit for public information and education outreach that provides marketing materials to support development of a speed management strategy.¹¹
- Public information campaigns that raise awareness of police crackdowns on impaired driving, distracted driving, and other offenses can increase the effectiveness of these enforcement activities and can promote adoption of practices (obeying the speed limit, using crosswalks, etc.) to avoid behaviors specifically linked to pedestrian/motor vehicle crashes.
- “Share the Road” and similarly branded campaigns can be used to increase driver awareness of pedestrians and encourage drivers to yield to pedestrians.¹²



9 Hatfield, J., Fernandes, R.F., Soames, J., & Smith, K. (2007). Misunderstanding of right-of-way rules at various pedestrian crossings: Observational study and survey, *Accident Analysis & Prevention*, 39, 833-842.

10 Mitman, M.F., & Ragland, D.R. (2007). Crosswalk confusion: More evidence why pedestrian and driver knowledge of the vehicle code should not be assumed. *Transportation Research Record*, 2002, 55-63. Washington, DC: National Research Council.

11 Speed Campaign Toolkit, <https://www.trafficsafetymarketing.gov/campaign-search?topic=162>

12 <http://safeny.ny.gov/media/beSmart-peds.htm>

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

FEDERAL SAFETY PROGRAMS AND RESOURCES

Federal government resources available to help states reduce pedestrian fatalities and serious injuries include the following:

- **Section 402.** The State and Community Highway Safety Grant Program, initially authorized by the Highway Safety Act of 1966, has been reauthorized and amended a number of times since then, most recently under the Fixing America's Surface Transportation (FAST) Act. The cornerstone of state behavioral highway safety strategies, this program provides the greatest flexibility for states to target resources to meet their most pressing needs. Eighteen states responding to GHSA's questionnaire for this report indicated they currently use Section 402 funds to support pedestrian safety programs.
- **Pedestrian and Bicycle Safety Focus States and Cities.** Since 2004, FHWA's Safety Office has been working aggressively to reduce pedestrian deaths by focusing extra resources on the cities and states with the highest pedestrian fatalities and/or fatality rates. Part of this effort has included *How to Develop a Pedestrian Safety Action Plan*, which helps state and local officials know where to begin to address pedestrian safety issues.
- **Section 403.** Under this program, NHTSA has conducted a series of education and enforcement efforts in pedestrian focus cities including demonstration projects in Louisville (KY) New York City and Philadelphia (PA). In addition, funds were awarded to the Safe States Alliance for a project on Injury Prevention for Pedestrians.
- **Section 405.** Beginning in Federal Fiscal Year 2017 (Oct. 1, 2016), approximately \$14 million will be awarded to states annually to decrease pedestrian and bicyclist crash fatalities. A state is eligible if its bicyclist and pedestrian fatalities exceed 15% of its total annual crash fatalities based on the most recent year of FARS data available. Funds may be used to train law enforcement officials on bicyclist/pedestrian traffic laws and for bicyclist/pedestrian safety enforcement and education campaigns promoting bicyclist/pedestrian traffic laws. The Federal share of the costs of activities funded using amounts from grants awarded under this subsection may not exceed 80 percent for each fiscal year for which a State receives a grant.
- **Highway Safety Improvement Program (HSIP).** The goal of this program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-state-owned public roads and roads on tribal lands. The HSIP requires a data-driven, strategic approach to improving highway safety that focuses on the application of proven engineering countermeasures to significantly reduce fatal and serious-injury crashes. Although MAP-21 allowed HSIP funds to be spent on behavioral safety programs – and several states leveraged this opportunity – this option was eliminated under the FAST Act.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

WHAT STATES ARE DOING

SHSOs are committed to improving the safety of all road users by focusing on behavioral issues that lead to traffic crashes such as impaired, distracted, and aggressive driving; seat belt use; child passenger, pedestrian, bicyclist and motorcyclist safety; and teen and older driver issues. SHSOs are typically tasked with addressing behavioral safety issues via education and enforcement. SHSOs administer federal and state highway safety grants (including Sections 402 and 405 as outlined above) and produce annual state Highway Safety Plans (HSPs) as required by the U.S. Department of Transportation. In some states, SHSOs are responsible for traffic records coordination and Safe Routes to School programs. SHSOs provided the following examples of strategies employed to reduce pedestrian fatalities and serious injuries:

- Targeted law enforcement efforts
- Public information campaigns
- Educational outreach in high-risk areas
- Data analysis
- Identifying high-risk zones
- Pedestrian safety assessments/road safety audits
- Adoption of Complete Streets policies, which direct transportation planners and engineers to routinely design and operate the entire right of way to enable safe access for all users, regardless of age, ability, or mode of transportation.
- Engineering measures, including some that target high-risk pedestrian crossing locations
- Strategic partnerships with universities and other organizations/agencies
- Inclusion of pedestrian safety action items in Strategic Highway Safety Plans (SHSPs)

State-specific examples of pedestrian safety initiatives are described in detail below.



Arkansas

The Arkansas Highway Safety Office is working with multiple agencies on the Arkansas Strategic Highway Safety Plan (SHSP) to address the increasing number of pedestrian and bicyclist fatalities.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



California

Behavioral measures to address pedestrian safety in California include:

- Establishing September as Pedestrian Safety Month;
- Funding the printing and distribution of culturally specific educational materials;
- Funding and distributing pedestrian safety equipment, including reflective arm and leg bands, and crossing guard kits; and
- Collaborating with community-based organizations, law enforcement, advocates, hospitals, and schools.

Law enforcement efforts target primary collision factors, crosswalk stings, and distracted driving operations at locations with high number of pedestrian-related collisions.

On the engineering front, the state also offers free Complete Streets safety assessments for communities with high numbers of pedestrian collisions.



Colorado

The state has invested approximately \$460,000 in pedestrian safety enforcement, education, and public relations initiatives.



Connecticut

A rash of holiday crashes prompted Connecticut to produce TV and radio spots that ran in December 2016 to bring awareness to pedestrian safety. The spot featured Connecticut State Police urging drivers to look out for pedestrians. Road Safety Audits are conducted statewide to identify problem areas for pedestrians. In response, rumble strips are being installed on many roadways, and more major projects such as road diets are being launched in some municipalities.



Delaware

Delaware established a public/private Pedestrian Safety Council by order of the Governor that is tasked with identifying pedestrian safety countermeasures.

The state also provides overtime for law enforcement officers to perform outreach and enforcement in high crash areas where pedestrians are not crossing safely. The Office of Highway Safety also utilizes social media, particularly Facebook, to run advertisements promoting pedestrian safety.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Delaware is also employing the following engineering strategies:

- Improving infrastructure (e.g., sidewalks, crosswalks, lighting, transit facilities) to reduce pedestrian exposure and potential pedestrian/vehicle conflicts, and increase pedestrian visibility and awareness;
- Conducting pedestrian safety audits at high-crash locations;
- Installing effective countermeasures to improve pedestrian safety at high crash locations and considering pedestrians when making roadway improvements; and
- Performing before/after studies to evaluate and identify the most effective pedestrian safety treatments

DC

District efforts include conducting location-based and regional outreach and enforcement; deploying of HAWK and Rapid Flash Beacons and other engineering treatments; converting high-use pedestrian streets to be more inclusive as well as installing traffic calming in other areas; and reviewing intersection data to improve pedestrian safety at critical locations.

Florida

Florida's statewide pedestrian and bicycle safety campaign (administered by the highway safety office which is located within the Florida Department of Transportation) focuses on areas with the highest number of fatal and serious injury pedestrian and bicycle crashes. Even in areas that are not prioritized, engineering, education, enforcement, and emergency response are mobilized to address pedestrian safety.

Florida is completely rethinking the way roads are designed and built through a Complete Streets approach, which means that the entire transportation system is being planned, designed and built to ensure the safety, mobility, and accessibility of all users.

Ongoing operational improvements include the addition of high visibility crosswalks and pedestrian countdown signals, signal timing/leading pedestrian intervals, advanced warning signs, speed reduction, and improved intersection lighting. The state also provides training to state and local partners.

The Florida DOT (FDOT) established strategic alliances with state and local partners, stakeholders, and safety advocates forming the state's Pedestrian and Bicycle Safety Coalition. Campaigns are geared towards increasing awareness and compliance with traffic laws; safe crossing practices; understanding of pedestrian and

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

bicycle related signs, signals, and pavement markings; decreasing pedestrian distractions; and reducing the number of impaired, speeding and distracted motorists impacting pedestrians and bicyclists.

To improve emergency response, the state provides ongoing training to first responders on the most common pedestrian and bicycle crash injury types so they arrive on scene prepared to provide the appropriate level of care.

Finally, Florida established an evidence-based high visibility enforcement initiative with local law enforcement agencies to improve pedestrian and bicycle safety. The effort began four years ago with 13 agencies and has since grown to 60.

Georgia



Georgia launched a SEE & BE SEEN campaign encouraging drivers to look out for people walking and pedestrians to cross the road where they can best be seen.

Section 402 funds are used to provide pedestrian safety enforcement grants to police agencies.

Engineering efforts undertaken by the Georgia Department of Transportation (GDOT) include:

- High risk bus stop corridor inventories to identify opportunities for improvement;
- Pedestrian-focused road safety audits;
- An updated Pedestrian and Streetscape Guide that includes clear guidelines for placement and protection of crosswalks;
- Analysis of hospital-based pedestrian injury data to target high risk areas;
- Review of infrastructure projects at the concept level to ensure that all are in line with GDOT's Complete Streets policy and will appropriately accommodate pedestrians; and
- Developing guidance and training employees to include pedestrian safety improvements in roadway maintenance and design projects.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



Hawaii

The Hawaii DOT provides grant funding for the Honolulu and Kauai Police Departments to conduct pedestrian enforcement. It also supports educational projects such as Walk Wise Hawaii. WalkWise Hawaii (WWH) is a pedestrian safety partnership between the Department of Transportation (HDOT), the City and County of Honolulu Department of Transportation Services, the Honolulu Police Department (HPD), and TLC PR. Targeted primarily to children and seniors, WWH educates the public about good pedestrian behavior and the need for drivers to be aware of people on foot. The message is conveyed in multiple languages including Korean, Chinese, Spanish, Vietnamese, Samoan, Hawaiian, Japanese and Filipino (Tagalog and Ilocano).



Idaho

The City of Rexburg has banned texting or using a cell phone while crossing a street. Violation of the ordinance carries a \$50 fine for the first offense and \$150 fine for each subsequent offense.



Illinois

In 2013, Illinois completed a statewide Pedestrian Corridor Analysis to identify corridors that had a high number of pedestrian fatalities and serious injury crashes. Since then, projects have been completed to improve pedestrian safety at the identified locations. In addition, pedestrian safety is an emphasis area in the Illinois SHSP, which calls for the implementation of engineering, enforcement, and education strategies to reduce pedestrian/motor vehicle crashes.



Indiana

The City of Bloomington promotes behavioral change through educational efforts, particularly on the campus of Indiana University. Grant funds are used by law enforcement agencies to enforce traffic laws by both pedestrians and motorists. Much of the enforcement takes place in school zones prior to and following school hours. The Alliance for Health Promotion has worked on engineering efforts in and around Indianapolis, including making sure pedestrian signals are working properly and adding pedestrian safety zones throughout the city.



Kentucky

Section 403 grant funds were used to develop the *Walk Safe Louisville* program which focuses on children up to 15 years of age and the elderly. Additionally, enforcement corridors were established based on city data. Statewide, Kentucky has a bicycle and pedestrian assessment process that is included in all roadway rehabilitation and new design projects.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



Louisiana

Louisiana adopted and is now in the process of implementing a Complete Streets policy. In response to Baton Rouge's and New Orleans' designations as pedestrian focus cities by FHWA, the state developed Pedestrian and Bicyclist Safety Action Plans and formed Bike and Pedestrian Emphasis Areas Teams as part of its SHSP. The Department of Transportation and Development also introduced a Safe Routes to Public Places (SRTPP) program to fund the construction of bike and pedestrian facilities within close proximity to libraries, parks, playgrounds, and other public places. Louisiana provides funding to four MPOs for bicycle and pedestrian safety programs, which include planning, program implementation, and public information/education.



Maine

Maine funds media to educate pedestrians and motorists and conducts local level infrastructure audits in high-crash locations.



Maryland

Region/city-specific pedestrian safety programs include: *Street Smart* in Baltimore, *Walk Smart* in Ocean City, and *Look Up, Look Out* in Annapolis and the Baltimore area. Maryland formed a Pedestrian & Bicycle Emphasis Area Team (PBEAT) as part of its SHSP. PBEAT is taking the lead in establishing a coordinated approach across the state that brings together stakeholders from the four E's of traffic safety to take a data-driven approach that uses proven countermeasures and shared resources to reduce pedestrian crashes, injuries, and fatalities.

A law enforcement partner conducts quarterly pedestrian law enforcement trainings open to all officers across the state. Many law enforcement partners support pedestrian safety high visibility enforcement waves in the spring and fall, and approximately 100 officers were trained in 2016.



Massachusetts

Massachusetts's pedestrian and bicycle enforcement grant program provides funds to bolster police department involvement in addressing pedestrian and bicycle issues. The program awarded \$279,000 to 71 local law enforcement agencies for 2016. As of June 1, 2016, the program had resulted in 794 patrol hours leading to 1,754 traffic stops, the issuance of 1,085 citations, and 12 arrests.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



Michigan

Many municipalities across Michigan are using public education and share the road messaging to promote pedestrian safety. Robust information sharing is occurring between state and local agencies working on a Pedestrian and Bicycle Action Team.



Minnesota

Minnesota is conducting a data-driven pedestrian education campaign that focuses on both drivers and pedestrians about pedestrian safety, while local communities and schools are implementing their own education initiatives, such as St. Paul's *Stop for Me*, a sustained education and enforcement program. The *Share the Road* campaign is being revamped to be more current, and a campaign is being developed to address incidental pedestrians, who were killed after starting their trip via another mode of transportation. In collaboration with Minnesota DOT and the Department of Health, Minnesota's bicycle alliance, BikeMN, developed a pedestrian safety education curriculum for elementary students called *Walk! Bike! Fun!* that has trained more than 448 instructors and reached an estimated 43,456 students across the state in just three years.

Engineering countermeasures are used to increase pedestrian safety, including raised crosswalks, curb extensions, signing, leading pedestrian intervals, rectangular rapid flashing and pedestrian hybrid beacons, road diets, lighting, and other geometric and traffic-related changes.



Mississippi

Educational programs are offered through the state DOT. For details, visit http://mdot.ms.gov/portal/bike_ped.aspx.



Missouri

Pedestrian safety is an emphasis area in Missouri's SHSP. The state is implementing public awareness strategies to address pedestrian safety in and around crosswalks as well as safety messaging when exiting a disabled vehicle. Engineering efforts include utilizing Complete Streets design and enhancing intersection and roadway design to be more pedestrian friendly through the introduction of measures such as refuge islands and traffic calming designs. The state is emphasizing design with pedestrians in mind to reduce conflict points and improve safety at crossings.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



Montana

Montana's Comprehensive Highway Safety Plan requires that the DOT annually review fatalities on high-risk roads and fatalities and serious injuries per capita among older drivers and pedestrians to determine what action is needed. The Roadway Departure and Intersection Crashes Emphasis Area includes a strategy to reduce and mitigate intersection crashes through data-driven problem identification and best practices. Countermeasures employed by DOT include installing: turn lanes; signal phasing/timing; flashing yellow arrows; retro-reflective back-plates on signals; sight distance improvements; roundabouts or other intersection controls; and pedestrian improvements such as midblock crossings, signal coordination and timing, and enhanced lighting.

During any construction project, pedestrian issues are reviewed to determine the best practice for the specific project. In addition, an update to the state's Americans with Disabilities Act (ADA) Transition Plan was completed in December 2016.



Nebraska

In Nebraska, selected urban intersections are routinely reviewed to determine locations where countdown signals may be needed. Pedestrian crossing signs and pavement markings are identified for needed upgrades and maintenance.



Nevada

The two most populous counties have adopted Complete Streets policies. Improvements such as dedicated bus and bike lanes and shelter setbacks are being installed. This adds a layer of buffered protection for those on sidewalks. Pedestrian countdown signals are standard, and at several locations in Clark County (Las Vegas), pedestrian lead-interval signals are being tested. Flashing yellow lights from solid red turn arrows are being used at intersections to protect pedestrians from right turning vehicles. Nevada has an aggressive Road Safety Audit plan, which specifically calls for pedestrians to be considered when evaluating streets. In at least two instances, the audit has led to reduced speed limits and in many cases, pedestrian improvements such as enhanced lighting at crosswalks. Pedestrian safety is one of the six critical emphasis areas under the state's SHSP, and in Clark County there is a separate Southern Nevada Pedestrian Education and Legislation Task Force, which established Pedestrian Safety Zones.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



New Jersey

The state is implementing Complete Streets policies, such as including pedestrian safety in driver education; educating pedestrians about safe walking responsibilities; implementing road diets; improving traffic signs, pavement markings and overall lighting; using traffic calming to change driver behavior; and in some cases installing HAWK signals that are pedestrian activated to help ensure a safe crossing.

Street Smart NJ is a public education, awareness, and behavioral change pedestrian safety campaign in which more than 40 communities have participated. It uses outdoor, transit, and online advertising; grassroots public awareness; and law enforcement to address pedestrian safety. The “Check your vital signs” slogan pairs street signs with a heart rate monitor to remind motorists and pedestrians that lives are on the line. Police agencies serving the participating communities are employing best practices in pedestrian enforcement with traffic safety officers. Engaging and educating, rather than simply issuing citations, is their focus. All officers have been trained to deploy the pedestrian decoy or Cops in the Crosswalk program, in which officers monitor driver, pedestrian and bicyclist behavior at selected crossings for periods of several days over an extended period of time. Observing officers note violations and call ahead to waiting officers, who stop and warn or ticket all offenders regardless of mode. Officers use the stops to educate drivers, pedestrians, and bicyclists about their duties and responsibilities under the law.



New Mexico

There are programs, campaigns, and planning efforts across New Mexico (*Look For Me*, Safe Routes to School, Safety Town, etc.), but a lack of nonprofits that focus on pedestrian safety hinders impact.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



New York City has its own pedestrian safety initiative known as Vision Zero, which uses a multi-faceted approach to bring together government, advocacy and private sector actors, as well as fully engaging the public to become part of the solution. Vision Zero programs combine strong enforcement and better roadway engineering with improved emergency response and high visibility behavior campaigns to discourage dangerous behavior on roads and streets. Key initiatives include the following:

- Increase enforcement against dangerous moving violations, including speeding, failing to yield to pedestrians, signal violations, improper turns/disobeying signage, and phoning/texting while driving
- Purchase advanced speed detection equipment (LIDAR guns), upgrade speed detection technology available to precincts and train additional personnel
- Convene monthly meetings of the DOT Traffic Division and the NYPD Transportation Bureau to review traffic safety performance and set strategy for improvement
- Implement safety engineering improvements at intersections and corridors
- Create “slow zones” on arterial streets and in neighborhood settings with frequent pedestrian crossings

New York

In June 2016, New York announced a \$110 million, five-year Pedestrian Safety Action Plan that takes a 3E (engineering, enforcement, and education) approach to addressing pedestrian safety across upstate New York and on Long Island. It identifies 20 focus communities which accounted for nearly 50% of all pedestrian crashes between 2009 and 2013. The plan calls for a variety of low-cost engineering improvements to be undertaken by the NYSDOT, enforcement strategies to be organized by the Governor’s Traffic Safety Committee (GTSC) and educational and public information initiatives to be spearheaded by the NYS Department of Health (NYSDOH) including:

- NYSDOT will implement crosswalk improvements at unsignalized intersections and midblock locations consisting of pavement markings and signage, and will improve signalized intersections with high-visibility crosswalk markings and signals enhanced with extended crossing times, countdown timers, and leading pedestrian intervals.
- GTSC provided training classes for law enforcement across the state on pedestrian safety issues. GTSC also organized New York’s first pedestrian enforcement mobilization in conjunction with the release of the Pedestrian Safety Action Plan.
- NYSDOH will continue to implement public information and education strategies including the development and maintenance of outreach materials, conducting statewide and targeted awareness activities, and providing technical support to communities in order to develop local educational initiatives.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



North Carolina

North Carolina funds the *Watch For Me NC* program, which offers training, resources, media, and technical assistance to local agencies to support pedestrian and bicycle law enforcement, community engagement/outreach, and policy change. More than 65 police agencies have participated in the data-driven, evaluated program since its inception in 2012. The Outer Banks Bicycle and Pedestrian Safety Coalition, for example, uses program concepts and principles to address vulnerable road user issues with residents and visitors.

There is a joint partnership between NCDOT and NC Division of Public Health to operate a statewide Active Routes to School project, with ten Regional Coordinators encouraging active travel to school. As part of that work, they use NCDOT-developed *Let's Go NC! Walking and Bicycling Skills* curriculum (based on the NHTSA curriculum) and provide implementation training to teachers and after-school programs.

The Executive Committee for Highway Safety (ECHS) adopted *Vision Zero* in 2015 as the guiding principal for North Carolina's traffic safety efforts and committed to driving down traffic fatalities by 50 percent by 2030, with the ultimate goal of zero traffic fatalities. *Vision Zero* was publicly launched in 2016, with pedestrian safety as a key component.

Engineering countermeasures include: marked crosswalks (traditional and high visibility), advanced vehicle yield lines, warning signs, pedestrian refuge islands, curb ramp adjustments, countdown pedestrian heads at signalized locations, lead pedestrian intervals, pedestrian hybrid beacons (HAWK), rectangular rapid flashing beacons (RRFB), standard flasher at crosswalk, yield here for pedestrian signing, pavement marking enhancements, sidewalks, and pedestrian corridor lighting, tunnels, sight distance improvements, and Pedestrian Road Safety Reviews.

North Dakota



North Dakota encourages the use of countdown timers and advanced walk intervals at identified urban intersections with high pedestrian traffic. Additionally, Safe Routes to School funds are used for school zone enforcement, education, and outreach activities.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



Ohio

The Ohio Traffic Safety Office awards funds to countywide Safe Community programs that have identified pedestrian problem areas and proven behavioral countermeasures. Ohio DOT has a statewide bicycle and pedestrian planning program that supports public and private sector efforts to encourage, educate, and plan and design pedestrian and bicycle facilities. A statewide Active Transportation Committee has been formed to review bicycle and pedestrian crashes and develop an action plan that will be incorporated into the SHSP. An active Safe Routes to School program helps local communities develop and implement projects to encourage and enable children to walk and bike to school safely.



Oklahoma

Oklahoma City and Tulsa implemented new multi-modal engineering solutions that include improved crosswalk markings, signals/signs, sidewalks, and dedicated lanes for bicyclists that also provide additional protection to pedestrians. Multi-modal use models are being incorporated into future engineering plans for these metropolitan areas, and agencies are sharing plans with surrounding cities. Many high risk locations (even in some rural areas) are targeted for assessment and implementation of engineering improvements in areas of high pedestrian traffic. Conversations and discussions continue among multiple agencies regarding what can be done in both metropolitan and rural areas to improve pedestrian safety, including more focused enforcement of traffic laws for both pedestrians and motorists.



Oregon

In 2015, Oregon launched a Facebook campaign that includes a series of pedestrian safety ads targeted at male and female drivers 18-54 years of age and pedestrians 18 years of age and older, asking drivers and pedestrians to watch out for each other. The state also created a 30-second PSA to foster understanding between drivers and pedestrians. It ran in large movie theater complexes on 247 screens from November through January, the months when Oregon experiences increased pedestrian crashes. For 2016, Oregon produced and distributed a 30-second PSA directed to pedestrians promoting safe crossing at intersections. In the Portland Metro area, regional traffic safety partners produced a poster campaign, *Every intersection is a Crosswalk*, that was posted on buses. A 30-second video was produced by the Metropolitan Planning Organization and posted on ODOT YouTube and partnering agencies' sites. The state has printed and distributed yard signs and bookmarks calling on drivers to watch for pedestrians.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Pedestrian safety enforcement operation overtime mini-grants were awarded to 24 local law enforcement agencies to conduct operations statewide from April through September, 2016. Non-funded agencies also conducted their own operations throughout the year.

In 2014, ODOT developed a Statewide Pedestrian and Bicycle Safety Implementation Plan. Oregon did a crash and risk-based analysis with practitioners statewide to develop a list of systemic mitigation measures being implemented with HSIP funds. ODOT is increasing its installation of rapid flashing and pedestrian hybrid beacons at intersections on state highways and made it common practice to use advanced stop bars at signalized intersections as a pedestrian/bike safety measure.



Pennsylvania

Pennsylvania's efforts include high-visibility enforcement operations, educational outreach efforts, and pedestrian-focused training for engineers.



Rhode Island

Rhode Island has taken the following steps to address pedestrian safety:

- Installing visible and consistent crosswalk pavement markings and wheelchair ramps at intersections and midblock locations with high pedestrian activity.
- Installing or retrofitting audible pedestrian signals at signalized locations.
- Updating pedestrian timing and taking into account locations with high volumes of older pedestrians.
- Working with local municipalities to develop pedestrian/vulnerable user safety action plans
- Installing road diets, curb extension, and raised crossings, advance yield/stop lines at some midblock crossing locations, pedestrian hybrids or rectangular rapid flashing beacons at some midblock crossings.
- Continuing to sign for parking restrictions at crossing locations to improve visibility/sightlines for pedestrians.
- Providing ADA sidewalks where feasible.
- Restricting right turn on red at some intersections with pedestrian crossings.
- Funding enforcement efforts and organizing training for all law enforcement.
- Providing funding to create a media campaign.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA



South Carolina

During the past five years, the state has implemented public information and education efforts, with a particular focus on radio and outdoor advertising. The South Carolina Highway Patrol has implemented a pedestrian safety program known as S.E.E. (Stop - Educate - Enforce), which involves law enforcement making contact with pedestrians walking in the roadway to educate them about pedestrian laws and fatality trends and initiate enforcement activity if appropriate. The project has also included printing and distribution of educational materials used in conjunction with the pedestrian contacts, as well as the distribution of reflective wristbands to increase pedestrian conspicuity.



Tennessee

Last year, Tennessee was one of three states selected for a demonstration grant program. The \$500,000 award for the Statewide Pedestrian and Bicyclist Focus Education and Enforcement Effort will target certain cities over the grant period based upon pedestrian and bicycle crash data. The Highway Safety Office is partnering with WalkBike Nashville and Collegedale Police Department (Chattanooga) for the first year of the program.

On the engineering side, Tennessee DOT (TDOT) works with local communities to fund the construction of sidewalks, ADA ramps, crosswalks, pedestrian signals, curb bulb-outs, mid-block crossings, road diets through the Transportation Alternatives and Multimodal Access Grant programs. Additionally, TDOT has requested FHWA approval to utilize HSIP funds for improvements at identified high pedestrian crash corridors and intersections. If approved, TDOT will conduct road safety audits at these locations to identify the appropriate safety countermeasures.



Texas

Pedestrian safety campaign materials have been developed (TV PSA and a poster) through an ad agency.



Utah

Utah is addressing behavior through social and paid media. Using a program called *Heads Up*, Utah has produced several videos and is planning a media event to promote motorist/pedestrian awareness. Utah sponsors pedestrian-specific, evidence-based enforcement shifts, which require law enforcement to identify an existing problem area then devise a plan to enforce pedestrian/motor vehicle laws. Many of the shifts involve decoys as needed. Pedestrian decoys are a way to bring attention to problems with motorists not yielding to pedestrians. Police officers in highly

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

visible civilian clothes pose as pedestrians crossing the street while other hidden officers observe their attempts. If a motorist violates safe crossing rules by failing to yield to the pedestrian, the hidden officers pursue and apprehend violators. Because it is such a highly visible approach, it often garners media interest and publicizes the need for motorists to be aware of pedestrians.

Engineering measures are being implemented through a partnership with the Utah DOT. Also, Utah published a Pedestrian Safety Action Plan that includes specific goals for data, driver education, engineering, law enforcement, communications, outreach, and policy.

Vermont



The state provides educational materials, such as a Share the Road brochure. Through the Safe Routes to School program, training about safe walking is taught to elementary and middle school students. Vermont has worked with the police academy to incorporate information about the state's bicycle and pedestrian laws into its training. Many engineering measures are in place to support pedestrian safety.

Virginia



Arlington, Fairfax, and Prince William Counties and the cities of Richmond, Roanoke, and Salem each receive highway safety funding to raise awareness of and enforce pedestrian safety laws. Virginia's Street Smart Regional Pedestrian and Bicycle Safety Program focuses on promoting pedestrian and bicyclist safety and includes similar strategic enforcement engagements around the metropolitan Washington region. Drive Smart's Bicycle Pedestrian Awareness Week (BPAW) has been a part of the grant project for the past couple of years. The BPAW is an educational awareness program that encourages drivers to look out for the bicyclists and pedestrians.

Washington



In 2015, the Washington State Legislature passed a law to create a pedestrian fatality and serious injury review panel charged with using data to identify pedestrian crash patterns and develop recommendations for reducing pedestrian deaths and fatalities that *Target Zero* partners can address.

Washington State DOT awarded \$30.2 million to 73 pedestrian and bicycle and Safe Routes to School projects for the 2015–2017 biennium, an all-time high for walking and biking safety investments in the state. WSDOT plans to contribute another \$37.5 million in the 2017–2019 biennium for these programs.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

The Washington Traffic Safety Commission (WTSC) provides direct funding to elementary and middle schools to support operating supplies and clothing for safety patrols and school crossing guard programs. In the 2015-16 school year, more than 70 schools received more than \$61,000 to increase support for school zone safety. Additionally, WTSC supports efforts to encourage enforcement of traffic laws in school zones. More than 20 agencies have received funding since July 1, 2016 for equipment purchases in exchange for their school zone enforcement efforts.

Wisconsin



Targeted, high visibility pedestrian safety enforcement efforts are ongoing in various cities. The goal is to educate the public (both motorists and pedestrians) about pedestrian safety and provide highly visible overtime enforcement to deter violations.

The *Share and Be Aware* program deploys ambassadors across the state to provide education and training to increase safety and knowledge for pedestrians and motorists.

Wisconsin DOT has funded the development of pedestrian safety ads that were placed on Madison Metro buses to inform the public about how pedestrians and motorists can safely interact with each other. The concept will also be used in posters and through social media.

The state is also designing for pedestrian safety by providing two-day courses for engineers and planners. The course covers crosswalks, intersections concerns and improvements, road diets, and a variety of pedestrian safety measures.

Pedestrian/Bicycle Law Enforcement Training is a two-day course offered to approximately 20 officers each spring. This course includes pedestrian/bicycle statutes, common crash causation factors, and hands-on training on bicyclist and crosswalk enforcement.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

DISCUSSION

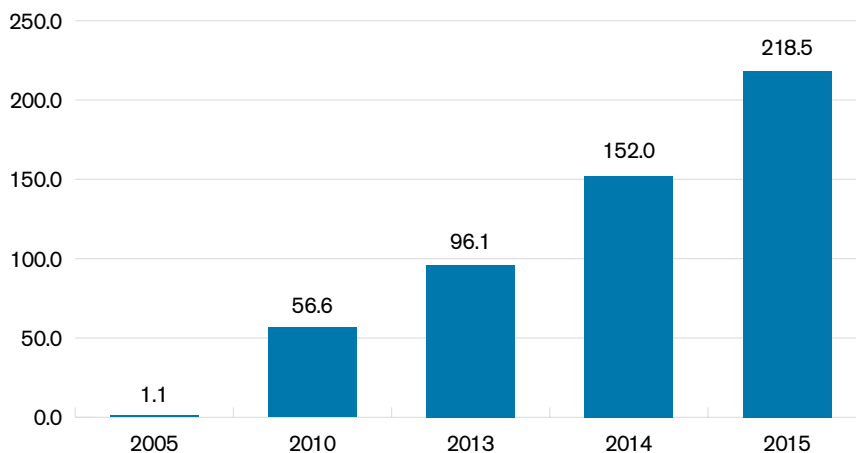
Pedestrian fatalities in the U.S. are rising at an alarming and unprecedented rate:

- The number of pedestrian fatalities increased 25 percent from 2010 to 2015, while at the same time, total traffic deaths increased by approximately six percent.
- The most recent analysis based on preliminary data for the first six months of 2016 projects an 11 percent rise in the number of pedestrian fatalities nationwide, following a nearly 10 percent increase in 2015.
- 2016 could be the first year in more than two decades with 6,000 or more pedestrian deaths.
- In addition to the total number of pedestrian fatalities increasing during the first six months of 2016, more than twice as many states had increases (34) than had decreases (15, plus DC) compared with 2015.

Many factors may contribute to changes in the number of pedestrian fatalities, including economic conditions, demographics, weather, fuel prices, and the amount of motor vehicle travel and time people spend walking. Travel monitoring data published by FHWA indicates that motor vehicle travel on all roads and streets increased by 3.3% (50.5 billion vehicle miles) for the first half of 2016 as compared with the same period in 2015.¹³ The year-to-date travel estimate was is the highest number of vehicle miles traveled ever reported by FHWA.

A more recent factor contributing to the increase in pedestrian fatalities may be the growing use of smart phones by all road users, which can be a significant source of distraction for both drivers and pedestrians. According to The Wireless Association, the reported number of annual multimedia messages increased by 45 percent from 2014 to 2015, and the volume of annual wireless data usage more than doubled.¹⁴

Figure 9 Annual Multimedia Messages (in billions)



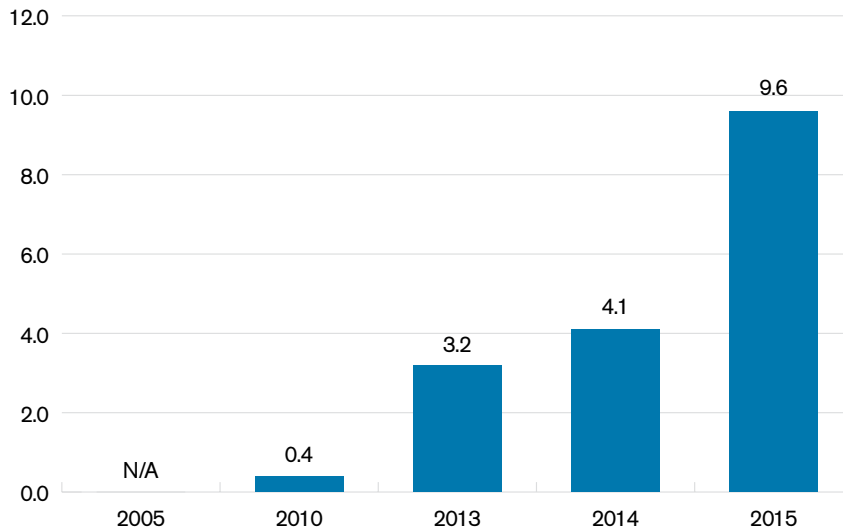
¹³ FHWA. 2016. Traffic Volume Trends, June 2016.

¹⁴ <http://www.ctia.org/industry-data/ctia-annual-wireless-industry-survey>

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

Figure 9 Annual Wireless Data Usage (in trillion MBs)



The fact that pedestrian deaths as a percent of total motor vehicle crash deaths have increased steadily in recent years from 11 percent to 15 percent could reflect, in part, the fact that passenger vehicles have become increasingly safer for vehicle occupants through design changes and supplemental safety equipment, thereby decreasing the chance of fatal injuries. Pedestrians, on the other hand, do not benefit from occupant-oriented vehicle crashworthiness improvements, and thus could account for an increasingly larger share of total traffic fatalities.

The 3.5 percent decrease in pedestrian fatalities in large cities in 2015, compared with a large nationwide increase, suggests that pedestrian fatalities may be becoming a bigger problem in smaller cities, suburbs, and/or rural areas. This finding suggests a need to examine pedestrian crash data in these areas to identify trends and countermeasure opportunities.

State highway safety offices in all 50 states and DC continue to actively engage with their partners to implement a wide range of educational, enforcement, and engineering initiatives aimed at reducing the numbers of pedestrian fatalities and serious injuries. Along with critical funding support provided through federal partners, states will continue to focus their efforts on effective countermeasures to reverse the trend of increasing pedestrian fatalities.

Pedestrian Traffic Fatalities by State

2016 PRELIMINARY DATA

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