North Carolina
Pedestrian Crash Facts
2012 - 2016

Prepared for

The North Carolina Department of Transportation
Division of Bicycle and Pedestrian Transportation

THE UNIVERSITY OF NORTH CAROLINA
HIGHWAY SAFETY RESEARCH CENTER

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December 2018

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General NC Pedestrian Crash Trends

This report provides a summary of crash trends and crash-related factors (where, when, who was involved, and conditions present) for pedestrian-motor vehicle crashes across the State. The information should help road safety practitioners, partners, and the public understand prevalent crash and injury-related factors. In turn, this understanding can help suggest a focus for potential treatments.

Between 2007 and 2016, at least 27,279 crashes between pedestrians and motor vehicles were reported by North Carolina public safety agencies (Figure 1). The highest total number of collisions for the entire ten-year period occurred in 2016 with 3,192. The five years between 2007 and 2011 averaged 2,457 total pedestrian crashes per year, while the five years between 2012 and 2016 averaged 2,999 per year, a 22 percent increase. Urban crashes accounted for 74 percent of the total over the 10 years while rural crashes were 26 percent.

Urban areas have reported an average of 26 percent more crashes from 2012-2016 compared with 2007-2011, while rural areas have reported close to 13 percent more. Thus, the rise in crashes over the decade has occurred more in urban areas compared with rural ones. Unfortunately, exposure data are lacking that might help to explain these trends in reported crashes. Increasing urbanization of the State could potentially contribute to the trend as well as an increasing trend of walking in cities and towns relative to unincorporated areas.

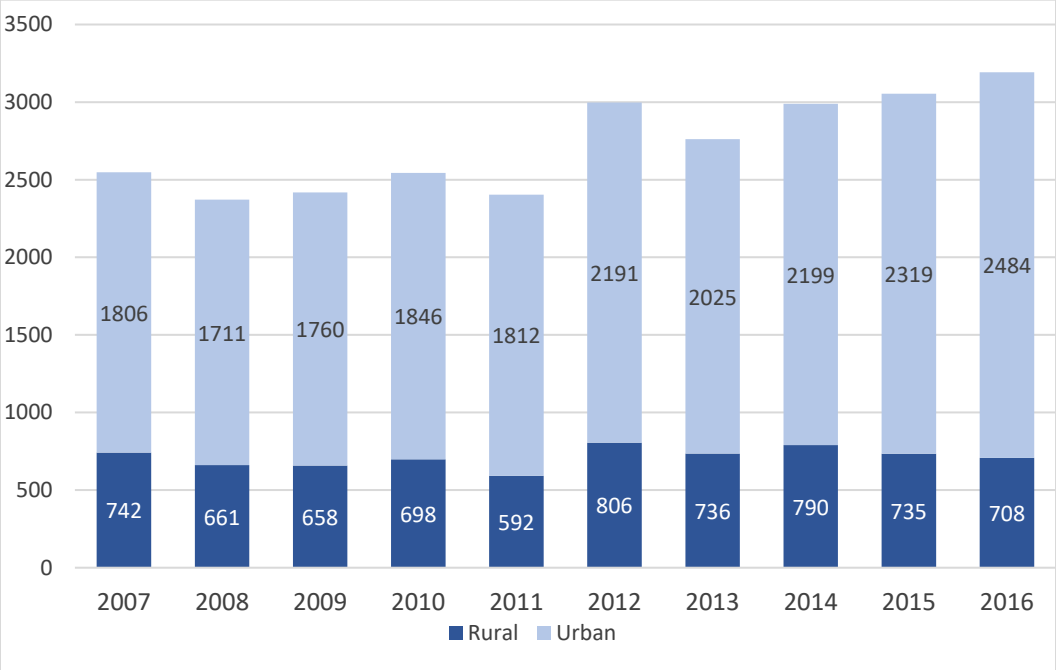

Figure 1 Pedestrian-motor vehicle crashes by year and rural/urban location

Beginning in 2014, the research team began an effort to compile the total number of pedestrians killed and injured in crashes. The numbers of collisions involving multiple pedestrians is relatively small, but identifying the precise numbers killed and injured is not always straight-forward. In some cases, a pedestrian may die within the 30-day period following a crash in which a fatality is assumed to be crash-

related, but all the data may not be updated in time for inclusion in these records. This threshold on reporting may exclude cases when a person in a crash dies of injures received after 30 days. In other cases, there are errors or inconsistencies in the data that require further inspection to resolve. Despite these issues, our best efforts suggest that for the 2014-16 period, a total of 588 pedestrians were killed in the 9,235 total crashes over these years and included in the analyses below (Table 1). Five crashes were indicated to involve multiple pedestrian fatalities during this three-year period.

Table 1 Pedestrian crashes resulting in fatal injuries, 2014-2016

Definitions	2014	2015	2016	3-yrs Totals
Crash Severity = Fatal (highest injury severity = one or more persons in the crash were killed)	177	194	212	583
Total Number of Pedestrians Killed	177	198	213	588
Pedestrian Injury Severity = killed (first pedestrian in the crash, may not be fatally injured)	176	193	209	578
Total Crashes - all severity included in these analyses	2,989	3,054	3,192	9,235

The remainder of this report will focus on the most recent five-year period. Between 2012 and 2016, a total of 14,993 pedestrian crashes were reported. The highest numbers of both fatal and disabling injury crashes over the five years was reported in 2016 (Figure 2).[1]

During 2016, the NC Department of Transportation revised the definition of A-type injuries from disabling to serious and B-type injuries from evident to minor. This is a possible explanation for the rise in A-type injuries in 2016. These revised injury categories were likely phased in at different times across the many reporting jurisdictions in the state and were not in effect for the full year. Therefore, in the tables below, the labels of 'disabling injury' and 'evident injury' were applied to all 2016 A-type and B-type severity indications, respectively, as it cannot be determined which may have been reported under the updated severity definitions.

[1] The number of pedestrians killed and injured here reflects only the "first" pedestrian reported on in the crash.

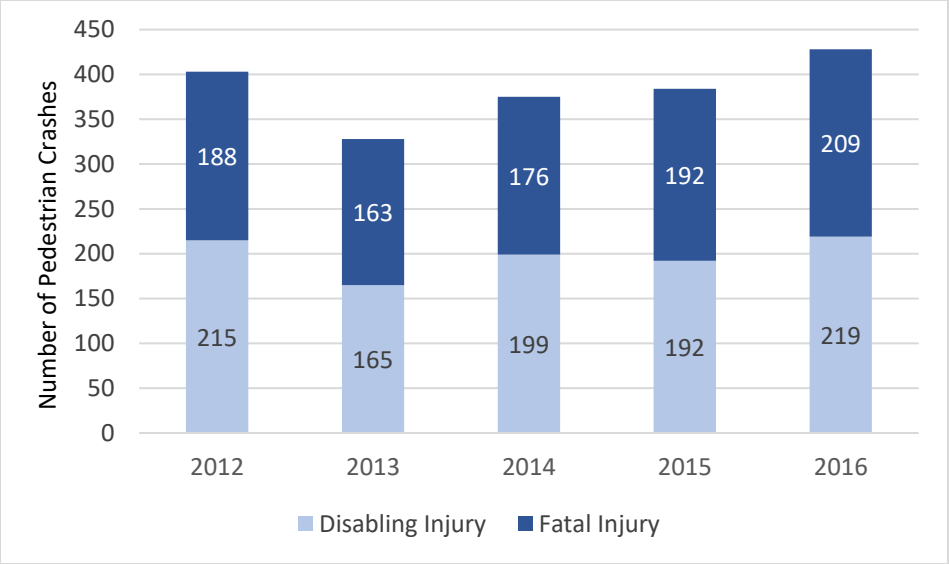

Figure 2 Fatal and disabling injury pedestrian crashes

The amount, times, locations of walking, and traffic conditions present, affect collision frequencies and the severity of injuries involving pedestrians, but we lack data on amounts of walking in NC to compare among years. The types of facilities available—the amount of separation from traffic (places and times to safely walk and cross), the availability of lighting, and other factors—also affect the risk of pedestrian collisions and injuries. Other risk factors include motor vehicle traffic volumes, speeds and driver yielding behaviors. Similarly, the knowledge and behaviors of those walking affect their risk. Alcohol or drug use by either the driver or pedestrian may be a factor. Distracted walking and driving also may play a role.

Crashes are officially reportable to the NC Division of Motor Vehicles (source of these data) if a fatality, injury, or at least $1,000 property damage occurred. The data in this report and behind the query tool on this website—North Carolina Pedestrian and Bicycle Crash Data Tool website —may include a small number of non-injury (or non-observed injury) collisions with low property damage that were not officially reportable, but which had nevertheless been reported to the State Division of Motor Vehicles by local agencies. Non-reportable collisions may not be included in other State crash statistics. Because under-reporting of pedestrian crashes is common,[2] any collisions in the database that involved pedestrians were retained in these data. In addition, injuries, even serious injuries that led to visits to emergency departments or other medical facilities, are sometimes noted after the crash report is filed, but crash reports may not be updated with such information.

As with all crash data, the reported numbers in the crash characteristics that follow undoubtedly reflect some error, including errors or gaps in reporting, as well as errors made during data entry or coding that may have affected the trends presented above and in the following tables and charges, despite the

[2] Injury to Pedestrians and Bicyclists: An analysis based on hospital emergency department data. Report No. FHWA-RD-99-078. US Department of Transportation, Federal Highway Administration.

research team's efforts to ensure the highest quality and completeness possible.[3] Updates to the data in future years may, therefore, affect the trends and statistics presented in this summary.
This sections below summarize the person, location types, time, environmental and roadway characteristics for the pedestrian-motor vehicle crashes identified statewide for 2012-2016. This information, and similar information developed for local communities, can be used to analyze safety issues, and aid in the targeting of resources and countermeasures to address pedestrian safety factors. See the companion *North Carolina Pedestrian Crash Types* summary report for descriptions of crash groups, along with an analysis of the most common and deadly crash group in North Carolina. This specific crash information can also aid in identifying and developing appropriate treatments.

Pedestrian Characteristics

Although, as noted, there are a few crashes involving more than one pedestrian, the following characteristics are associated with the 'first' pedestrian reported on in the crash. The numbers and percentages in the tables below reflect the first pedestrian involved in the crash and exclude cases with missing data for the pedestrian.

Pedestrian Age

Table 2 shows pedestrian crashes by age group for each year of the study period. (Age intervals vary to show more detail for younger age groups). Adults between 31 and 40 accounted for the highest proportion of these crashes with 15 percent while among younger age groups, those between 21 and 25 were involved in the highest percentage with more than 12 percent. It can also be noted that the crashes involving seniors 71 and older have increased in percent every year through the study period, the percent for pedestrians 51 – 60 and 61 – 70 also increased in recent years.

[3] Note that each crash report was reviewed for the data described in these reports and available on the NCDOT-DBPT website for query. This review offered the opportunity to correct some types of detectable errors.

Table 2 Age group of pedestrians involved in crashes[4]

Pedestrian Age	2012	2013	2014	2015	2016	Total
0-5	87	69	68	68	74	366
	2.9%[1]	2.5%	2.3%	2.2%	2.3%	2.4%[2]
6-10	86	103	95	78	95	457
	2.9%	3.7%	3.2%	2.6%	3.0%	3.0%
11-15	193	148	170	161	154	826
	6.4%	5.4%	5.7%	5.3%	4.8%	5.5%
16-20	332	301	310	325	317	1,585
	11.1%	10.9%	10.4%	10.6%	9.9%	10.6%
21-25	366	348	368	352	388	1,822
	12.2%	12.6%	12.3%	11.5%	12.2%	12.2%
26-30	290	271	305	329	337	1,532
	9.7%	9.8%	10.2%	10.8%	10.6%	10.2%
31-40	442	375	455	485	490	2,247
	14.7%	13.6%	15.2%	15.9%	15.4%	15.0%
41-50	481	452	130	434	426	2,223
	16.0%	16.4%	14.4%	14.2%	13.3%	14.8%
51-60	350	357	411	429	478	2,025
	11.7%	12.9%	13.8%	14.0%	15.0%	13.5%
61-70	226	204	222	228	245	1,125
	7.5%	7.4%	7.4%	7.5%	7.7%	7.5%
71+	115	113	142	157	174	701
	3.8%	4.1%	4.8%	5.1%	5.5%	4.7%
Total	2,968	2,741	2,976	3,046	3,178	14,909[4]
	19.9%[3]	18.5%	20.0%	20.4%	21.3%	

Combining age categories into larger ranges gives a more in-depth picture of pedestrian crash involvement by population and how it has changed over time (Table 3 and Table 4).

Between 2012-2016 as well as from 2007-2011, young adults ages 16 to 34 had the highest yearly crash rate per 10,000 residents. It is notable that the crash rate for all adult age groups increased significantly between both 5-year periods while the rate for juveniles remained the same. The rate of increase was substantially higher than the population growth rate for the age brackets. The crash rate for the 16-34-year age group increased 17 percent while the population estimates suggest increases of about 4 percent. The crash rate for the 35-64-year group increased 16 percent while the population increased 3 percent, and the crash rate for over 65 increased 47 percent while the population increased 17 percent.

[4] In this and each subsequent table, unless otherwise denoted, the formatting is as follows:
The top row for each variable level is the count of crashes with that characteristic. The bottom row in each category is that category's percentage of the yearly (or other column) total.
[1] = Row percent of column total
[2] = Row total percent of total
[3] = Column total percent of total
[4] = Total includes total minus any cases with missing or unknown data

Further research would be needed to determine if these increases have to do with higher rates of walking, behavioral changes, or other reasons.

Table 3 Pedestrian age group crash rate by population, 2012-2016

Pedestrian age group	Total crashes, 2012-2016	Avg. 1-year Count	July 2014 population estimate[5]	Avg. yearly crash rate / 10,000
< 16	1,649	329.8	2,038,703	1.6
16-34	5,944	1,188.8	2,538,336	4.7
35-64	6,050	1,210.0	3,914,087	3.1
65+	1,266	253.2	1,454,516	1.7
All Ages Total	14,909	2,981.8	9,945,642	3.0

Table 4 Pedestrian age group crash rate by population, 2007-2011

Pedestrian age group	Total crashes, 2007-2011	Avg. 1-year Count	July 2009 population estimate	Avg. yearly crash rate / 10,000
< 16	1,638	327.6	2,009,421	1.6
16-34	4,682	936.4	2,428,848	3.9
35-64	4,930	986.0	3,792,541	2.6
65+	903	180.6	1,204,586	0.9
All Ages Total	12,153	2,430.6	9,435,396	2.6

Pedestrian Injury

Table 5 shows the data for all five years for pedestrian crashes.[6] Pedestrian crashes tend to be especially serious, with over 6 percent resulting in fatal injury in NC over the study period. By comparison, around 0.5 percent of all motor vehicle crashes in NC result in fatal injuries.[7] Additionally, nearly 7 percent of all pedestrian crashes resulted in serious (A-type) injuries over the five-year period. As mentioned earlier, the number of fatalities for 2016 was the highest for the five-year period, which reflects national trends. The sharp increase in unknown injury crashes in 2016 was the result of missing data from some municipalities.

[5] Population estimates from North Carolina Office of State Budget and Management website: https://files.nc.gov/ncosbm/demog/statesingleage_2010_2019.html.
[6] Counts are of crashes with the most severe injury reported.
[7] North Carolina 2016 Traffic Crash Facts: https://connect.ncdot.gov/business/DMV/DMV%20Documents/2016%20Crash%20Facts.pdf

Table 5 Five-year pedestrian crash injury levels

Pedestrian injury	2012	2013	2014	2015	2016	Total
K: Killed	188	163	176	192	210	929
	6.3%	5.9%	5.9%	6.3%	6.6%	6.2%
A: Disabling Injury	215	165	199	192	219	990
	7.2%	6.0%	6.7%	6.3%	6.9%	6.6%
B: Evident Injury	1,070	938	1,044	1,066	1,096	5,214
	35.7%	34.0%	34.9%	34.9%	34.3%	34.8%
C: Possible Injury	1,247	1,219	1,304	1,372	1,243	6,385
	41.6%	44.2%	43.6%	44.9%	38.9%	42.6%
O: No Injury	165	179	167	154	208	873
	5.5%	6.5%	5.6%	5.0%	6.5%	5.8%
Unknown Injury	112	97	99	78	216	602
	3.7%	3.5%	3.3%	2.6%	6.8%	4.0%
Total	2,997	2,761	2,989	3,054	3,192	14,993
	20.0%	18.4%	19.9%	20.4%	21.3%	

Analyzing the data by larger age groups finds that pedestrians 35 and older are over-represented in fatal or disabling injury crashes compared with their involvement in all crashes (Table 6). This may represent differences in frailty when involved in a collision, as well as differences in the typical walking environments compared to younger ages.

Table 6 Pedestrian injury severity by age group

Pedestrian age group	Fatal or Disabling Injury	Evident, Possible, No, or Unknown Injury	Total
< 16	167	1,482	1,649
	8.7%	11.4%	11.1%
16-34	704	5,240	5,944
	36.8%	40.3%	39.9%
35-64	852	5,198	6,050
	44.5%	40.0%	40.6%
65+	190	1,076	1,266
	9.9%	8.3%	8.5%
Total	1,913	12,996	14,909[8]
	12.8%	87.2%	

Pedestrian Alcohol/Drug Use

The investigating officer indicated alcohol and/or drug use by an average of 12 percent of pedestrians struck where use was known (Table 7). Suspected alcohol or drug use does not imply that a pedestrian

[8] This number does not include crashes where the pedestrian's age was unknown.

was intoxicated, but that evidence of alcohol or drug use was detected or suspected by an investigating officer and may have played a role. There is no clear evidence of an increasing role of drugs in pedestrian crashes as shown by these data, but it is uncertain how well officers are able to detect the presence of many types of potentially impactful drugs when investigating crashes. More in-depth studies including medical data are needed to assess the potential role of opioids and other drugs.

Table 7 Pedestrian use of alcohol or drugs

Pedestrian alcohol/drug use suspected or detected	2012	2013	2014	2015	2016	Total
No	2,446	2,234	2,458	2,500	2,664	12,302
	81.9%	81.2%	82.3%	82.2%	83.7%	82.3%
Alcohol and Drug Impairment Suspected or Detected	33	26	31	21	19	130
	1.1%	0.9%	1.0%	0.7%	0.6%	0.9%
Alcohol Impairment Suspected or Detected	318	320	307	312	290	1,547
	10.6%	11.6%	10.3%	10.3%	9.1%	10.3%
Drug Impairment Suspected or Detected	20	16	17	19	21	93
	0.7%	0.6%	0.6%	0.6%	0.7%	0.6%
Unknown	170	156	172	191	190	921
	5.7%	5.7%	5.8%	6.3%	6.0%	6.2%
Total	2,987	2,752	2,985	3,043	3,184	14,951
	20.0%	18.4%	20.0%	20.4%	21.3%	

Examining crashes where alcohol/drug use was reported by injury level shows that alcohol or drug-indicated crashes are over-represented among those resulting in fatal or disabling injury (Figure 3). While intoxicant use is suggested in close to 13 percent of total collisions (when intoxicant use was known), alcohol and/or drug use was indicated in 32 percent of fatal and disabling type injury crashes.

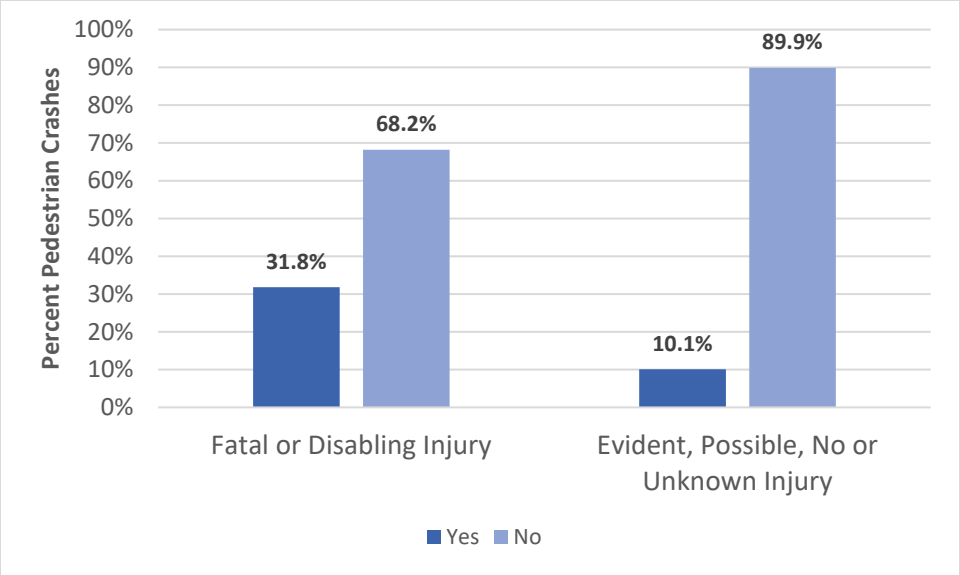

Figure 3 Alcohol or drug use by pedestrian injury level

Pedestrian Gender

Males accounted for around 60 percent of pedestrian crashes while females were around 40 percent. This rate remained fairly consistent through the five-year study period. Males are also more highly represented in the most serious crashes with 70 percent of fatal or disabling injury crashes having a male victim (Table 8).

Table 8 Gender by injury level

Pedestrian gender	Fatal or Disabling Injury	Evident, Possible, No, or Unknown Injury	Total
Female	574	5,318	5,892
	30.0%	41.7%	40.2%
Male	1,338	7,441	8,779
	70.0%	58.3%	59.8%
Total	1,912	12,759	14,671
	13.0%	87.0%	

Driver Characteristics

This section describes characteristics of drivers involved in collisions with pedestrians. One of the characteristics is that close to 21 percent of drivers were involved in hit and run crashes with pedestrians, on its own a serious problem. Traits for these hit and run drivers and some additional drivers are therefore unknown, so the numbers of drivers reported on in the following sections is lower than for the number of crashes and pedestrians.

Driver Age

Similar to pedestrian age data, this table has varying age intervals to show more detail for younger drivers. Drivers aged 30 to 39 had the highest proportion of crashes for any age group over the study period with close to 18 percent (Table 9). However, drivers aged 20 to 29 have the highest proportion (23%) when combining groups. In 2016, the proportion for senior drivers 70 and over was the lowest for the five-year period, however the proportion for drivers 60 to 69 was the highest compared to earlier years. These trends may reflect increases in the population of residents ages 60 to 69 and potentially other factors.

Table 9 Age of drivers involved in crashes with pedestrians

Driver Age	2012	2013	2014	2015	2016	Total
< 20	199	182	153	152	177	863
	8.0%	8.1%	6.3%	6.1%	6.8%	7.0%
20-24	326	263	287	336	318	1,530
	13.1%	11.7%	11.8%	13.5%	12.3%	12.5%
25-29	251	221	264	271	272	1,279
	10.1%	9.8%	10.9%	10.9%	10.5%	10.4%
30-39	440	380	431	452	471	2,174
	17.7%	16.9%	17.7%	18.1%	18.2%	17.7%
40-49	410	396	388	373	404	1,971
	16.5%	17.6%	16.0%	15.0%	15.6%	16.1%
50-59	366	338	398	383	390	1,875
	14.7%	15.0%	16.4%	15.4%	15.1%	15.3%
60-69	271	252	271	282	338	1,414
	10.9%	11.2%	11.1%	11.3%	13.0%	11.5%
70+	229	222	240	243	221	1,155
	9.2%	9.8%	9.9%	9.8%	8.5%	9.4%
Total	2,492	2,254	2,432	2,492	2,591	12,261
	20.3%	18.4%	19.8%	20.3%	21.1%	

Driver Alcohol/Drug Use

Alcohol and/or drug use was suspected or detected in less than 5 percent of drivers involved in pedestrian crashes over the study period (Table 10) This does not necessarily imply that alcohol or drug use was a factor in the crash. The rate was higher in 2012 compared with other years. It is possible that the use of ride sharing services in recent years has led to a reduction in this factor, however further research is needed. Additionally, due to the many types of drugs and potential interactions, along with difficulty in detecting diverse types of drugs and/or their effects, the accuracy of these data is uncertain. However, with increasing concerns about opioids and other classes of drugs, there may be interest in tracking and better-understanding these data.

Table 10 Driver use of alcohol or drugs

Driver alcohol/ drug use suspected or detected	2012	2013	2014	2015	2016	Total
No	2,256	2,072	2,242	2,299	2,374	11,243
	88.0%	87.8%	87.5%	88.2%	87.3%	87.7%
Alcohol and Drugs Impairment Suspected or Detected	14	9	9	8	10	50
	0.5%	0.4%	0.4%	0.3%	0.4%	0.4%
Alcohol Impairment Suspected or Detected	109	72	81	93	86	441
	4.3%	3.0%	3.2%	3.6%	3.2%	3.4%
Drug Impairment Suspected or Detected	10	11	15	11	20	67
	0.4%	0.5%	0.6%	0.4%	0.7%	0.5%
Unknown	174	197	214	197	230	1,012
	6.8%	8.3%	8.4%	7.6%	8.5%	7.9%
Total	2,563	2,361	2,561	2,608	2,720	12,813
	20.0%	18.4%	20.0%	20.4%	21.2%	

Considering crashes which led to a fatal or disabling injury for a pedestrian, alcohol/drug use was suspected or detected in 10 percent of drivers in these crashes (Table 11). This is more than twice the overall rate for drivers.

Table 11 Driver use of alcohol or drugs by pedestrian injury level

Driver alcohol/drug use suspected or detected	Fatal or Disabling Injury (Pedestrian)	Evident, Possible, No, or Unknown Injury (Pedestrian)	Total
Yes	166	392	558
	10.0%	3.9%	4.7%
No	1,488	9,755	11,243
	90.0%	96.1%	95.3%
Total	1,654	10,147	11,801
	14.0%	86.0%	

Where Pedestrian Crashes Occur

Development Extent

Between 2012 and 2016, urban areas accounted for 75 percent of pedestrian-motor vehicle crashes while rural areas accounted for 25 percent (Figure 1). Rural-urban coding may not reflect land use patterns, however. When looking at development density, as coded by crash reporting agencies, it is seen that crashes are even more heavily weighted toward areas that are at least somewhat developed (Table 12). Over 87 percent of crashes occur in areas that are at least 30 percent developed, with close to 13 percent in areas less than 30 percent developed.

Areas between 30 and 70 percent developed may represent areas in transition, where infrastructure is often still more rural in nature and traffic speeds remain high, while traffic volumes and roadway complexity are increasing.

Table 12 Pedestrian crashes by development extent

Development extent	2012	2013	2014	2015	2016	Total
Rural (<30% Developed)	395	378	398	375	356	1,902
	13.2%	13.7%	13.3%	12.3%	11.2%	12.7%
Mixed (30% To 70% Developed)	427	368	428	424	460	2,107
	14.2%	13.3%	14.3%	13.9%	14.4%	14.1%
Urban (>70% Developed)	2,175	2,015	2,163	2,255	2,376	10,984
	72.6%	73.0%	72.4%	73.8%	74.4%	73.3%
Total	2,997	2,761	2,989	3,054	3,192	14,993
	20.0%	18.4%	19.9%	20.4%	21.3%	

Development Type

On average, more than half (51%) of pedestrian crashes occurred in areas indicated as commercial districts, 35 percent in residential areas, around 10 percent in areas designated as farms, woods, or pastures, 3 percent in institutional areas, and less than 1 percent in industrial areas (Table 13).

Table 13 Pedestrian crashes by development type

Development type	2012	2013	2014	2015	2016	Total
Commercial	1,430	1,409	1,546	1,585	1,722	7,692
	47.7%	51.0%	51.7%	51.9%	53.9%	51.3%
Farms, Woods, Pastures	317	286	296	271	280	1,450
	10.6%	10.4%	9.9%	8.9%	8.8%	9.7%
Industrial	17	21	21	23	14	96
	0.6%	0.8%	0.7%	0.8%	0.4%	0.6%
Institutional	84	89	95	88	112	468
	2.8%	3.2%	3.2%	2.9%	3.5%	3.1%
Residential	1,149	956	1,031	1,087	1,064	5,287
	38.3%	34.6%	34.5%	35.6%	33.3%	35.3%
Total	2,997	2,761	2,989	3,054	3,192	14,993
	20.0%	18.4%	19.9%	20.4%	21.3%	

Temporal and Environmental Factors

Month of Year

Pedestrian crashes occur throughout the year but are highest in the fall and lowest in the summer (Figure 4). October through December when daylight periods are shorter, and students have returned to school, accounted for 30 percent of all crashes during the study period. By comparison, June through August accounted for 22 percent.

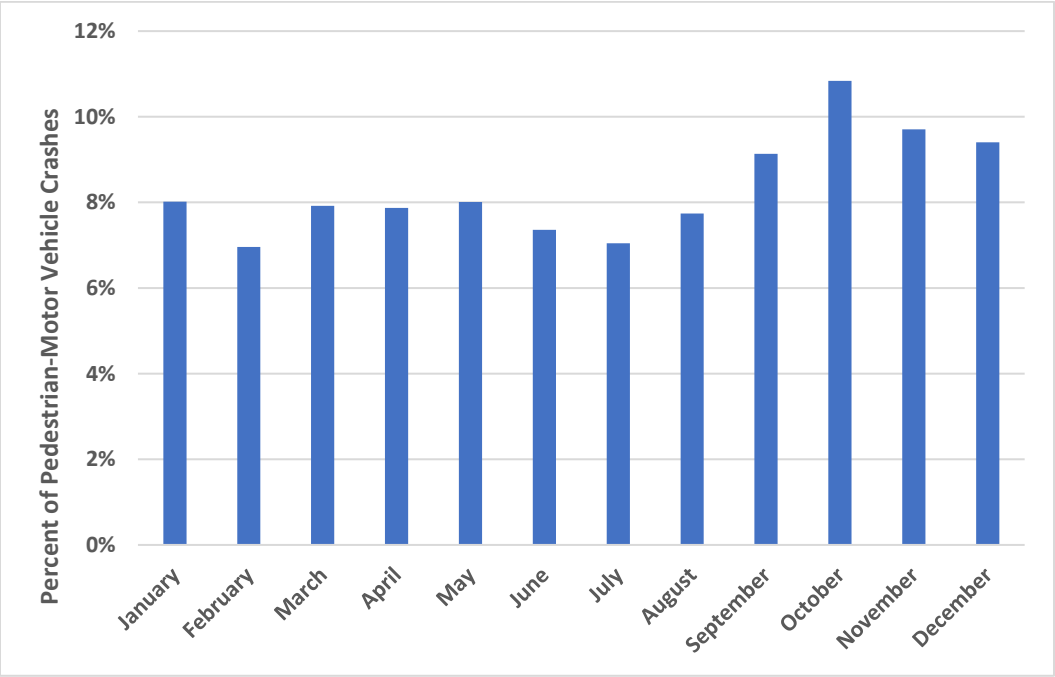

Figure 4 Pedestrian crashes by month

Day of Week and Time of Day

Fridays had the most pedestrian crashes over the study period with 16 percent while Sundays had the fewest with 10 percent (Figure 5), these days are the same as for bicycle crashes.

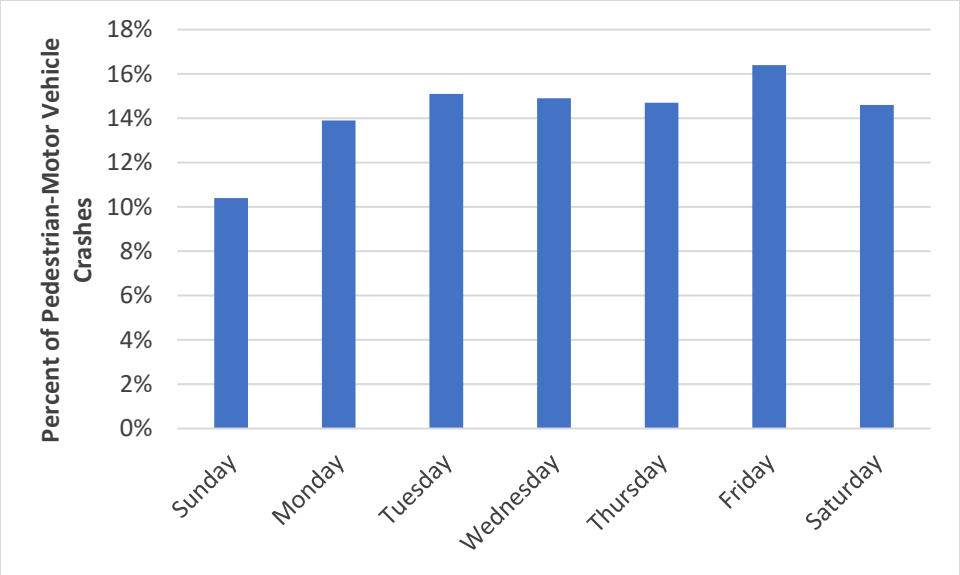

Figure 5 Pedestrian crashes by day of week

Over 21 percent of all reported crashes occurred between 6 and 9 pm (Figure 6). Overnight and morning hours have the lowest frequency of crashes.

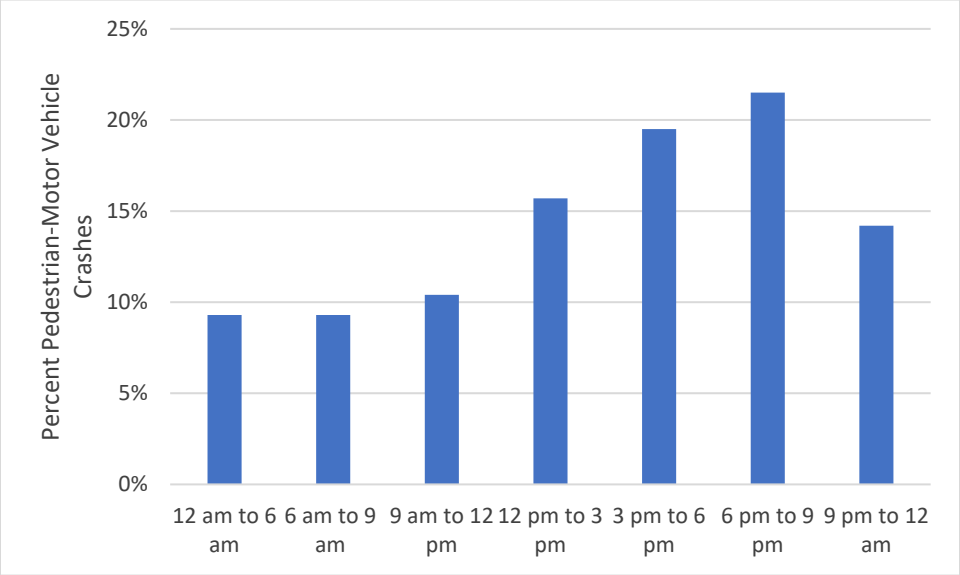

Figure 6 Pedestrian crashes by time of day

Light Conditions

Around 55 percent of crashes happened during daylight hours (Figure 7). An additional 39 percent occurred on dark roadways (over 17% on dark, unlighted road sections). Dawn and dusk conditions combined account for 4.5 percent of crashes, with all other or unknown lighting conditions accounting for just over 1 percent. There is some variability across years in these percentages, but no distinct trends.

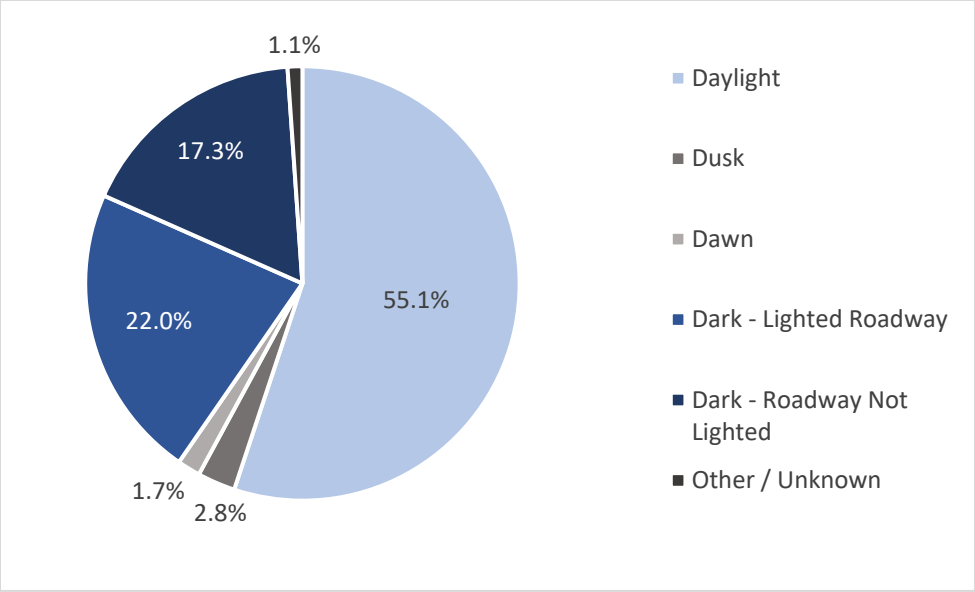

Figure 7 Pedestrian crashes by light conditions

There are significant differences between rural and urban locations for dark roadway crashes (Table 14). Over 41 percent of all rural crashes occurred on dark, unlighted roadways compared with under 9 percent in urban areas. Around 8 percent of rural night-time crashes involved a lighted roadway compared with over 27 percent in urban areas. Nationally, 75 percent of all pedestrians killed were killed in collisions at night (on both unlighted and lighted roads, data from NHTSA, not shown). However, even lighted roadways may not have sufficient or correctly-designed lighting to help motorists detect pedestrians crossing roadways at night. See this FHWA report (https://www.fhwa.dot.gov/publications/research/safety/08053/) by Gibbons et al (2008) for more information on lighting design to better illuminate pedestrians at crossing locations.

Table 14 Rural/urban crashes by light conditions

Light conditions	Rural	Urban	Total
Daylight	1,744	6,528	8,272
	46.2%	58.2%	55.2%
Dusk	89	309	398
	2.4%	2.8%	2.7%
Dawn	57	188	245
	1.5%	1.7%	1.6%
Dark-lighted roadway	294	3,094	3,388
	7.8%	27.6%	22.6%
Dark-roadway not lighted	1,567	967	2,534
	41.5%	8.6%	16.9%
Other / unknown	24	132	156
	0.6%	1.2%	1.0%
Total	3,775	11,218	14,993
	25.2%	74.8%	

Weather

The majority of pedestrian crashes occurred during clear weather (76%); cloudy weather accounted for an additional 14 percent (Figure 8). Any year-to-year variations in the percentage occurring during poor weather conditions is likely related to exposure (e.g. more snowy crashes in years where the State received more snowfall).

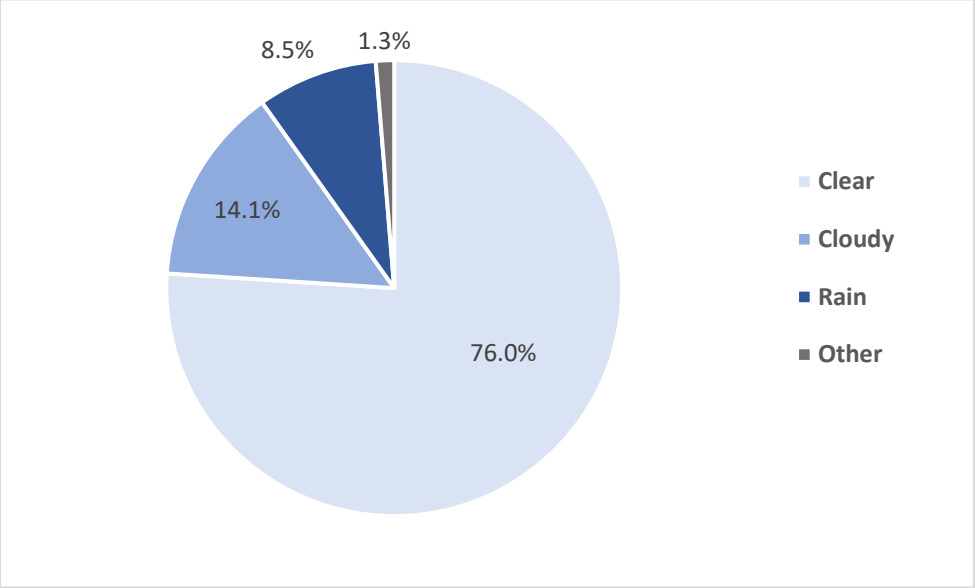

Figure 8 Pedestrian crashes by weather conditions

Roadway Characteristics

Roadway Type

Seventy-one percent of pedestrian collisions occurred on two-way, undivided roadways, 13 percent on two-way roads divided by an unprotected median, 5 percent on two-way roads divided by a positive median barrier and 8 percent on one-way roads (Figure 9). Note that these designations are based on crash reporting; more accurate estimations of roadway characteristics may be obtained by joining the crash data with accurate roadway inventory data.

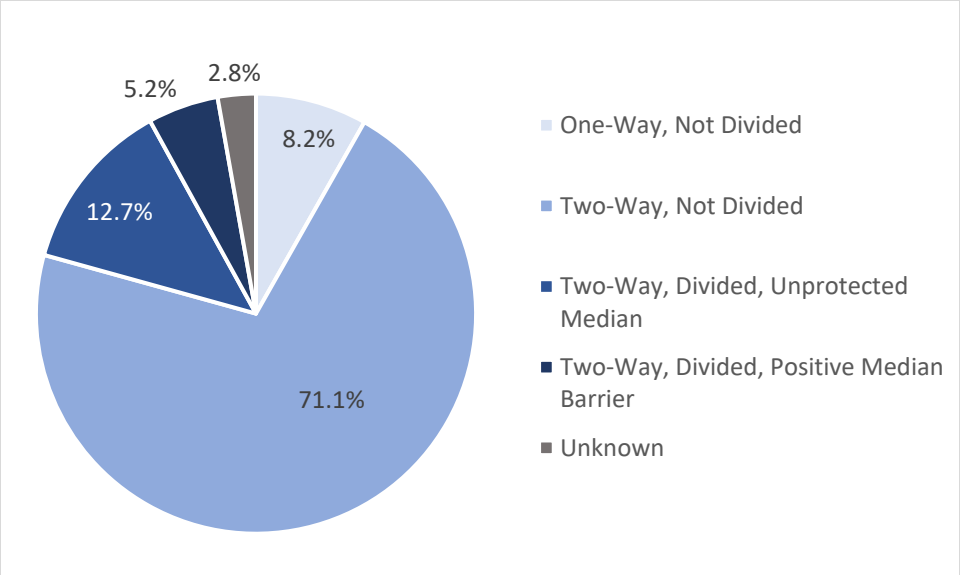

Figure 9 Pedestrian crashes by road configuration

Speed Limit

When speed limits were known and reported, 69 percent of pedestrian crashes occurred on roads of 35 mph or lower. These statistics likely reflect the fact that urban streets and commercial thoroughfares, where more pedestrians tend to walk, generally have limits of 35 mph or lower.

However, pedestrian crashes on higher speed roads are typically more severe (Figure 10). On average, just under 9 percent of those struck on roads with speed limits of 25 mph or lower were killed or suffered a disabling injury. The proportion of severe crashes begins to climb rapidly with higher speed limit roads to where over half of those struck on roads with speeds limits 60 mph or greater were killed or suffered disabling injury. Fifty-nine percent of those struck, whose injuries were fatal or disabling, were struck on roads with speed limits 40 mph or greater. For comparison, roadways with speed limits of 40 mph or greater account for 32 percent of pedestrian crashes of all severities over the study period.[9]

[9] Crash data do not provide good information on actual travel speeds of the striking vehicle, but the speed limit of the roadway provides general information about the prevailing travel speeds.

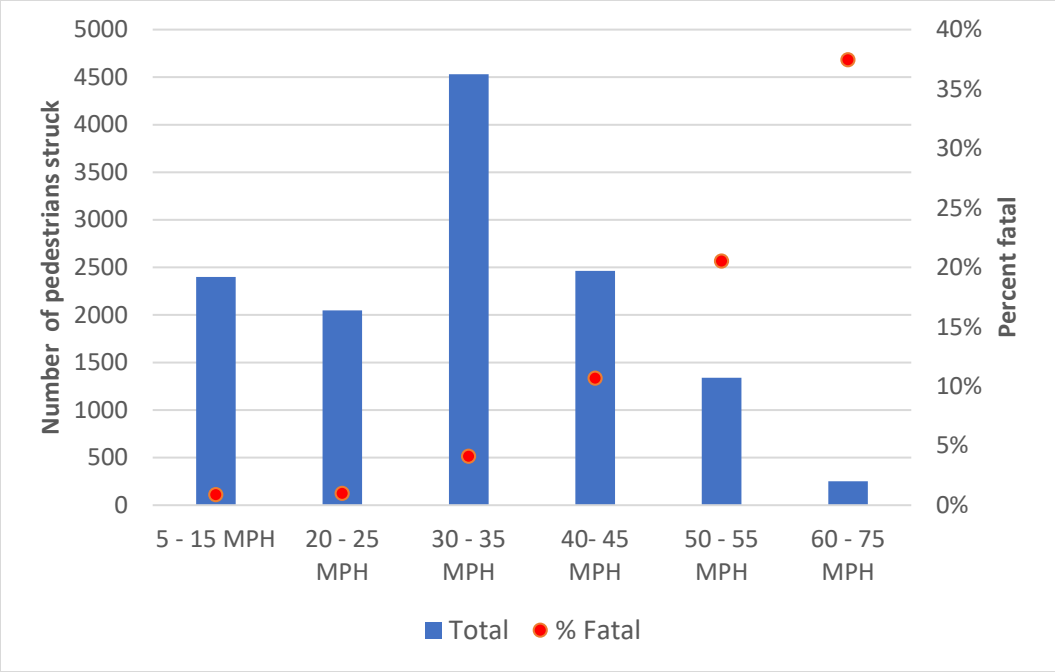

Figure 10 Pedestrian crashes and fatal/disabling injury by posted speed limit of roadway

The crash factors discussed in this summary provide information useful for assessing problems and providing safe and accessible pedestrian facilities for local and State roads. Resources such as the North Carolina Pedestrian and Bicycle Road Safety Assessment Guide, PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System, and others can provide additional assistance with diagnosing and identifying appropriate treatments for pedestrian safety issues.

For more information about pedestrian crashes and potential countermeasures in North Carolina and events leading up to the crashes, see the companion *North Carolina Pedestrian Crash Types* summary report.

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