PEDESTRIAN CRASH FACTS SUMMARY, 2003-2007

Trends

Over the past five years in North Carolina (NC), an average of more than 2,500 pedestrian-motor vehicle collisions has been reported to the NC Division of Motor Vehicles. On average, more than 170 pedestrians were killed and around 250 were reported seriously injured in each of the past five years with many more suffering evident or possible injuries (Figure 1).

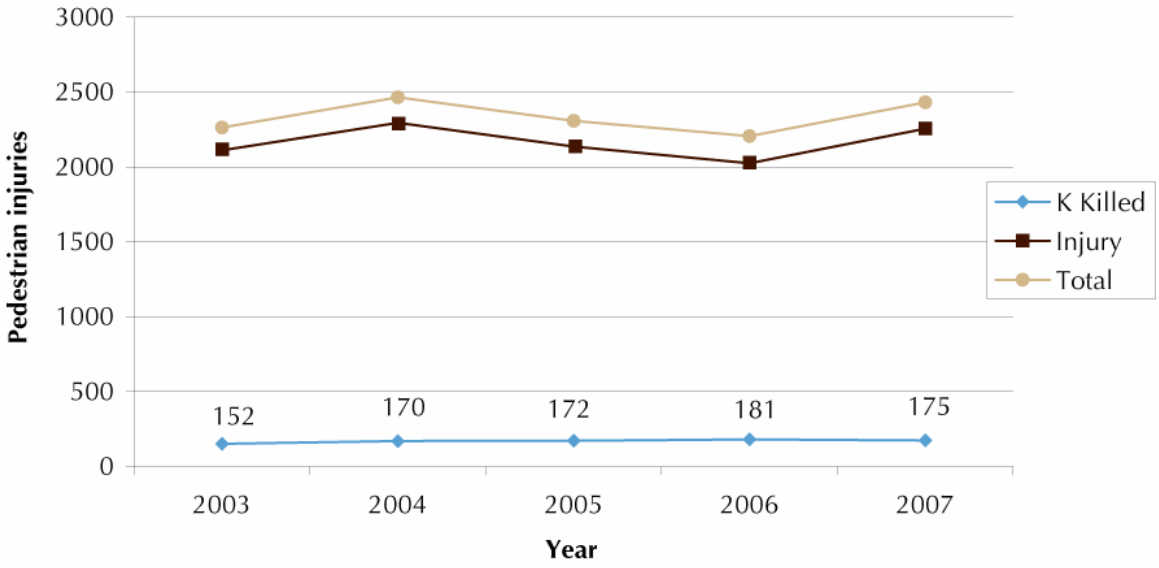

Figure 1. Five year trend of NC pedestrian fatalities and injuries due to reported collisions with motor vehicles, 2003 - 2007. (Counts are of pedestrians. The totals reflected in this figure do not include pedestrians reported being involved in collisions for whom unknown or no injuries were indicated.)

The ten year trend since 1998 has seen an increase in the number of pedestrian crashes (Figure 2). An average of 2503 crashes occurred in the latest 5-year period compared with an average of 2260 in the first five years. This represents an increase in pedestrian collisions of about 11% for the recent five years compared to 1998-2002. The peak for the current five year period was 2587 crashes in 2004, although 2007 was close behind with 2563.

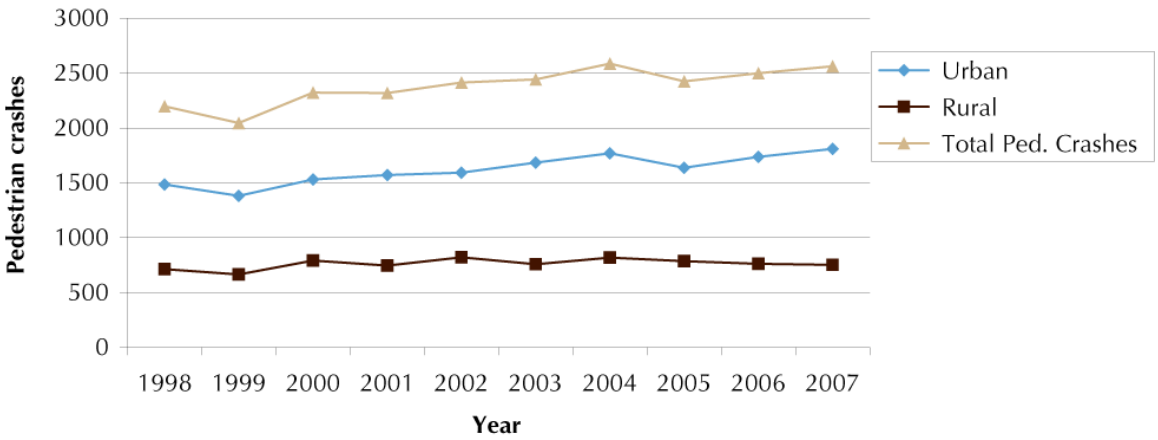

Figure 2. Pedestrian crash trends, 1998 – 2007. Rural crashes have fluctuated but remained fairly flat over the 10-year time period, while urban crashes have climbed more steadily and account for most of the increase in pedestrian crashes. (Counts are of crashes.)

As can be seen in Figure 2, most of the increase has been in urban pedestrian crashes, with rural crashes initially increasing and then declining in recent years. The increase may reflect greater population growth in urban areas and other factors. Adult pedestrians also account for the largest share of those involved in the greater number of crashes, especially in recent years (Figure 3).

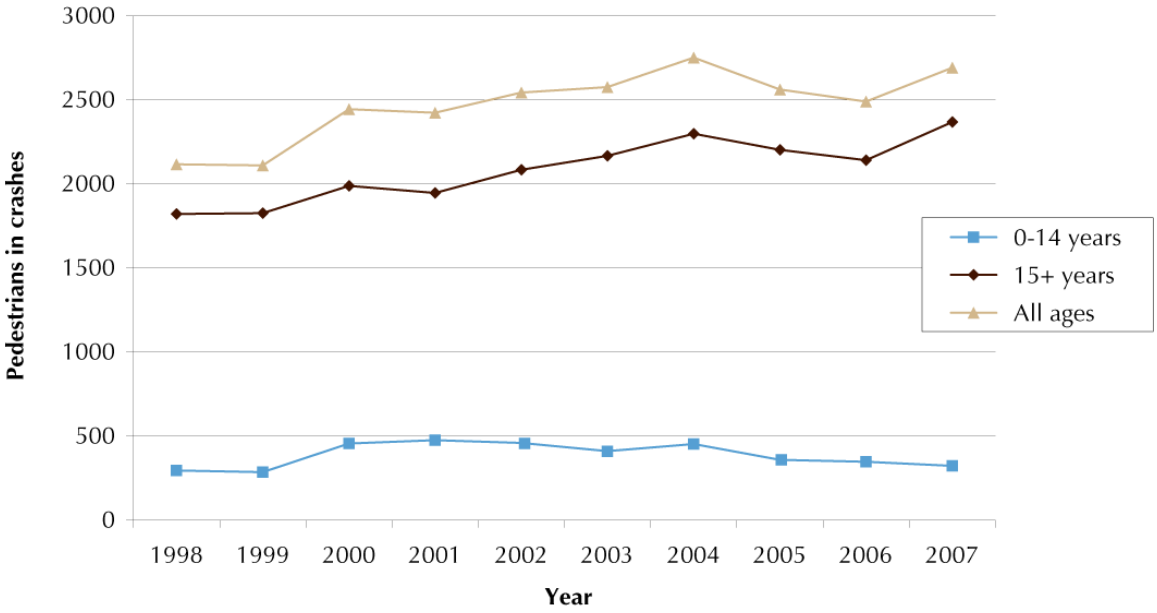

Figure 3. Pedestrian crash-involvement by age, 1998 - 2007. Nearly 30% more adults aged 15 and up (includes those of unknown age) were involved in collisions in 2007 than in 1998. Child pedestrian involvement was higher in the middle years, 2000 – 2004, but since has dropped off. (Counts are of pedestrians.)

This report summarizes roadway, environmental, and person characteristics of pedestrian-motor vehicle crashes that were reported statewide for this five year period. (These data include collisions which were not officially "reportable" but had been reported. Non-reportable collisions would not be included in other state crash statistics.) There were 12,517 pedestrian crashes with motor vehicles reported for all five years. These crashes involved about 13,071 pedestrians (due to multiple pedestrians' involvement in some crashes) and 14,267 drivers. As with all crash data, the reported numbers in the crash characteristics that follow undoubtedly reflect some error, including errors in officers' coding of crashes, as well as errors made during data entry and recoding of the data.

Where do most NC Pedestrian Crashes Occur

More than two-thirds of pedestrian collisions in NC occurred in urban areas over the most recent five years, with about one-third occurring in non-incorporated areas (Table 1). These data are coded based on whether the crash was indicated as occurring within municipal boundaries (urban), or not (rural), and may not reflect area land use. Based on 2007 population data, the five-year urban (within municipalities) yearly pedestrian crash rate averages 3.5 per 10,000 population, and 1.9 per 10,000 population in un-incorporated (more rural) areas of the state. (Municipal population statewide was estimated at 4,962,027 and 4,107,317 for unincorporated areas, 2007. Population estimates are from the Office of State Budget and Management, Municipal and Non-Municipal Population by County, retrieved from **http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/demog/ctotm07.htm**).

The difference in rural and urban crash rates likely reflect greater exposure in urban areas where sidewalks, transit use, compact development and other opportunities for walking are typically greater than in rural areas of the state.

Table 1. Number and percentage of rural and urban pedestrian crashes statewide

Rural/Urban Crash Location	YEAR					Total
	2003	2004	2005	2006	2007	
Rural	758 31.0[1]	818 31.6	787 32.5	762 30.5	753 29.4	3878 31.0
Urban	1685 69.0	1769 68.4	1638 67.6	1737 69.5	1810 70.6	8639 69.0
Total	2443 19.5[2]	2587 20.7	2425 19.4	2499 20.0	2563 20.5	12,517

[1]Row percent of column total
[2]Column percent of row total

The ten counties with the highest numbers of pedestrian-motor vehicle crashes for all five years are shown in Table 2 in descending order by crash frequency. The ten highest crash counties accounted for 55% of NC's reported pedestrian – motor-vehicle crashes. All of these counties are more than 50% urbanized, with most more than 80% urbanized, with the exceptions of Buncombe and Robeson. The average crash rate per 10,000 population for all of the ten counties was 3.6. Counties with considerably higher than average pedestrian crash rates based on population were, in descending order, Durham, Mecklenburg, New Hanover, Robeson, and Cumberland.

Table 2. Ten NC counties with Highest Numbers of Pedestrian crashes from 2003 to 2007

County	Number of Crashes	Percent of NC Total Crashes (12,517)	2007 County pop. estimate	Avg. yearly Crash rate / 10,000 pop.
Mecklenburg	1934	15.5	863,147	4.5
Wake	1276	10.2	832,590	3.1
Guilford	783	6.3	460,780	3.4
Cumberland	594	4.8	313,616	3.8
Durham	579	4.6	254,740	4.6
New Hanover	387	3.1	189,922	4.1
Forsyth	365	2.9	338,679	2.2
Buncombe	360	2.9	225,609	3.2
Gaston	344	2.8	200,972	3.4
Robeson	259	2.1	129,425	4.0
Total – 10 counties	6881	55.0	3,809,480	3.6

The ten cities with the highest numbers of pedestrian-motor vehicle crashes during these five years are shown in Table 3. These ten cities together accounted for about 43% of the state's 12,517 pedestrian crashes over the past five years. Among North Carolina cities, Charlotte accounts for 14.3% of statewide crashes over the past five years, followed by Raleigh (7.1%) and Durham (4.3%), which displaced Greensboro (now at 4.2%). The cities and counties with the highest numbers of pedestrian crashes are generally those with the largest populations although there is not an exact correlation as shown by the population-based crash rates in the right hand columns of Tables 2 and 3. Other factors affecting the rate of crashes per population include the extent of walking by residents and visitors, traffic volume, safety of roadways where pedestrians walk, and driver and pedestrian behaviors. Cities with universities and colleges and those with tourist destinations may have higher pedestrian activity. The crash rate based on population averages 4.7 per 10,000 people for these 10 cities, compared with 3.5 for all urban/municipal areas of the state.

Table 3. Ten NC cities with Highest Numbers of Pedestrian Crashes from 2003-2007

Municipality	Number of Crashes, all 5 years	Percent of NC Total	2007 Population	Avg. Yearly Crash Rate/10,000 pop.
Charlotte	1791	14.3	674,658	5.3
Raleigh	887	7.1	367,098	4.8
Durham	544	4.4	222,472	4.9
Greensboro	523	4.2	248,111	4.2
Fayetteville	413	3.3	181,453	4.6
Wilmington	284	2.3	100,746	5.6
Asheville	255	2.0	76,764	6.6
Winston-Salem	244	2.0	224,889	2.2
Gastonia	219	1.8	72,779	6.0
High Point	176	1.4	98,791	3.6
Total - 10 cities	5336	42.6	2,267,761	4.7

Some of the findings that follow are also undoubtedly related to exposure, or the number of pedestrians, as well as when, where, and which people are more likely to walk. Crash trends can change over time simply due to chance, due to exposure factors such as weather and trends in amount of walking and driving, and as a result of other factors including engineering, educational, and enforcement initiatives.

Pedestrian Characteristics

Pedestrian Age

It is difficult to draw firm conclusions about the year-to-year fluctuations in crash proportions by age across these five years (Table 4). (Note that the younger age categories span five years, while those beginning with age 30 span 10 years.) Crash involvement by age reflects both population and exposure or amount of walking among different age groups plus other risk factors. Older teens (16 to 20) and young adults (21 to 25) continue, however, to account for the greatest numbers and proportions of pedestrian crashes, probably reflecting greater pedestrian activity among these ages. Children ages 11 to 15 account for a larger share than younger age groups. Beginning with the 51 to 60 year group, the proportion of crash involvement begins to markedly decline with increasing age.

Table 4. Pedestrian age group for those involved in crashes

Pedestrian Age	YEAR					Total
	2003	2004	2005	2006	2007	
0 to 5	125 5.0 [1]	156 5.8	134 5.3	98 4.0	116 4.4	629 4.8
6 to 10	124 5.0	120 4.4	115 4.6	108 4.4	97 3.7	564 4.4
11 to 15	188 7.5	206 7.6	136 5.4	162 6.6	134 5.0	826 6.5
16 to 20	230 9.2	311 11.5	265 10.5	274 11.2	311 11.7	1391 10.9
21 to 25	277 11.1	298 11.0	278 11.1	279 11.4	278 10.5	1410 11.0
26 to 30	212 8.5	237 8.7	232 9.2	222 9.1	285 10.7	1188 9.3
31 to 40	423 17.0	465 17.1	433 17.2	370 15.1	392 14.8	2083 16.3
41 to 50	442 17.7	425 15.7	412 16.4	428 17.5	473 17.8	2180 17.0
51 to 60	242 9.7	248 9.1	296 11.8	284 11.6	295 11.1	1365 10.7
61 to 70	118 4.7	128 465.0	100 4.0	122 5.0	162 6.1	630 4.9
70+	133 5.3	137 5.0	130 5.2	122 5.0	137 5.2	659 5.1
Total	2491 19.4 [2]	2713 21.2	2512 19.6	2451 19.1	2656 20.7	12,823 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total does not equal total pedestrians (13,071) due to unknown ages and missing data.

Pedestrian Gender

Males accounted for, on average, about 61% of the pedestrians reported involved in crashes over this five year period. Females were involved in nearly 39% of pedestrian crashes on average over this time period (Table 5). In the latest year, females were involved in a slightly higher frequency and percentage than is typical at 40%.

Table 5. Pedestrian gender for those involved in crashes

Gender	YEAR					Total
	2003	2004	2005	2006	2007	
Female	939 37.6 [1]	1028 38.1	993 39.5	918 37.7	1064 40.1	4942 38.6
Male	1558 62.4	1673 61.9	1523 60.5	1518 62.3	1591 59.9	7863 61.4
Total	2497 19.5 [2]	2701 21.1	2516 19.7	2436 19.0	2655 20.7	12805 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total pedestrians involved (13,071) due to unknown values / missing data.

Pedestrian Race/Ethnicity

Pedestrian crashes in North Carolina are most likely to involve pedestrians reported to be of White racial background (approximately 51%; Table 6). However, 40% of persons are reported to be Black/African-American. Considering that African-Americans comprise about 22% of persons living in the State over this period (according to middle year, 2005 census data), Blacks are clearly over-represented in pedestrian crashes based on population. These proportions may, however, reflect greater amounts of walking by Blacks as well as other factors. Over this time period, those identified on crash report forms as Hispanic and persons of Asian descent have accounted for about 7% and around 1%, respectively, of pedestrians involved in crashes each year. Native Americans accounted for about 1.2% of the total, on average. Persons not identified in any of the other groups account for less than 1% of pedestrians involved in collisions.

Table 6. Pedestrian race/ethnicity for those involved in crashes

Ethnicity	YEAR					Total
	2003	2004	2005	2006	2007	
Asian	23 0.9 [1]	25 0.9	26 1.1	19 0.8	25 1.0	118 0.9
Black	982 40.1	1067 40.1	1005 40.6	945 39.3	1015 38.7	5014 39.8
Hispanic	172 7.0	184 6.9	185 7.5	136 5.7	183 7.0	860 6.8
Native American	27 1.1	25 0.9	28 1.1	32 1.3	36 1.4	148 1.2
Other	13 0.5	15 0.6	16 0.7	15 0.6	25 1.0	84 0.7
White	1231 50.3	1343 50.5	1216 49.1	1256 52.3	1342 51.1	6388 50.7
Total	2448 19.4 [2]	2659 21.1	2476 19.6	2403 19.1	2626 20.8	12,612 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total pedestrians involved (13,071) due to missing data.

Pedestrian Injury Severity

Pedestrian crashes tend to be especially serious, with nearly 7% of struck pedestrians being killed, on average, compared less than 0.3% fatalities for all crash-involved people (mostly drivers and passengers) over the same time period. An additional 10% suffered serious (A-type) injuries over the five years (Table 7). NC's overall fatality rate for this 5-year time period averages 0.19 per 10,000 persons living in the State in 2007. Based on 2007 national data, North Carolina is ranked 12th highest of U.S. states for pedestrian fatalities (NHTSA Traffic Safety Facts 2007; available http://www-nrd.nhtsa.dot.gov/Pubs/811002.PDF).

Table 7. Pedestrian injury severity for those involved in crashes

Injury	YEAR					Total
	2003	2004	2005	2006	2007	
K Killed	152 6.3 [1]	170 6.4	172 7.0	181 7.6	175 6.8	850 6.8
A Type Injury (disabling)	254 10.5	273 10.3	251 10.2	211 8.9	223 8.7	1212 9.7
B Type Injury (evident)	897 37	1018 38.4	908 37.0	875 36.8	992 38.6	4690 37.6
C Type Injury (possible)	960 39.6	1004 37.9	977 39.8	939 39.5	1041 40.5	4921 39.4
O No Injury	161 6.6	185 7.0	149 6.1	174 7.3	140 5.5	809 6.5
Total	2424 19.4 [2]	2650 21.2	2457 19.7	2380 19.1	2571 20.6	12,482 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total pedestrians involved (13,071) due to missing data or unknown values.

Pedestrian Alcohol Use

The investigating officer indicated alcohol use by an average of about 12% of the pedestrians struck by motor vehicles over this five year period (Table 8). Suspected use does not necessarily imply that the pedestrian was impaired at the time of the crash, but that evidence of alcohol use was detected.

Table 8. Pedestrian use of alcohol

Alcohol Detected/Suspected	YEAR					Total
	2003	2004	2005	2006	2007	
No	2306 89.5[1]	2413 87.7	2258 88.2	2204 88.7	2362 87.8	11,543 88.3
Yes	271 10.5	339 12.3	303 11.8	282 11.3	329 12.2	1524 11.7
Total	2577 19.7 [2]	2752 21.1	2561 19.6	2486 19.0	2691 20.6	13,067[3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total pedestrians involved (13.071) due to missing data.

Driver and Vehicle Characteristics

Driver Age

There are slight year-to-year fluctuations in the distributions of driver age group involved in pedestrian crashes across the five years of data, but generally similar levels (Table 9). Younger drivers tend to be most involved in crashes with pedestrians as with crashes in general, with the 20 to 24 year age group having highest involvement; this 5-year age group accounted for about 14% of collisions with pedestrians. Older drivers ages 60-69 and 70+ account for the smallest proportions of collisions with pedestrians, although 2007 saw higher numbers and percentages for both of those age groups.

Table 9. Age of drivers involved in crashes with pedestrians

Driver Age	Year					Total
	2003	2004	2005	2006	2007	
< 20 years	239 11.0 [1]	258 11.3	229 10.9	278 12.2	218 9.9	1222 11.1
20 - 24	318 14.7	329 14.5	290 13.8	324 14.2	305 13.9	1566 14.2
25 - 29	253 11.7	256 11.3	252 12.0	248 10.9	229 10.4	1238 11.2
30 - 39	441 20.3	430 18.9	378 18.0	417 18.3	428 19.5	2094 19.0
40 - 49	325 15.0	406 17.8	378 18.0	386 16.9	357 16.2	1852 16.8
50 - 59	269 12.4	271 11.9	275 13.1	305 13.4	287 13.1	1407 12.8
60 - 69	150 6.9	170 7.5	163 7.7	170 7.4	207 9.4	860 7.8
70+	174 8.0	156 6.9	141 6.7	157 6.9	168 7.6	796 7.2
Total	2169 19.7 [2]	2276 20.6	2106 19.1	2285 20.7	2199 19.9	11,035 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total drivers involved (14,267) due to missing data, including for unidentified hit and run drivers.

Driver Gender

Male drivers account for 58% of the pedestrian-motor vehicle crashes over the five years, and female drivers, about 42% (Table 10). There is little year to year variability in these percentages, although female drivers showed a higher rate of involvement in 2007 at about 45%.

Table 10. Gender of drivers involved in crashes with pedestrians

Driver Gender	YEAR					Total
	2003	2004	2005	2006	2007	
Female	924 42.6 [1]	965 42.4	867 41.0	937 41.0	989 44.9	4682 42.4
Male	1247 57.4	1309 57.6	1250 59.1	1347 59.0	1214 55.1	6367 57.6
Total	2171 19.7 [2]	2274 20.6	2117 19.2	2284 20.7	2203 20.0	11,049 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total drivers involved (14,267) due to missing data, including for unidentified hit and run drivers.

Driver Race/Ethnicity

White drivers are involved in about 60% and Black drivers 32% of the crashes with pedestrians (Table 11). Blacks have greater representation as drivers involved in collisions with pedestrians than their overall representation in all traffic crashes (24.5%). Hispanic drivers account for about 5% of collisions with pedestrians, and Asians and Native Americans about 1% each according to information from police crash-reports.

Table 11. Ethnicity of drivers involved in pedestrian crashes

Ethnicity	YEAR					Total
	2003	2004	2005	2006	2007	
Asian	20 0.9 [1]	30 1.3	21 1.0	21 0.9	21 1.0	113 1.0
Black	692 32.0	710 31.4	638 30.3	731 32.3	687 31.4	3458 31.5
Hispanic	112 5.2	107 4.7	132 6.3	119 5.3	121 5.5	591 5.4
Native American	25 1.2	16 0.7	27 1.3	30 1.3	27 1.2	125 1.1
Other	21 1.0	12 0.5	19 0.9	23 1.0	22 1.0	97 0.9
White	1290 59.7	1389 61.4	1267 60.2	1337 59.1	1312 59.9	6595 60.1
Total	2160 19.7 [2]	2264 20.6	2104 19.2	2261 20.6	2190 20.0	10,979 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total drivers involved (14,267) due to missing data including for unidentified hit and run drivers.

Driver Injury Severity

Less than 8% of drivers involved in collisions with pedestrians were reported to be injured over this time period on average (killed, A, B, or C in the table below). Those injuries that do occur are rarely serious (Table 12). About four-tenths of 1% suffered serious (A-type) or fatal injuries in crashes with pedestrians. The proportion of drivers injured is fairly consistent from year to year.

Table 12. Injury severity for drivers involved in crashes with pedestrians

Driver Injury	YEAR					Total
	2003	2004	2005	2006	2007	
K Killed	1 0.1 [1]	1 0.0	3 0.1	4 0.2	3 0.1	12 0.1
A Type (disabling)	7 0.3	5 0.2	7 0.3	15 0.7	1 0.0	35 0.3
B Type (evident)	38 1.8	40 1.8	56 2.7	92 4.1	32 1.5	258 2.4
C Type (possible)	109 5.2	108 4.8	103 5.0	137 6.1	78 3.6	535 5.0
O No Injury	1963 92.7	2081 93.1	1901 91.8	1987 88.9	2032 94.7	9964 92.2
Total	2118 19.6 [2]	2235 20.7	2070 19.2	2235 20.7	2146 19.9	10,804 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total drivers involved (14,267) due to missing data including for unidentified hit and run drivers.

Driver Alcohol Use

The investigating officer detected or suspected alcohol use by the drivers involved in pedestrian crashes in an average of about 4% of the crashes for all five years (Table 13). This means that the investigating police officer reported detecting alcohol; it does not necessarily imply intoxication.

Table 13. Use of alcohol by drivers involved in crashes with pedestrians

Alcohol Detected/Suspected	YEAR					Total
	2003	2004	2005	2006	2007	
No	2114 96.2 [1]	2226 96.4	2078 96.0	2258 95.5	2168 95.7	10,844 95.9
Yes	84 3.8	84 3.6	87 4.0	106 4.5	98 4.3	459 4.1
Total	2198 19.5 [2]	2310 20.4	2165 19.2	2364 20.9	2266 20.1	11,303 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total drivers involved (14,267) due to missing data, including for unidentified hit and run drivers.

Vehicle Type

Most vehicles involved in crashes with pedestrians are passenger vehicles, including cars, pickups, light truck/mini vans, sport utility vehicles (SUVs), and vans, which together account for about 94% of collisions with pedestrians (Table 14). While passenger cars account for the majority (57%), pickups account for nearly 15%, and SUVs have accounted for a steadily increasing share over the past five years, accounting for nearly 17% of collisions with pedestrians in 2007 (average of 14%). Vans and light trucks/mini-vans account for 8.7% of collisions. Heavier vehicles tend to result in more severe injuries to pedestrians. Pedestrians struck by SUVs and light trucks/mini vans were more likely to be killed (9.1% -9.2%, respectively), than those struck by passenger cars (5.7%).

School buses have been involved in an average of a little more than 10 crashes with pedestrians per year over the past five years; three of the 52 collisions resulted in fatalities. Commercial buses were involved in about 7 pedestrian collisions per year across the state; 3 of the 37 total involved fatalities. Commercial types of vehicles including vans, single unit trucks, taxicabs, heavy trucks, and emergency and other types of vehicles account for the remaining crashes with pedestrians. Three-axle and larger trucks and tractors accounted for 1.8% of these collisions and also tend to result in a high proportion of fatal and serious injuries with about 30% of those being struck by these vehicle types being killed.

Table 14. Vehicle types involved in crashes with pedestrians

Vehicle Type	YEAR					Total
	2003	2004	2005	2006	2007	
Activity Bus	1 0.0 [1]	1 0.00	2 0.1	0 0	1 0.0	5 0.0
All Terrain Vehicle (Atv)	1 0.0	0 0	0 0	0 0	2 0.1	3 0.0
Commercial Bus	5 0.2	6 0.2	8 0.3	11 0.5	7 0.3	37 0.3
Ems Vehicle - Ambulance - Rescue Squad	2 0.1	4 0.2	2 0.1	0 0	6 0.2	14 0.1
Farm Tractor	0 0	0 0	0 0	0 0	0 0	0 0
Fire Truck	1 0.0	0 0	1 0.0	2 0.1	0 0	4 0.0
Light Truck (Mini-Van - Panel)	63 2.6	58 2.2	57 2.3	55 2.3	55 2.2	288 2.3
Moped	0 0	1 0.0	0 0	1 0.0	0 0	2 0.0
Motor Home/Recreational Vehicle	2 0.1	1 0.0	3 0.1	1 0.0	2 0.1	9 0.1
Motorcycle	12 0.5	9 0.3	24 1.0	14 0.6	15 0.6	74 0.6
Other	2 0.1	3 0.1	2 0.1	5 0.2	3 0.1	15 0.1
Other Bus	6 0.2	0 0	2 0.1	3 0.1	4 0.2	15 0.1
Passenger Car	1394 56.7	1548 59.3	1398 57.1	1366 56.4	1345 53.5	7051 56.6
Pedalcycle	2 0.1	2 0.1	1 0.0	1 0.0	0 0	6 0.1
Pickup	369 15	371 14.2	352 14.4	366 15.1	363 14.4	1821 14.6
Police	21 0.9	19 0.7	11 0.5	22 0.9	18 0.7	91 0.7
School Bus	11 0.5	12 0.5	12 0.5	10 0.4	7 0.3	52 0.4
Single Unit Truck (2-axle - 6-tire)	39 1.6	43 1.7	38 1.6	36 1.5	27 1.1	183 1.5
Single Unit Truck (3 Or More Axles)	4 0.2	16 0.6	5 0.2	13 0.5	6 0.2	44 0.4
Sport Utility	316 12.9	324 12.4	341 13.9	339 14.0	419 16.7	1739 14.0
Taxicab	6 0.2	4 0.2	5 0.2	8 0.3	6 0.2	29 0.2
Tractor/Tractor & Semi-Trailer	26 1.1	20 0.8	38 1.6	16 0.7	20 0.8	120 1.0

Vehicle Type	YEAR					Total
	2003	2004	2005	2006	2007	
Truck	11 0.5	11 0.4	6 0.2	8 0.3	13 0.5	49 0.4
Unknown Heavy Truck	4 0.2	1 0.0	3 0.1	2 0.1	5 0.2	15 0.1
Van	162 6.6	158 6.1	138 5.6	145 6.0	189 7.5	792 6.4
Total	2460 19.8 [2]	2612 21.0	2449 19.7	2424 19.5	2513 20.2	12,458[3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total differs from total drivers involved (14,267) due to missing data including for unidentified hit and run drivers.

Temporal and Environmental Factors

Month of Year

Pedestrian crashes in North Carolina are fairly evenly distributed throughout the year, with lower numbers occurring during the late winter months of February (a short month) and March, and the warmer months of May, June and July (Table 15). Monthly peaks vary from year to year, but for the five years of data, the highest average numbers of crashes have occurred in the fall months of November, followed by October and December.

Table 15. Pedestrian crashes by month of the year

Month	YEAR					Total
	2003	2004	2005	2006	2007	
January	202 8.27 [1]	194 7.5	189 7.79	210 8.4	163 6.36	958 7.65
February	163 6.67	160 6.18	164 6.76	190 7.6	171 6.67	848 6.77
March	197 8.06	211 8.16	198 8.16	188 7.52	186 7.26	980 7.83
April	207 8.47	214 8.27	190 7.84	228 9.12	188 7.34	1027 8.2
May	182 7.45	203 7.85	213 8.78	205 8.2	194 7.57	997 7.97
June	199 8.15	200 7.73	175 7.22	192 7.68	196 7.65	962 7.69
July	218 8.92	223 8.62	160 6.6	172 6.88	219 8.54	992 7.93
August	205 8.39	211 8.16	198 8.16	208 8.32	235 9.17	1057 8.44
September	214 8.76	245 9.47	240 9.9	226 9.04	219 8.54	1144 9.14
October	236 9.66	230 8.89	220 9.07	240 9.6	279 10.89	1205 9.63
November	211 8.64	258 9.97	225 9.28	242 9.68	262 10.22	1198 9.57
December	209 8.56	238 9.2	253 10.43	198 7.92	251 9.79	1149 9.18
Total	2443 19.52 [2]	2587 20.67	2425 19.37	2499 19.96	2563 20.48	12,517

[1] Row percent of column total
[2] Column percent of row total

Day of the Week

Pedestrian crashes in NC are most likely to occur on a Friday with the second highest number occurring on Saturdays. Pedestrian crashes are least likely to occur on a Sunday (Table 16). These results are typically consistent from year to year, but in 2003 there was a spike in Wednesday crashes and a lower number and proportion of crashes occurred on Saturdays.

Table 16. Pedestrian crashes by day of the week

Day of Week	YEAR					Total
	2003	2004	2005	2006	2007	
Monday	349 14.29 [1]	354 13.68	336 13.86	307 12.28	378 14.75	1724 13.77
Tuesday	317 12.98	342 13.22	333 13.73	367 14.69	353 13.77	1712 13.68
Wednesday	394 16.13	381 14.73	364 15.01	332 13.29	384 14.98	1855 14.82
Thursday	374 15.31	363 14.03	334 13.77	362 14.49	370 14.44	1803 14.40
Friday	402 16.46	456 17.63	420 17.32	446 17.85	443 17.28	2167 17.31
Saturday	315 12.89	392 15.15	378 15.59	382 15.29	389 15.18	1856 14.83
Sunday	292 11.95	299 11.56	260 10.72	303 12.12	246 9.6	1400 11.18
Total	2443 19.52 [2]	2587 20.67	2425 19.37	2499 19.96	2563 20.48	12,517

[1] Row percent of column total
[2] Column percent of row total

Time of Day

Pedestrian crashes were most likely to occur in the afternoon and early evening between the hours of 3 to 6 p.m. and 6 to 9 p.m., followed by mid-day from noon to 3 pm (Table 17). Above 41% of pedestrian collisions occurred during these six hours. There are also more pedestrian crashes between 9 p.m. and midnight than between 9 a.m. to noon, suggesting over-involvement of pedestrians in crashes at night; exposure data to test this hypothesis are, however, lacking. Fewer crashes occur during late night and early morning hours; however, night-time collisions are, however associated with greater injury severity, and more often involve alcohol use. For example, over this period approximately 10% of pedestrians struck during 9 pm to midnight, 14% of those struck midnight to 3 am, and nearly 22% of those struck from 3 to 6 am were killed compared to 6.8% of those struck over all hours. There is little notable year to year variability in these trends.

Table 17. Pedestrian crashes by time of day

Time of Day	YEAR					Total
	2003	2004	2005	2006	2007	
midnight to 3 am	157 6.43 [1]	168 6.49	154 6.35	187 7.48	163 6.36	829 6.62
3 am to 6 am	71 2.91	86 3.32	70 2.89	87 3.48	103 4.02	417 3.33
6 am to 9 am	203 8.31	235 9.08	229 9.44	198 7.92	237 9.25	1102 8.8
9 am to noon	266 10.89	266 10.28	279 11.51	268 10.72	299 11.67	1378 11.01
noon to 3 pm	390 15.96	396 15.31	357 14.72	379 15.17	364 14.20	1886 15.07
3 pm to 6 pm	524 21.45	551 21.3	514 21.2	538 21.53	511 19.94	2638 21.08
6 pm to 9 pm	512 20.96	517 19.98	497 20.49	534 21.37	543 21.19	2603 20.8
9 pm to midnight	320 13.1	368 14.22	325 13.4	308 12.32	343 13.38	1664 13.29
Total	2443 19.52 [2]	2587 20.67	2425 19.37	2499 19.96	2563 20.48	12,517

[1] Row percent of column total
[2] Column percent of row total

Light Condition

While 57% of collisions occurred during daylight hours, over 42% of pedestrian crashes over the past five years have occurred during non-daylight conditions, including dawn and dusk. Most of these crashes occur under conditions of darkness (Table 18). A majority of night-time crashes occur on lighted roadway segments (typically urban areas), although almost as many occur in unlighted areas. Those struck at night on unlighted roadways are more like to be killed (nearly 18%) compared with those struck at night on lighted roadways (7%; data not shown). This likely reflects a number of factors including higher speeds associated with rural (unlighted) roads, and perhaps a decreased tendency for drivers to detect and slow before striking pedestrians on unlighted roadways. Trends are fairly consistent across the five years of data, but there are slight year-to-year fluctuations. As with late night times-of-day, night-time collisions are probably over-represented based on the amount of walking and driving that occurs during hours of darkness, but data are lacking to support this conjecture.

Table 18. Pedestrian crashes by light condition

Light Condition	YEAR					Total
	2003	2004	2005	2006	2007	
Dark - Lighted Roadway	469 19.24 [1]	531 20.55	466 19.26	528 21.15	501 19.57	2495 19.96
Dark - Roadway Not Lighted	416 17.06	466 18.03	445 18.39	455 18.23	481 18.79	2263 18.11
Dark - Unknown Lighting	17 0.7	15 0.58	13 0.54	13 0.52	18 0.7	76 0.61
Dawn	22 0.9	26 1.01	28 1.16	29 1.16	33 1.29	138 1.1
Daylight	1441 59.11	1469 56.85	1396 57.69	1389 55.65	1450 56.64	7145 57.17
Dusk	67 2.75	71 2.75	67 2.77	74 2.96	76 2.97	355 2.84
Other	6 0.25	6 0.23	5 0.21	8 0.32	1 0.04	26 0.21
Total	2438 19.51[2]	2584 20.68	2420 19.36	2496 19.97	2560 20.48	12,498 [3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total does not equal total number of collisions (12,517) due to missing data and unknown cases.

Weather

The vast majority (93%) of pedestrian crashes occur under clear or cloudy (not raining) weather conditions on average (Table 19), no doubt reflecting exposure. Year to year variation in the number of crashes occurring under rainy, snowy/icy, or foggy/smoky conditions is also likely a reflection of exposure to these conditions (e.g., more pedestrian crashes under rainy or snowy conditions in years when the state received more snowfall).

Table 19. Pedestrian crashes by weather conditions

Weather	YEAR					Total
	2003	2004	2005	2006	2007	
Clear	1735 71.02 [1]	1888 72.98	1841 75.92	1961 78.47	2095 81.74	9520 76.06
Cloudy	491 20.1	507 19.6	407 16.78	381 15.25	317 12.37	2103 16.8
Fog / Smog /Smoke	13 0.53	9 0.35	17 0.7	8 0.32	11 0.43	58 0.46
Other	6 0.25	5 0.19	6 0.25	0 0	6 0.23	23 0.18
Rain	181 7.41	154 5.95	142 5.86	146 5.84	128 4.99	751 6.0
Severe Crosswinds	0 0	0 0	0 0	1 0.04	0 0	1 0.01
Snow - Sleet - H	17 0.7	24 0.93	12 0.49	2 0.08	6 0.23	61 0.49
Total	2443 19.52 [2]	2587 20.67	2425 19.37	2499 19.96	2563 20.48	12,517

[1] Row percent of column total
[2] Column percent of row total

Roadway Characteristics

Roadway Classification

Nearly half (46%) of all pedestrian-motor vehicle crashes occurred on local (mostly city) streets reflecting higher levels of walking/numbers of pedestrians in cities and neighborhoods (Table 20). Around 25% of reported pedestrian crashes in this five year period occurred in parking lots, public driveways, or other public vehicular areas. About 12% occurred along State Secondary routes. All other roadway classifications accounted for about 14% of the total, including around 5% on NC Routes and 7% on US Routes, with approximately 2% on Interstate Routes. Collisions on interstates often involve pedestrians that were involved in a prior vehicle-to-vehicle collision and were struck attempting to cross the expressway, or standing near or walking to or from a disabled vehicle. Collisions that occurred on private property were reported frequently enough to comprise about 3% of the reported crashes.

Table 20. Pedestrian crashes by roadway classification

Road Class	YEAR					Total
	2003	2004	2005	2006	2007	
Interstate Route	54 2.21[1]	56 2.16	50 2.06	44 1.76	40 1.56	244 1.95
Local Street	1179 48.26	1164 44.99	1096 45.2	1141 45.66	1194 46.59	5774 46.13
North Carolina Route	131 5.36	139 5.37	129 5.32	143 5.72	127 4.96	669 5.34
Private Property	64 2.62	66 2.55	68 2.8	70 2.8	90 3.51	358 2.86
Public Vehicular Area (ex. Parking lot)	559 22.88	646 24.97	605 24.95	649 25.97	652 25.44	3111 24.85
State Secondary Route	288 11.79	351 13.57	308 12.7	301 12.04	300 11.71	1548 12.37
United States Route	168 6.88	165 6.38	169 6.97	151 6.04	160 6.24	813 6.5
Total	2443 19.52[2]	2587 20.67	2425 19.37	2499 19.96	2563 20.48	12,517

[1] Row percent of column total
[2] Column percent of row total

Number of Through Lanes

Number of lanes indicated should reflect number of *through* lanes, excluding limited turn lanes and other non-continuing lanes. The table below excludes pedestrian crashes that occurred on public vehicular areas and other non-roadway locations (Table 21). The majority of reported on-roadway pedestrian crashes occurred on two-lane roads (a fairly consistent 59 - 60% year-to-year), while approximately 30% occurred on roadways with four or more travel lanes. There are year-to-year fluctuations in most categories. The numbers of crashes reflect amounts of walking and driving on roadways with different numbers of lanes as well as other possible differences in risk exposure to crashes. There are also likely to be some inaccuracies in these data, with officers interpreting numbers of lanes differently based on divided/undivided and other roadway characteristics.

Table 21. Pedestrian crashes by number of through traffic lanes

Number of Thru Lanes	YEAR					Total
	2003	2004	2005	2006	2007	
1	83 4.45[1]	96 4.73	84 4.5	81 4.17	91 4.51	435 4.47
2	1103 59.17	1205 59.39	1119 59.94	1137 58.52	1207 59.78	5771 59.36
3	124 6.65	137 6.75	102 5.46	112 5.76	120 5.94	595 6.12
4	282 15.13	319 15.72	288 15.43	343 17.65	321 15.9	1553 15.97
5	146 7.83	160 7.89	159 8.52	152 7.82	150 7.43	767 7.89
6 or 7	101 5.42	88 4.34	90 4.82	80 4.12	106 5.25	465 4.78
8+	25 1.34	24 1.18	25 1.34	38 1.96	24 1.19	136 1.4
Total	1864 19.17[2]	2029 20.87	1867 19.2	1943 19.99	2019 20.77	9722[3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total reflects only on-roadway crashes for which number of lanes is not missing.

Speed Limit

Two-thirds (66%) of pedestrian crashes on public roadways took place on roads with speed limits of 35 mph or less reflecting speeds on urban streets where more walking takes place (Table 22). The 36 - 45 mph roadways account for about 18% of crashes, and above 45 mph roadways another 17% of crashes. There seems to be a slight increasing trend in crashes on the lowest speed category (15 mph and lower) of roads, perhaps reflecting an increasing use of very low speed limits on some roads.

Table 22. Pedestrian crashes by speed limit of roads

Speed Limit	YEAR					Total
	2003	2004	2005	2006	2007	
0-15 MPH	242 11.93[1]	286 12.95	299 14.81	331 15.5	374 16.59	1532 14.39
16-25 MPH	272 13.41	296 13.41	274 13.57	284 13.3	303 13.44	1429 13.42
26-35 MPH	803 39.58	825 37.36	765 37.89	807 37.78	829 36.78	4029 37.85
36-45 MPH	340 16.76	425 19.25	354 17.53	393 18.4	417 18.5	1929 18.12
46-55 MPH	324 15.97	326 14.76	273 13.52	279 13.06	284 12.6	1486 13.96
56+ MPH	48 2.37	50 2.26	54 2.67	42 1.97	47 2.09	241 2.26
Total	2029 19.06[2]	2208 20.74	2019 18.96	2136 20.06	2254 21.17	10,646[3]

[1] Row percent of column total
[2] Column percent of row total
[3] Total reflects only on-roadway crashes for which the speed limit was reported.

Roadway Feature

On average, over this time period, approximately 62% of crashes occurred on roadway locations with no special features (i.e., in between intersections, bridges, underpasses, etc.) (Table 23). For this table, detailed features that have few reported crashes have been combined. According to state crash data, intersection locations accounted for about 14% of pedestrian crashes, with the majority occurring at four-way intersections. (Note that during the crash typing process, analysts coded general crash location [intersection/non-intersection] from analysis of crash diagrams, narratives, and other information contained on hard copies of the police crash report. The percent of intersection or intersection-related collisions coded in this way accounted for a somewhat higher percentage of pedestrian-related collisions, about 23% combined. These data are summarized in the Crash Types Summary Report). Crashes at public and private driveways account for 13% and 7%, respectively. No other road feature category exceeds 1% of the total, except for the "Other" category which includes any other features not specifically identified.

Table 23. Pedestrian crashes by roadway feature

Road Feature	YEAR					Total
	2003	2004	2005	2006	2007	
No Special Feature	1534 62.79[1]	1604 62	1479 60.99	1599 63.99	1652 64.46	7868 62.86
Bridge or Bridge Approach	23 0.94	22 0.85	23 0.95	23 0.92	17 0.66	108 0.86
Underpass	1 0.04	5 0.19	7 0.29	6 0.24	5 0.2	24 0.19
Driveway - Public	322 13.18	344 13.3	342 14.1	313 12.53	322 12.56	1643 13.13
Driveway - Private	154 6.3	179 6.92	157 6.47	139 5.56	163 6.36	792 6.33
Intersection	355 14.53	390 15.08	356 14.68	351 14.05	354 13.81	1806 14.43
Non-intersection Median Crossing	2 0.08	3 0.12	0 0	2 0.08	1 0.04	8 0.06
Begin./End Divided Highway	3 0.12	1 0.04	1 0.04	1 0.04	0 0	6 0.05
On - Off Ramp	16 0.65	11 0.43	20 0.82	24 0.96	15 0.59	86 0.69
Railroad Crossing	3 0.12	1 0.04	1 0.04	1 0.04	2 0.08	8 0.06
Other	30 1.23	27 1.04	39 1.61	40 1.6	32 1.25	168 1.34
Total	2443 19.52[2]	2587 20.67	2425 19.37	2499 19.96	2563 20.48	12,517

[1] Row percent of column total
[2] Column percent of row total

For more information about pedestrian crashes in North Carolina and events leading up to the crashes, see the **Pedestrian Crash Types Summary, 2003 – 2007,** available at http://www.pedbikeinfo.org/pbcat/pdf/summary_ped_types5yrs.pdf .