

# Promoting Education and Enforcement in Wilson Pedestrian Safety Efforts:

## Project Overview and Preliminary Draft Action Plan

6/22/10

The objective of this project is to assist selected communities within North Carolina in implementing the education and enforcement activities of their established (or soon to be completed) pedestrian safety plans. Through this project, we will develop model programs and processes to implement appropriate pedestrian safety campaigns that will target significant numbers of pedestrian injuries and fatalities within the combined (selected) jurisdictions. These programs can then be repeated elsewhere to address the types of behaviors, demographic groups, environments, and other issues that are common Statewide as well as specific to other regions in North Carolina.

The project team will work closely with the North Carolina Department of Transportation (NC DOT) and three NC cities (Charlotte, Durham, and Wilson). Based on the results of the activities in the selected cities, we will provide feedback and coordinate with State leadership (including the NC Executive Committee for Highway Safety) to develop supportive strategies, policies, and programs to facilitate implementation of effective behavioral pedestrian safety programs in communities Statewide.

### Project Overview

#### *Objectives and goals*

- Develop and implement education and enforcement-oriented interventions to improve pedestrian safety in three target communities (Charlotte, Wilson, and Durham)
- Evaluate interventions using both process and outcome measures
- Present lessons learned and models for other communities across NC

#### *Timeline and funding*

- Four year project (max of 5)
- Some funding to directly support communities will also be seeking additional grants to tie into project
- Our first goal is to spend the next few months reviewing pedestrian crash data, identifying problems and potential solutions, and developing an "Action Plan" for activities to conduct with local agencies by September 2010.

#### *Role of HSRC*

- Review pedestrian crash data and identify crash locations suitable for education/enforcement interventions
- Develop partnerships with local agencies to discuss issues and potential interventions
- Work with local agencies to develop integrated goals, plans, and timelines for intervention implementation

- Provide support to local agencies to implement planned activities (including financial resources, training, technical assistance, and staff support for materials, etc.) and assist in coordination
- Coordinate with local agencies to collect, manage, and analyze data related to the interventions and prepare final report

*Anticipated Role of Wilson (and other demonstration communities)*

- Assist in providing pedestrian-related data and background/context to identify key issues, locations, and recommended activities – this could be structured through the use of the Walk Friendly Communities Assessment Tool or in less formal discussions of data and trends
- Assist in partnership development and activity coordination (to provide input to process evaluation)
- Assist with data collection and outcome evaluation efforts, to the extent possible
- Depending on what interventions are selected and the funding available, could assist in some aspects of intervention implementation
- Depending on other grant/funding opportunities identified, could partner with HSRC or other local organizations to seek additional funds

## **Wilson Pedestrian Safety Description**

A City of just under 50,000 people, Wilson represents an opportunity to create a model program that could be easily transferred to communities of similar size across the state.

In 2000, there were 42.5 percent black and 7.3 percent Hispanic or Latino residents, higher than the state averages of 21.6 percent and 4.7 percent, respectively. The median household income in Wilson in 1999 was \$31,169, less than the state average of \$39,184. Also, 21.6 percent of the population was below poverty level, compared with 12.3 percent statewide.<sup>1</sup> Roughly 15 percent of Wilson households do not have access to a motor vehicle, higher than state (7.5) and US (10.3) averages.<sup>2</sup>

Between 2003 and 2007, the City of Wilson experienced 132 pedestrian-vehicle crashes. Wilson’s estimated crash rate per population is 5.3 per 10,000. This rate compares with Charlotte (also 5.3 per 10,000), Wilmington (5.6), and Gastonia (6.0). According to the Pedestrian Plan, crashes were experienced along local streets in residential areas more than twice as often as other locations.

About 30 percent of Wilson pedestrians involved in reported collisions identified as White, 54 percent as Black, and about 8 percent as Hispanic. The youngest age group – children up to age 5 – have accounted for 11 percent of pedestrians struck in Wilson over this five year time period (with nearly half being struck in 2004). Altogether, children up to age 15 accounted for 24 percent of those struck by motor vehicles; this proportion is higher than the State average of 16 percent for this age group.

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<sup>1</sup> State & County Quick Facts – Wilson. US Census Bureau. 2000. <http://quickfacts.census.gov/qfd/states/37/3774540.html>

<sup>2</sup> City of Wilson Pedestrian Plan. City of Wilson. August 2008. <http://www.wilsonnc.org/downloads/PedPlanFinal.pdf>

Backing vehicle (predominantly in parking areas and driveways) and other Off-roadway collisions together accounted for more than one-quarter (26.5 percent) of collisions. Over all crash types, the largest proportion, 37 percent, of the (reported) pedestrian collisions in Wilson occurred at non-intersection locations – that is, midblock locations such as at or near driveways or in-between intersections.

## **Current Wilson Pedestrian Safety Activities & Opportunities**

**Safe Routes to School Action Plan** – Wilson has received state funding to complete a SRTS Action Plan for six local schools. The process will involve a series of public meetings and outreach efforts to inform the public, as well as a data collection/assessment effort to determine the pedestrian safety needs of the local schools. The final plan will be drafted by late 2010.

**Pedestrian & Bicycle Safety Brochures** – Over the past year, the City of Wilson has developed educational brochures intended to spread safety messages to pedestrians, bicyclists, and motorists. The pedestrian and bicycle safety brochures are complete, and the motorist brochure is still in development.

**Bicycle & Pedestrian Advisory Board** – The advisory board meets on the fourth Tuesday of each month, and has been very active in promoting bicycle and pedestrian improvements in Wilson. They have had a hand in a wide variety of projects, from planning bicycle parking facilities to giving input on the Safe Routes to School project. They will be a valuable resource during the NHTSA project.

**Wilson Growing Together: The 2030 Comprehensive Plan** – In April 2010, the Wilson City Council unanimously adopted the comprehensive plan. Denise Boswell, the primary contact for the NHTSA project, led this effort, and the project team will seek to combine efforts with the goals outlined in the plan. More info at:

<http://www.wilsonnc.org/departments/developmentservices/plansandordinances/comprehensiveplan/>

**Wilson County Comprehensive Transportation Plan** – The County’s comprehensive transportation plan is currently being updated by NCDOT, Wilson County, and the City of Wilson. More info at:

<http://www.wilsonnc.org/departments/developmentservices/plansandordinances/wilsoncountycprehensivetransportationplan/>

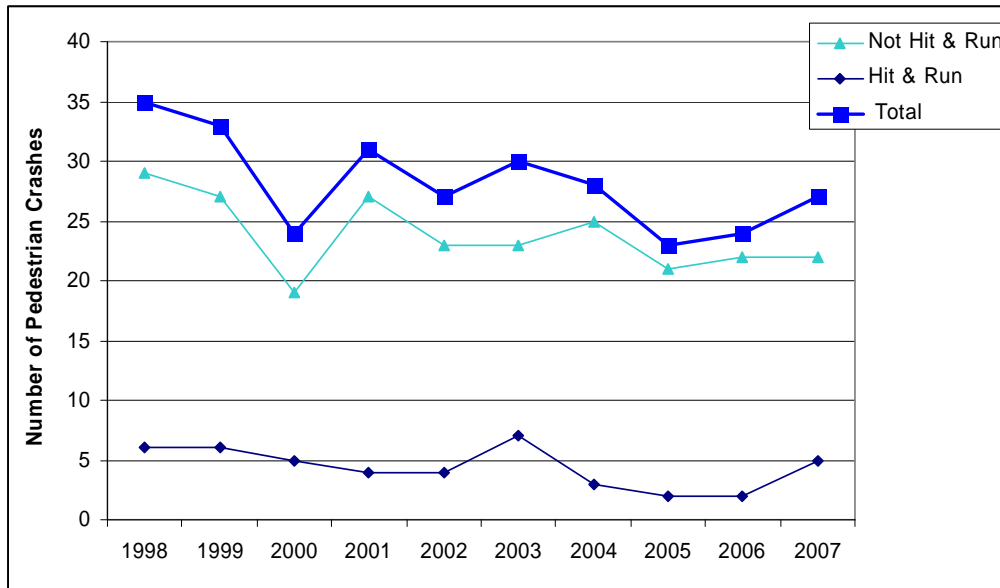
**Wilson Pedestrian Plan** – The Pedestrian Plan was adopted in 2008. It identifies areas of pedestrian safety concern, possible solutions to these issues, and makes recommendations for activities to enhance pedestrian safety and promote walking. Specifically, the City identified education and enforcement as two priority areas in the plan. The plan is available at:

<http://www.wilsonnc.org/downloads/PedPlanFinal.pdf>.

## Pedestrian Crash Data Analysis to Date

Collisions involving pedestrians have shown a general downward trend over most of the past ten years from a high of 35 in 1998 to a low of 23 in 2005. There has, however been a slight increase in each of the past two years with 27 collisions reported in 2007.

**Figure 1. Ten-year trend of pedestrian collisions reported from Wilson, NC.<sup>3</sup>**



Although ranked 17th in estimated 2007 population, Wilson ranks 13th in terms of number of pedestrian crashes reported to the State Department of Motor Vehicles (DMV) (See Table 1). (Note that these numbers includes “non-reportable” collisions that are in the state database and may not match with reportable pedestrian crashes in other databases.) With a projected 2007 population of 49,947, Wilson’s estimated crash rate per population is 5.3 per 10,000. As mentioned, this rate compares with Charlotte (also 5.3 per 10,000), Wilmington (5.6) and Gastonia (6.0). Crash rates based on population are, at best, a crude estimate of exposure, since many other factors affect amounts of walking in an area and crash risks (safety).

**Table 1. Top 20 municipalities for pedestrian crashes, 2003-2007.**

	City Name	2003	2004	2005	2006	2007	Totals
1	Charlotte	363	366	339	349	374	1791
2	Raleigh	167	174	162	173	211	887
3	Durham	111	131	89	106	107	544

<sup>3</sup> Data are compiled from data prepared for NCDOT, Division of Bicycle and Pedestrian Transportation. A hard copy of each bicycle or pedestrian crash reported to DMV is reviewed and a crash type assigned, and no crashes are excluded based on reporting requirements for injuries or property damage. Therefore, these data may not precisely match that in other State crash databases.

4	Greensboro	127	109	111	99	77	523
5	Fayetteville	84	67	73	76	113	413
6	Wilmington	61	58	66	56	43	284
7	Asheville	46	44	60	55	50	255
8	Winston-Salem	54	65	47	40	38	244
9	Gastonia	39	44	39	41	56	219
10	High Point	19	39	34	46	38	176
11	Rocky Mount	31	39	27	39	30	166
12	Chapel Hill	21	32	24	33	30	140
13	Wilson	30	28	23	24	27	132
14	Jacksonville	16	31	28	29	24	128
15	Cary	24	28	15	27	30	124
16	Hickory	25	21	24	29	24	123
17	Concord	23	14	12	22	26	97
18	Burlington	19	19	18	18	21	95
19	Greenville	26	28	10	13	10	87
20	Goldsboro	13	18	17	17	18	83

In 2007, the most recent year compiled and analyzed to date, 27 pedestrians were reported to be involved in crashes in the City of Wilson. One pedestrian was killed and one was reported to be seriously injured (Table 1). The cost of these pedestrian crashes, for individuals and the community as a whole, is a significant burden. The National Safety Council estimates the average comprehensive cost of a motor-vehicle crash, by injury. Applying these costs to the pedestrian crashes that occurred in Wilson in 2007 alone, the cost of these crashes is nearly \$5 million (See Table 2). The crash costs are higher when children are involved, as children have more life-years lost in crashes compared to other pedestrians.

**Table 2. Wilson average comprehensive cost (per person) by injury severity, 2007**

Pedestrian Injury	2007 Totals <sup>4</sup>	Average Comprehensive Cost (Per Person) by Injury Severity, 2007 <sup>5</sup>	Total Comprehensive Cost
K Killed	1	\$4,100,000	\$4,100,000
A Type Injury (disabling)	1	\$208,500	208,500
B Type Injury (evident)	8	\$53,200	425,600
C Type Injury (possible)	9	\$25,300	227,700
O No Injury	5	\$2,300	11,500
Unknown	3	unknown	
<b>Totals</b>	<b>27</b>		<b>\$4,973,300</b>

<sup>4</sup> Pedestrian Injuries. NCDOT Division of Bicycle and Pedestrian Transportation. [http://www.pedbikeinfo.org/pbcat/ped\\_main.htm](http://www.pedbikeinfo.org/pbcat/ped_main.htm)

<sup>5</sup> National Safety Council. <http://www.nsc.org/resources/issues/estcost.aspx>

## Time and Environmental Crash Factors

Understanding where, when, how and why pedestrian collisions occurred can help toward developing appropriate countermeasures. The following tables highlight some of the characteristics of pedestrian collisions in Wilson over a recent five year period.

On average, November, followed by April and September, have been the highest crash months in Wilson. For comparison, the fall months of October, November, and December were the highest crash months Statewide. However, there is considerable year-to-year variability. In 2007, for example, there were five pedestrian crashes in August. There were six crashes in June of 2004, and five in April of 2003, and none in some months and years. (See Table 3)

**Table 3. Wilson pedestrian crashes by month**

Month	2003	2004	2005	2006	2007	Totals	Statewide
January	1 3.3%	1 3.6%	0 0.0%	3 12.5%	2 7.4%	7 5.3%	958 7.6%
February	1 3.3%	2 7.1%	1 4.3%	2 8.3%	3 11.1%	9 6.8%	848 6.8%
March	5 16.7%	1 3.6%	1 4.3%	1 4.2%	2 7.4%	10 7.6%	980 7.8%
April	5 16.7%	4 14.3%	2 8.7%	4 16.7%	0 0.0%	15 11.4%	1027 8.2%
May	2 6.7%	3 10.7%	0 0.0%	1 4.2%	2 7.4%	8 6.1%	997 8.0%
June	1 3.3%	6 21.4%	3 13.0%	2 8.3%	1 3.7%	13 9.8%	962 7.7%
July	2 6.7%	3 10.7%	1 4.3%	4 16.7%	2 7.4%	12 9.1%	992 7.9%
August	2 6.7%	1 3.6%	3 13.0%	2 8.3%	5 18.5%	13 9.8%	1057 8.4%
September	3 10.0%	2 7.1%	3 13.0%	1 4.2%	5 18.5%	14 10.6%	1144 9.1%
October	1 3.3%	3 10.7%	3 13.0%	2 8.3%	2 7.4%	11 8.3%	1205 9.6%
November	6 20.0%	2 7.1%	5 21.7%	0 0.0%	3 11.1%	16 12.1%	1198 9.6%
December	1 3.3%	0 0.0%	1 4.3%	2 8.3%	0 0.0%	4 3.0%	1149 9.2%
Totals	30 22.7%	28 21.2%	23 17.4%	24 18.2%	27 20.5%	132	12,517

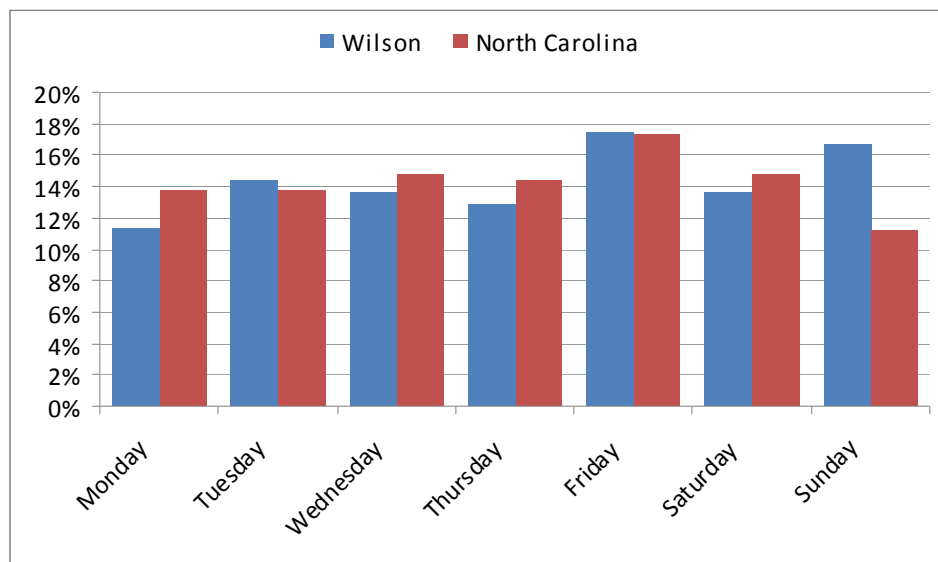
On average over this five year period, Friday and Sunday have been the highest pedestrian crash days in Wilson (about 17 percent each). For the State as a whole, Friday is also the highest crash day, but Sunday is typically the lowest crash day. With small crash numbers, one high-crash year (in 2004 – eight crashes on Sundays), can result in significant fluctuations in year-to-year proportions. (See Table 4)

**Table 4. Wilson pedestrian crashes by day of the week**

Day of Week	2003	2004	2005	2006	2007	Totals	Statewide
Monday	7 23.3%	2 7.1%	1 4.3%	2 8.3%	3 11.1%	15 11.4%	1724 13.8%
Tuesday	3 10.0%	4 14.3%	4 17.4%	5 20.8%	3 11.1%	19 14.4%	1712 13.7%
Wednesday	6 20.0%	3 10.7%	5 21.7%	1 4.2%	3 11.1%	18 13.6%	1855 14.8%
Thursday	2 6.7%	3 10.7%	4 17.4%	4 16.7%	4 14.8%	17 12.9%	1803 14.4%
Friday	6 20.0%	4 14.3%	3 13.0%	4 16.7%	6 22.2%	23 17.4%	2167 17.3%
Saturday	5 16.7%	4 14.3%	2 8.7%	3 12.5%	4 14.8%	18 13.6%	1856 14.8%
Sunday	1 3.3%	8 28.6%	4 17.4%	5 20.8%	4 14.8%	22 16.7%	1400 11.2%
Totals	30 22.7%	28 21.2%	23 17.4%	24 18.2%	27 20.5%	132	12,517

From 12:01 am Saturday (following Friday evening) to midnight Sunday, the two days of the weekend comprise about 30 percent of crashes (and about 28 percent of time), as shown in Figure 2.

**Figure 2. Wilson pedestrian crashes by day of the week**



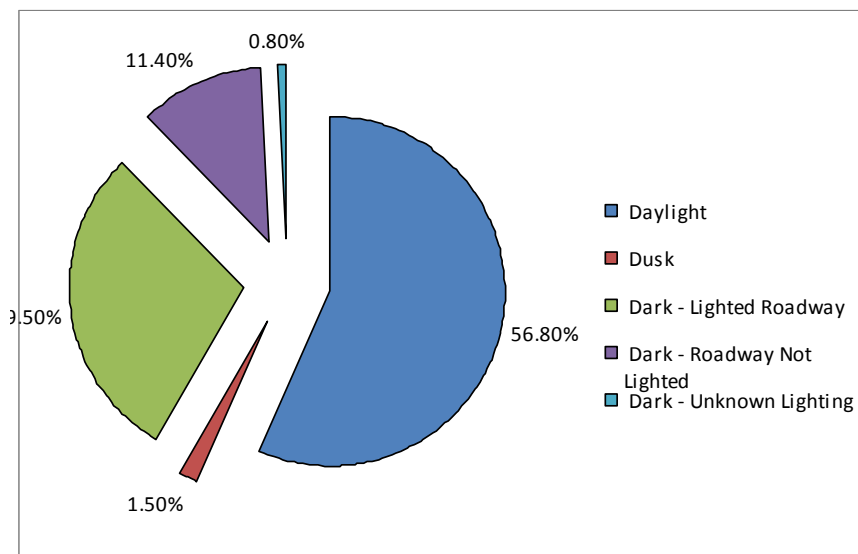
A majority of pedestrian crashes (57 percent) have occurred during daylight conditions, similar to the proportion Statewide; nevertheless it is likely that crashes under dark conditions are over-represented for the amount of walking that occurs at night, although data are lacking to verify this conjecture. About 30 percent of pedestrian crashes occurred on roadways that were reported to have supplemental lighting while 11-12 percent occurred at night at locations that were indicated to have no lighting (or unknown lighting). See Table 5 and Figure 3 for more details.

**Table 5. Wilson pedestrian crashes by light condition**

Light Condition	2003	2004	2005	2006	2007	Totals	Statewide
Daylight	19 63.3%	17 60.7%	14 60.9%	13 54.2%	12 44.4%	75 56.8%	7145 57.1%
Dusk	0 0.0%	0 0.0%	1 4.3%	0 0.0%	1 3.7%	2 1.5%	355 2.8%
Dawn	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	138 1.1%
Dark - Lighted Roadway	7 23.3%	10 35.7%	7 30.4%	8 33.3%	7 25.9%	39 29.5%	2495 19.9%
Dark - Roadway Not Lighted	3 10.0%	1 3.6%	1 4.3%	3 12.5%	7 25.9%	15 11.4%	2263 18.1%
Dark - Unknown Lighting	1 3.3%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 0.8%	76 0.6%
Other/Unknown	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	45.0% 0.0%
Totals	30 22.7%	28 21.2%	23 17.4%	24 18.2%	27 20.5%	132	12,517

*Counts are of Crashes where at least one (1) person was a pedestrian.*

**Figure 3. Wilson pedestrian crashes by light condition**



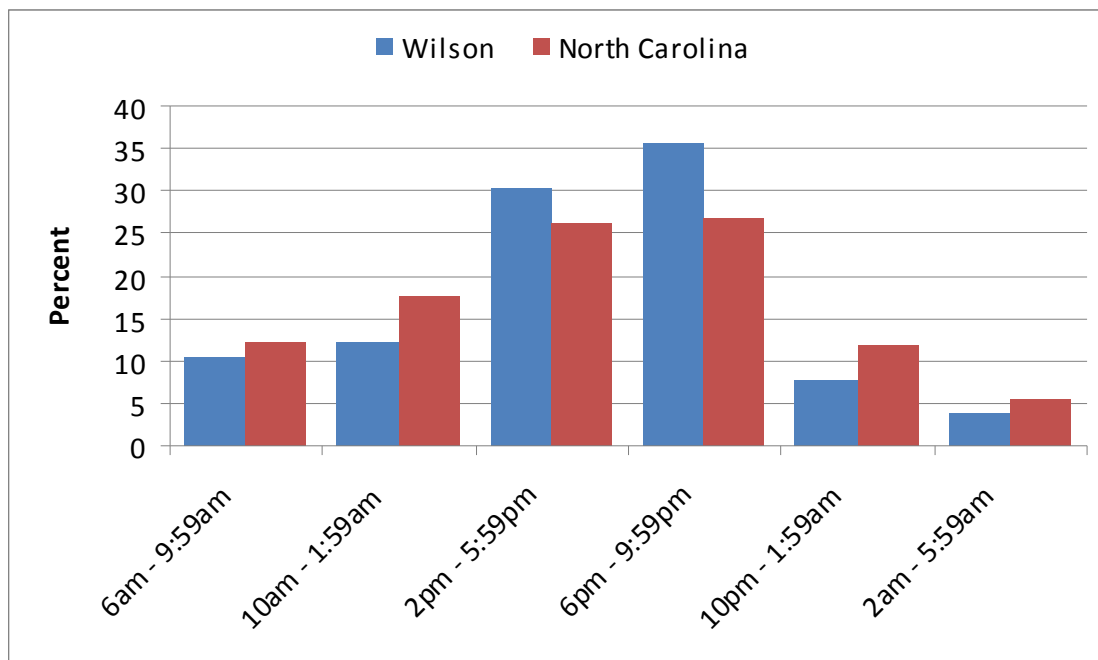
North Carolina’s peak period for crashes over this time period is the evening hours from 6 to 10pm with almost the same number occurring during the afternoon period of 2 to 6pm. The peaks are the same for Wilson, only these 8 hours account for an even larger proportion of Wilson’s pedestrian crashes – 66 percent – compared with 53 percent for the State as a whole. Thus, proportionally fewer crashes occurred during morning, midday, and later evening and night-time hours. (See Table 6 and Figure 4)

**Table 6. Wilson pedestrian crashes by time of day**

Time Of Day	2003	2004	2005	2006	2007	Totals	Statewide
6:00 am- 9:59 am	6 20.0%	1 3.6%	4 17.4%	1 4.2%	2 7.4%	14 10.6%	1509 12.1%
10:00 am- 1:59 pm	5 16.7%	4 14.3%	0 0.0%	3 12.5%	4 14.8%	16 12.1%	2199 17.6%
2:00 pm- 5:59 pm	9 30.0%	8 28.6%	10 43.5%	7 29.2%	6 22.2%	40 30.3%	3296 26.3%
6:00 pm - 9:59 pm	7 23.3%	12 42.9%	8 34.8%	11 45.8%	9 33.3%	47 35.6%	3338 26.7%
10:00 pm- 1:59 am	3 10.0%	3 10.7%	0 0.0%	1 4.2%	3 11.1%	10 7.6%	1494 11.9%
2:00 am - 5:59 am	0 0.0%	0 0.0%	1 4.3%	1 4.2%	3 11.1%	5 3.8%	681 5.4%
<b>Totals</b>	30 22.7%	28 21.2%	23 17.4%	24 18.2%	27 20.5%	132 100.0%	12,517

*Counts are of Crashes where at least one (1) person was a pedestrian.*

**Figure 4. Wilson and NC pedestrian crashes by time of day**



## Pedestrian Characteristics

Wilson compares favorably in terms of crash severity with both Statewide and other urban areas of the State having lower fatality and disabling injury rates over the 2003-2007 time period. Two pedestrians have been killed over the five-year span, while five were reported to receive serious/disabling-type injuries (Type A). (See Table 7)

**Table 7. Wilson pedestrian crashes by injury severity**

Injury	2003	2004	2005	2006	2007	Totals	NC urban	NC rural
K Killed	0 0.0%	0 0.0%	1 4.2%	0 0.0%	1 3.7%	2 1.5%	382 4.3%	468 11.5%
A Type Injury (disabling)	1 3.4%	2 7.1%	0 0.0%	1 4.2%	1 3.7%	5 3.8%	731 8.1%	481 11.8%
B Type Injury (evident)	11 37.9%	9 32.1%	8 33.3%	8 33.3%	8 29.6%	44 33.3%	3192 35.5%	1498 36.7%
C Type Injury (possible)	10 34.5%	10 35.7%	11 45.8%	12 50.0%	9 33.3%	52 39.4%	3645 40.6%	1276 31.2%
O No Injury	3 10.3%	4 14.3%	3 12.5%	0 0.0%	5 18.5%	15 11.4%	621 6.9%	188 4.6%
Unknown	4 13.8%	3 10.7%	1 4.2%	3 12.5%	3 11.1%	14 10.6%	416 4.6%	173 4.2%
<b>Totals</b>	<b>29 22.0%</b>	<b>28 21.2%</b>	<b>24 18.2%</b>	<b>24 18.2%</b>	<b>27 20.5%</b>	<b>132</b>	<b>8987 68.8%</b>	<b>4084 31.2%</b>

The youngest age group – children up to age 5 – have accounted for 11 percent of pedestrians struck in Wilson over this five year time period (with 43 percent being struck in 2004). By comparison, this age group accounts for only 7.4 percent of Wilson’s population, according to the 2000 Census.<sup>6</sup> Altogether, children up to age 15 accounted for 24 percent of those struck by motor vehicles; this proportion compares with the State average of 16 percent for this age group. Adults aged 41 to 50 accounted for 18 percent of those struck a little higher than the State average of 17 percent. [Note that up to age 30, groups span 5 years and those over 30 span 10 years.] Senior adults (61 years and older) accounted for 14 percent of those struck, compared to 10 percent for the State as a whole. Proportionally fewer young adults (age 16 to 25) were struck, 15 percent, compared to 20 percent for the State as a whole. [Note that these comparisons do not account for population of these different age groups.] (See Table 8)

<sup>6</sup> Profile of General Demographic Characteristics: 2000. US Census Bureau.  
[http://factfinder.census.gov/servlet/QTTable?\\_bm=y&-qr\\_name=DEC\\_2000\\_SF1\\_U\\_DP1&-ds\\_name=DEC\\_2000\\_SF1\\_U&-lang=en&-geo\\_id=16000US3774540](http://factfinder.census.gov/servlet/QTTable?_bm=y&-qr_name=DEC_2000_SF1_U_DP1&-ds_name=DEC_2000_SF1_U&-lang=en&-geo_id=16000US3774540)

**Table 8. Wilson pedestrian crashes by age group**

Age Group	2003	2004	2005	2006	2007	Totals	Statewide
0 - 5	3 10.3%	6 21.4%	3 12.5%	2 8.3%	0 0.0%	14 10.6%	629 4.8%
6 - 10	1 3.4%	1 3.6%	1 4.2%	2 8.3%	2 7.4%	7 5.3%	559 4.3%
11 - 15	2 6.9%	3 10.7%	2 8.3%	2 8.3%	2 7.4%	11 8.3%	945 7.2%
16 - 20	0 0.0%	4 14.3%	3 12.5%	4 16.7%	2 7.4%	13 9.8%	1261 9.6%
21 - 25	4 13.8%	2 7.1%	0 0.0%	0 0.0%	1 3.7%	7 5.3%	1418 10.8%
26 - 30	3 10.3%	0 0.0%	4 16.7%	2 8.3%	0 0.0%	9 6.8%	1139 8.7%
31 - 40	3 10.3%	2 7.1%	4 16.7%	1 4.2%	6 22.2%	16 12.1%	2097 16.0%
41 - 50	7 24.1%	5 17.9%	3 12.5%	6 25.0%	3 11.1%	24 18.2%	2169 16.6%
51 - 60	1 3.4%	4 14.3%	3 12.5%	1 4.2%	3 11.1%	12 9.1%	1334 10.2%
61 - 70	1 3.4%	1 3.6%	0 0.0%	4 16.7%	4 14.8%	10 7.6%	602 4.6%
>70	3 10.3%	0 0.0%	1 4.2%	0 0.0%	4 14.8%	8 6.1%	670 5.1%
Unknown	1 3.4%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 0.8%	248 1.9%
<b>Totals</b>	29 10.2%	28 9.8%	24 8.4%	24 8.4%	27 9.5%	132	13,071

*Counts are of pedestrians.*

On average, 58 percent of pedestrian collisions involved male pedestrians over the five years although there were significant year-to-year fluctuations (for example, 75 percent in 2005 were male). The average is close to the Statewide average of 60 percent males. (See Table 9)

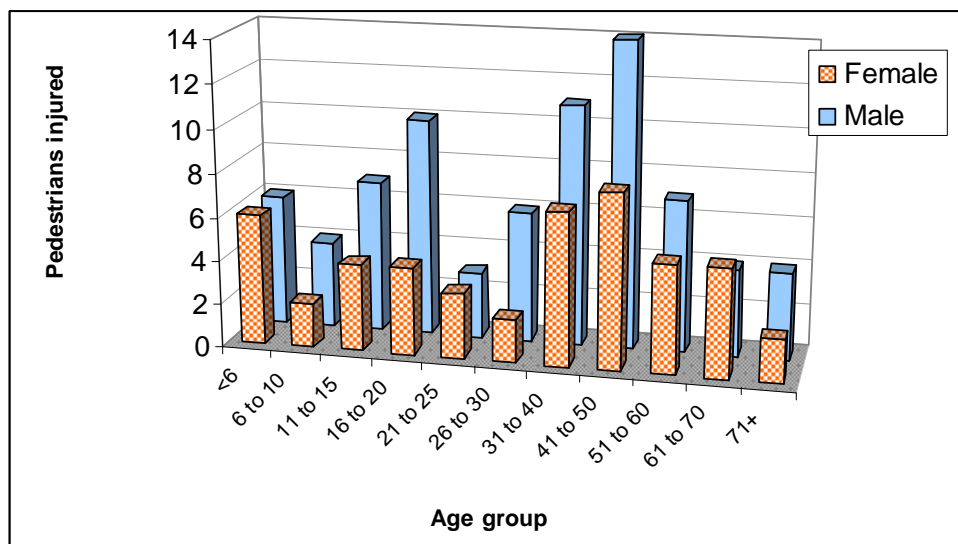
**Table 9. Wilson pedestrian crashes by gender**

Gender	2003	2004	2005	2006	2007	Totals	Statewide
Male	17 58.6%	12 42.9%	18 75.0%	14 58.3%	16 59.3%	77 58.3%	7863 60.2%
Female	11 37.9%	13 46.4%	6 25.0%	8 33.3%	10 37.0%	48 36.4%	4942 37.8%
Unknown	1 3.4%	3 10.7%	0 0.0%	2 8.3%	1 3.7%	7 5.3%	266 2.0%
<b>Totals</b>	29 22.0%	28 21.2%	24 18.2%	24 18.2%	27 20.5%	132	13,071

*Counts are of pedestrians.*

Figure 5 shows that, for the youngest age group, males and females were equally involved in crashes. Beginning with the 6 to 10 year age group and for most other ages, however, males are more often involved in collisions. Exceptions were the 21 to 25 year group and the 60 to 70 year age group when females were about equally represented.

**Figure 5. Wilson pedestrian crashes by age group and gender**



According to Table 10, about 30 percent of Wilson pedestrians involved in reported collisions identified as White, 54 percent as Black, and about 8 percent as Hispanic. According to 2000 Census estimates, 42.5 percent of Wilson’s population was black, and 7.3 percent was Hispanic. Few other ethnic/racial groups were evidently involved (0 Asian, 0 Native American, 0 Other).

**Table 10. Wilson pedestrian crashes by race/ethnicity**

Race	2003	2004	2005	2006	2007	Totals	Statewide
Asian	0	0	0	0	0	0	118 0.9%
Black	16 55.2%	16 57.1%	16 66.7%	8 33.3%	15 55.6%	71 53.8%	5014 38.4%
Hispanic	3 10.3%	1 3.6%	1 4.2%	3 12.5%	2 7.4%	10 7.6%	860 6.6%
Native American	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	148 1.1%
White	8 27.6%	7 25.0%	6 25.0%	10 41.7%	9 33.3%	40 30.3%	6388 48.9%
Other	0	0	0	0	0	0	84 0.6%
Unknown	2 6.9%	4 14.3%	1 4.2%	3 12.5%	1 3.7%	11 8.3%	459 3.5%
<b>Totals</b>	29 22.0%	28 21.2%	24 18.2%	24 18.2%	27 20.5%	132	13,071

*Counts are of pedestrians.*

Essentially the same percentages as for the State as a whole, 12 percent of pedestrians involved in collisions in Wilson were suspected of alcohol use. Suspected use does not necessarily imply intoxication. (See Table 11)

**Table 11. Wilson pedestrian crashes by alcohol use**

<b>Alcohol Use Suspected/Detected</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Totals</b>	<b>Statewide</b>
No	27 93.1%	23 82.1%	22 91.7%	20 83.3%	24 88.9%	116 87.9%	11,543 88.3%
Yes	2 6.9%	5 17.9%	2 8.3%	4 16.7%	3 11.1%	16 12.1%	1,524 11.7%
Unknown	0	0	0	0	0	0	4 0.0%
<b>Totals</b>	29 22.0%	28 21.2%	24 18.2%	24 18.2%	27 20.5%	132	13,071

*Counts are of pedestrians.*

About 14 percent of collisions apparently involved alcohol use by either the pedestrian or the driver, compared with 15 percent Statewide. (See Table 12)

**Table 12. Wilson pedestrian crashes by alcohol involvement**

<b>Alcohol-Involved Crashes</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Totals</b>	<b>Statewide</b>
No	27 90.0%	22 78.6%	22 95.7%	19 79.2%	24 88.9%	114 86.4%	10,679 85.3%
Yes	3 10.0%	6 21.4%	1 4.3%	5 20.8%	3 11.1%	18 13.6%	1,838 14.7%
<b>Totals</b>	30 22.7%	28 21.2%	23 17.4%	24 18.2%	27 20.5%	132	12,517

*Counts are of Crashes where at least one (1) person was a pedestrian.*

## **Pedestrian Crash Types**

The largest groups of crash types were “Pedestrian Failure to Yield” and “Dart-Outs and Dashes.” “Dart-outs” involve pedestrians suddenly emerging from a location that was blocked from view by the motorist until an instant before impact – such as from behind a parked car, building or shrubbery. “Dashes” involve pedestrians running or dashing into the street, but not from an obscured location. “Pedestrian Failure to Yield” implies the pedestrian was crossing the roadway, either against a traffic signal indication, or at an undesignated location (such as a midblock area with no crosswalk) and failed to yield to traffic, but should not be taken to imply fault. Specific circumstances (gaps in traffic, speed of oncoming cars, availability of suitable crossings, signal timing, etc. or even whether an implied crosswalk or pedestrian right-of-way existed), are often difficult to ascertain from crash reports. Most (60 percent) of both “Pedestrian Failure to Yield” and “Dashes/Dart-Outs” in Wilson occurred at non-intersection locations, with 40 percent occurring at intersections.

“Backing Vehicle” (predominantly in parking areas and driveways) and other “Off-roadway” collisions together accounted for more than one-quarter (26.5 percent) of collisions. “Turning Vehicles” striking pedestrians accounted for 7 percent of collisions – eight occurred at intersection locations; one occurred at a non-intersection location such as a driveway/roadway junction.

Crashes involving pedestrians “Walking Along a Roadway” and being struck from behind or the front accounted for nearly 5 percent of collisions. Examination of detailed crash types reveals that four out of six involved pedestrians walking in the same direction as traffic who were struck from behind, while two involved pedestrians walking facing traffic who were struck from the front. These collisions typically occur on roadways lacking sidewalks (or other space) for pedestrians to walk and often occur at night as well. Further examination of crash reports could reveal whether these factors were also present in the Wilson walking along roadway crashes.

Finally, “Unusual Circumstance” types of collisions (involving such situations as disputes or intentional assaults with a vehicle, pedestrians hanging or sitting on vehicles that began moving, and pedestrians being struck as a result of prior vehicle-to-vehicle or vehicle-object collisions) occurred a majority of the time in off-roadway areas such as parking lots (47 percent), 41percent of the time at non-intersection locations, with 2 unusual-type collisions occurring at intersections.

Over all crash types, the largest proportion (37 percent) of the (reported) pedestrian collisions in Wilson occurred at non-intersection locations, that is midblock locations such as at or near driveways or in-between junctions. Another 30 percent occurred at or related to an intersection, while 31 percent occurred off the roadway network at locations such as parking lots and commercial driveways. These figures do not reflect other collisions that were not technically reportable or reported to law enforcement.

For more details on crash types in Wilson, see Table 13.

Table 13. Wilson pedestrian crash types by location

Crash Type Group	Crash Location					Total
	Intersection	Intersection Related	Non-Intersection Location	Non-Roadway Location	Unknown/Insufficient Information	
Backing Vehicle	1 6.3% <sup>1</sup>	0 0.0%	1 6.3%	14 87.5%	0 0.0%	16 12.1% <sup>2</sup>
Expressway Crossing	0	0	1 100%	0	0	1 0.8%
Motorist Failed to Yield	1 100%	0 0	0 0	0 0	0 0	1 0.8%
Multiple Threat	1 100%	0 0%	0 0%	0 0%	0 0%	1 0.8%
Off Roadway	0 0%	0 0%	0 0%	19 100%	0 0%	19 14.4%
Other Roadway Related	4 50.0%	0 0.0%	4 50.0%	0 0.0%	0 0.0%	8 6.1%
Other Unusual Vehicle Type / Vehicle Action	0 0.0%	1 33.3%	2 66.7%	0 0.0%	0 0.0%	3 2.3%
Pedestrian Dart Out or Dash	9 40.9%	0 0.0%	13 59.1%	0 0.0%	0 0.0%	22 16.7%
Pedestrian Failure to Yield	9 40.9%	0 0.0%	13 59.1%	0 0.0%	0 0.0%	22 16.7%
Standing / Walking in Roadway-Other	2 50.0%	1 25.0%	1 25.0%	0 0.0%	0 0.0%	4 3.0%
Turning Vehicle	8 88.9%	0 0.0%	1 11.1%	0 0.0%	0 0.0%	9 6.8%
Unique Pedestrian Action	0 0	0 0	1 100	0 0	0 0	1 0.8%
Unknown	0 0	0 0	0 0	0 0	2 100	2 1.5%
Unusual Circumstance	2 11.8%	0 0.0%	7 41.2%	8 47.1%	0 0.0%	17 12.9%
Walking Along Roadway	1 16.7%	0 0.0%	5 83.3%	0 0.0%	0 0.0%	6 4.6%
<b>Total</b>	<b>38</b> 28.8%	<b>2</b> 15.2%	<b>49</b> 37.1%	<b>41</b> 31.1%	<b>2</b> 15.2%	<b>132</b>

<sup>1</sup> Column percent of row total, <sup>2</sup> Row percent of total

Children up to age 15 accounted for 82 percent of the “Dart-Outs and Dash” type crashes. Since children account for 24% of all the collisions in Wilson over this time period, this is a crash type in which children are clearly over-represented. The predominant crash type for adults is Failure to Yield” collisions, with young adults and adults combined accounting for 77 percent of these types. “Backing Vehicle” and “Off Roadway” (parking lot) collisions involved pedestrians of all ages, but particularly adults. Only adults 61 and up, however, are over-represented.

Adults 61 and up accounted for 31 percent of “Backing Vehicle” and 26 percent of other “Off-Roadway” crashes, but only 13 percent of all types of crashes. The other sizable group of crashes, “Unusual Circumstances,” which involve conflicts (seven dispute-related and two assault with vehicle), pedestrians on vehicles that began moving, pedestrians being struck as a result of prior collisions with other motor vehicles or objects (five of this type) and assorted other “unusual” circumstances involved mostly adult pedestrians. Adults were also most represented in crashes involving “Turning Vehicles.” (See Table 14)

**Table 14. Wilson pedestrian ages by crash type**

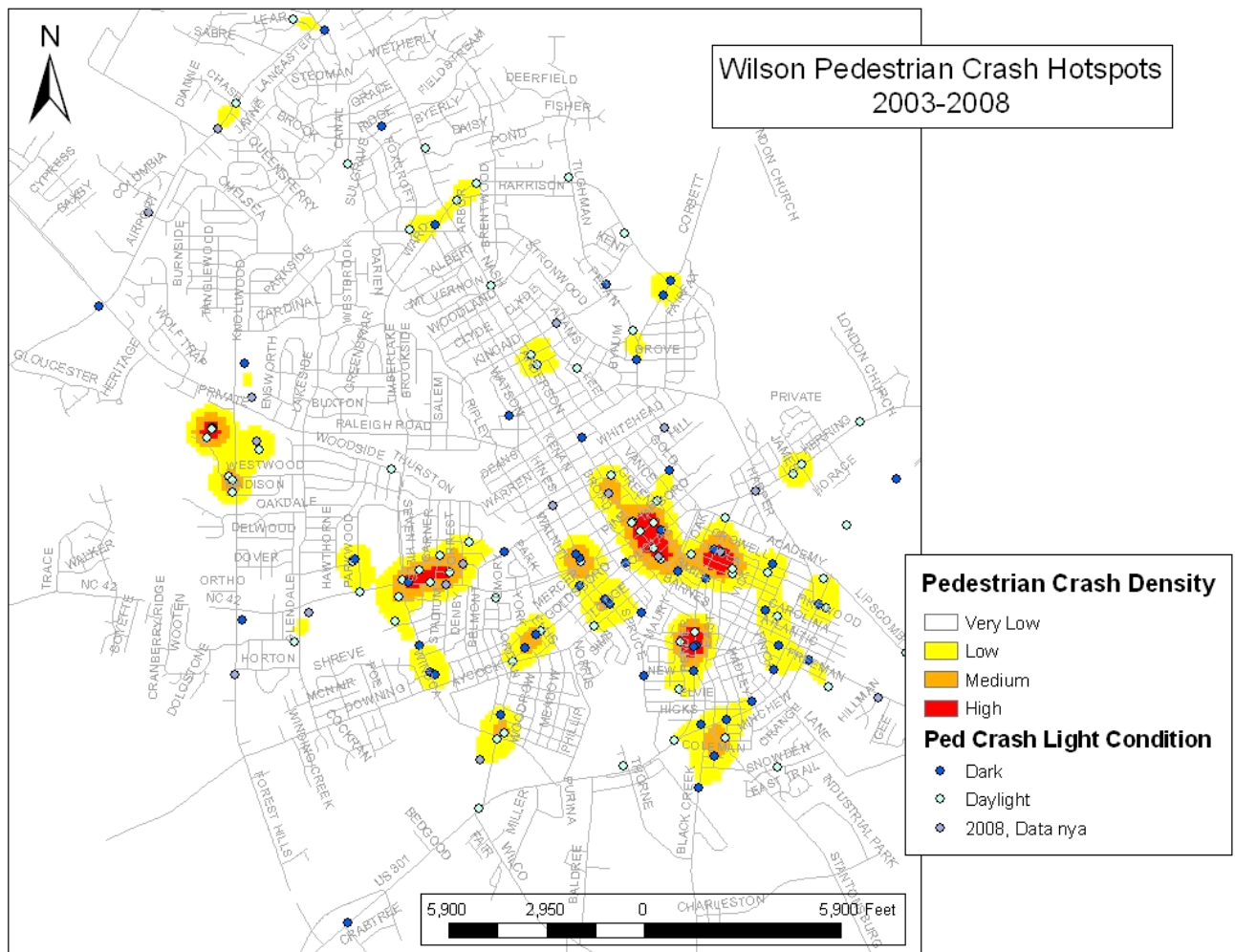
Wilson Pedestrian Crash Types by Pedestrian Age Group						
Crash Type Group	Age Group					Total
	Children (up to 15)	Young adults (16 to 25)	Adults (26 to 60)	Older Adults (61+)	Unknown	
Backing Vehicle	2 12.5% <sup>1</sup>	3 18.8%	6 37.5%	5 31.3%	0	16 12.1% <sup>2</sup>
Expressway Crossing	0.0	0	0	0	1 100.0%	1 0.8%
Motorist Failed to Yield		0	1 100.0%	0	0	1 0.8%
Multiple Threat	0.0	0	1 100.0%	0	0	1 0.8%
Off Roadway	2 10.5%	5 26.3%	7 36.8%	5 26.3%	0	19 14.4%
Other Roadway Related	2 25.0%		5 62.5%	1 12.5%	0 0.0	8 6.1%
Other Unusual Vehicle Type / Vehicle Action	1 33.3%	1 33.3%	0	1 33.3%	0 0.0	3 2.3%
Pedestrian Dart Out or Dash	18 81.8%	0	4 18.2%	0	0	22 16.7%
Pedestrian Failure to Yield	5 22.7%	2 9.1%	13 59.1%	2 9.1%	0	22 16.7%
Standing / Walking in Roadway-Other	1.0 25.0%	1 25.0%	1 25.0%	1 25.0%	0	4 3.0%
Turning Vehicle	0	2 22.2%	5 55.6%	1 11.1%	0	9 6.8%
Unique Pedestrian Action	0	0	1 100.0%	0	0	1 0.8%
Unknown	0	0	2 100.0%	0	0	2 1.5%
Unusual Circumstance	1 5.9%	4 23.5%	12 70.6%	0	0	17 12.9%
Walking Along Roadway	0	3 50.0%	3 50.0%	0	0	6 4.6%
Total	32 24.2%	21 15.9%	82 62.1%	17 12.9%	1 0.8%	132

<sup>1</sup> Column percent of row total, <sup>2</sup> Row percent of total

## Spatial Analysis

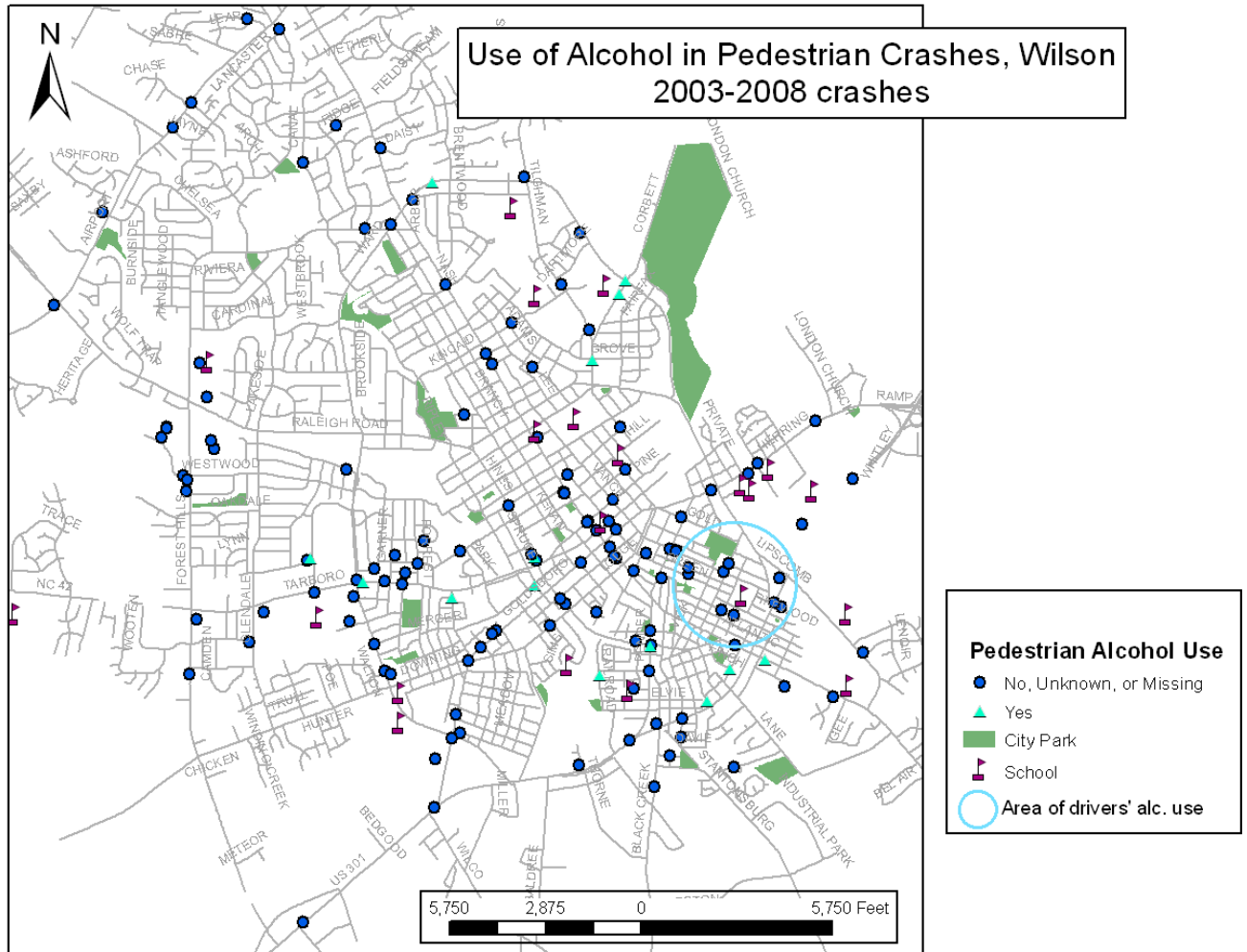
The map below (Figure 6) illustrates where pedestrian collisions were concentrated over the six years from 2003-2008. (Note that the areas of concentration did not change significantly when 2008 was added to 2003-2007 data). The areas of red and orange highlight the higher crash density zones (from 50 to 75 percent and 75 to 100 percent above the average crash density across the entire city). As discussed earlier, crashes occurring under conditions of darkness account for 41% of Wilson's pedestrian collisions, and some corridors have experienced a number of nighttime collisions.

Figure 6. Wilson pedestrian crash hotspots, 2003 - 2008



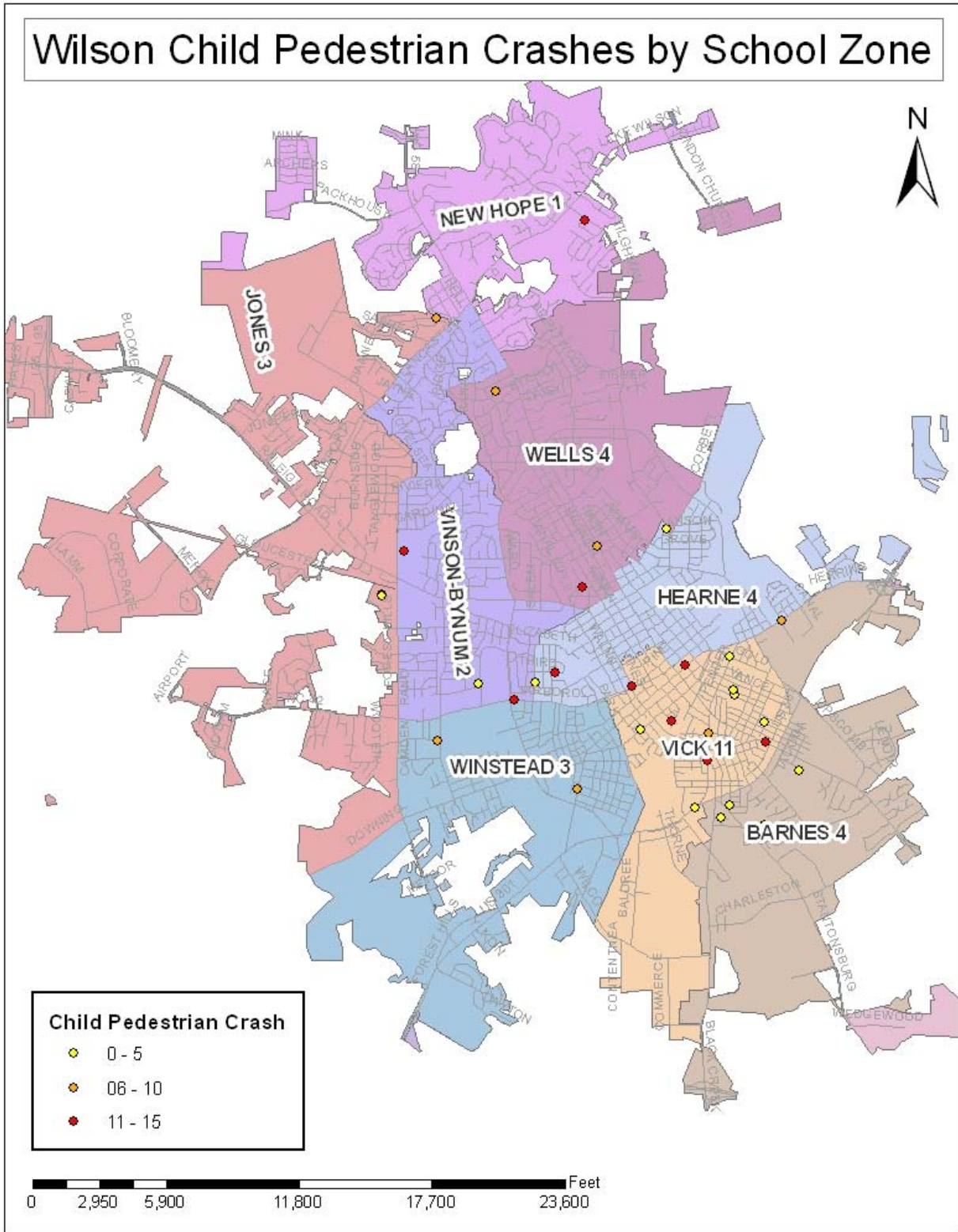
Crashes involving pedestrians and/or drivers that had apparently used alcohol prior to the crash also seem to be spatially concentrated in some areas (see Figure 7; the area circled in bright blue included several crashes involving driver alcohol use). Since these crashes also occurred most often at night (see Figure 6), these could be areas for enhanced night-time enforcement, as well as assessment of whether roadway lighting is adequate for pedestrian needs.

**Figure 7. Use of alcohol in pedestrian crashes**



Finally, an analysis of child pedestrian crashes by school zone is shown (Figure 8). Vick Elementary school district suffered the most child pedestrian collisions with 11 occurring in that district. Further examination shows that very young, actually below school-aged, children comprise a significant portion (6 of the 11) of the child crashes in the district, with 11 to 15 year-olds being next most often involved. Countermeasures for both very young and school-aged child pedestrian crashes should be considered. This district could be a candidate for initial efforts.

Figure 8. Wilson pedestrian crashes by school zone



We have conducted a number of other spatial assessments of crash problems by crash type, location, time period or light conditions, age of pedestrians, proximity to schools, and other factors that may help to identify appropriate countermeasures. A summary of highlights of all the analyses follows.

## **Summary of Data/Crash Analysis Findings**

- Crashes have fluctuated over the past 10 years, with a generally downward trend, but crashes appear to be trending upward again over the most recent two years.
- Children up to age 15 accounted for 24 percent of those struck in reported collisions, a larger proportion than for the State as a whole (16 percent). More than half of children struck were less than age five, suggesting the need for better oversight and guardian/caregiver training.
- Adults ages 41 to 50 account for about 18 percent of all pedestrians struck, and adults 41 and up are more highly represented in general than for the State as a whole. Proportionally fewer young adults are represented in contrast to other areas of the State. These proportions may reflect population proportions in Wilson as well as differing amounts of walking.
- Males of all ages account for about 58 percent of pedestrians involved, similar to the 60 percent Statewide.
- Blacks/African Americans account for 54 percent of pedestrians reported struck in collisions, higher than the 42.5 percent black population tallied by the 2000 census. Hispanics account for about 7 percent of pedestrians involved in collisions, similar to reported population in 2000, and whites about 30 percent of those struck.
- Of the collisions that occurred over this time period, fewer (< 2 percent) have been fatal than for the State as a whole (6.5 percent; 4.3 percent other urbanized areas).
- Proportionally more pedestrian collisions have occurred in summer months (June, July and August) and the April peak has accounted for more than for the State as a whole; but fall months still account for the most pedestrian crashes in Wilson, particularly November and September.
- Friday has been the highest crash day of the week on average (17 percent), similar to the State as a whole. Sunday has, however, accounted for almost as many crashes with 16 percent over this time period. For the State as a whole, Sunday has been the lowest crash day. Relatively small numbers of crashes in Wilson mean that there may be significant year to year fluctuations in proportions. Nevertheless, it may be worth exploring whether there are cultural, behavioral factors associated with Sunday pedestrian crashes.
- Above 41 percent of Wilson's pedestrian crashes have occurred during hours of darkness. Nearly one-fourth of these have reportedly occurred on roadways with no supplemental lighting.

- Reflecting the numbers of night-time crashes, Wilson’s four-hour peak in pedestrian crashes is during the 6 to 10 pm time period, accounting for 36 percent of crashes on average, followed by the afternoon period (2 to 6 pm) of 30 percent. These 8 hours together account for two-thirds of Wilson pedestrian collisions. The same time period accounts for 53 percent for the State as a whole.
- The largest groups of crash types were pedestrians dashing and darting into the roadway and otherwise crossing without a suitable gap in traffic (at apparently undesignated crossing locations), accounting for 33 percent of pedestrian collisions. These types may result when there are long gaps between suitable crossings and few gaps in traffic, or pedestrians otherwise fail to wait for a suitable gap or fail to see oncoming vehicles.
- Backing vehicle (mostly off-roadway) and other parking lot and driveway crashes accounted for more than one-fourth of the reported collisions. These numbers are likely understated.
- Nearly 7 percent of pedestrian collisions involved turning vehicles striking pedestrians; most of these occurred at intersections.
- Walking along the roadway and being struck accounted for about 5 percent of pedestrian collisions, with most of these involving pedestrians walking in the same direction as traffic and being struck from behind. Provision of sidewalks/walking space is the primary countermeasure for this crash type, but education about walking facing traffic (and moving off the roadway) and being conspicuous as night are the primary behavioral countermeasures where sidewalks cannot be implemented right away.
- About 9 percent of pedestrian collisions occurred in the roadway but could not be more specifically defined. These types may result from pedestrians standing in the roadway as well as indeterminate walking in the roadway.
- More than 12 percent involved unusual circumstances such as pedestrians being struck in relation to disputes or as a result of hanging onto a vehicle that began moving. Many of these unusual types occur in off-roadway areas such as parking lots. Increased security, lighting and other measures may help to reduce these types.

## Potential Activities

There are a number of potential activities that could be conducted as part of this project or in coordination with other funding sources. Activities will need to be selected based on the problems identified in the crash data and correspond to the priorities/interests of local agencies. Some potential activities include:

### *Professional Education*

- PBIC Training Courses to planning/design agencies
- New course to advocates/developers/others
- Law Enforcement Training

### *Broad Public Education*

- Walking guide with safety tips
- Project web site
- Kick-off Event
- Community workshops
- Widespread media campaign
- Media/educational messages near/in transit facilities
- Novice driver education program through drivers ed

### *School-related Education/Enforcement*

- In schools – coordinate with ongoing curriculum development (in draft Plan)
- Around schools – could focus media and enforcement near schools and target drivers
- Addressing Parents/PTAs and other drivers through counseling or other strategies (in draft Plan)
- School crossing guard program

### *Enforcement*

- “Sting” Operations to enforce yielding behavior
- Speeding/traffic calming campaigns
- Red-light running campaigns
- School-based enforcement
- Community partnerships
- Foot patrol programs

### *Engineering*

- small scale; can tie to connectivity, midblock crossing program, or other program

### *Planning/Policy Change*

## **Wilson Working Group**

A number of individuals representing a variety of agencies have been identified to serve as members of the project working group. These individuals will provide critical input at key stages of the project, and will assist the project team by identifying resources and strategies that may enhance project activities. Agencies represented include:

**Wilson Planning Department** – The Planning Department will be the primary partner and champion within the City of Wilson. The Director of Planning is Rodger Lentz, and the Assistant Director is Janet Holland. Denise Boswell is the Senior Planner and SRTS Coordinator (and primary community champion/liaison). The GIS specialist, Will Deaton, will also provide key project support.

- Rodger Lentz
- Denise Boswell
- Janet Holland
- Will Deaton

**Wilson Police** – The Police Department has been very supportive of the project, and has provided a staff member to assist with project activities. In particular, we will be working with Captain Scott Biddle and Lieutenant Eric Smith. Sgt. Jacqui Boykin is the Crossing Guard Program Coordinator.

- Captain Scott Biddle
- Lieutenant Eric Smith
- Sergeant Jacqui Smith

**Wilson Human Relations** – The Wilson Office of Human Relations has worked closely with neighborhood groups in the past, and has a solid network of contacts within many of the neighborhoods. If the project uses a neighborhood-based education/enforcement strategy, the team can work closely with HR to communicate with neighborhood leaders and organize events. Renee Smith is the Director of the Office of Human Relations.

- Renee Smith

**Wilson Public Works/NCDOT** – Engineers at the City and State level will help identify locations with pedestrian safety concerns, and can lend their perspective on traffic management, speed, design, and other critical issues. Bryant Bunn will represent the City of Wilson's Public Works Department, and Bill Bass represents the North Carolina Department of Transportation (NCDOT). Jimmy Taylor will also represent the City as the Engineering Services Coordinator.

- Bryant Bunn – City Engineer for Wilson
- Bill Bass – NCDOT District Engineer for Wilson and Nash Counties
- Jimmy Taylor – Engineering Services Coordinator for Wilson

## Wilson Partners

A number of individuals have been identified to serve as partners in plan development, implementation, or evaluation. The partners will provide much needed on-the-ground support for the project team, as well as information about ongoing activities and potential collaborative efforts. As other partners are identified, this group may grow as the project moves forward. To date, Wilson partners include the following groups and individuals:

**Schools** – As the SRTS project moves forward, the City of Wilson will be relying upon its relationship with local schools and the school board. If the NC Focus project decides to target its efforts at reducing crashes among children, those efforts should dovetail with the SRTS Action Plan project. Having identified child crashes as a primary area of concern in Wilson, the project team hopes to use this partnership to assist with any education programs targeted toward children in the community. Tommy Finch is the Assistant Superintendent for Administrative Services. Jim Lewis is the Wilson County Schools Director of Transportation.

- Tommy Finch
- Jim Lewis

**Local Colleges** – Wilson is home to both Barton College and Wilson Community College. These schools might be helpful in providing students for data collection efforts and other project tasks. Dr. Rusty Stevens, of WCC, is especially supportive of sustainability efforts and will be an asset to the project. Dr. Norval Kneten is the President of Barton College.

- Dr. Rusty Stevens/Dr. Rob Holsten
- Dr. Norval Kneten/Dr. Kelly Thompson

**Walkable Wilson** – This program is intended to encourage active living among individuals over the age of 55. Set up through the Upper Coastal Plan Area Agency on Aging, the Wilson County Cooperative Extension, and the Wilson County Health Department. An event was planned for December 22, 2009 ([http://adams.ces.ncsu.edu/index.php?page=events&event\\_id=16198](http://adams.ces.ncsu.edu/index.php?page=events&event_id=16198)), but we will have to look for more information on this. Jody Riddle is the AAA Director for the Upper Coastal Plain COG. Cyndi Lauderdale is the Extension Agent for Wilson County Cooperative Extension. Felix Meyer is the Director of the Wilson County Health Department.

- Jody Riddle
- Cyndi Lauderdale
- Felix Meyer

**WilMed Wellness Program** – This is the proactive health and wellness arm of the Wilson Medical Center and would be a great partner. Contact Paula Furiness (Coordinator of the Wellness Program) for more info. <http://www.wilmed.org/foundation.asp>

- Paula Furiness

### **Bicycle and Pedestrian Advisory Board:**

- Bicycle and Pedestrian Advisory Board – 13 members

**City of Wilson Housing Authority** – The Housing Authority will provide critical insight into pedestrian safety concerns of lower-income individuals, as well as perspective on accessibility and land-use issues. Edward Jagnandan, the Executive Director, will represent this group.

- Edward Jagnandan – Executive Director, Wilson Housing Authority

**City of Wilson Transportation** – As the City’s Transportation Manager, Gronna Jones will provide a great deal of expertise on City-wide transportation issues and concerns. Gronna’s involvement will ensure that project goals and activities are consistent with City transportation plans and other ongoing activities.

- Gronna Jones – City of Wilson Transportation Manager

## Appendix A: Project Team Members

Name/Title	Other Role(s)	Contact Information	Background/Other
<b>Laura Sandt</b> Principal Investigator (PI)	Liaison to City of Charlotte	919-962-2358 <a href="mailto:sandt@hsrc.unc.edu">sandt@hsrc.unc.edu</a>	Planning & Epidemiology
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<b>Libby Thomas</b> Research Specialist	Data Analyst	919-962-7802 <a href="mailto:thomas@hsrc.unc.edu">thomas@hsrc.unc.edu</a>	Transportation Safety Research
<b>Dan Gelinne</b> Research Specialist	Liaison to City of Wilson	919-962-8703 <a href="mailto:gelinne@hsrc.unc.edu">gelinne@hsrc.unc.edu</a>	Planning & Environmental Science
<b>Carl Sundstrom</b> Research Specialist	Liaison to City of Durham	919-962-4963 <a href="mailto:sundstrom@hsrc.unc.edu">sundstrom@hsrc.unc.edu</a>	Engineering
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<b>Lauren Marchetti</b> Technical Expert		919-962-7412 <a href="mailto:marchet@hsrc.unc.edu">marchet@hsrc.unc.edu</a>	Communications
<b>Katy Jones</b> Marketing Specialist		919-962-7007 <a href="mailto:jones@hsrc.unc.edu">jones@hsrc.unc.edu</a>	Marketing & Communications
<b>Michael Daul</b> Designer		919-962-1936 <a href="mailto:dual@hsrc.unc.edu">dual@hsrc.unc.edu</a>	Design
<b>Anran Ye</b> Designer		<a href="mailto:ye@hsrc.unc.edu">ye@hsrc.unc.edu</a>	Design