CITY OF RALEIGH

BIKE AND PEDESTRIAN CRASH HISTORY

OVERVIEW

- From 2000 to 2015, there were **2,824 reported pedestrian crashes** in the City of Raleigh. Of those crashes, there were **111 pedestrian fatalities** and **133 Type-A (disabling) injuries to pedestrians**.

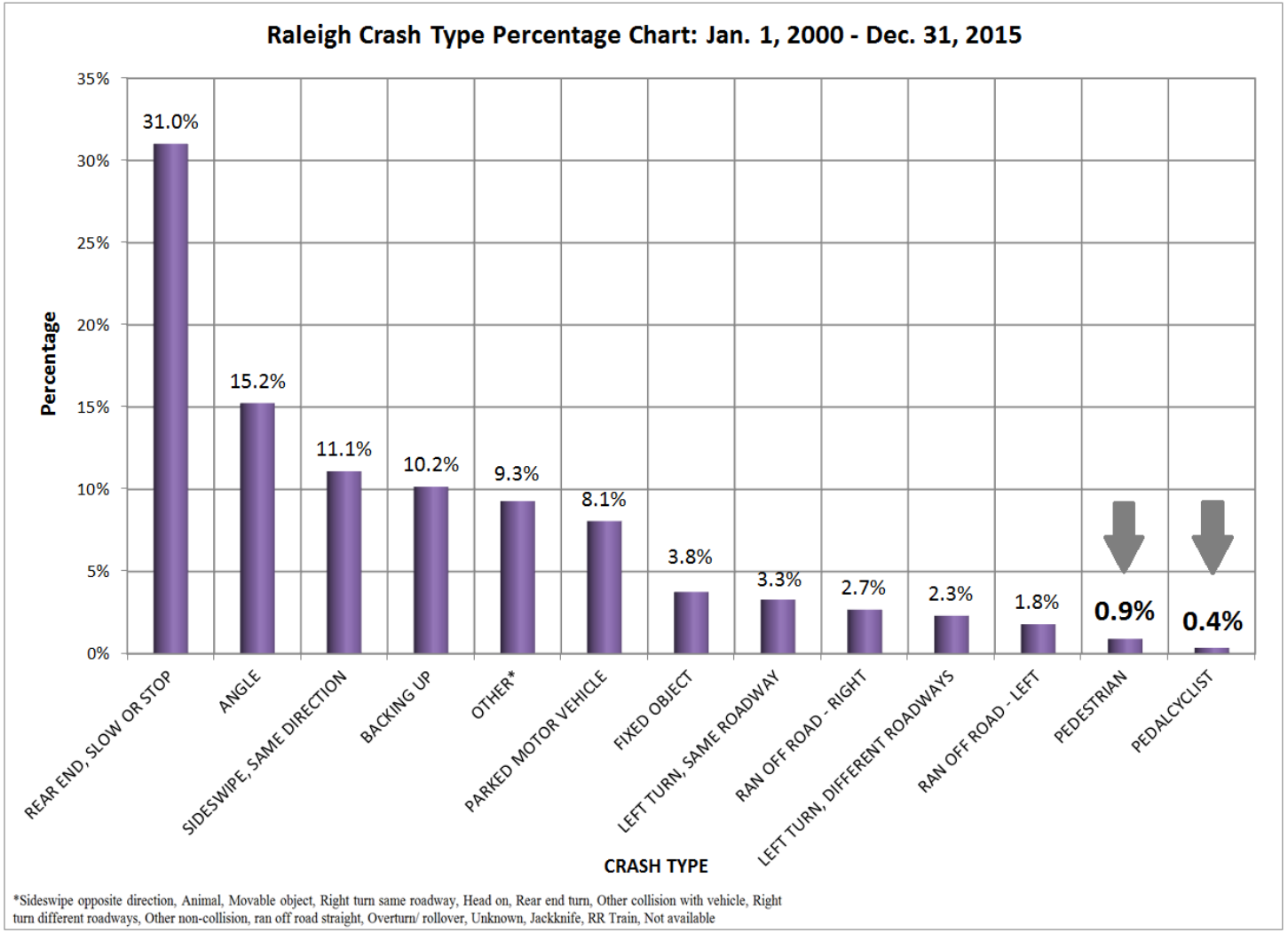
- From 2000 to 2015, the City of Raleigh experienced **1,122 reported bike crashes**. Of those crashes, there were **14 fatal** and **37 Type-A (disabling) injury bike crashes**.

OVERVIEW

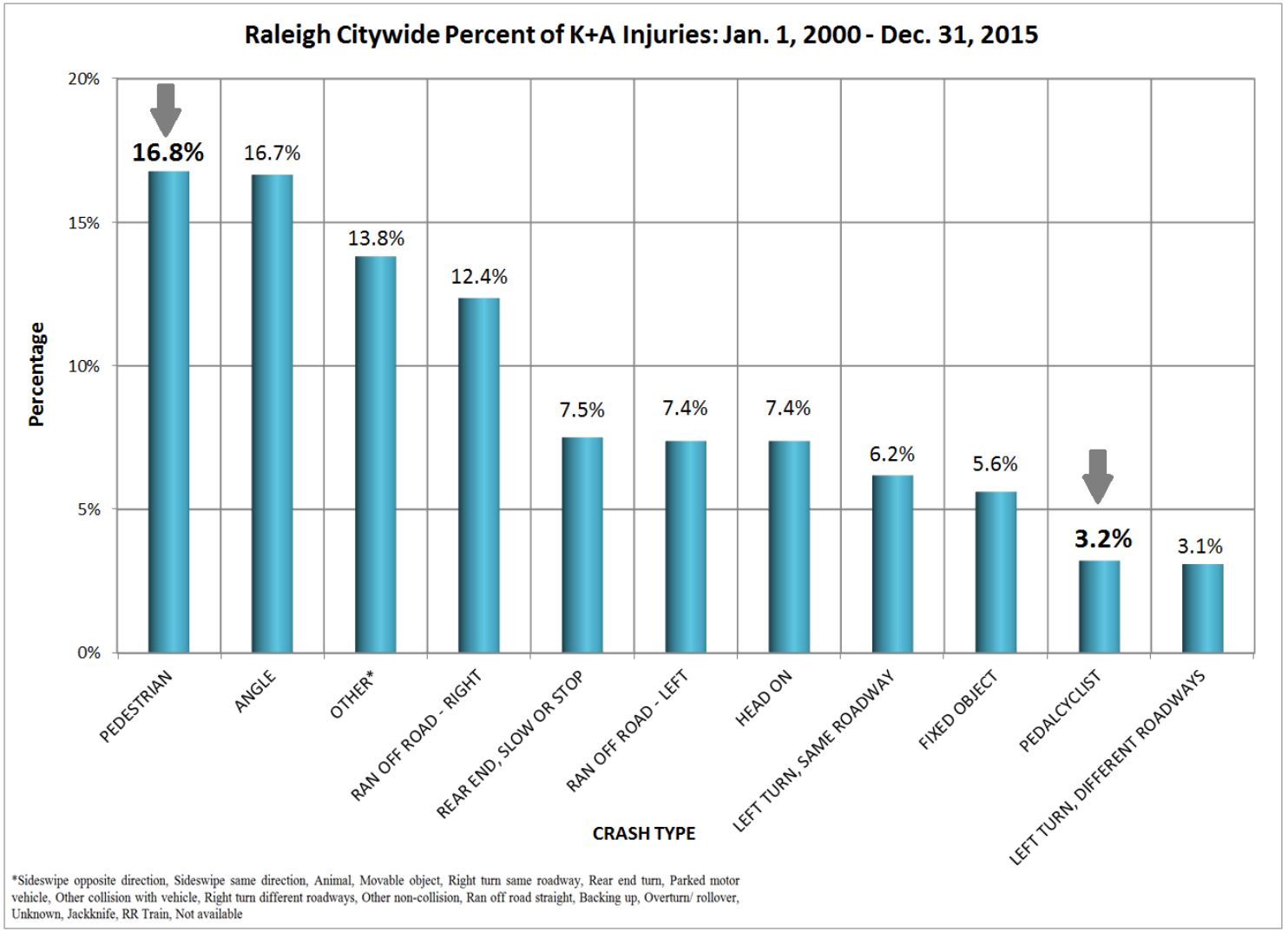
INJURY STATUS TYPE

1. **Killed** – Deaths (which must occur within 12 months after the crash)
2. **A injury type (disabling)** – Injury obviously serious enough to prevent person injured from performing normal activities for at least one day beyond day of collision
3. **B injury type (evident)** – Obvious injury, other than killed or disabling which is evident at the scene
4. **C injury type (possible)** - No visible injury, but person complains of pain or has been momentarily unconscious.
5. **No injury**
6. **Unknown**

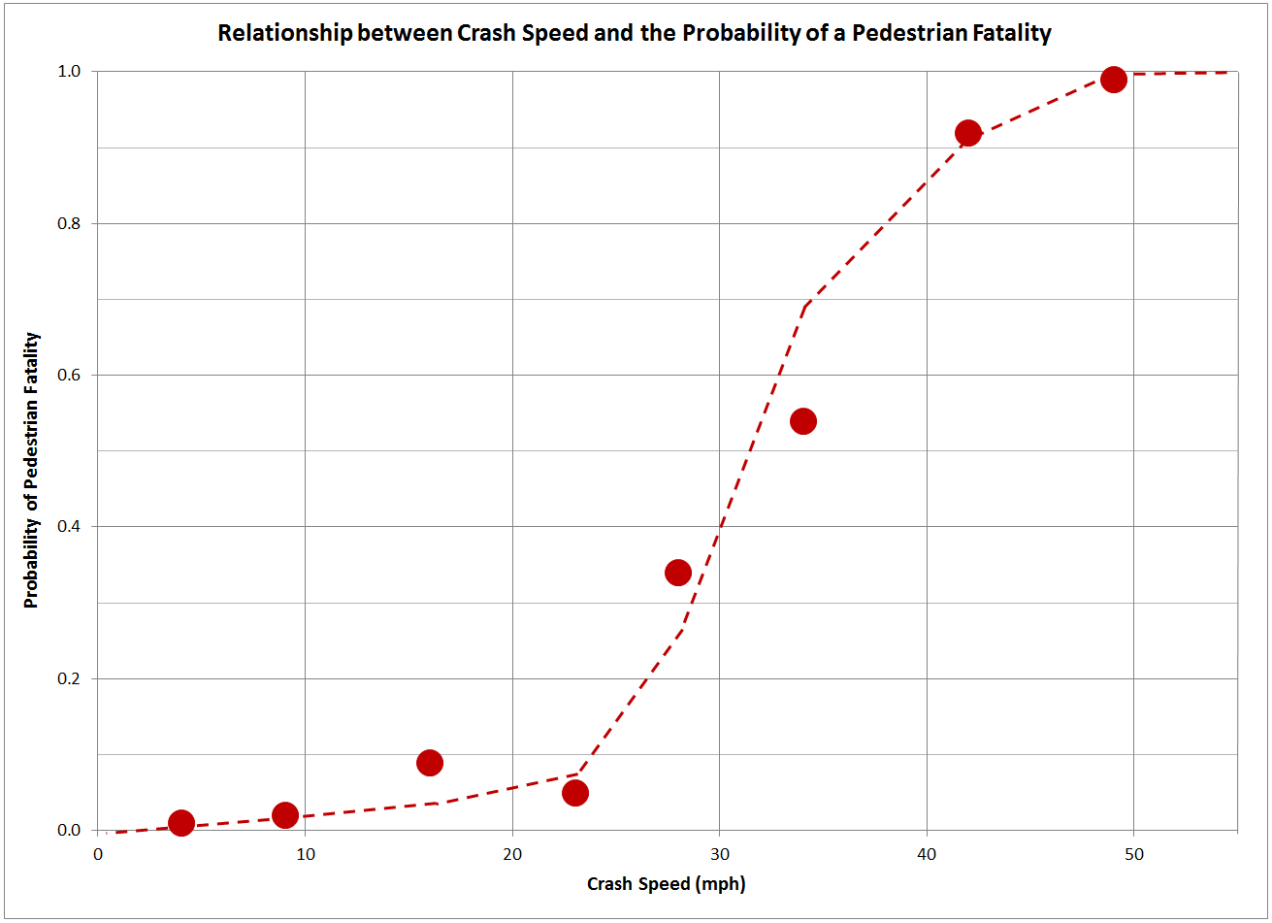
Source: NC DMV-349 Instruction Manual



Pedestrians and Bicyclists make up a relatively small percentage of all crashes, but a much larger percentage of Fatal and Type A injury crashes.


Raleigh Citywide Percent of K+A Injuries: Jan. 1, 2000 - Dec. 31, 2015
Percentage
20%
15%
10%
5%
0%
16.8%
16.7%
13.8%
12.4%
7.5%
7.4%
7.4%
6.2%
5.6%
3.2%
3.1%
PEDESTRIAN
ANGLE
OTHER*
RAN OFF ROAD - RIGHT
REAR END, SLOW OR STOP
RAN OFF ROAD - LEFT
HEAD ON
LEFT TURN, SAME ROADWAY
FIXED OBJECT
PEDALCYCLIST
LEFT TURN, DIFFERENT ROADWAYS
CRASH TYPE
*Sideswipe opposite direction, Sideswipe same direction, Animal, Movable object, Right turn same roadway, Rear end turn, Parked motor vehicle, Other collision with vehicle, Right turn different roadways, Other non-collision, Ran off road straight, Backing up, Overturn/ rollover, Unknown, Jackknife, RR Train, Not available

GENERAL TRENDS

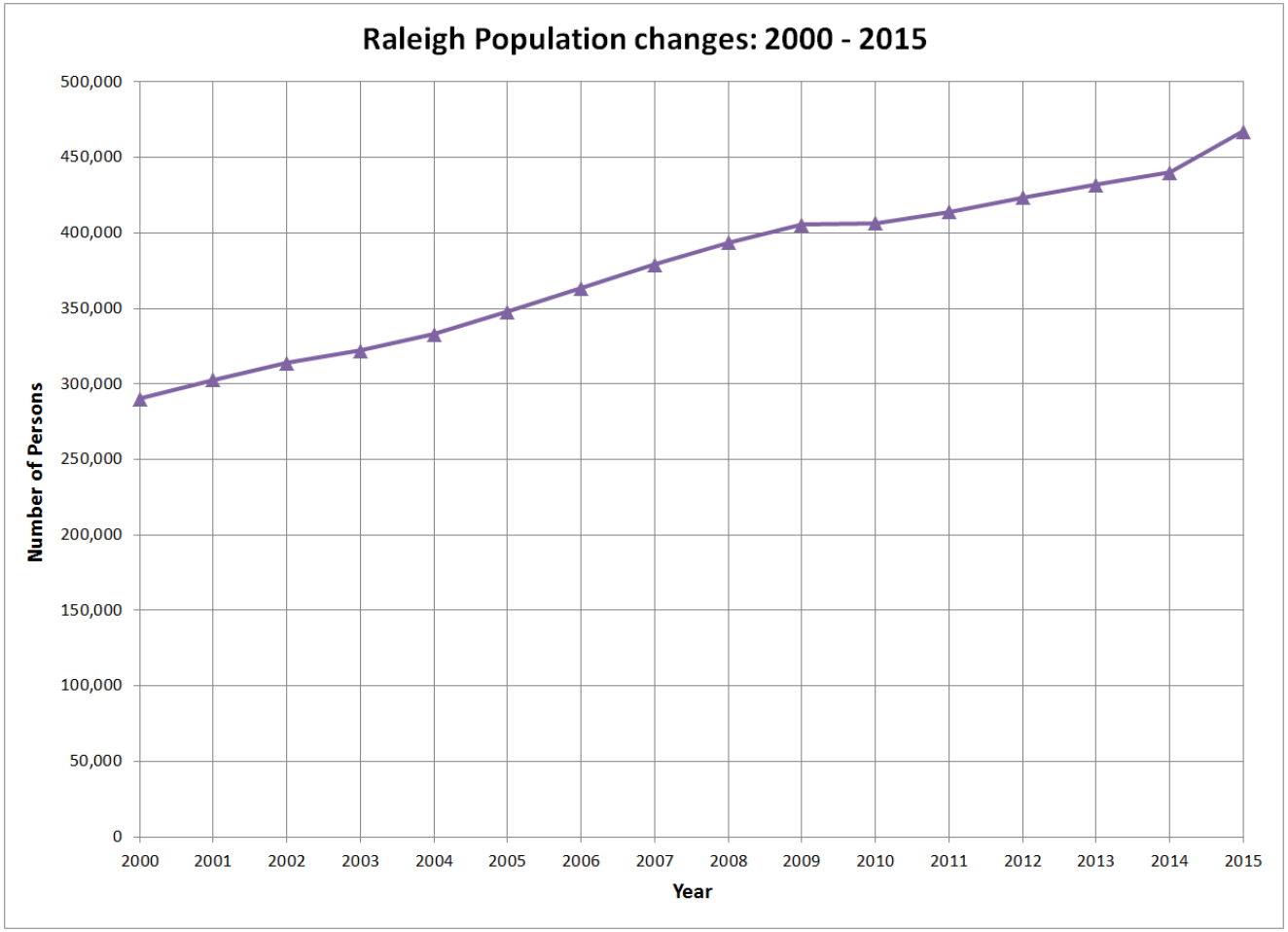


The Highway Safety Manual 2010 estimates a 50/50 chance of a pedestrian fatality if speed at impact is more than 31 mph

FATAL PEDESTRIAN CRASHES

- NCDOT provided crash data from TEAAS (statewide crash database) including crash location, severity, date, time, and vehicle type.
- Additional data was collected manually from individual DMV-349 crash report forms.
- Crashes involving pedestrian fatalities were analyzed for general trends.
- We noted Raleigh's population increase during these years.

GENERAL TRENDS



Average annual growth rate was 3% per year from 2000-2015

BACKGROUND

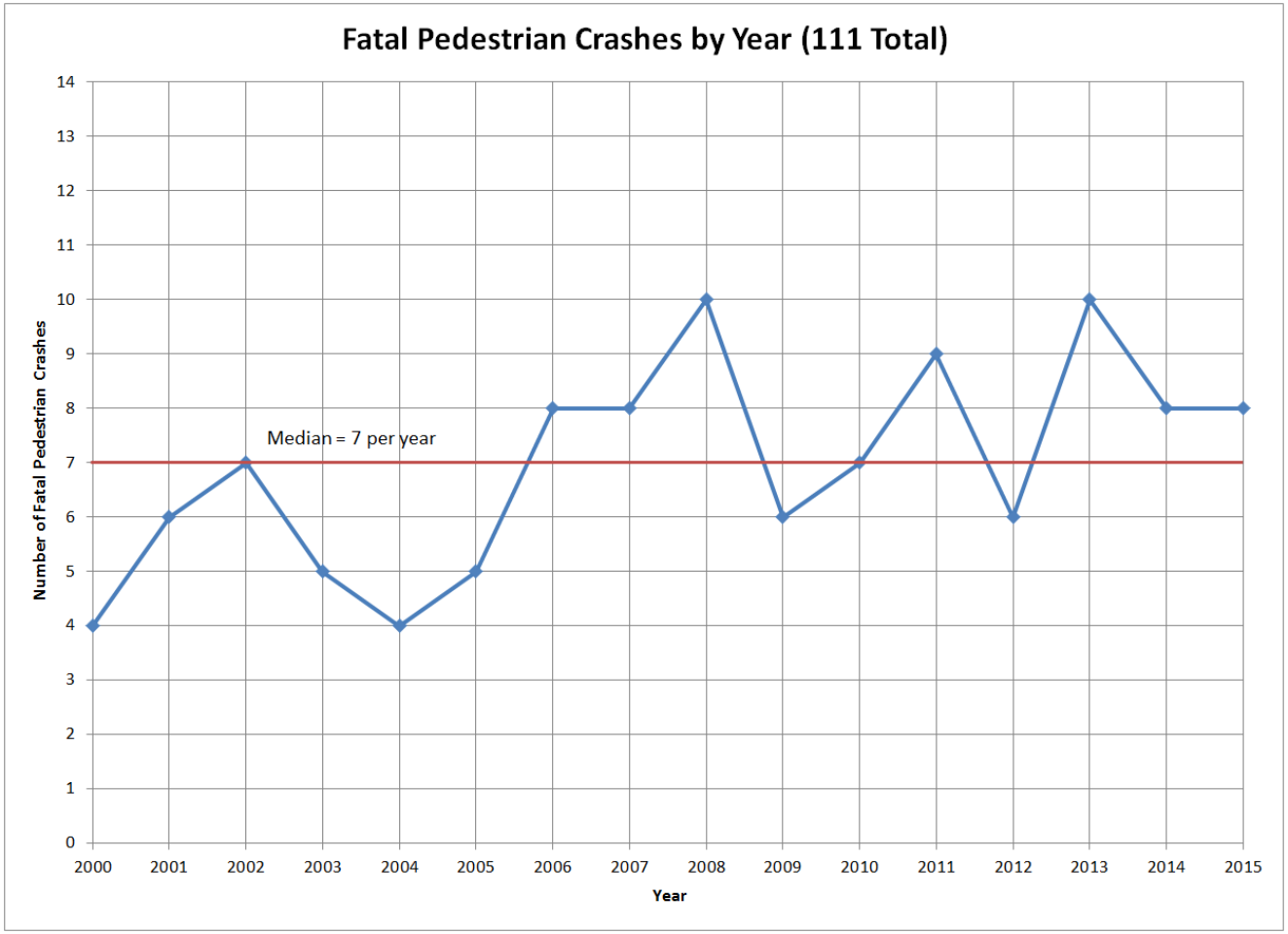
Wake County Crash Ranking: 2003 - 2013											
GENERAL	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Population	699,503	723,772	755,034	793,888	832,590	866,438	882,344	906,788	925,938	945,143	964,934
Registered Vehicles	609,048	635,952	685,017	699,156	730,438	735,601	721,305	719,668	767,153	788,210	803,077
Est. Annual Miles Traveled (100 MVMT)	68.60	69.64	76.51	76.73	82.19	84.73	94.72	92.48	95.38	96.17	98.45
Fatal Crashes per Year	63	65	55	68	62	65	69	69	60	60	63
CRASH RANKS (3 yr Average)	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Total Crashes (per 100 MVMT)	5	5	5	5	4	4	5	8	6	6	5
Fatal Crashes (per100 MVMT)	95	94	96	96	97	96	97	95	93	94	97
Fatal Crashes per 1000 People	96	96	99	99	99	98	98	97	94	97	97
Fatal Crashes per 1000 Reg. Veh.	96	97	98	98	99	98	97	96	94	95	99
Severity Index	100	100	100	100	100	100	100	99	98	97	96

NOTE: Ranks range from 100 (fewest crashes) to 1 (most crashes) among the 100 counties in North Carolina

Despite its population growth, Wake County has traditionally had one of the lowest Fatal crash rates in North Carolina

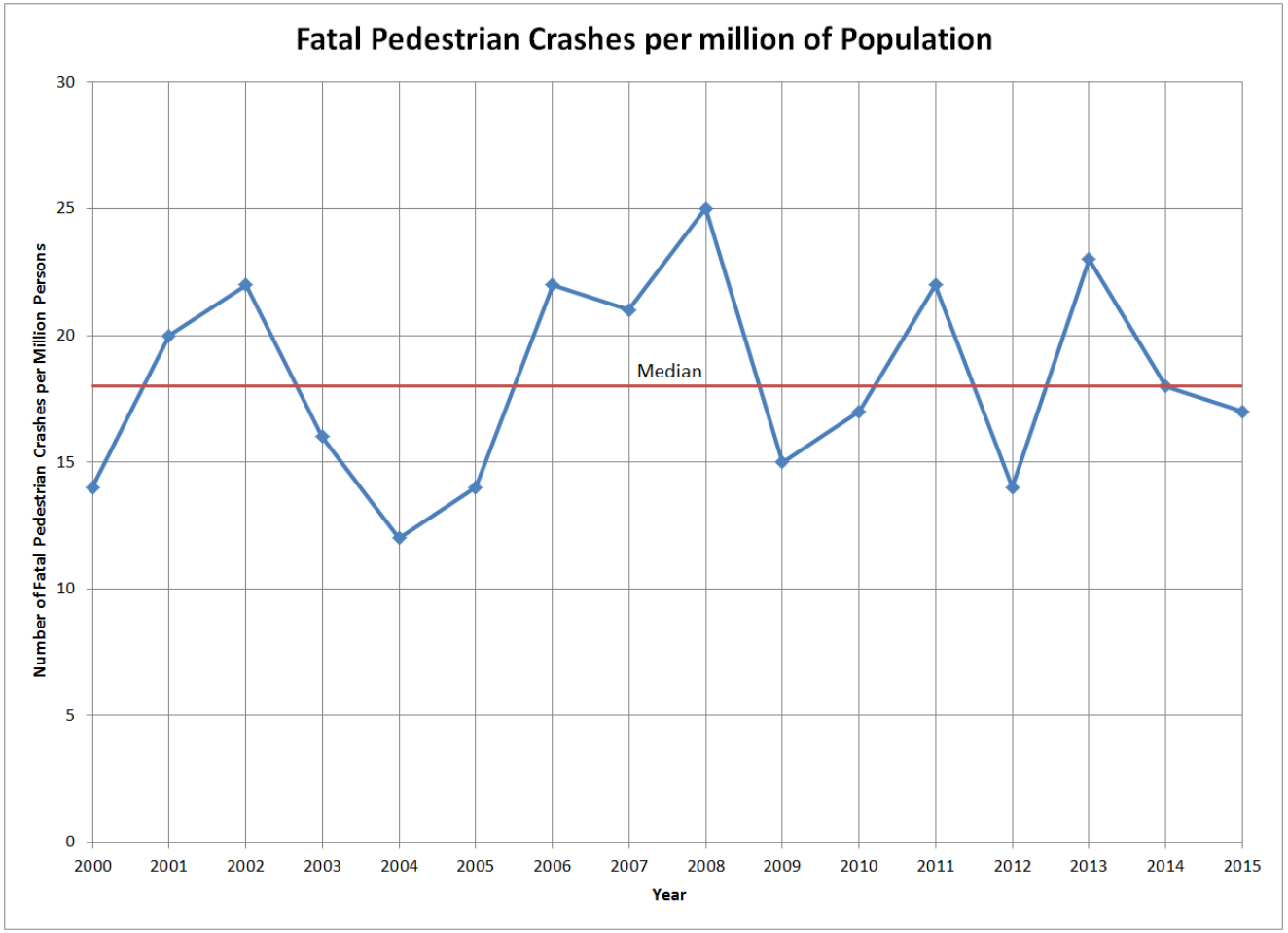
Source: NCDOT Annual North Carolina Traffic Crash Facts

GENERAL TRENDS



From **2000 – 2015** there was an average of **7 fatal pedestrian crashes per year**.
Fatal Crashes appear to be on the increase

GENERAL TRENDS



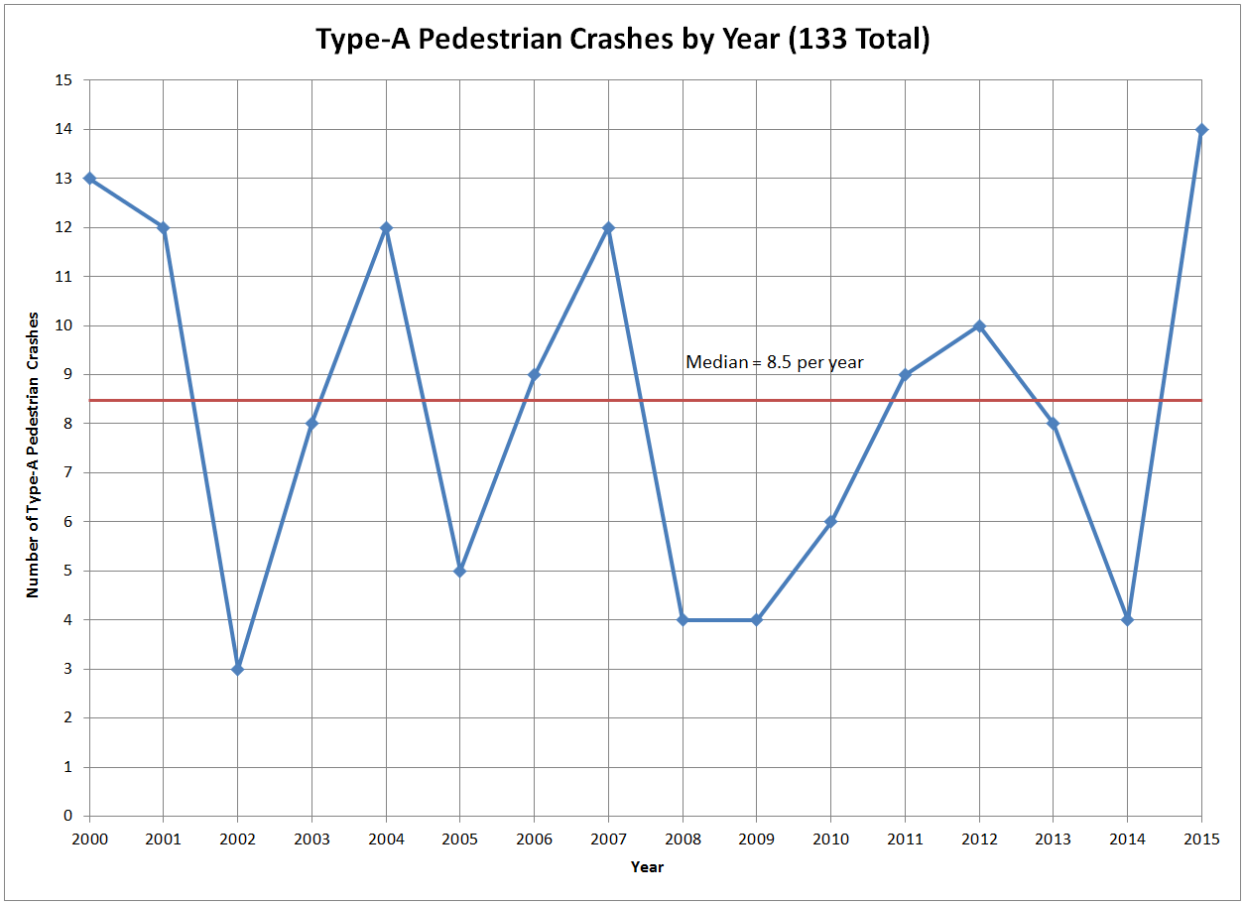
When we account for population growth between 2000 & 2015, the rate of Fatal pedestrian crashes held steady

TYPE A INJURY PED CRASHES

- From 2000 – 2015, there were a total of **133 Type A (disabling injury) pedestrian crashes**.

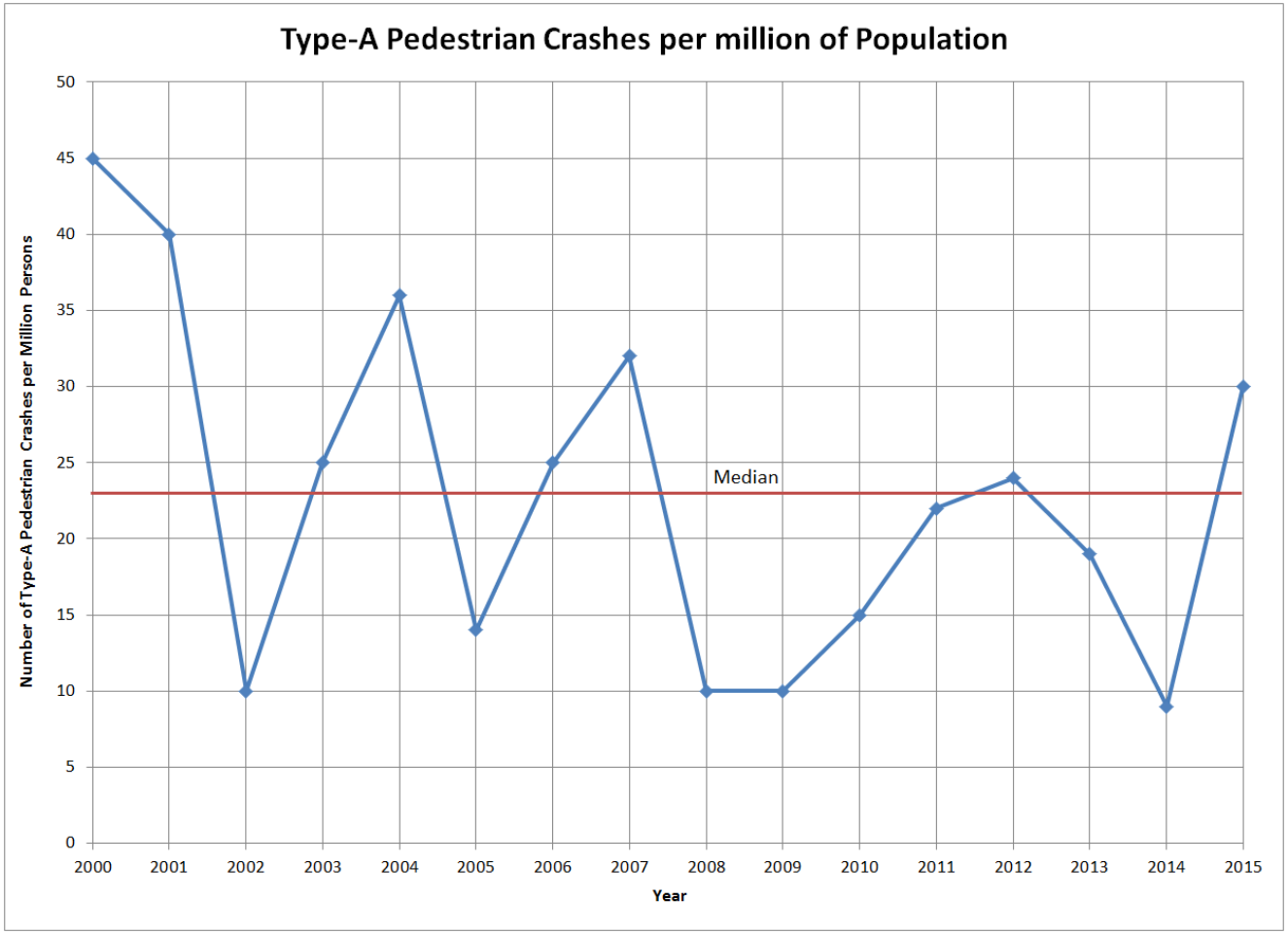
*__Type A Injury__ (disabling) – Injuries serious enough to prevent normal activity for at least one day such as massive loss of blood, broken bones, etc. (NC Crash Report Instruction Manual)

GENERAL TRENDS



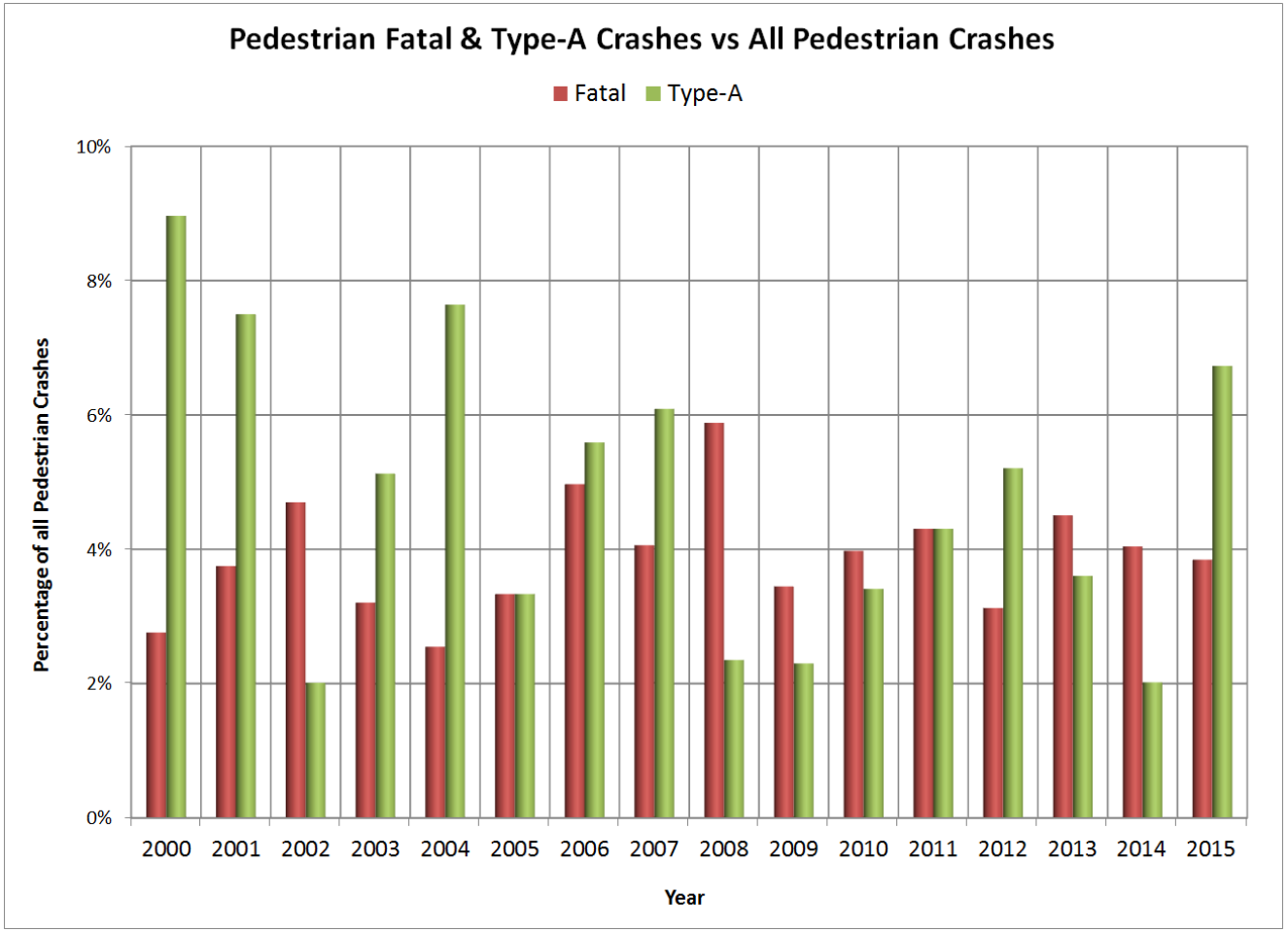
From 2000 – 2015 there were an average of **8.5 Type A pedestrian crashes per year.**
(Type A crash data does not include fatalities)

GENERAL TRENDS



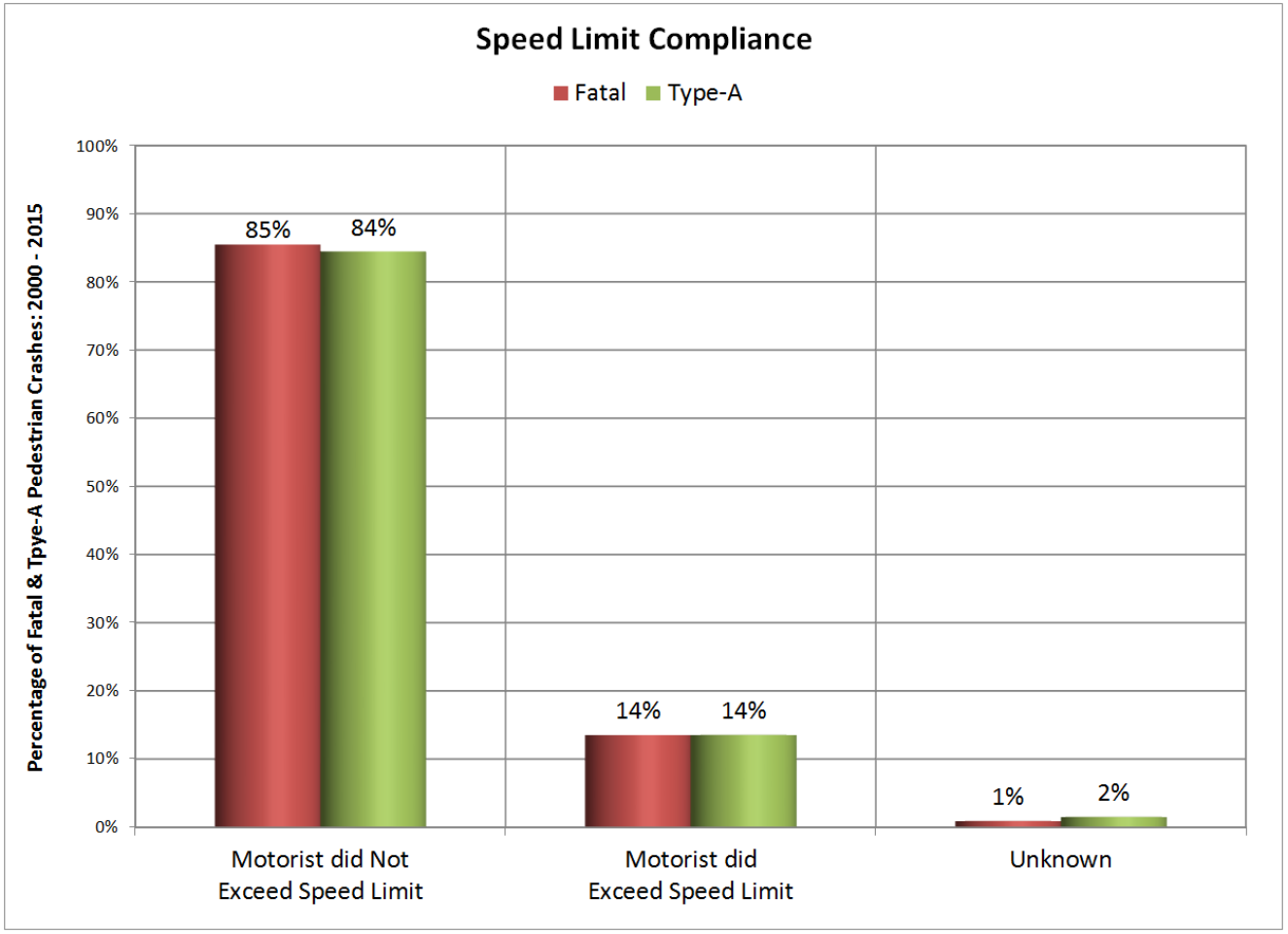
The rate of Type-A pedestrian crashes between 2000 & 2015 did not change

GENERAL TRENDS



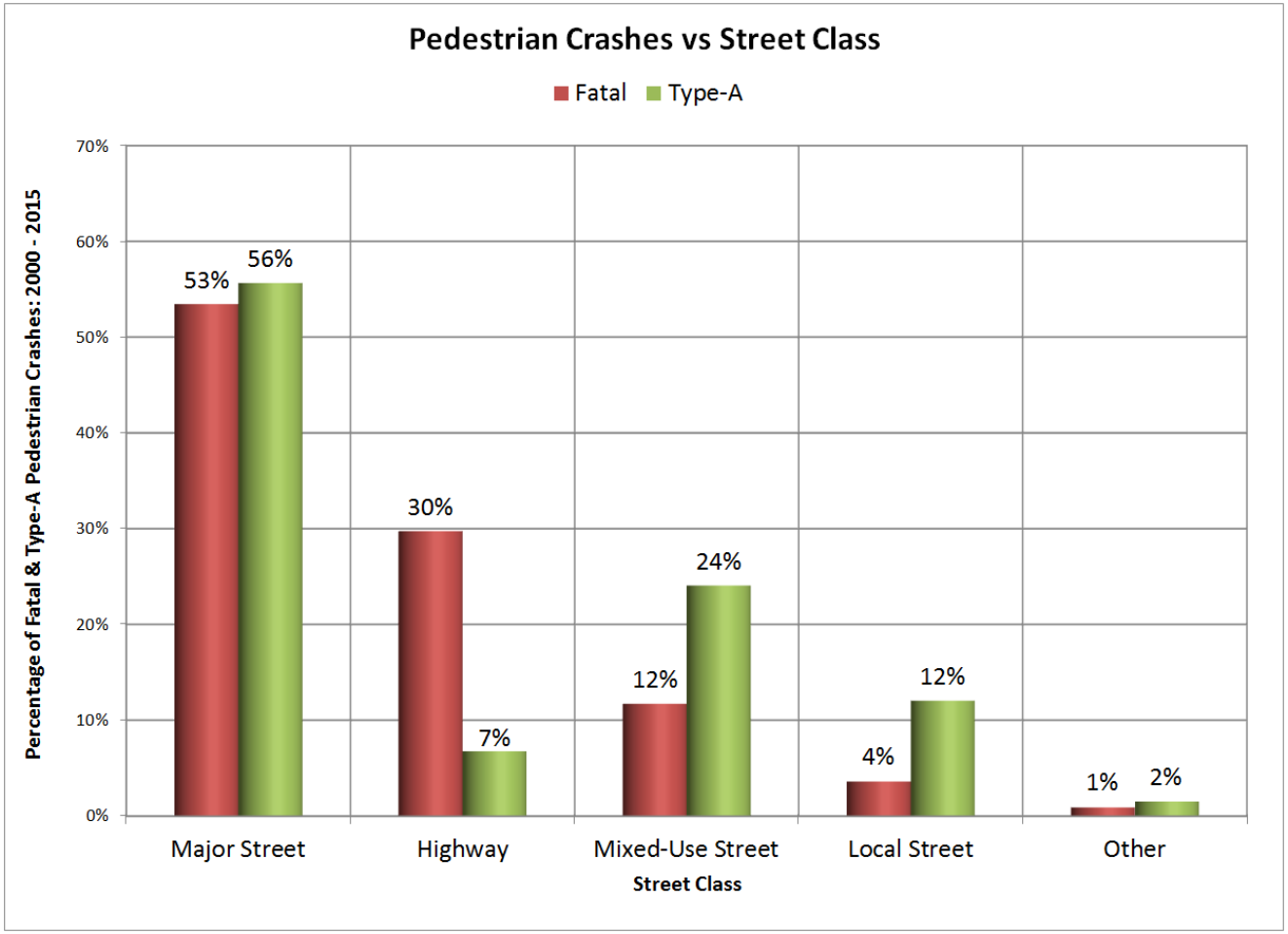
Over time, Fatal crashes made up roughly 5% of all pedestrian crashes
Type-A crashes made up 7% of all pedestrian crashes

GENERAL TRENDS



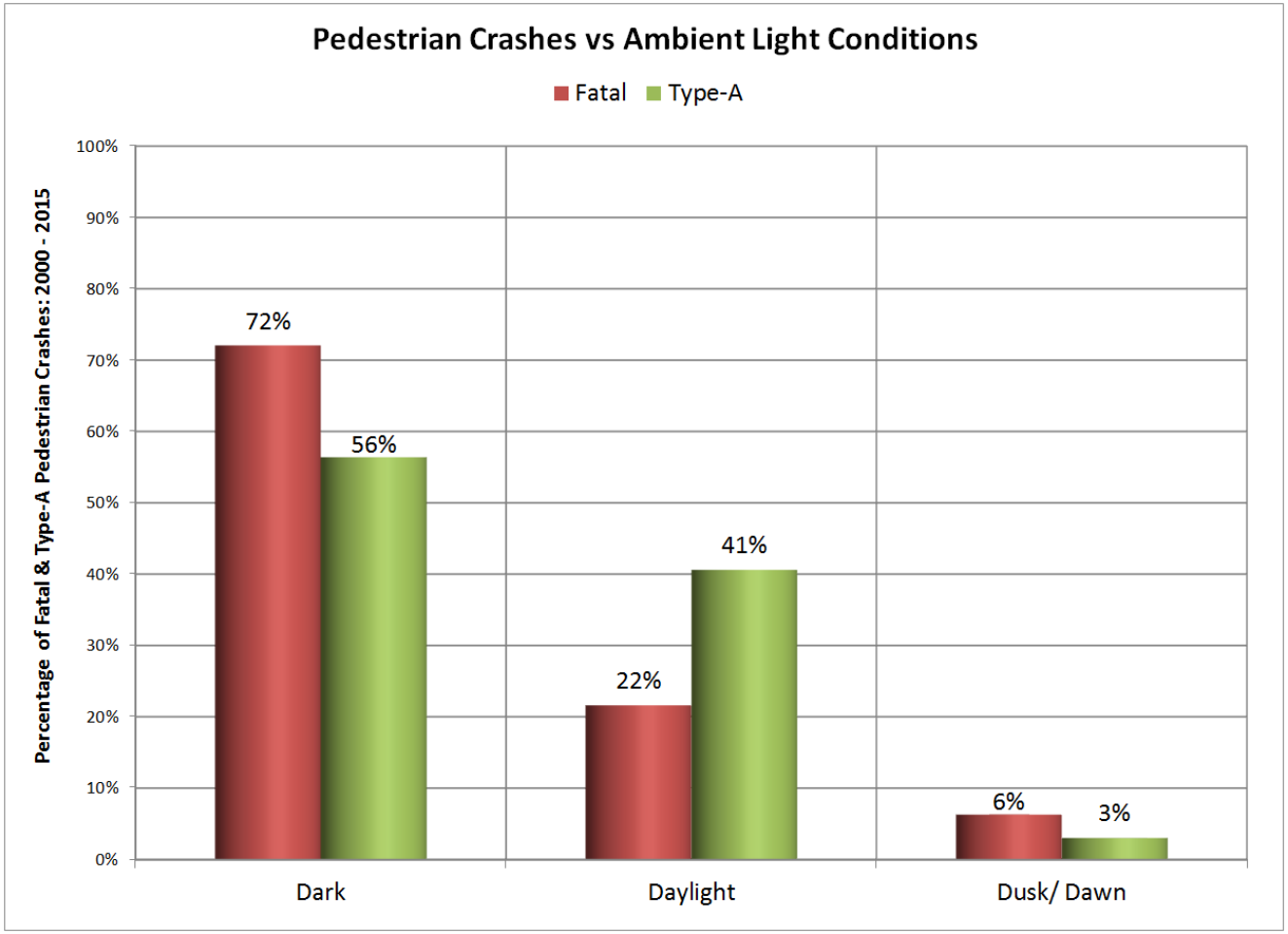
In most Fatal & Type-A crashes, motorists did not exceed the speed limit

GENERAL TRENDS

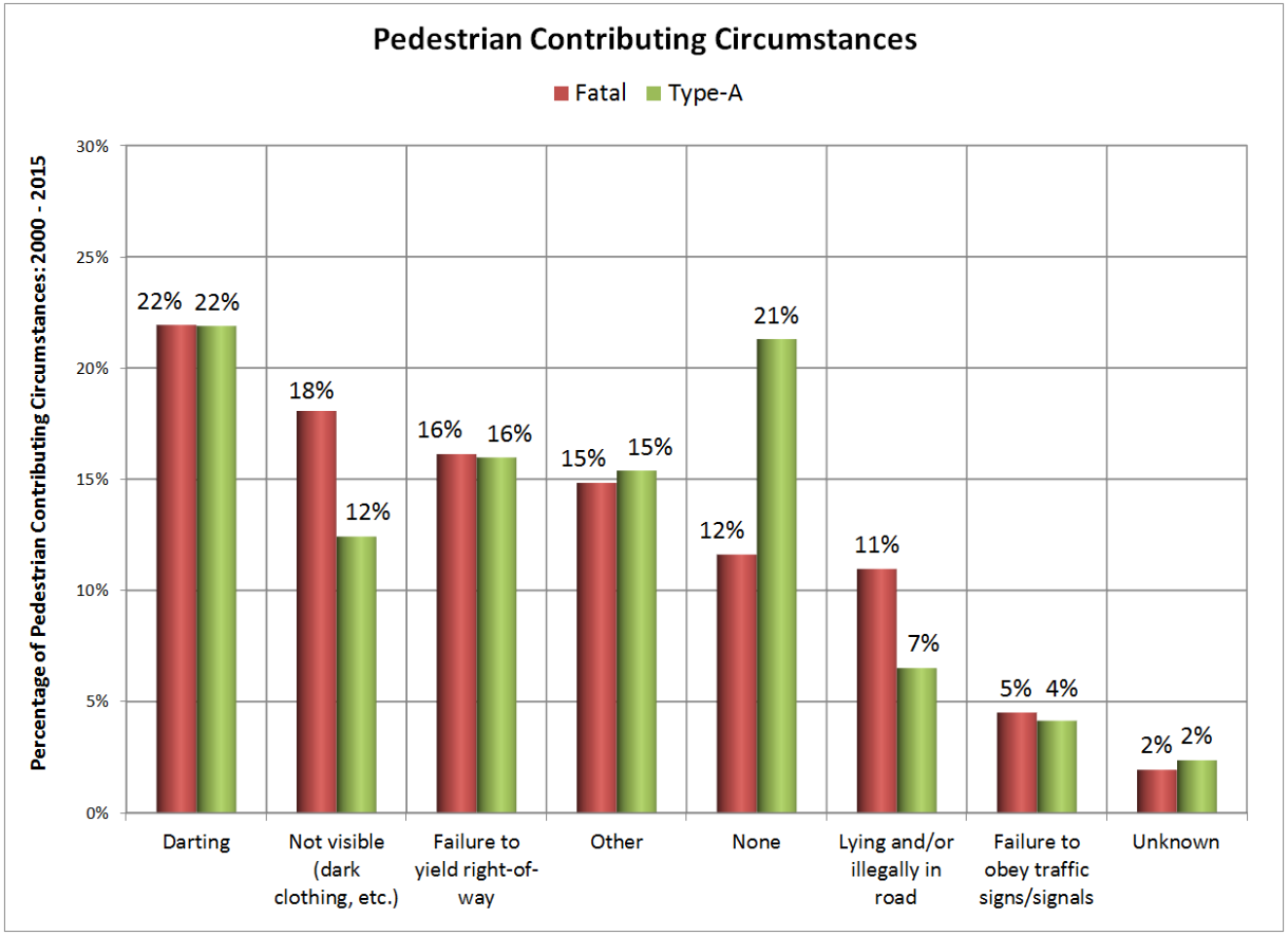


Most Fatal & Type-A crashes occurred on streets with 4 or more lanes & 45 mph speed limit

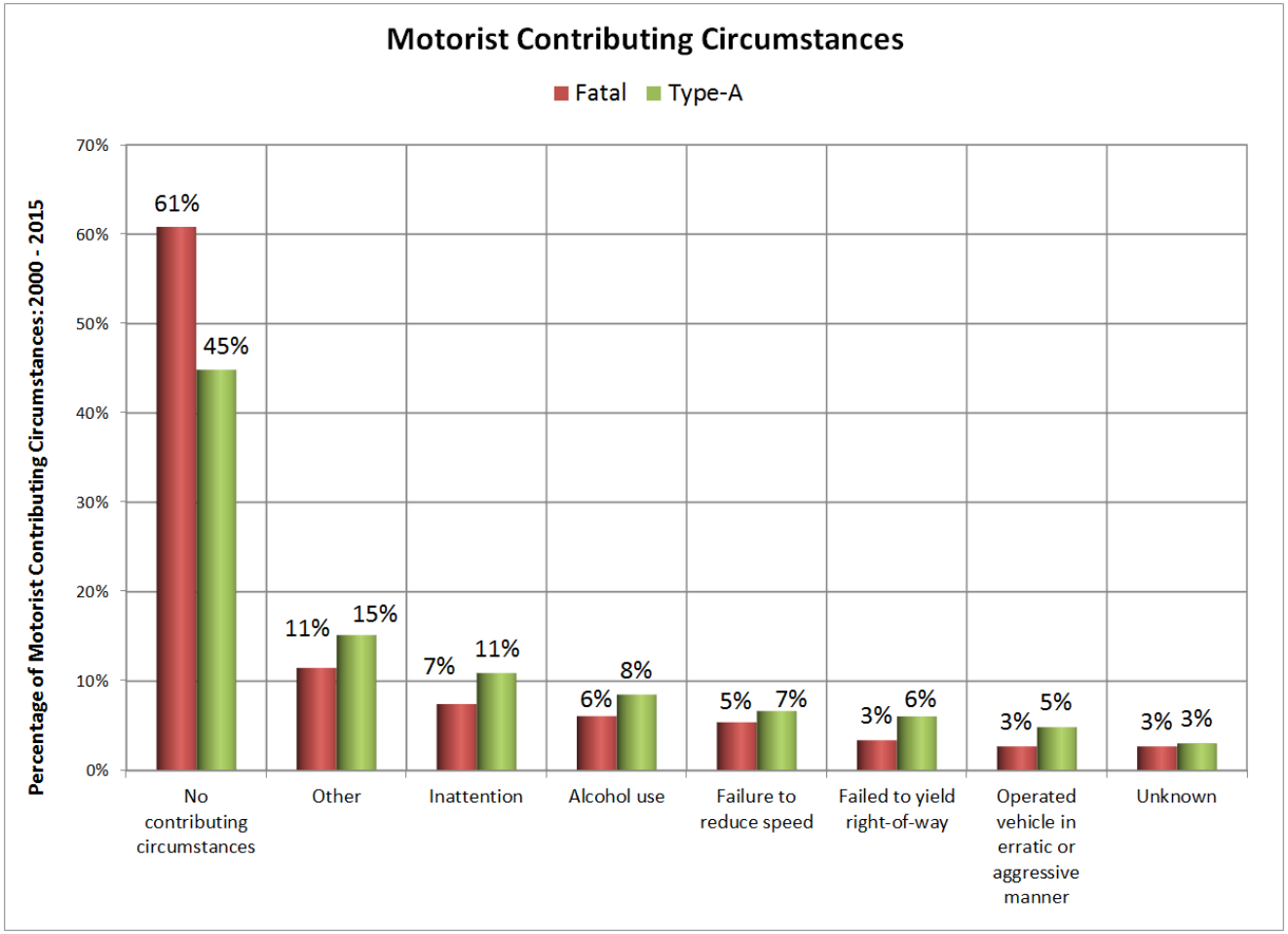
GENERAL TRENDS



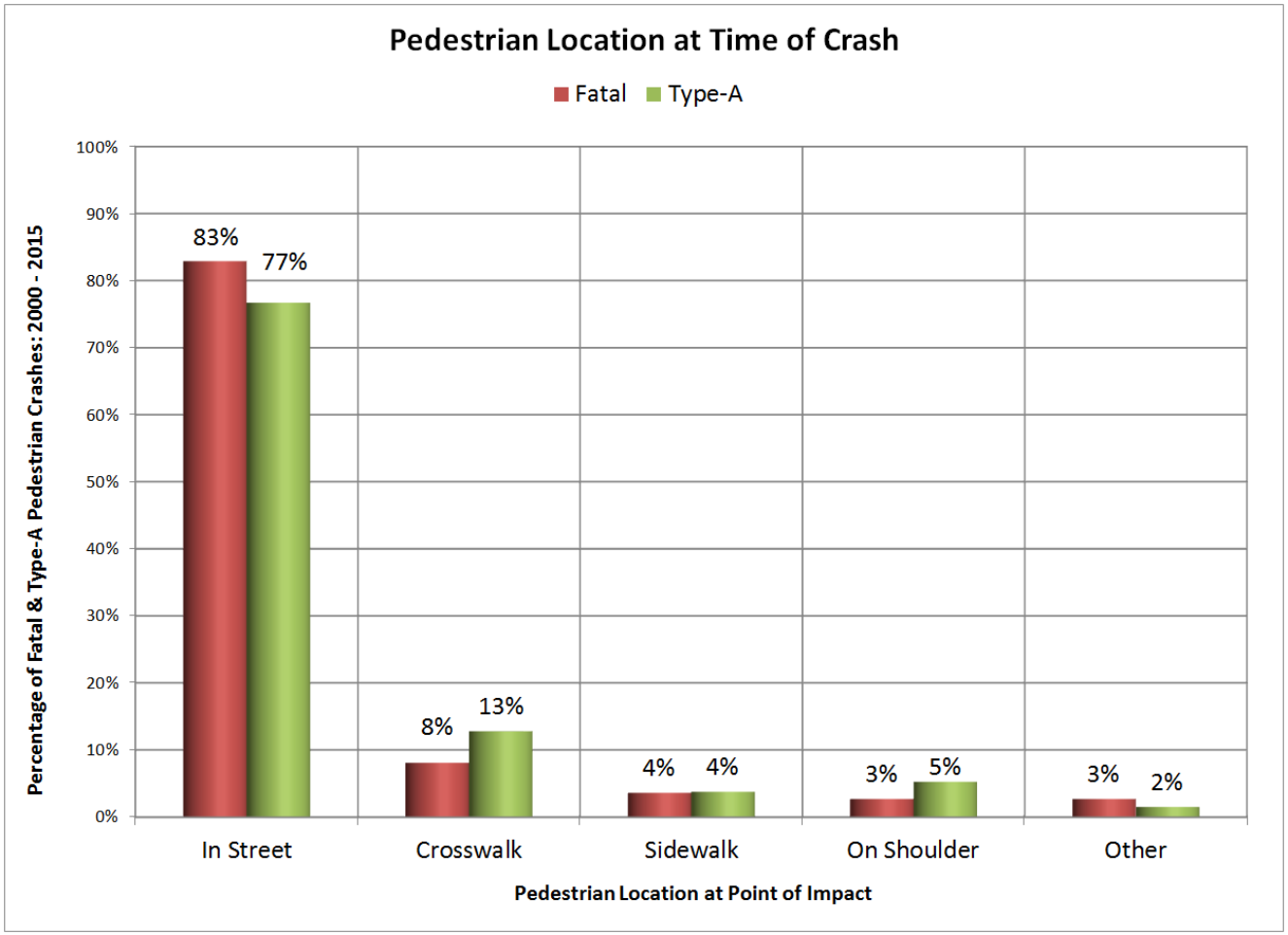
GENERAL TRENDS



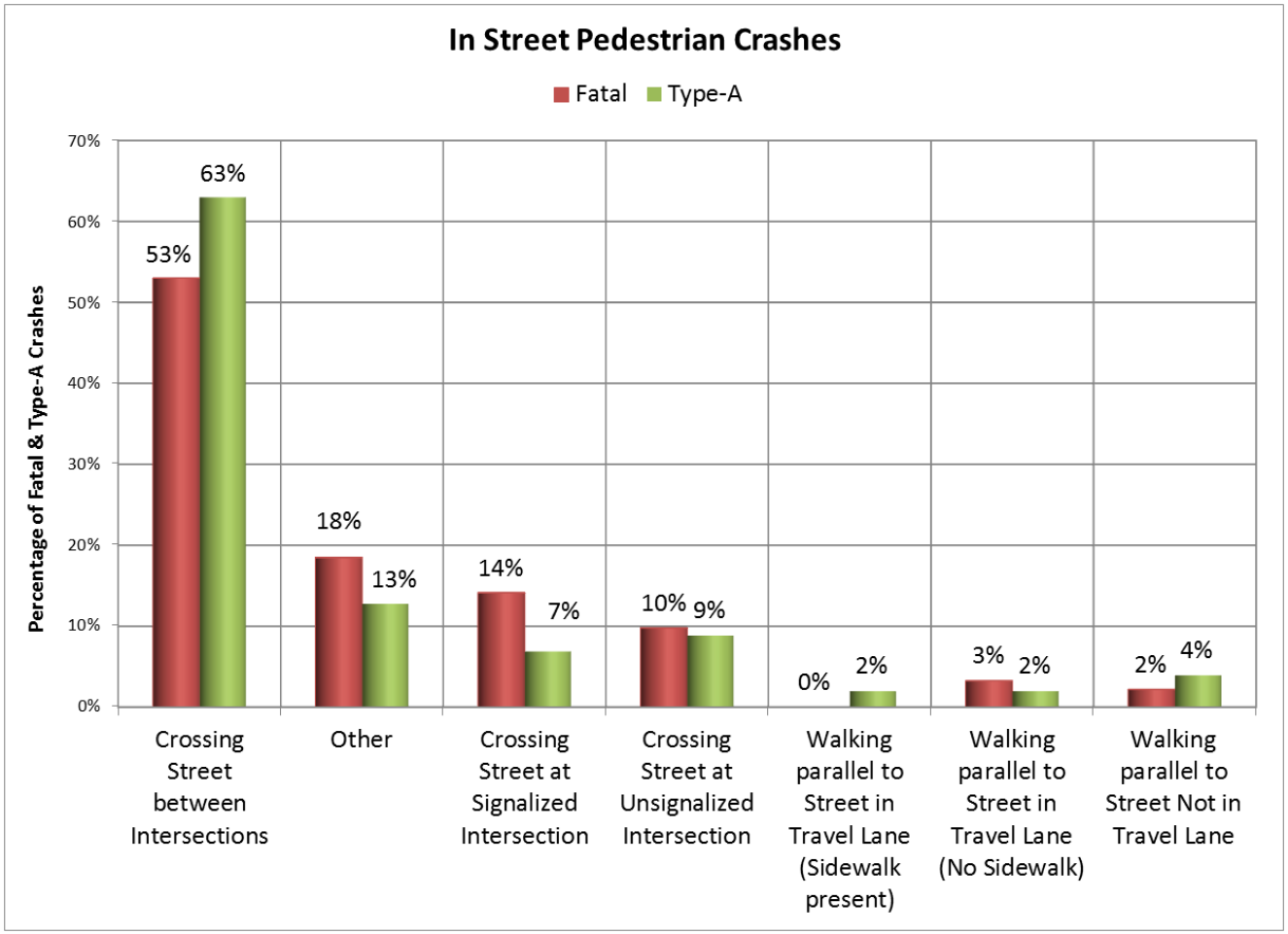
GENERAL TRENDS



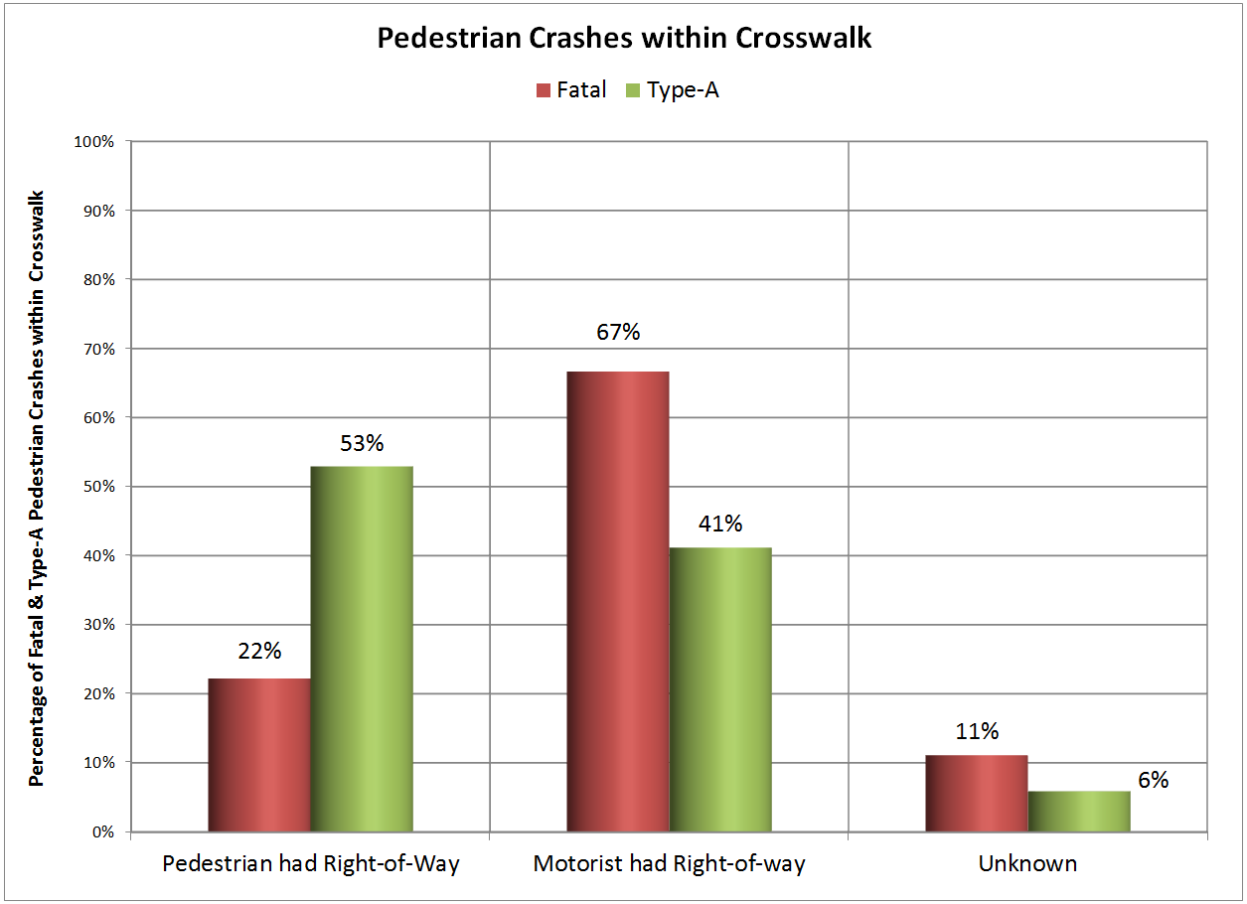
GENERAL TRENDS



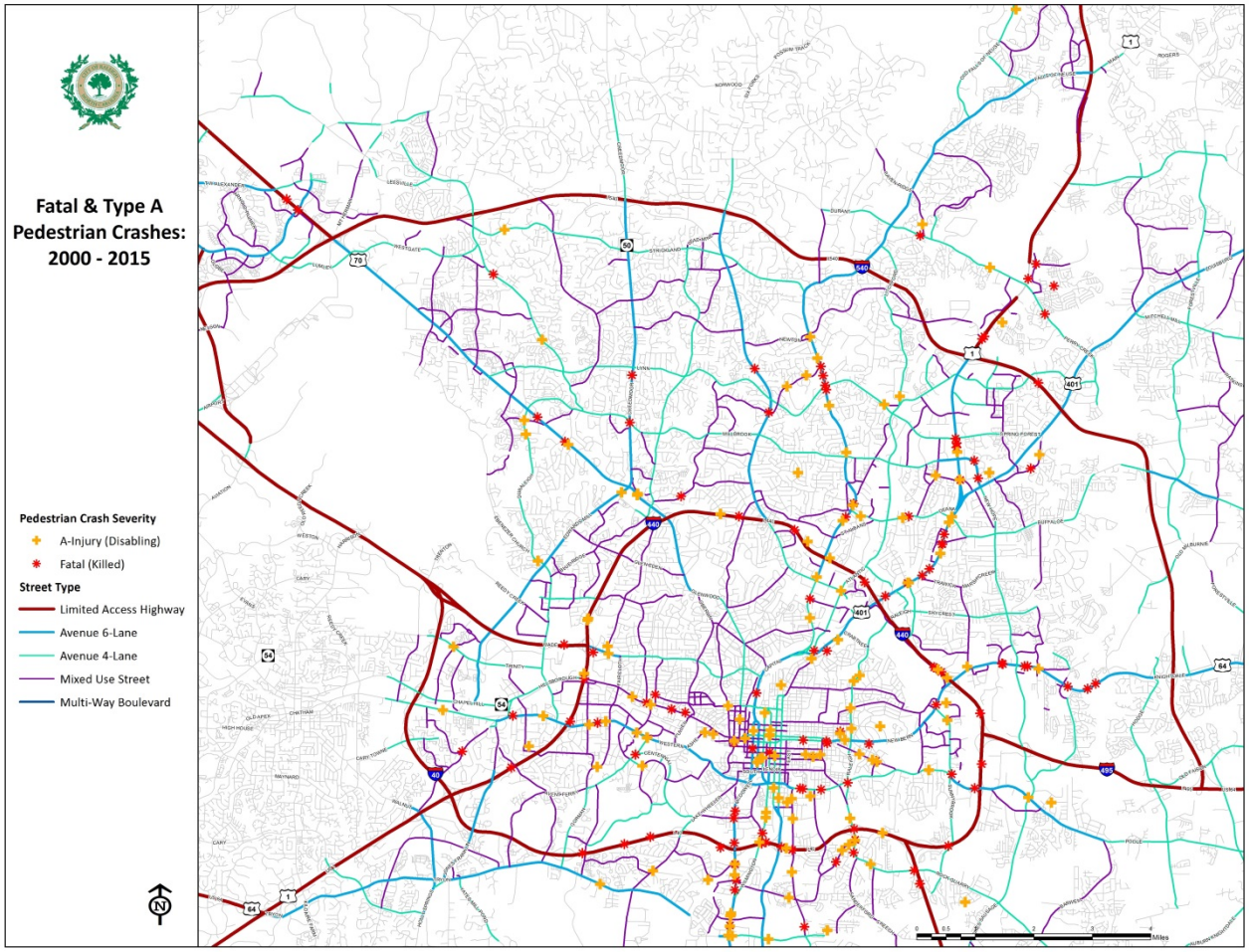
GENERAL TRENDS



GENERAL TRENDS



PED CRASH MAP 2000-2015



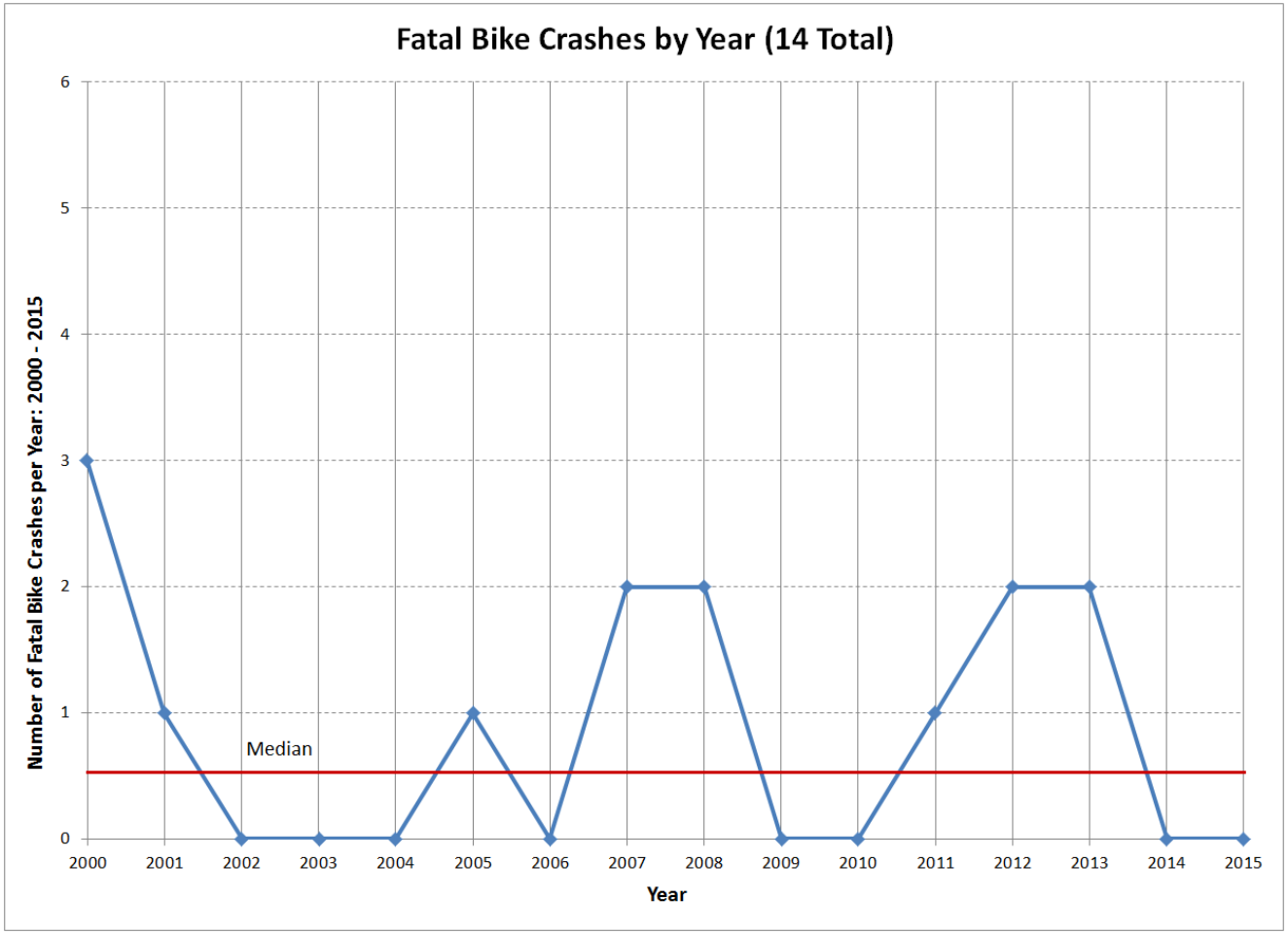
Most Fatal & Type-A crashes occurred along major corridors

FATAL & TYPE A BICYCLE CRASHES

- From 2000 - 2015, there were **14 fatal** and **37 Type-A (disabling) injury bike crashes**.

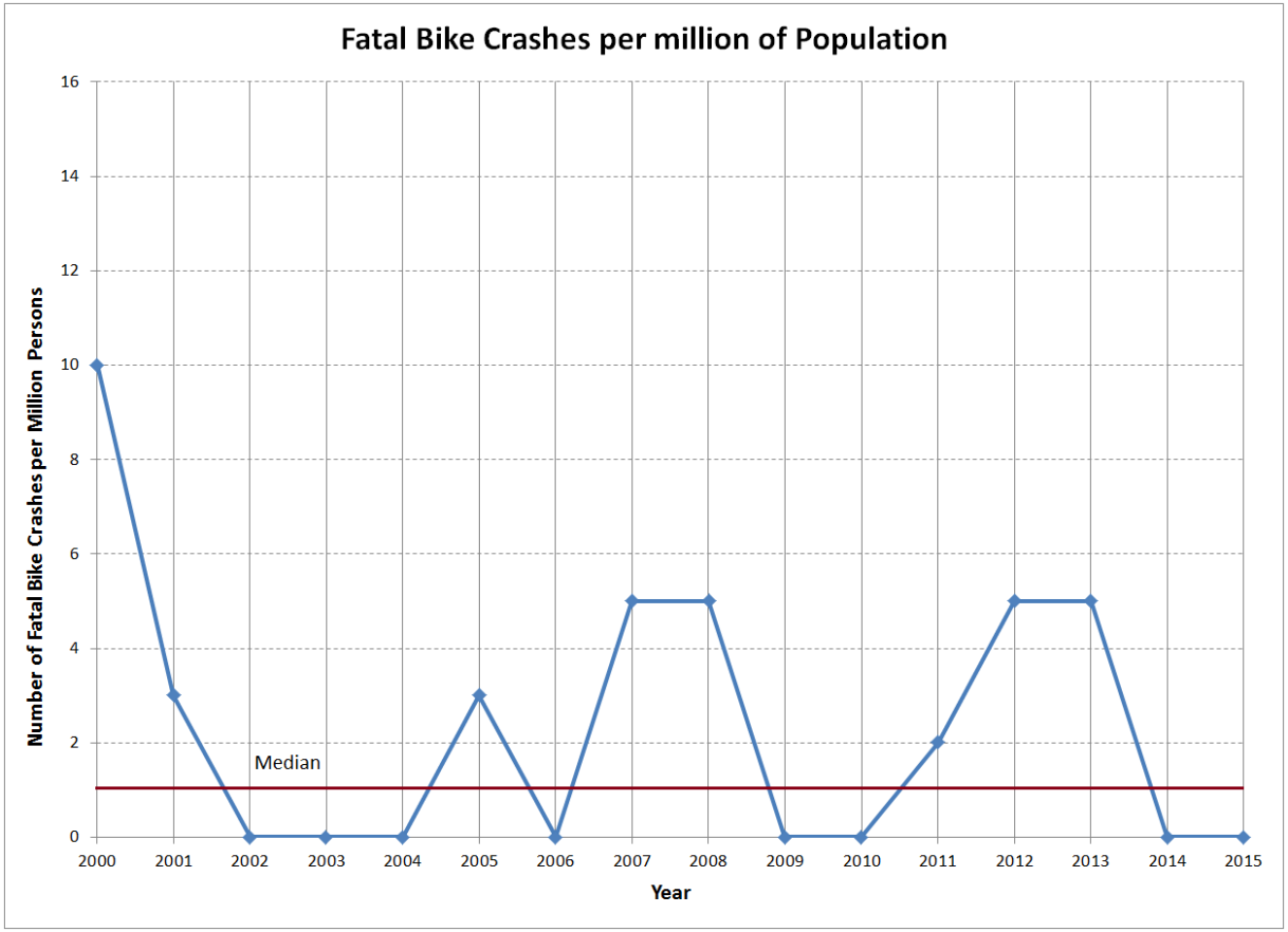
- Crashes involving bicyclist fatalities were analyzed for general trends.

GENERAL TRENDS

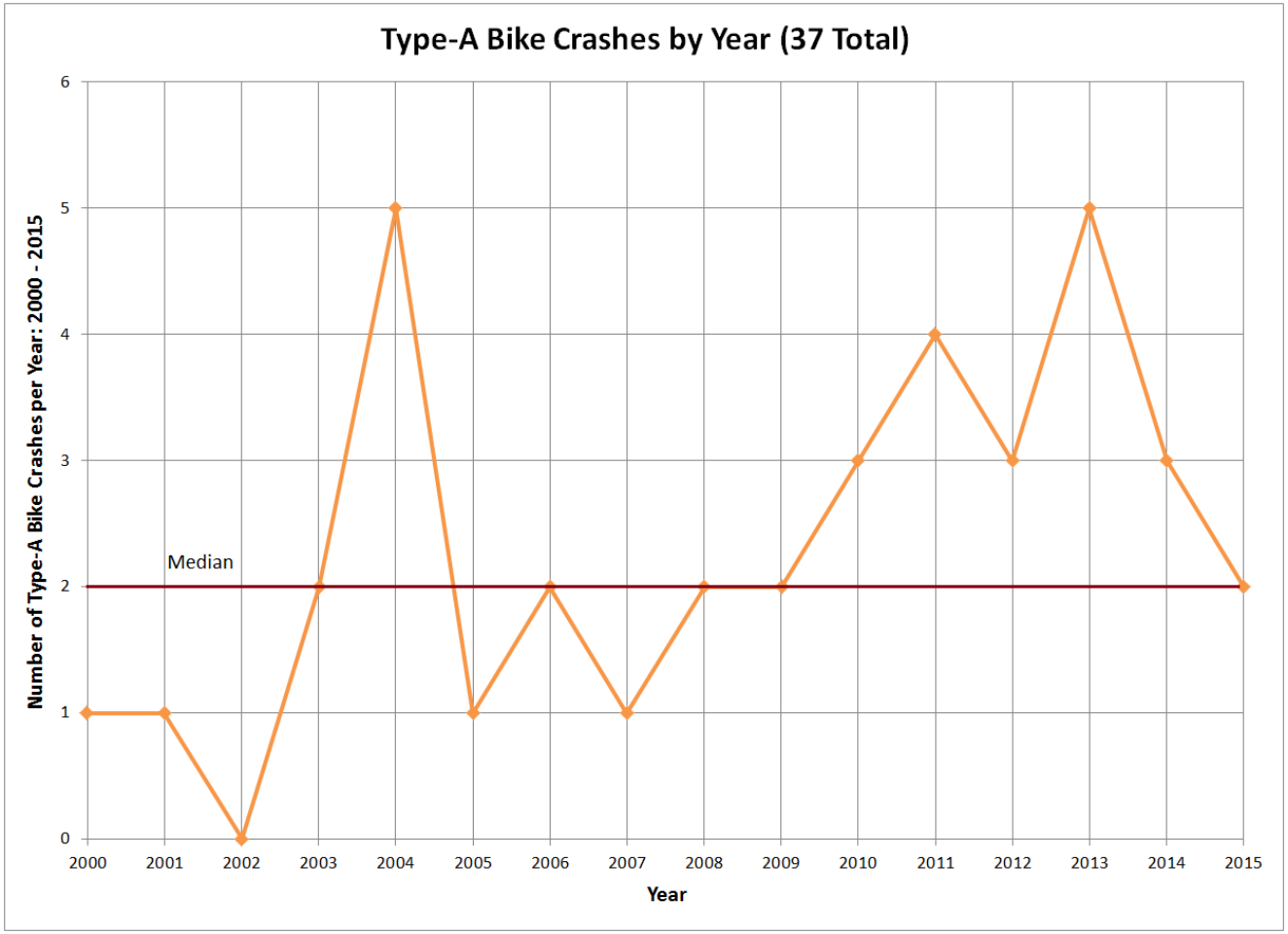


There was no discernable trend in Fatal Bike crashes over time

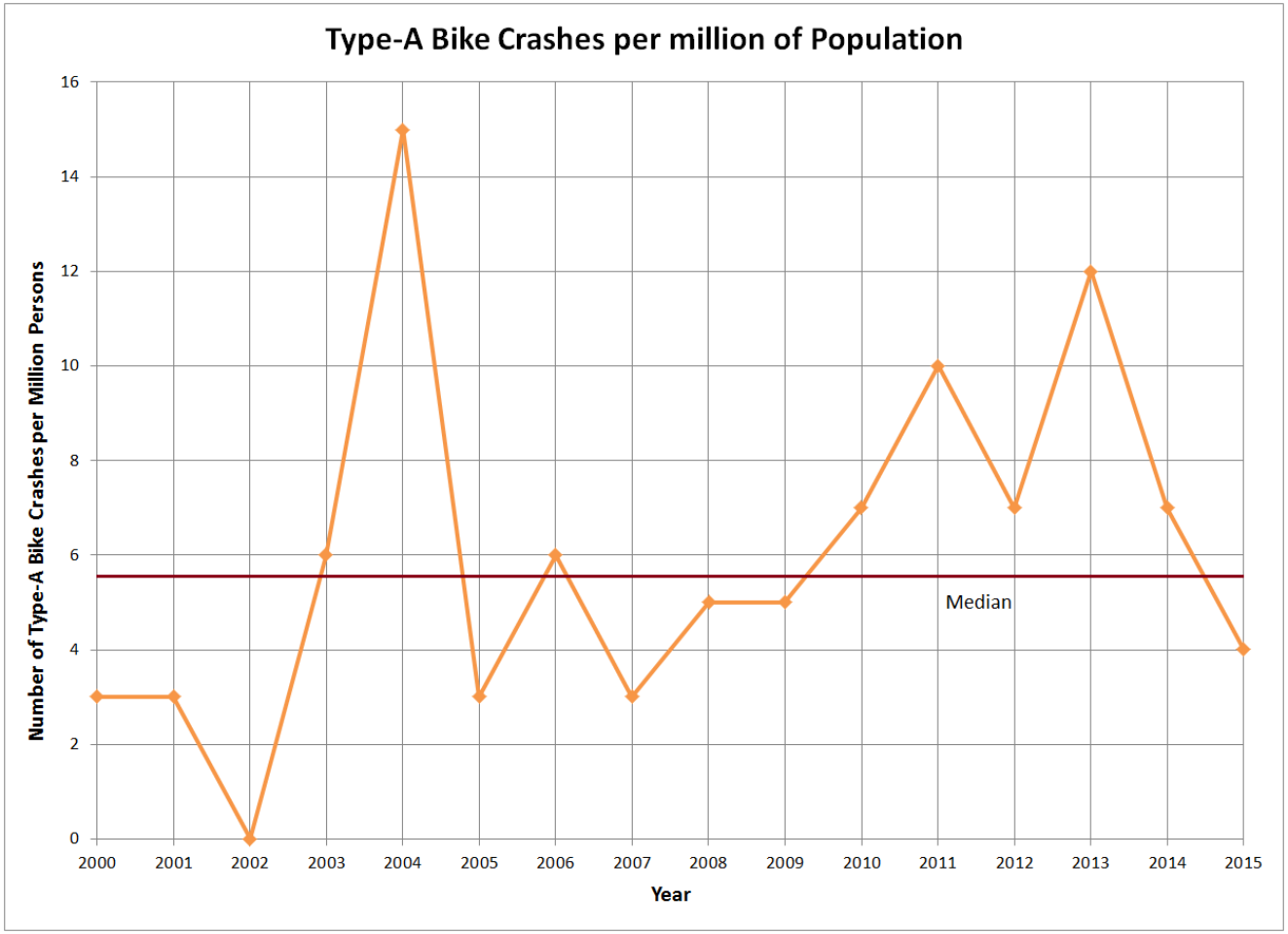
GENERAL TRENDS



GENERAL TRENDS

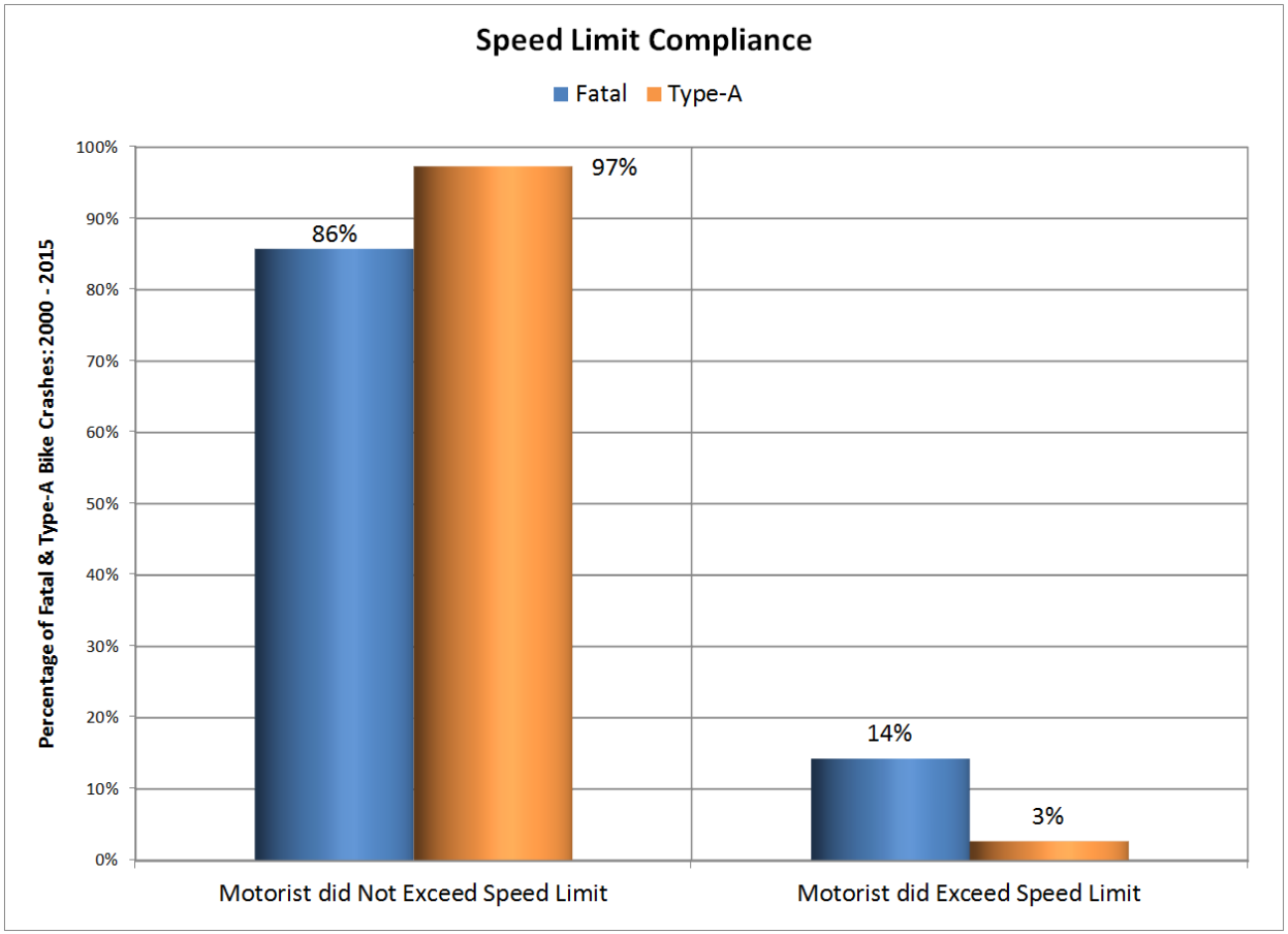


GENERAL TRENDS

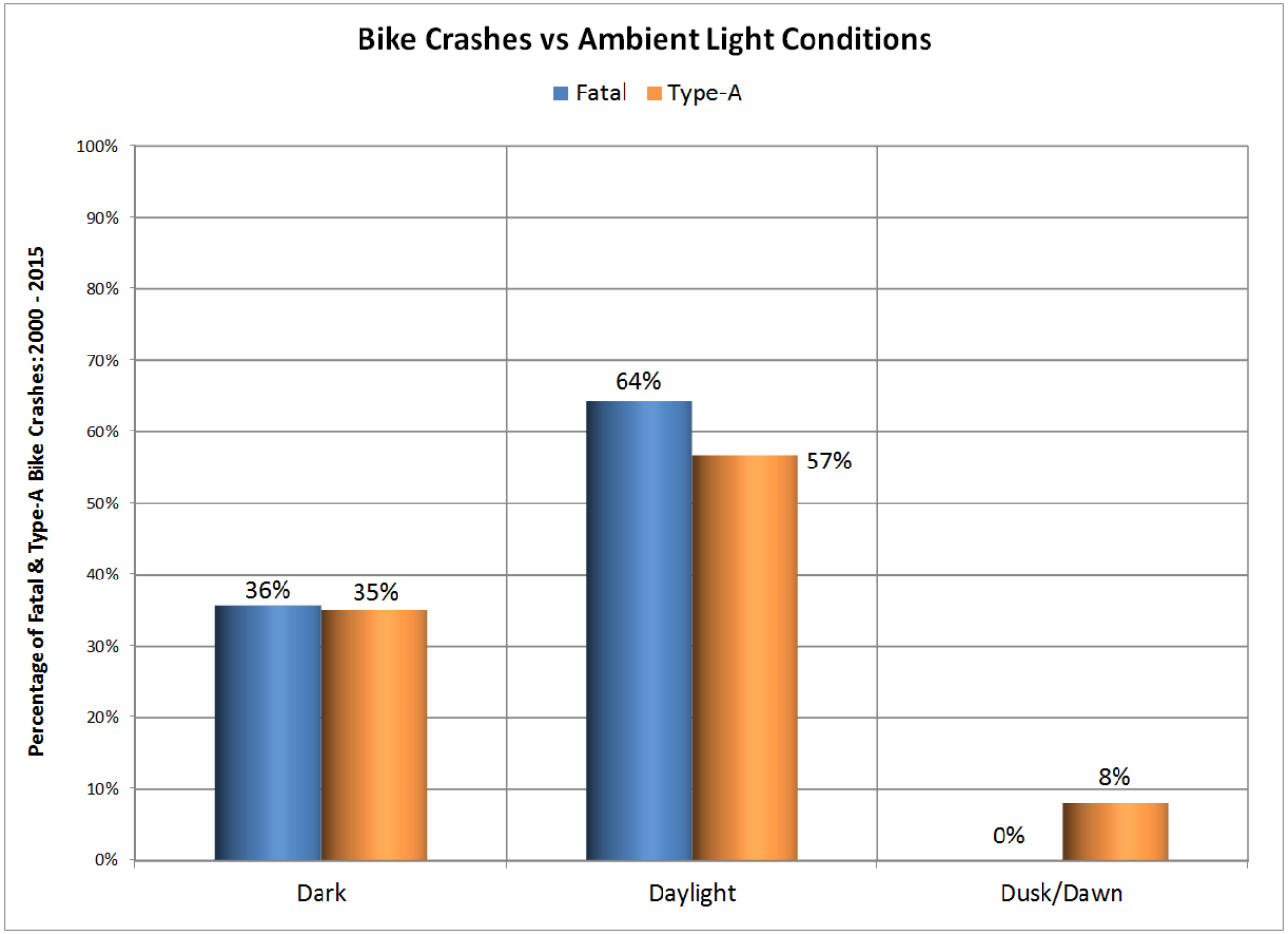


Statistical tests show an increase in Type-A Bike crashes over time

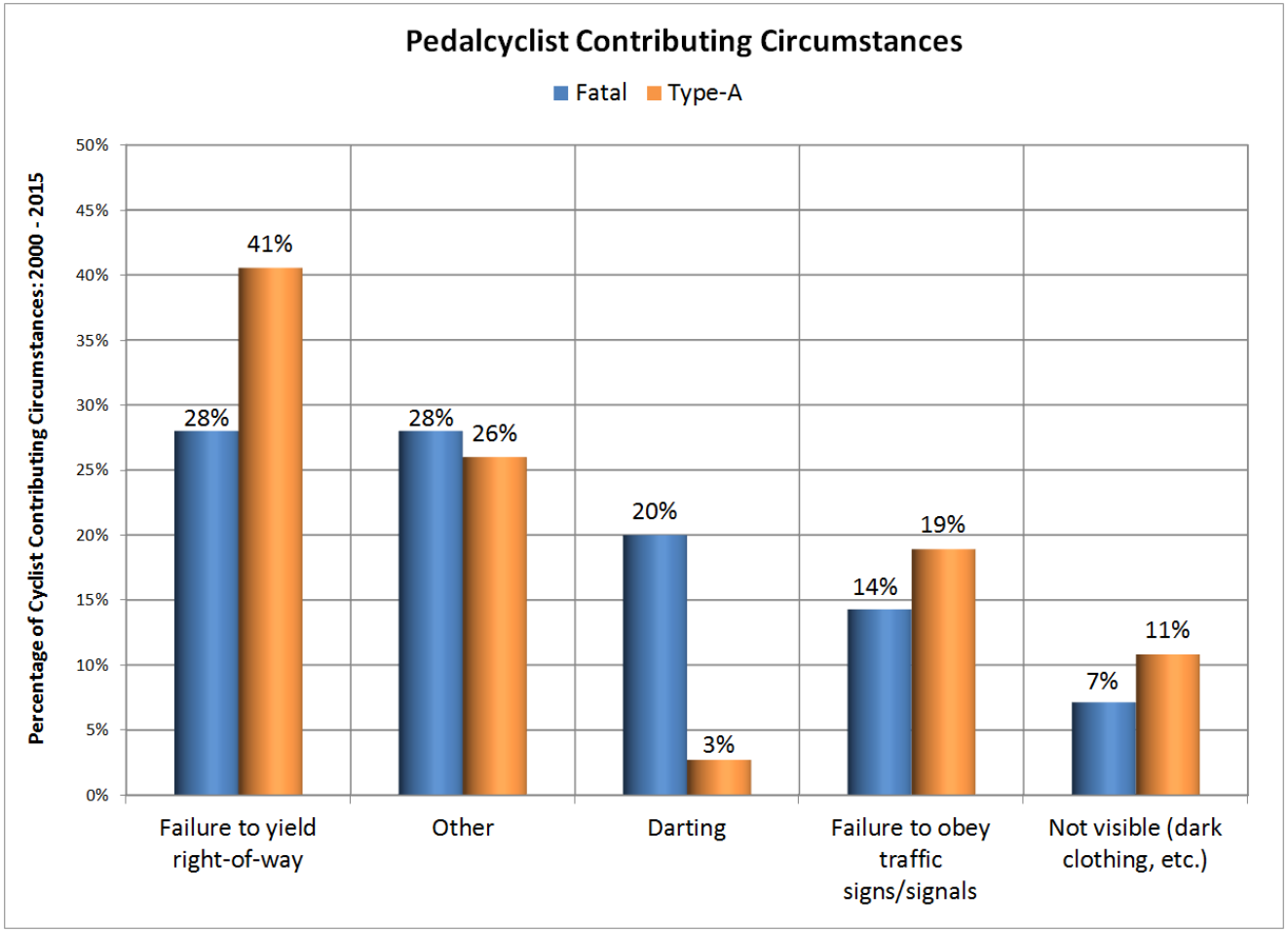
GENERAL TRENDS



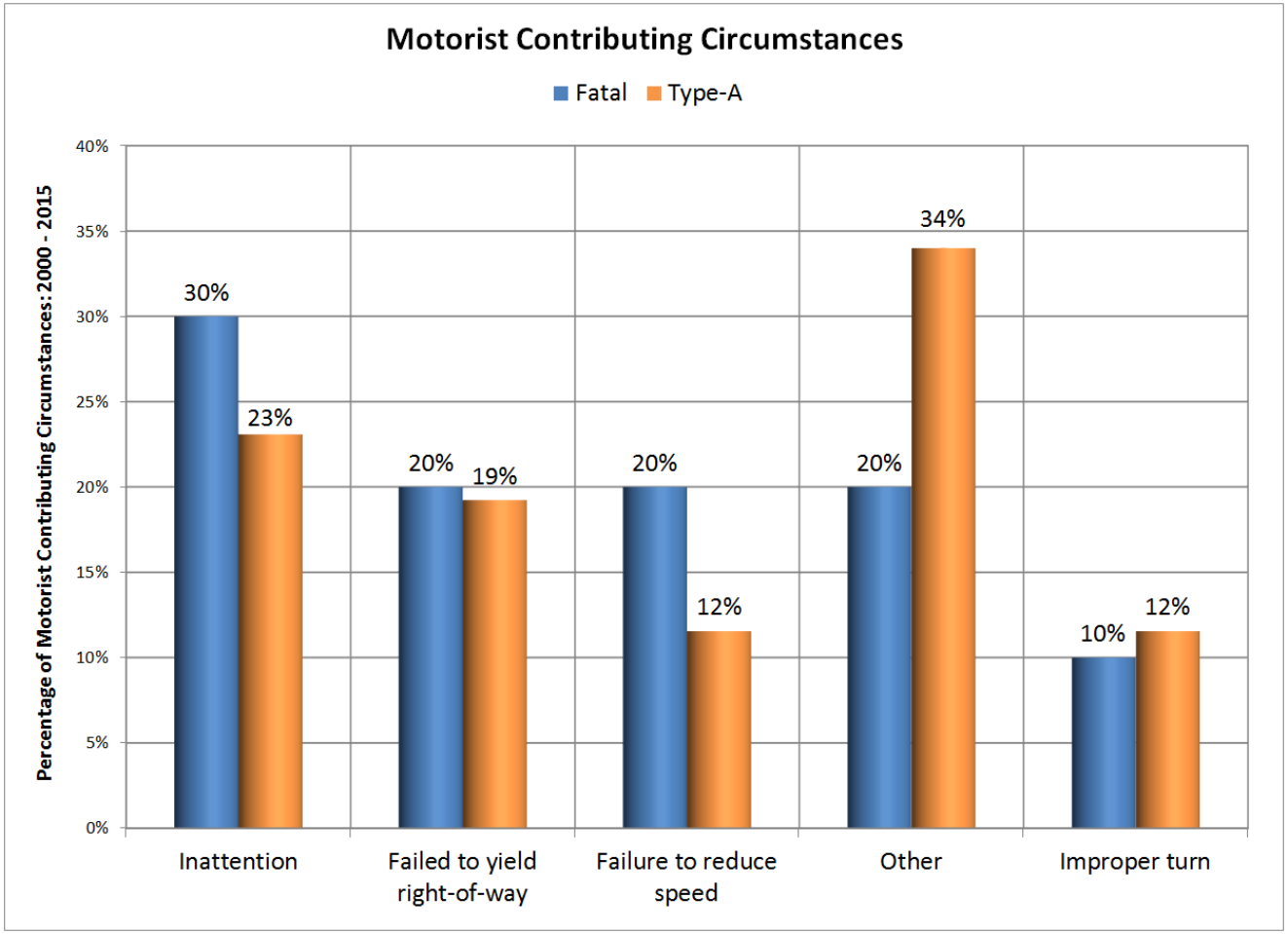
GENERAL TRENDS



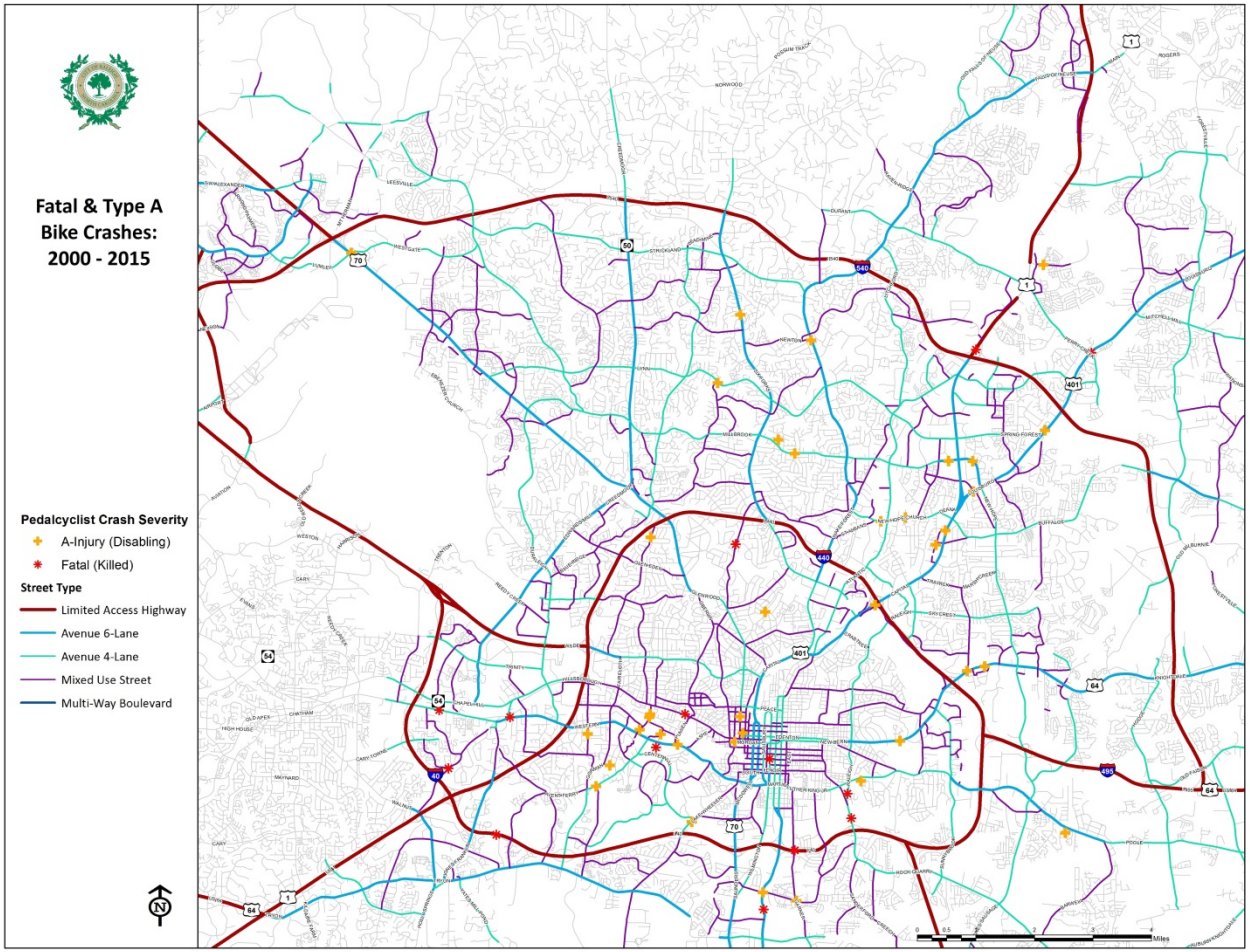
GENERAL TRENDS



GENERAL TRENDS



BIKE CRASH MAP 2000-2015



Unlike Pedestrian crashes, Bike crashes do not appear to have a geographic pattern

THANKS

- Thanks to the audience for your interest.
- Special thanks to **Bowman Kelly, Dan Hoff** and **Susan Wilson** of the City of Raleigh for help with this presentation.