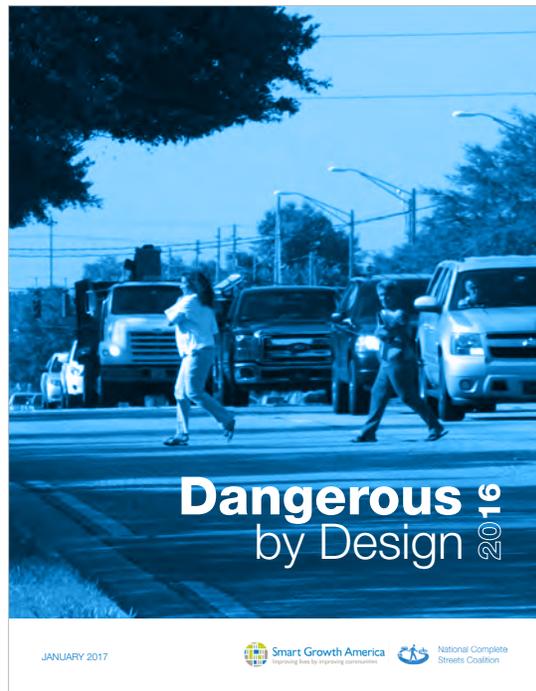




2. PEDESTRIAN SAFETY IN CONTEXT

Before examining pedestrian crashes in Minneapolis, several pedestrian crash studies in other cities and several nationwide studies were reviewed. Key findings of these studies are provided here for background and context for the Minneapolis pedestrian crash analysis. More detailed descriptions of these studies are provided in **Appendix A**.



Pedestrian crashes in Minneapolis have been considered in the context of several national studies, including Dangerous by Design 2016, authored by Smart Growth America and the National Complete Streets Coalition.



Fatality Trends

National Fatality Trends Over Time

The national steady downward trend of fatalities for all modes through the 1990s and early 2000s has reversed. Mirroring the recent upward trend in motorized fatalities, pedestrian and bicycle fatalities have gone up every year since 2009.

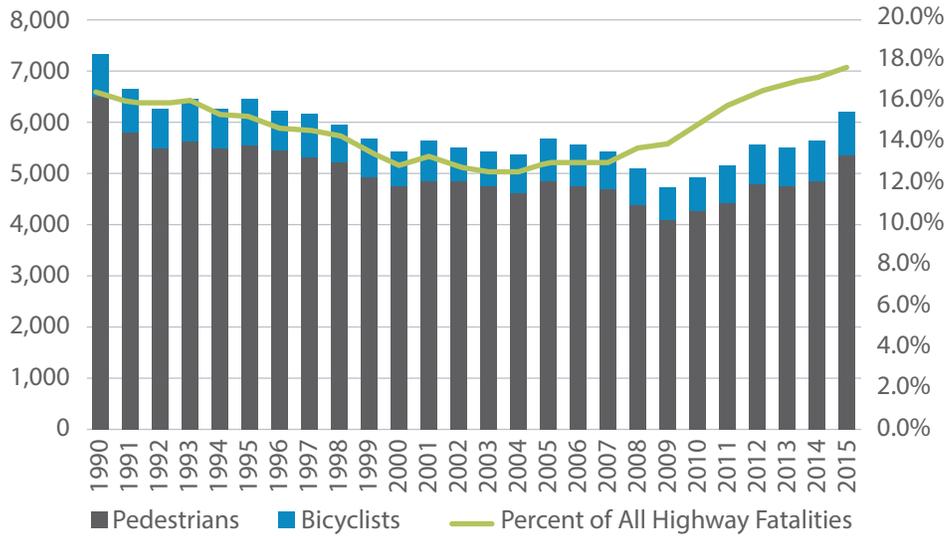


Figure 2-1. U.S. Pedestrian and Bicycle Fatalities, 1990-2015
 Source: Strategic Agenda for Pedestrian and Bicycle Transportation (FHWA) using NHTSA data.

A study from the Governors Highway Safety Commission corroborates these findings. Its study found that nationally pedestrian fatalities increased by 25 percent from 2010 to 2015 and account for a steadily increasing percentage of total traffic fatalities. It estimates that fatalities in 2016 increased 11 percent over 2015.

Compared to other states, Minnesota’s pedestrian, vehicle, and bicycle fatality rates are low. The Governors Highway Safety Commission report found that at 0.75 pedestrian fatalities per 100,000 population in 2015, Minnesota had the fourth lowest fatality rate in the country. However, pedestrian fatalities in Minnesota in the first six months of 2016 increased 64 percent compared to the first six months of 2015, from 14 to 23 deaths.

Although the statewide pedestrian fatality rate is low, that percent is on the rise in Minneapolis specifically. Since 2013, the percent of all traffic fatalities that involve pedestrians have been on the rise (**Figure 2-2**).

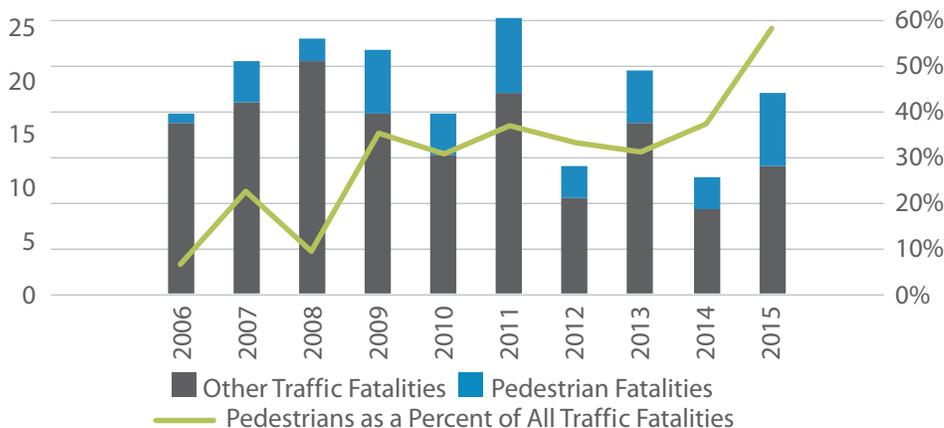


Figure 2-2. Traffic Fatalities in Minneapolis
 Source: MnCMAT. These fatality numbers include crashes on freeways in the City of Minneapolis. The dataset presented in Chapter 4 and 5 excluded pedestrian crashes on freeways from the analysis.

National Demographic Trends in Fatal Pedestrian Crashes

Several studies indicated that pedestrian fatalities are not distributed equally among population groups. In particular, seniors, people of color, and low-income populations are disproportionately represented among pedestrian fatalities as compared to their portion of the population. One specific example of this uneven representation by age comes from a 2016 New York City study that found that seniors have a disproportionately higher risk of being killed by a left-turning vehicles than other age groups. While victims of all other fatal crash types have a median age of 50, left-turning vehicle crash victims have a median age of 67.

Race and ethnicity are also factors in pedestrian crashes. A Smart Growth of America study found that while only one-third of the United States population identified as non-white or Hispanic, these groups accounted for almost half of all pedestrian deaths between 2005 and 2014.

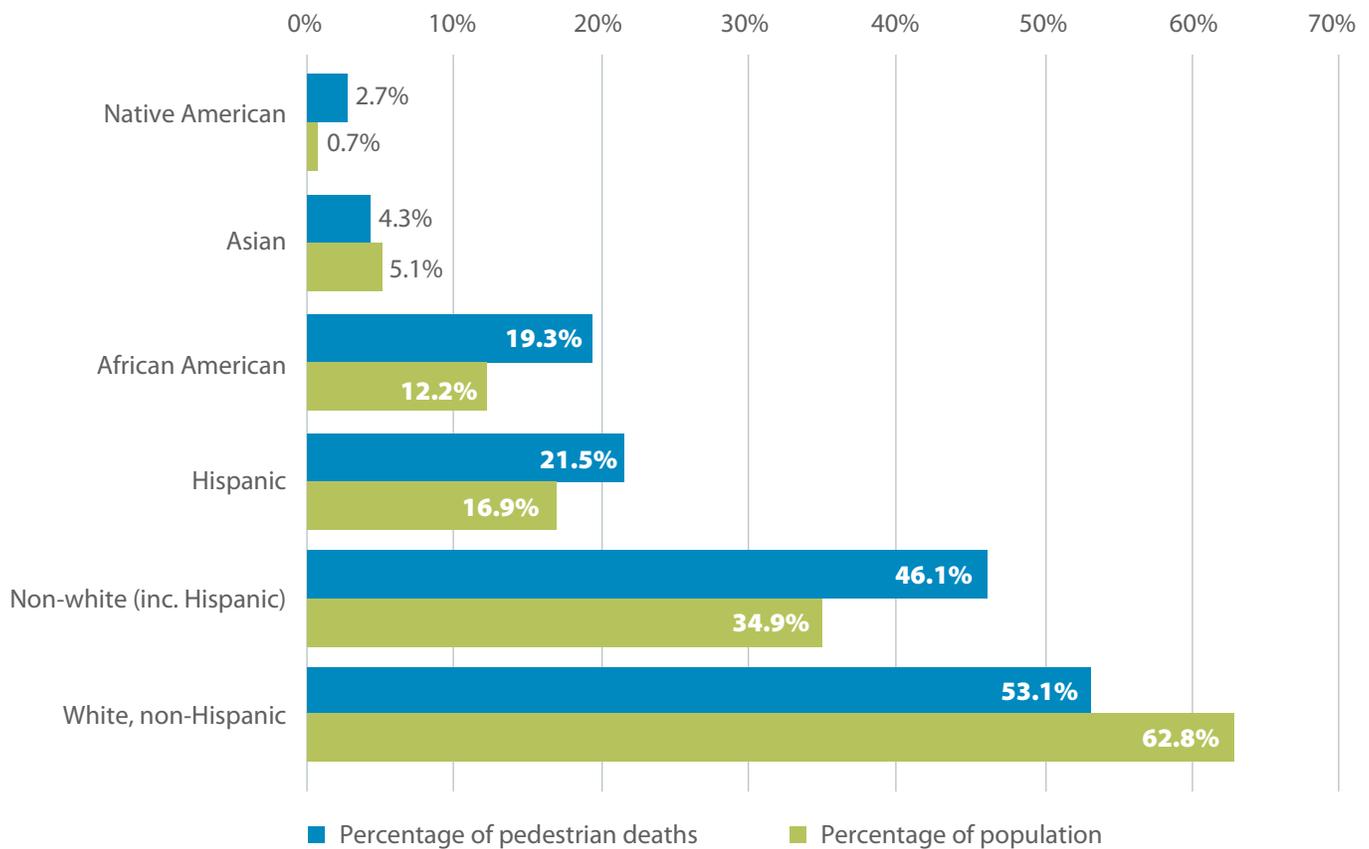


Figure 2-3. Pedestrian Deaths by Race/Ethnicity Relative to U.S. Population, 2005-2014

Nationally, minority groups are overrepresented in pedestrian deaths.

Source: Smart Growth America



Crash Locations

In urban settings, pedestrian crashes occur most frequently at intersections. In rural or suburban settings, pedestrian crashes tend to occur at non-intersection locations. Pedestrian crashes happen most often on arterial streets and on streets with more vehicular travel lanes.

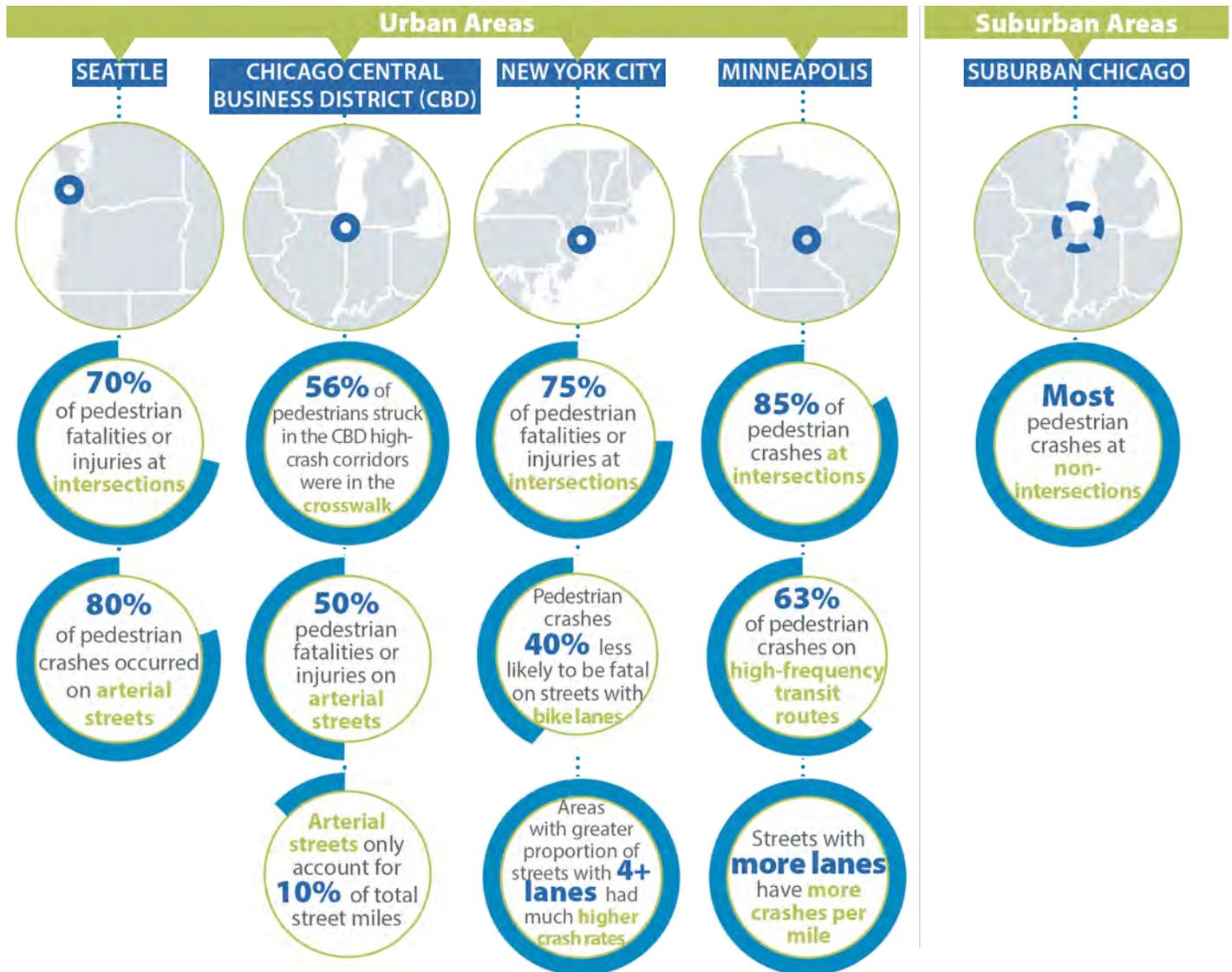


Figure 2-4. National Trends in Crash Locations

Sources: New York statistics on this page are from the New York City Pedestrian Safety Study & Action Plan (2010), Seattle statistics on this page are from the City of Seattle Bicycle and Pedestrian Safety Analysis (2016), and Chicago statistics on this page are from the City of Chicago Pedestrian Crash Analysis Summary Report (2011). Minneapolis statistics on this page were compiled as a part of this Pedestrian Crash Study.

Common Features

Driver Inattention and Failure to Yield

Multiple cities and studies found that inattention and driver failing to yield are the most common contributing factors in pedestrian crashes.

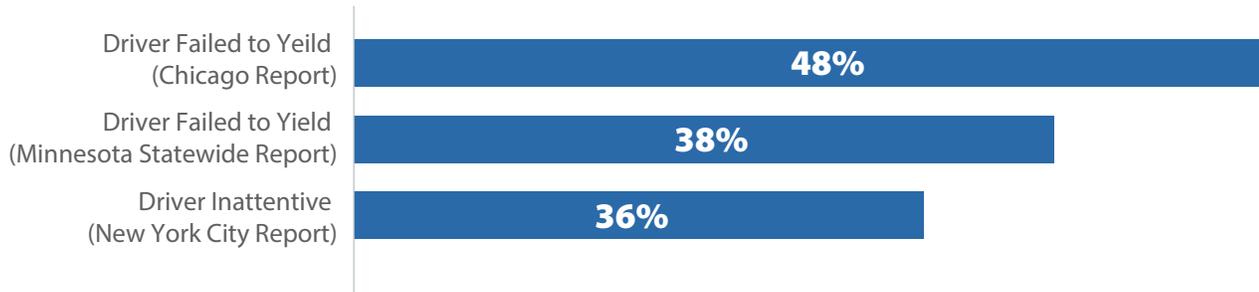


Figure 2-5. Driver Inattention and Failure to Yield

Additionally, a 2017 report from the Governors Highway Safety Association suggests that the growing use of smartphones by all road users could be a significant source of distraction.

Turning Vehicles

Several studies found that turning vehicles are most commonly involved in pedestrian crashes and that left-turning vehicles are more often involved than right-turning vehicles.

Turning-vehicle related crashes are a much smaller percentage of all pedestrian crashes in statewide Minnesota than in urban studies. The different street network characteristics of these geographies (with low intersection density in statewide Minnesota and higher intersection density in Chicago and Seattle) likely contribute to this difference in turning-related crashes. However, all three studies show that left-turning vehicles are involved in crashes more than right-turning vehicles.

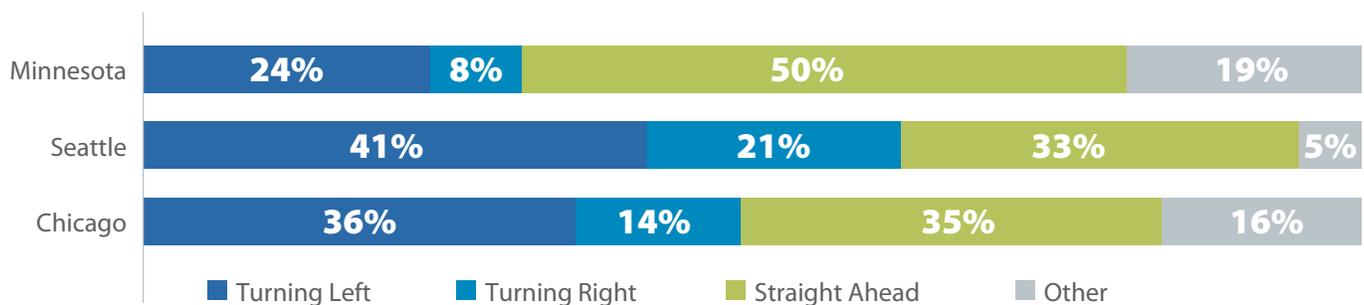


Figure 2-6. Vehicle Movements Prior to Crash

Source: Adapted from Minnesota Motor Vehicle Crash Facts (2015), the City of Chicago Pedestrian Crash Analysis Summary Report (2011), and the City of Seattle Pedestrian Safety Analysis (2016)



A 2016 New York City study found that over two-thirds of all intersections (70 percent) where a left-turn pedestrian or bicyclist injury crash occurred involved a one-way street. These crashes were most likely to happen at intersections where:

- The approach street is a minor street.
- The receiving street is 60' or wider.
- The vehicle is turning onto a two-way street.
- The vehicle is turning from a one-way onto a one-way.

The same study showed that all left-turn pedestrian and bicycle injury and fatal crashes occurred at about 18 percent of New York City's intersections. Left-turn restrictions and left-turn phasing had the greatest benefits in reducing pedestrian and bicycle injuries resulting from left-turn crashes.

