

Bicycle and Pedestrian Crashes

Introduction

Local crash data are a valuable source of information for identifying safety trends and challenges for people bicycling and walking. This section of the plan summarizes reported bicyclist-involved and pedestrian- and crashes in the City of Little Rock from 2015 to 2019.

According to national and local surveys, safety concerns are the most common reason people do not bicycle or do not ride more often. Many bicyclists feel that motorists do not see them or are openly hostile to them on roadways, particularly at intersections. National bicycle crash research shows that the most commonly reported bicycle/vehicle crashes occur at major arterial intersections. In addition, national studies show that many bicyclists involved in crashes are younger people who have less experience riding on the road and/or cyclists who are riding the wrong way or on the sidewalk.¹⁰

Certain caveats are necessary when interpreting crash data. First, bicycle and pedestrian crashes, and in particular incidents that do not result in serious injury, are

generally considered to be significantly under-reported. A street or intersection that did not experience a crash during the analysis period is not an indication that people are not bicycling or walking there, nor is it evidence that the area does not present hazards to bicycling. Crash data also do not take into consideration “near misses,” which characterize conditions at many high-risk locations without reported incidents. Second, in the absence of bicycle and vehicle counts, there is no way to measure “exposure” to crashes, defined as crashes per bicycle mile traveled. For example, consider two streets that experienced the same number of crashes but different cyclist volumes. The street with greater bicycle traffic is likely to be less dangerous than the street that saw the same number of crashes despite seeing little bicycle traffic (measured by crashes per bicyclist or crashes per miles traveled). Third, coding of crash data may be inaccurate, incomplete, or biased, which can limit the explanatory power of the data.

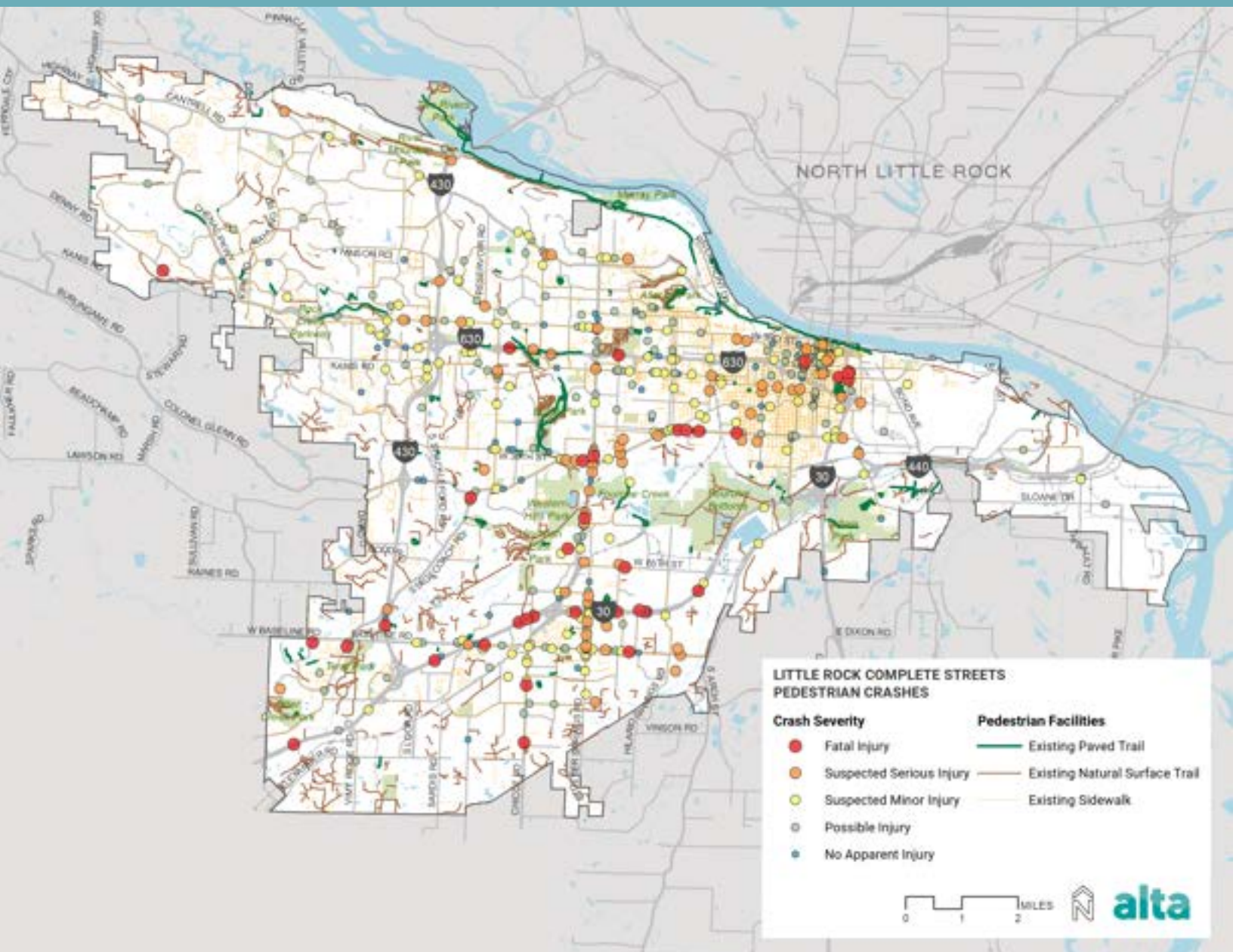
¹⁰ Federal Highway Administration. “Crash-Type Manual for Bicyclists” (<http://www.fhwa.dot.gov/publications/research/safety/pedbike/96104/>). n.d. Web. August 14, 2014

Pedestrian Crashes

OVERVIEW

Between 2015 and 2019, there were 529 crashes involving pedestrians in Little Rock. Eight percent of crashes resulted in a fatal injury, and another 15% resulted in suspected serious injury. The charts to the right displays pedestrian crashes by crash severity from 2015 through 2019, and Map 17 below illustrates the locations of these same pedestrian crashes by severity. In both the figure and the map.

Map 17: Pedestrian Crashes by Injury Severity, 2015 - 2019



PEDESTRIAN COLLISIONS BY YEAR AND SEVERITY

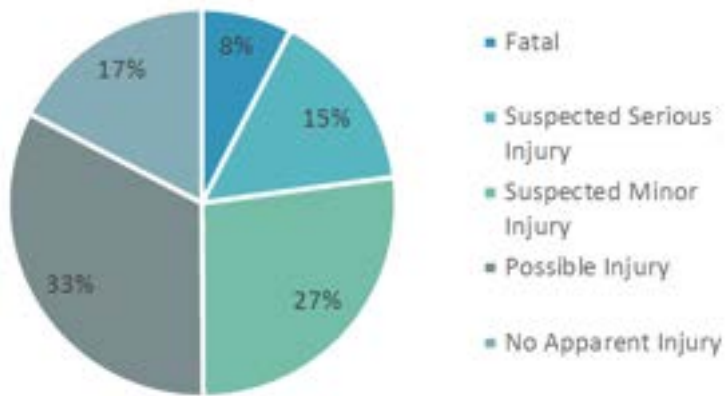
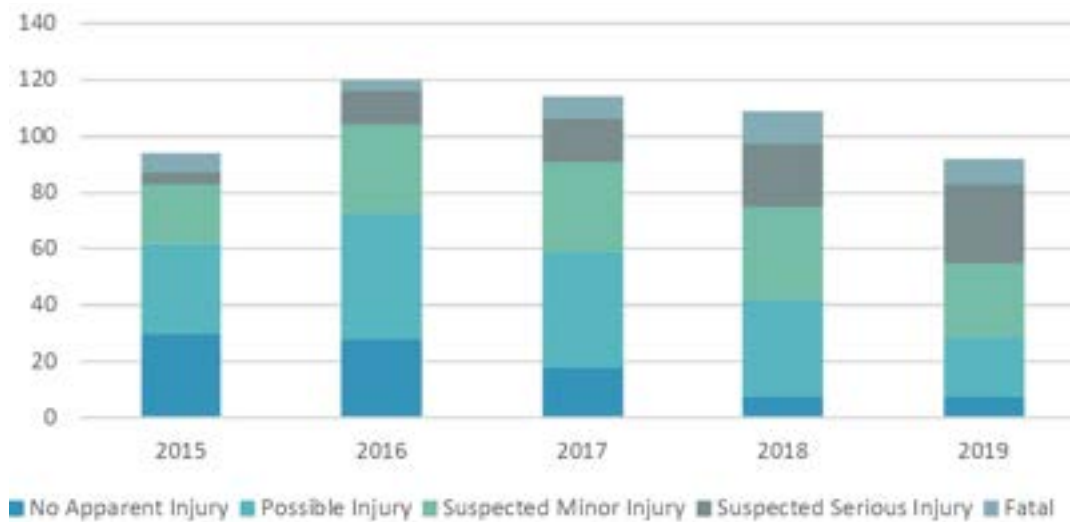


Figure 10: Pedestrian Crashes by Injury Severity, 2015-2019

Figure 11: Annual pedestrian crashes by severity, 2015-2019



Pedestrian Risk Groups

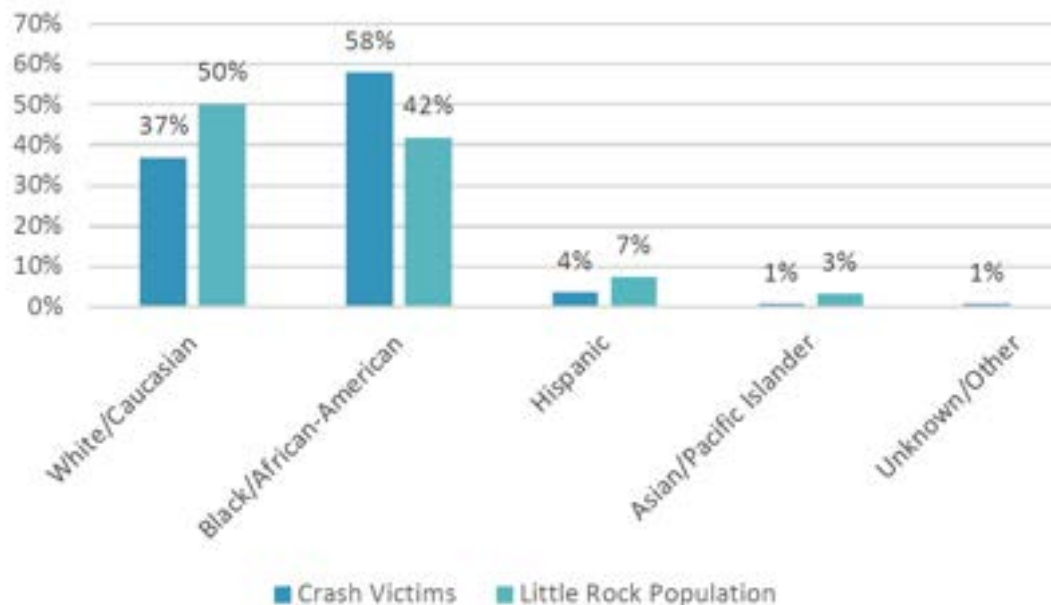
Law enforcement agencies responding to crash incidents document a number of demographic characteristics of involved parties. In aggregate, these data can illuminate crash trends and involvement in pedestrian and bicycle crashes for a certain demographic relative to that demographic's percentage of the total population. For example, is the percentage of pedestrians involved in a crash who are African-American greater than the percentage of Little Rock residents who identify as African-American? In other words, are African-Americans overrepresented in pedestrian crashes? The following sections and figures provide insight into the demographics of pedestrians involved in crashes on roadways in Little Rock.

RACE

While people who identify as Black or African-American represent just 42% of all Little Rock residents, they represent nearly 58% of all pedestrians involved in a crash from 2015 through 2019 (see Figure 23 below).¹¹ Conversely, people who identify as White or Caucasian constitute just over 50% of the population, yet represent only 37% of pedestrians involved in crashes. Hispanics represent five percent of pedestrian crashes, while Asians and Pacific Islanders represent just one percent of pedestrian crashes.

Figure 12 below shows crash rates by race compared to the actual racial distribution of Little Rock residents. The overrepresentation of African-Americans in pedestrian crashes indicates a need for critical assessment of the ways in which pedestrian infrastructure, such as sidewalks and marked crosswalks, may be inequitably distributed throughout Little Rock neighborhoods.

Figure 12: Pedestrian crashes by race, with comparison to black & white populations of Little Rock



¹¹ American Community Survey, 2019.

GENDER

As seen in Figure 13 below, men are significantly overrepresented in pedestrian-involved crashes in Little Rock: men make up approximately 48% of the city’s population, while comprising 66% of pedestrian-involved crash victims. In contrast, 34% of pedestrian crash victims are women, who make up 52% of the overall Little Rock population.

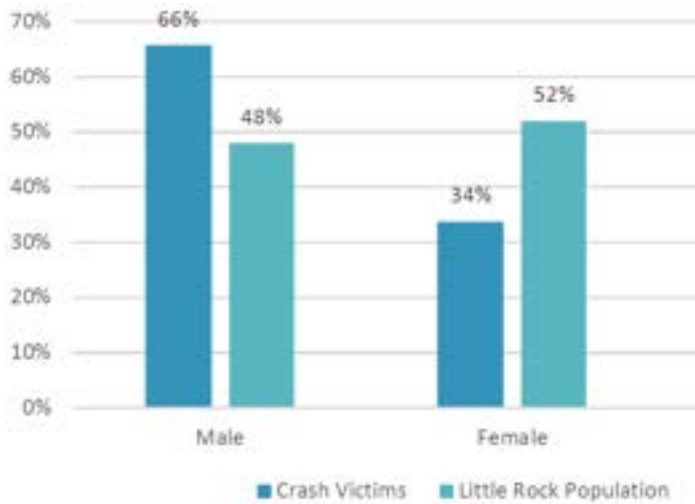


Figure 13: Pedestrian crashes by gender of victim, compared to overall Little Rock population

AGE

Figure 14 shows the distribution of pedestrian age at the time of the incident. The age of pedestrians involved in crashes follows a relatively normal distribution, with a mean age of 39.57 and a median age of 40 for victims. The age group with the most crash victims is 51-55.

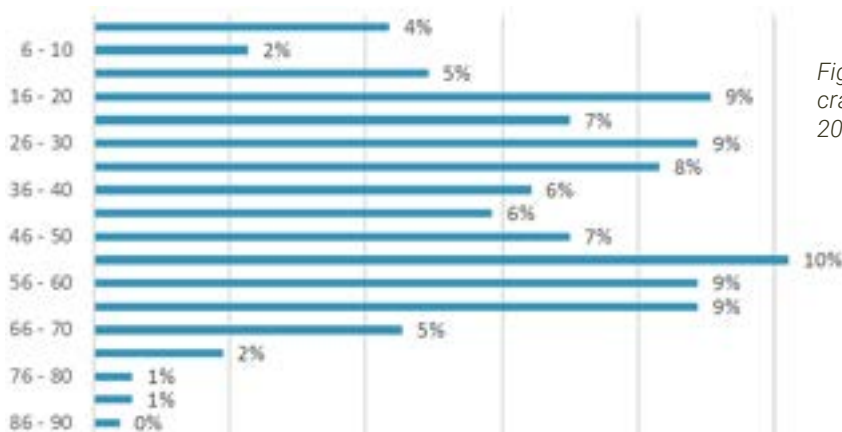


Figure 14: Pedestrian crashes by age group, 2015 - 2019

PEDESTRIAN CRASH LOCATION

Examining the kinds of roadways where pedestrian crashes occurred, whether crashes occurred inside or outside of intersections, and where in the roadway they occurred allow us to narrow in on the kinds of interventions that will help to improve the safety of all pedestrians in Little Rock.

Figure 15 shows the distribution of the types of roadways where pedestrian-involved crashes took place. Nearly 40% of all pedestrian crashes occurred on minor or principal arterial roadways. These roads provide connections to shopping centers, transit, and other destinations that generate pedestrian trips, even though facilities such as sidewalks and crosswalks may be inadequate or nonexistent. These roads are also wider, and vehicles are moving at higher speeds than on local or collector roads.

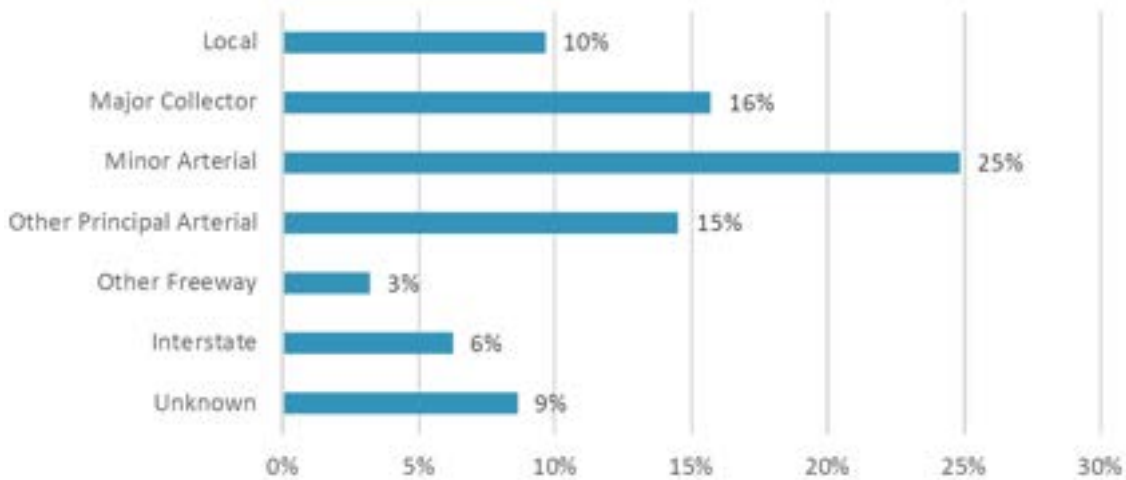
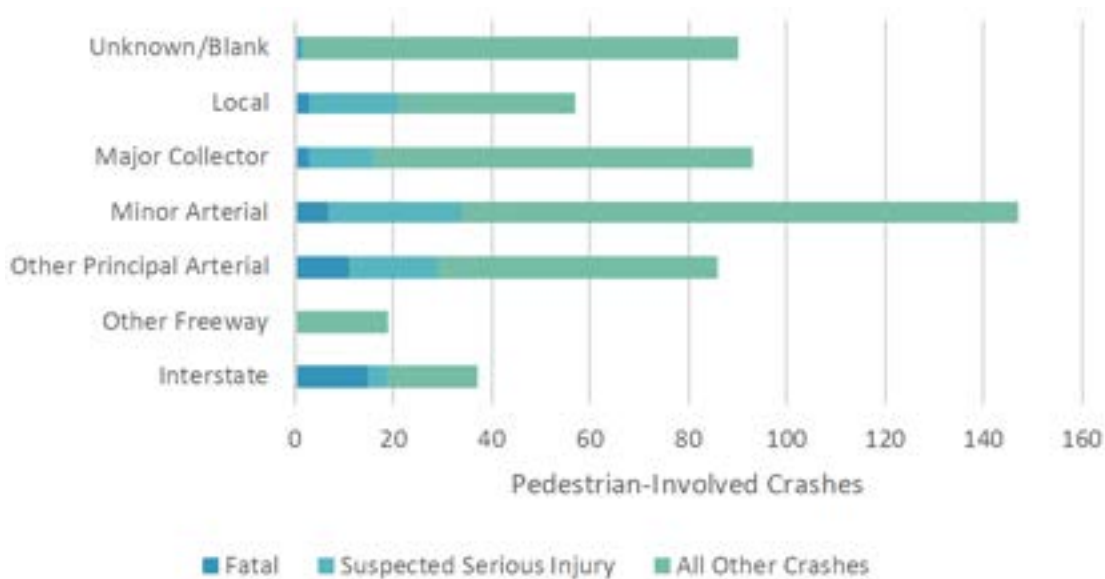


Figure 15: Pedestrian crashes by functional classification, 2015 – 2019

Figure 16 shows what percentage of fatal and serious pedestrian-involved crashes happen along each type of roadway. 83% of fatal crashes occur on arterial or limited-access roadways (this includes the “interstate” and “other freeway” categories in the analysis), while 60% of pedestrian-involved crashes resulting in suspected serious injuries occur on arterial or limited-access roadways.

Figure 16: Occurrence of fatal and suspected serious injuries by roadway classification



Despite crashes on limited-access roadways and arterials making up a significant majority of fatal and suspected serious pedestrian injuries, freeways make up only about 10% of the total roadway mileage in Little Rock, while principal and minor arterials make up about 16% (see Figure 17 below).

Figure 17: Percentage of Little Rock road network mileage falling into each category of roadway

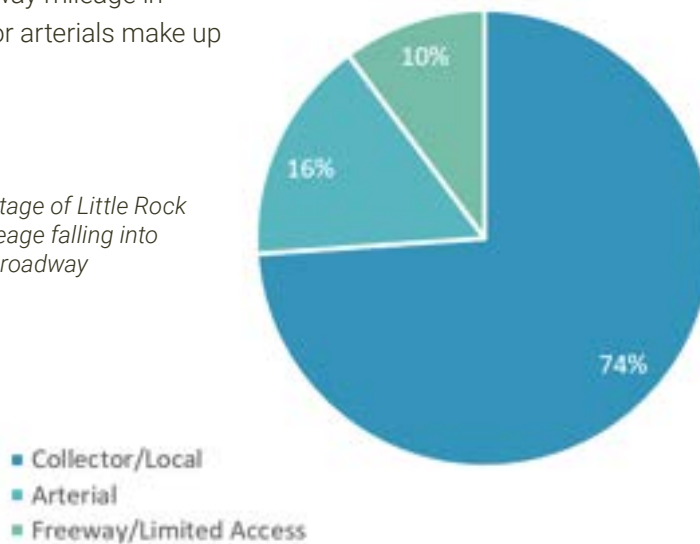


Figure 18 illustrates that most pedestrian-involved crashes occurred on roadway segments between intersections, and only 28% occurred at an intersection.

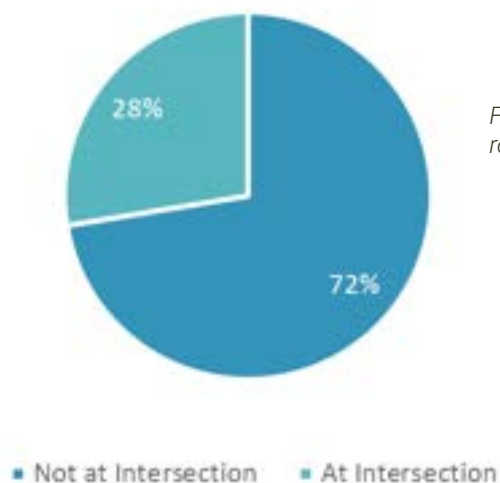


Figure 18: Pedestrian crashes by roadway location, 2015 -2019

Figure 19 shows the most common pedestrian crash location on the roadway is within a motor vehicle travel lane, accounting for one in every five pedestrian crashes.

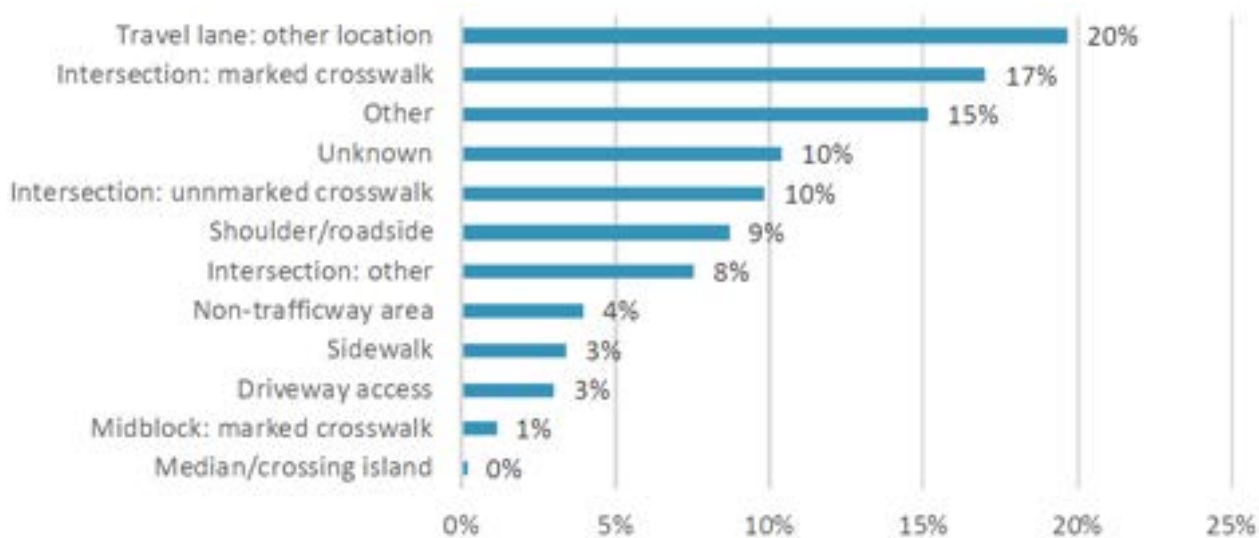


Figure 19: Pedestrian crashes by location on roadway, 2015 - 2019

PEDESTRIAN ACTIONS

Prior to the incident, nearly half of all pedestrians involved in crashes had been crossing the roadway, as displayed in Figure 20. No other identified action prior to the crash accounted for more than 10%. This indicates a need for pedestrian safety improvements at intersections and at mid-block crossing locations, particularly near everyday destinations such as schools, medical facilities, parks, retail, and grocery stores, where safe access for nonmotorized traffic should be prioritized.

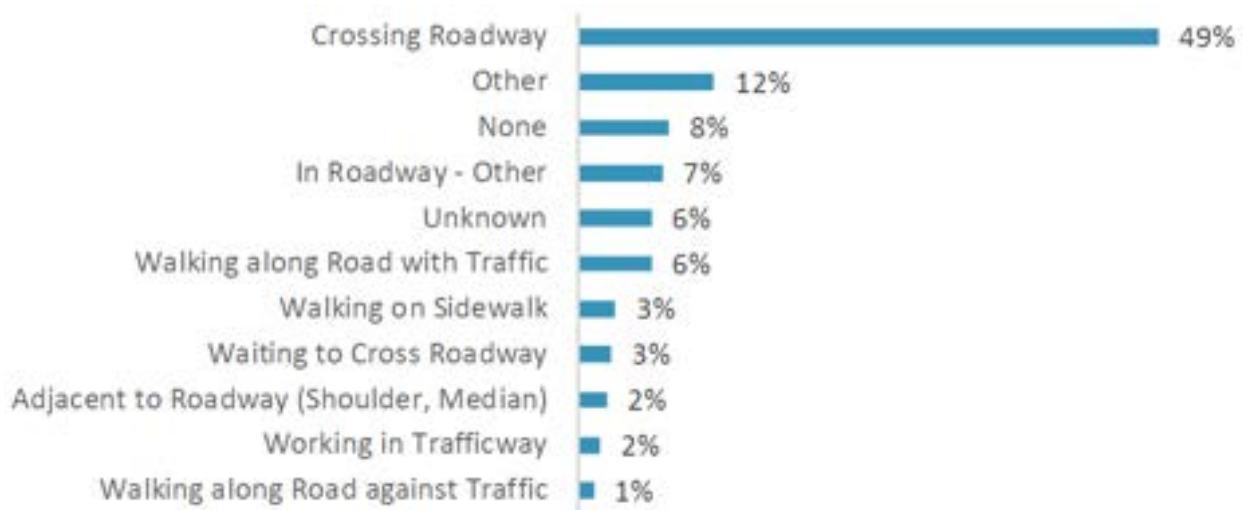


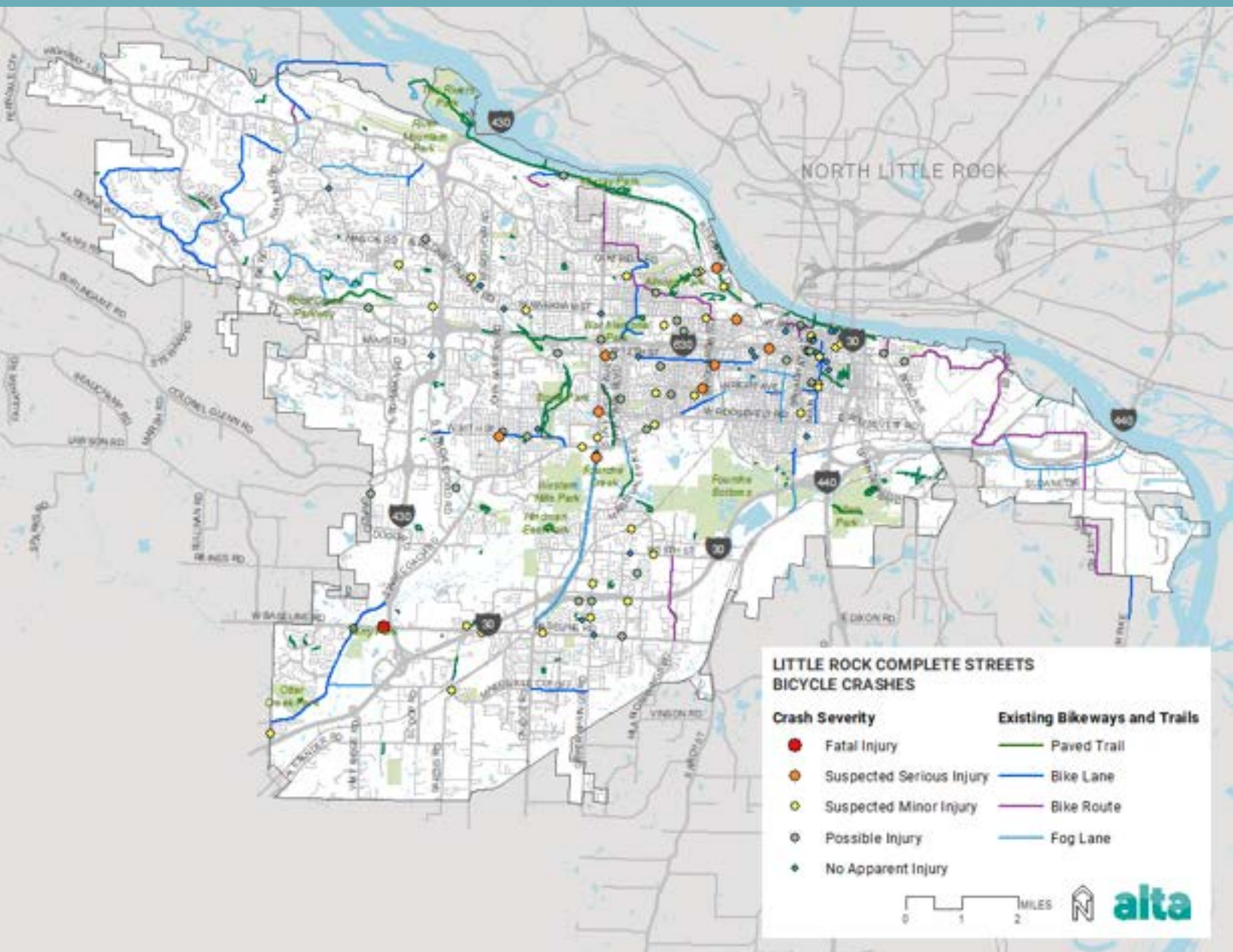
Figure 20: Pedestrian crashes by pedestrian action prior to crash, 2015 - 2019

Bicycle Crashes

OVERVIEW

There were 98 crashes involving bicycles in Little Rock from 2015 through 2019, with only one fatal injury to a bicyclist and few serious injuries. The largest categories of injury were “possible” and “suspected minor,” each with 32 total incidents, and 24 incidents out of 98 involved “no apparent injury” to the bicyclist. Map 18 displays all 98 bicycle crashes during the five-year study period by injury severity.

Map 18: Bicycle crashes by injury severity, 2015 - 2019



BICYCLE COLLISIONS BY YEAR AND SEVERITY

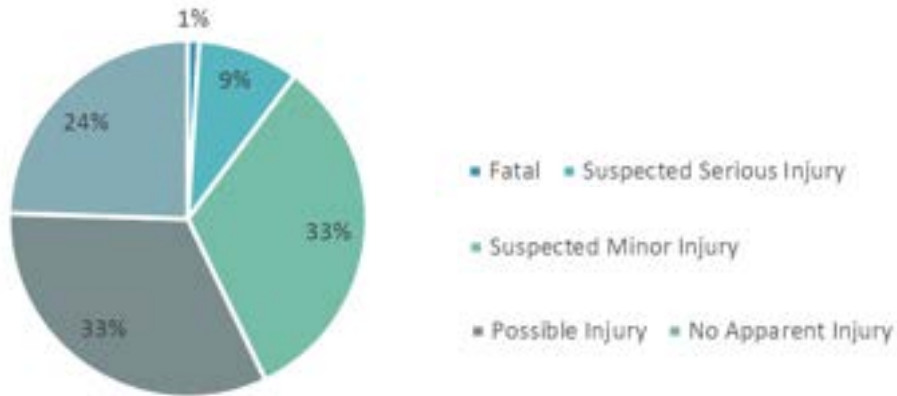


Figure 21: Bicycle crashes by severity, 2015-2019

The year with the most bicycle-involved crashes was 2017, also when the only fatal injury occurred. 2018 and 2019 each had 20 incidents, although the number of suspected injuries decreased in 2019.

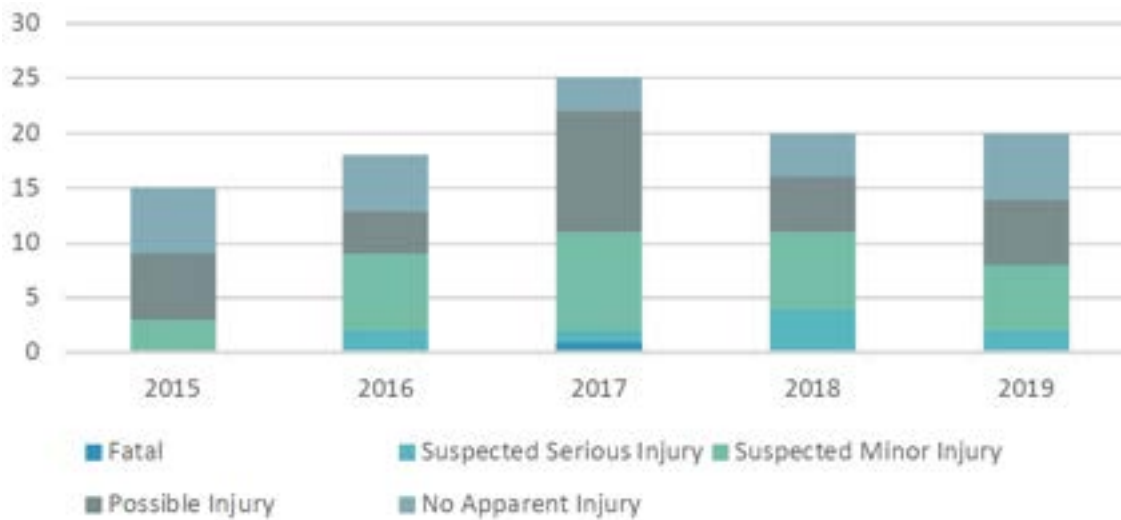


Figure 22: Annual bicycle crashes by severity, 2015 - 2019

RISK GROUPS

As with pedestrian crashes, here we are interested in seeing if any specific demographic group is overrepresented in bicycle crashes in Little Rock. Figure 23 shows that again, African-Americans in the city are more likely to be involved in bicycle crashes: while comprising 42% of the population, they make up 53% of bicycle crash victims in the city. 40% of bicycle crash victims were white, while people identifying as white make up 50% of the overall population of Little Rock.

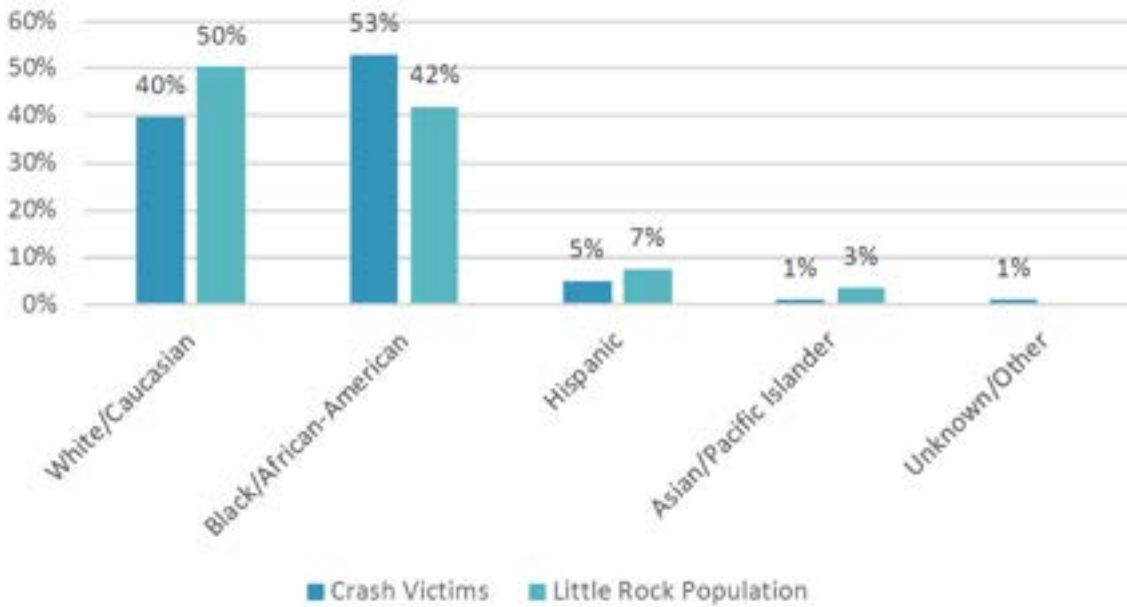


Figure 23: Bicycle crashes by bicyclist race, 2015 – 2019 (with comparison to percent of Little Rock population)

Male bicyclists made up 86% of crash victims, and as such were greatly overrepresented as compared to the male population of Little Rock (48%). Only 14% of bicycle crash victims were women, who make up 52% of the city's population.

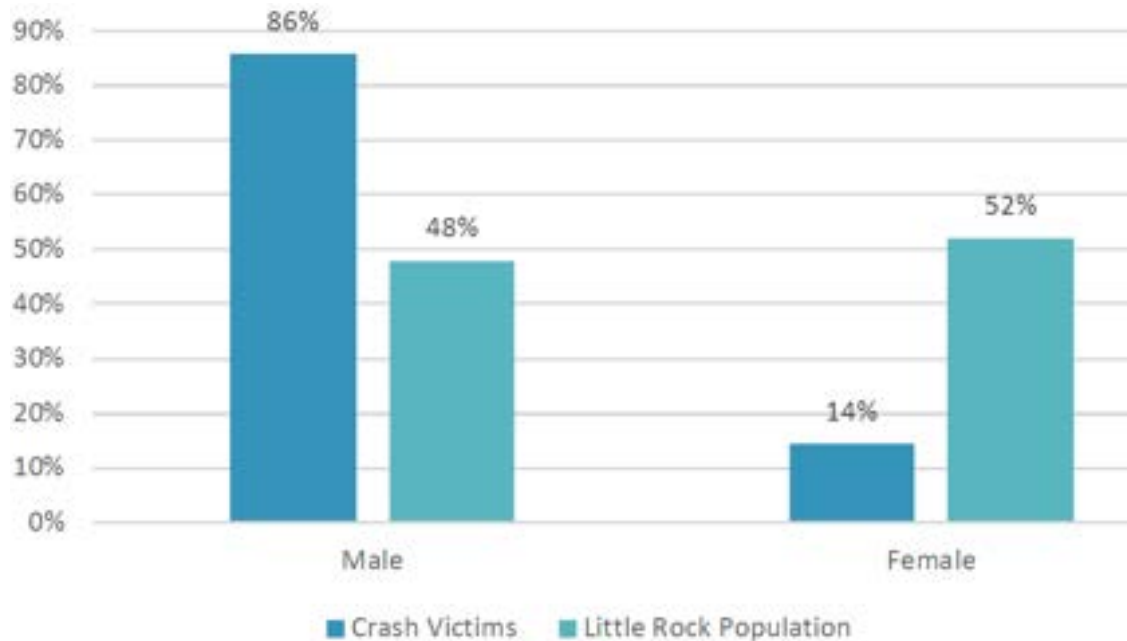


Figure 24: Bicycle crashes by bicyclist gender, 2015 - 2019

The median age for bicycle crash victims was 26, with a mean of 29, representing a much younger demographic than the pedestrian crashes. The age group with the largest number of bicycle crashes was 11-15, accounting for nearly one in every five bicycle crashes. The fact that bicyclists involved in crashes tend to be younger indicates a need for dedicated facilities in neighborhoods, and along common routes to middle and high schools, parks, and other popular neighborhood destinations.

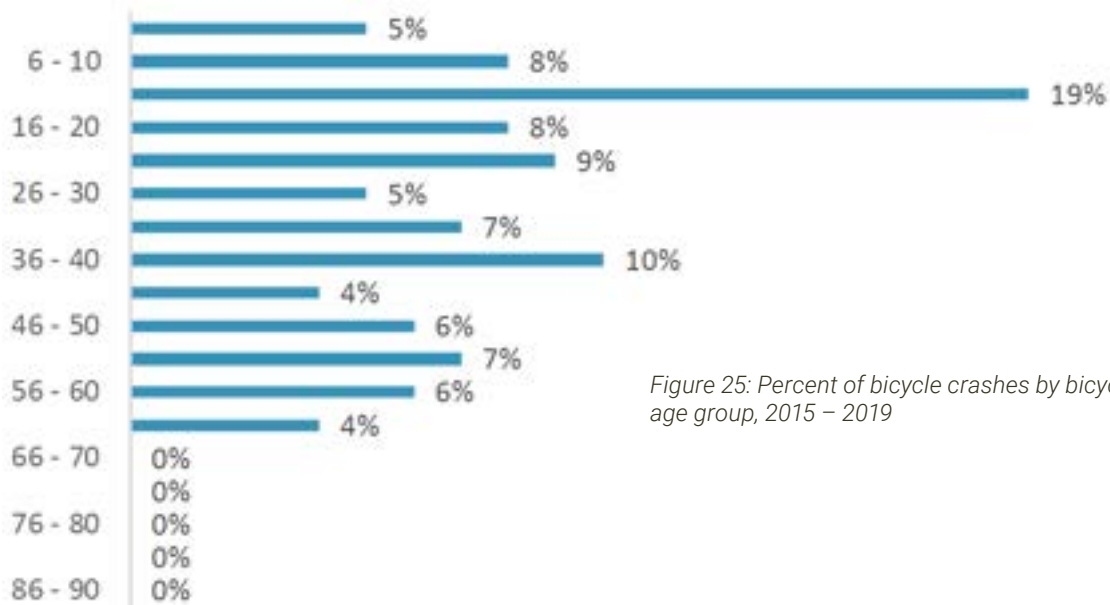


Figure 25: Percent of bicycle crashes by bicyclist age group, 2015 – 2019

CRASH LOCATION

Figure 26 shows that 58% of bicycle crashes occur on roadways classified as “Minor Arterial” and “Major Collector,” indicating that bicyclists tend to avoid major roadways with faster vehicle traffic.

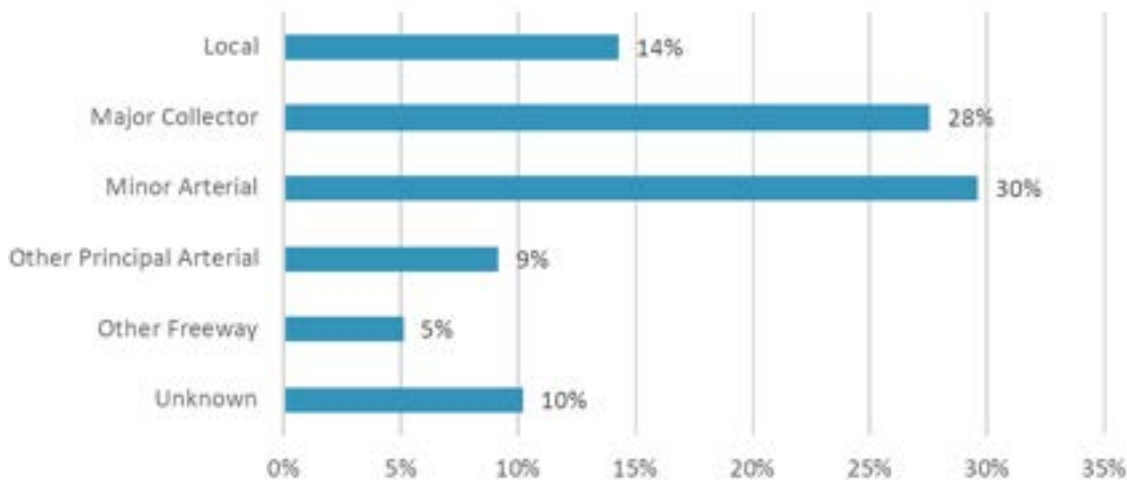


Figure 26: Bicycle crashes by roadway functional classification, 2015 - 2019

Figure 27 below shows the occurrence of the injury severity on each type of roadway. All fatal or suspected serious injury crashes occurred on non-local roads where higher traffic volumes and speeds are found.

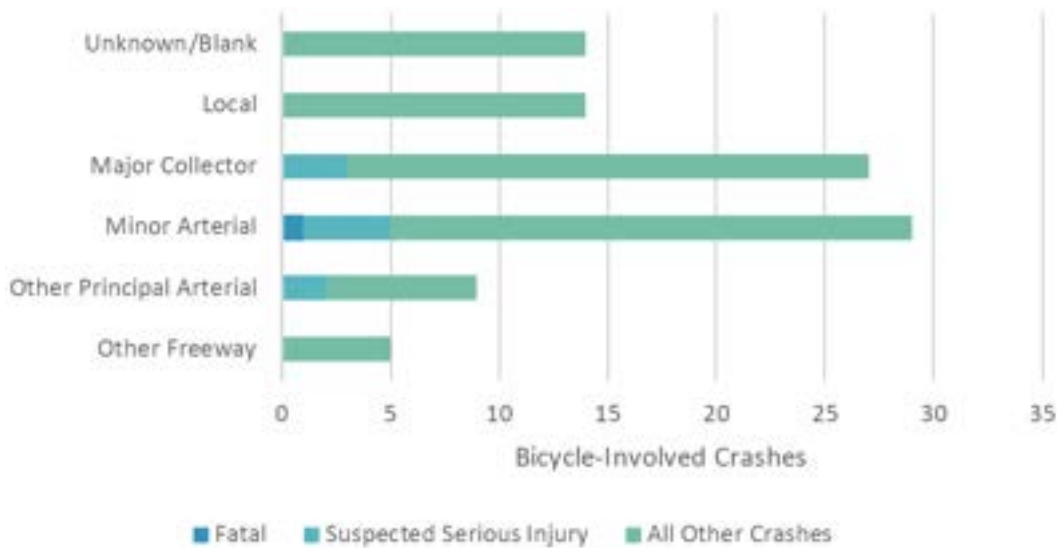


Figure 27: Occurrence of fatal and suspected serious injuries by roadway classification.

Crashes involving bicyclists were approximately equally as likely to occur within an intersection as outside of one. Figure 28 indicates that 48% of crashes occurred outside an intersection, and 52% occurred at an intersection. Figure 29 shows the distribution of the locations within the roadway where bicycle crashes occurred—most happened in intersections, due to the fact that bicyclists often have to share the road with motorists.

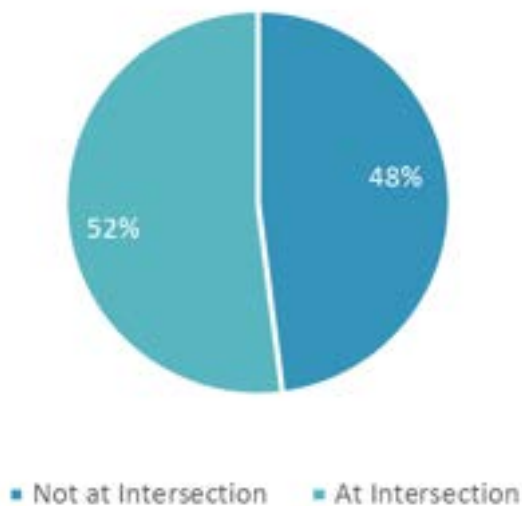


Figure 28: Bicycle crashes by roadway location, 2015 - 2019

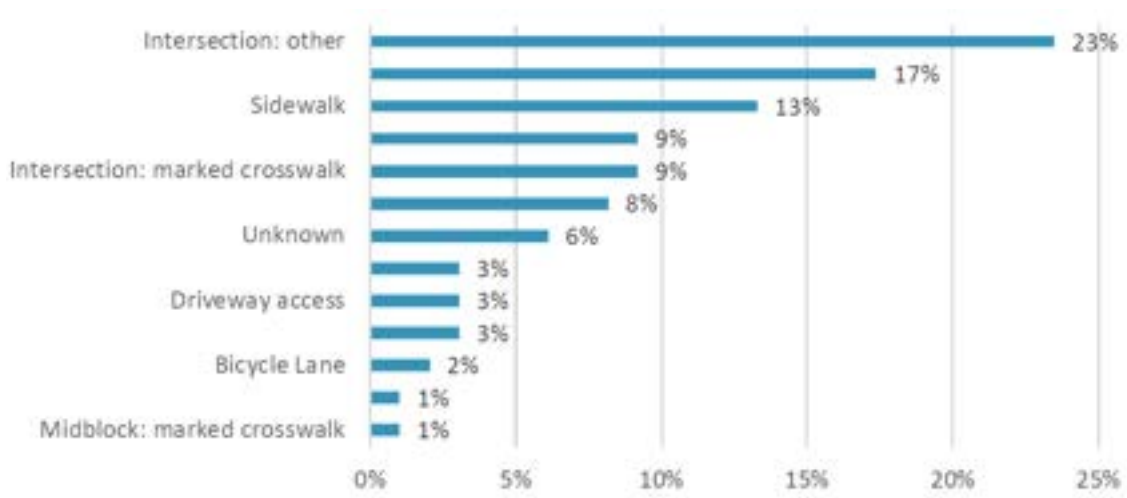


Figure 29: Bicycle crashes by location within the roadway, 2015 - 2019

BICYCLIST ACTIONS

Figure 30 displays bicyclist action prior to the crash occurrence. Almost four in every ten bicyclists were crossing the roadway prior to being involved in a crash. Other common bicyclists' actions prior to a crash include bicycling along the road with traffic and bicycling on the sidewalk. While review of individual crash reports at high-crash locations can help identify specific safety countermeasures, the data show that crossing enhancements for bicyclists and protected biking facilities can make these common actions safer and more comfortable for all bicyclists.

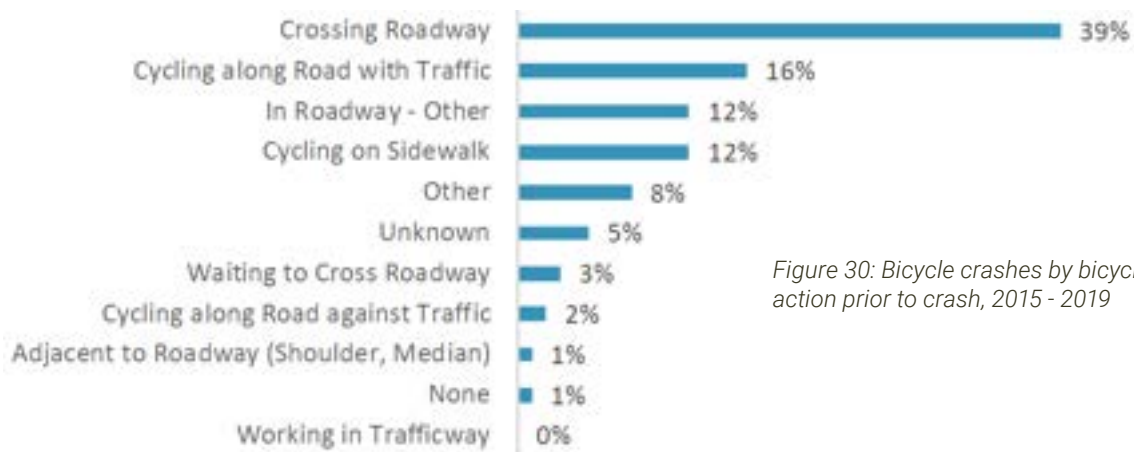


Figure 30: Bicycle crashes by bicyclist action prior to crash, 2015 - 2019