CITY TRANSPORTATION SAFETY
June 2014

Bicycle Crash Fact Sheet

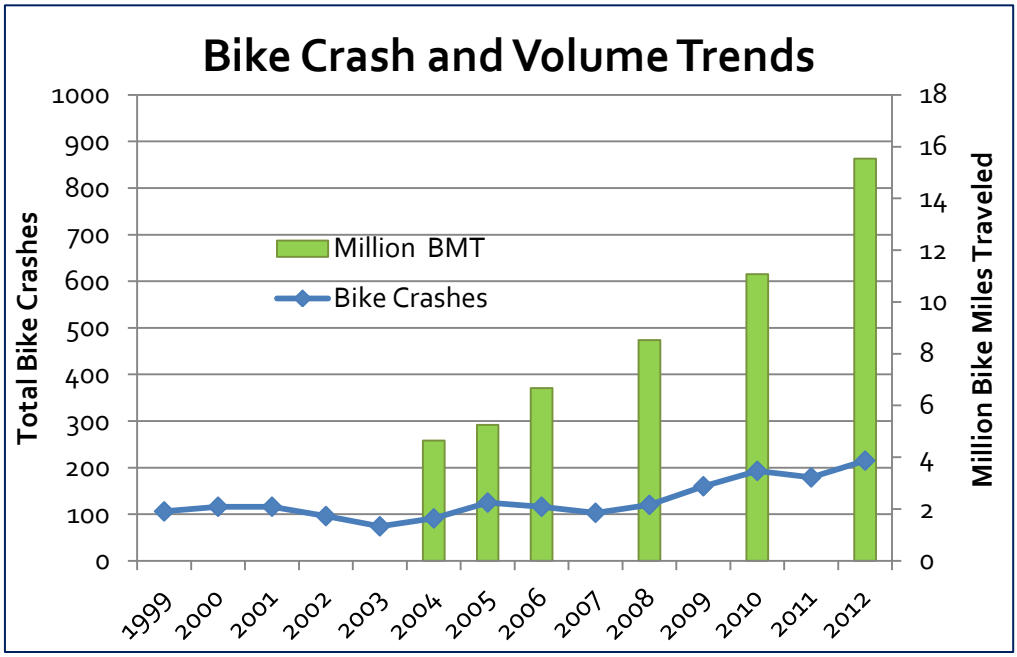
Overview

A partnership of the Community Development Department (CDD), The Cambridge Police Department (CPD), and the Traffic, Parking, and Transportation Department (TPTD) has created the Cambridge Road Safety Analysis Tool (CamRA), which will allow for detailed evaluation of crashes on Cambridge Streets. For this first Fact Sheet, CamRA's principal components are a set of bicycle counts taken between 2004 and 2012 and a detailed database of crashes involving bicycles over the same period. In the future, data will be added to CamRA, including historic vehicle and pedestrian counts, as well as more crash data.

The crash rate in Cambridge has been decreasing with the steady increase in numbers of people bicycling

Bicycle count and crash trends

CDD has conducted 4-hour manual bicycle counts since 2001, and in even-numbered years since 2006 at 16 intersections across the city. These counts were extrapolated to annual counts using the TPTD permanent bike count station and national standards. The Federal Highway Administration Vehicle Miles Travelled formula was applied to the annual counts to attain citywide Bicycle Miles Travelled (BMT). See the Bicycle Trends webpage for more information.



As shown in Figure 1, BMT has grown from 4.6 million in 2004 to 15.5 million, an increase of 235% over nine years. Bicycle use has more than tripled in Cambridge in less than a decade.

Over the same period, reported crashes involving a bicycle have increased as well. There were 91 crashes were reported to CPD in 2004 and 215 in 2012. This represents an increase of 136%. Both bicycle and count trends are shown in Figure 1. While both are trending up, bicycle use is rising much faster than reported crashes.

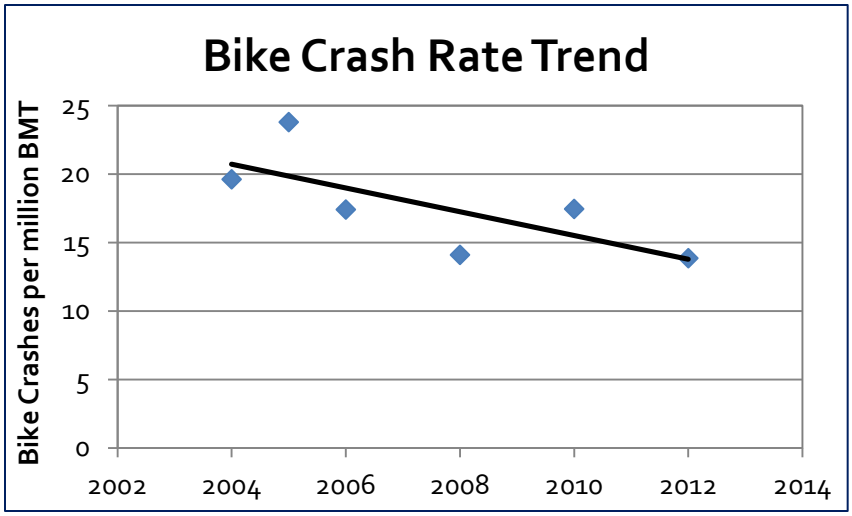


Figure 1 Bicycle Count and Crash Trends

Crash Rates

The best way to describe the relative change in the level of safety of travelling by bicycle is with a crash rate. A rate accounts for changes in volume of use. With CamRA we know the number of crashes we have per bicycle mile travelled each year. As shown in Figure 2, the crash rate has declined from 19.6 crashes per million BMT in 2004 to 13.8 in 2012, a drop of 29%.

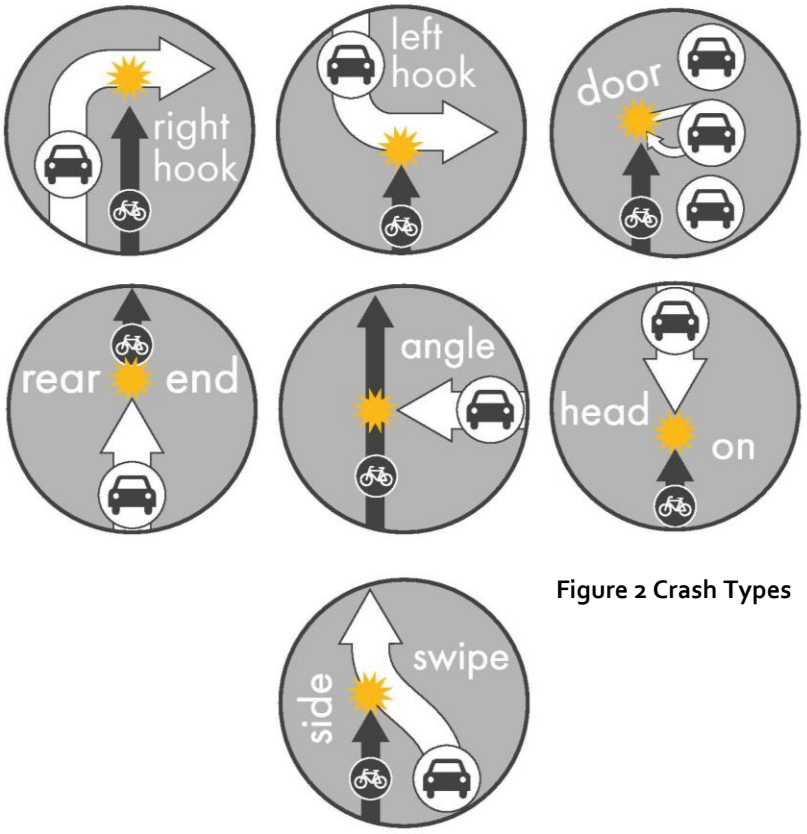


Figure 2 Crash Types

Crash Types

CamRA categorizes each bicycle crash by type, which helps us understand why crashes occur and how we may prevent future crashes. These types are illustrated in Figure 2.

Angle crashes are the leading type of bike crash, with the dooring and left hook types prevalent as well, as shown in Figure 3.

Next Steps

This summary document provides the big picture of what is happening and evaluation efforts are ongoing, including identifying any intersections or corridors that may need focused attention for improvements.

Additional crash analysis information will be available once completed.

For more information bicycle-related initiatives in the city website see:

www.cambridgema.gov/bike

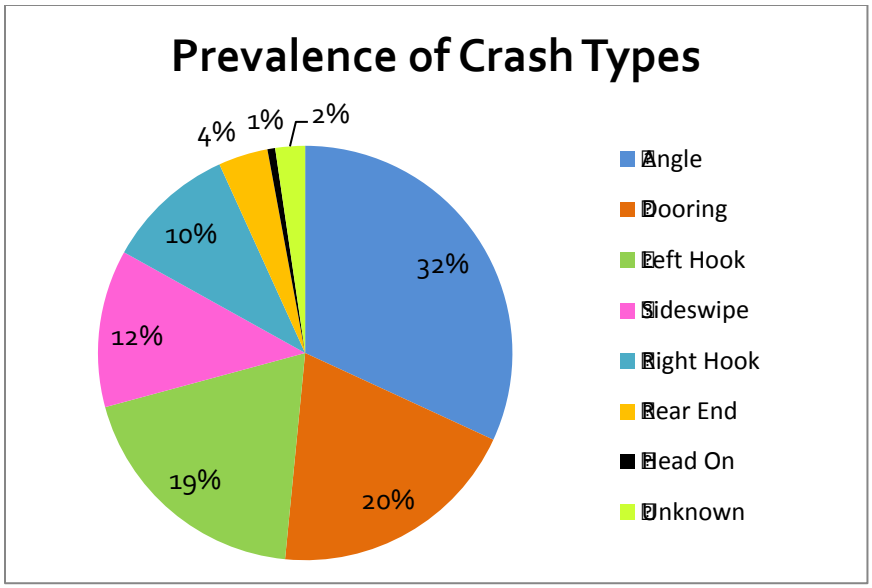


Figure 3 Prevalence of Crash Types

Injury Severity

The severity of the cyclist's injury in each crash is recorded in CamRA. Most reported injuries were minor. Just 5% of reported injuries were labeled "incapacitating;" this means that the injury was such that the person was not mobile (for example, having a broken leg or head trauma), while in 18% of crashes the cyclist reported no injury at all.

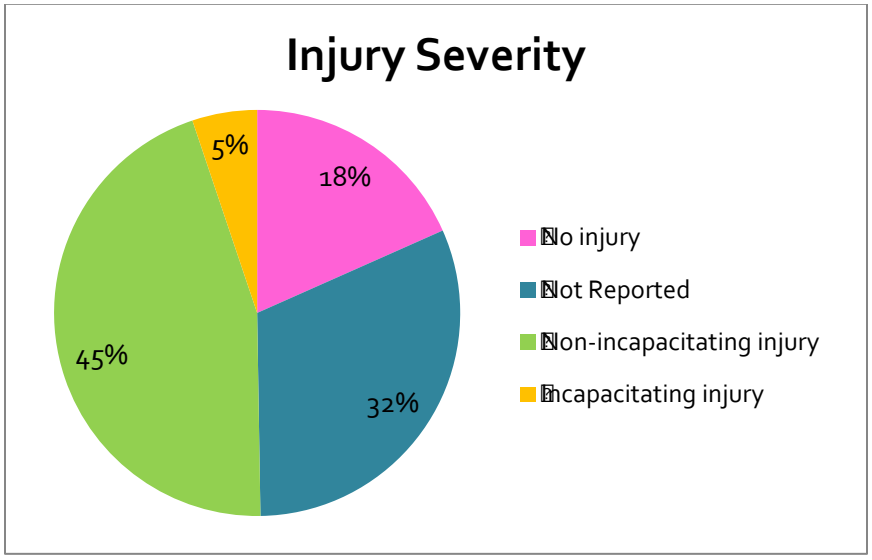


Figure 4 Injury Severity

For more information

To learn more about CamRA and how the data in this Fact Sheet were calculated, please contact Jeffrey R. Parenti, P.E., Principal Traffic Engineer, Traffic, Parking, and Transportation Department, at jparenti@cambridgema.gov.