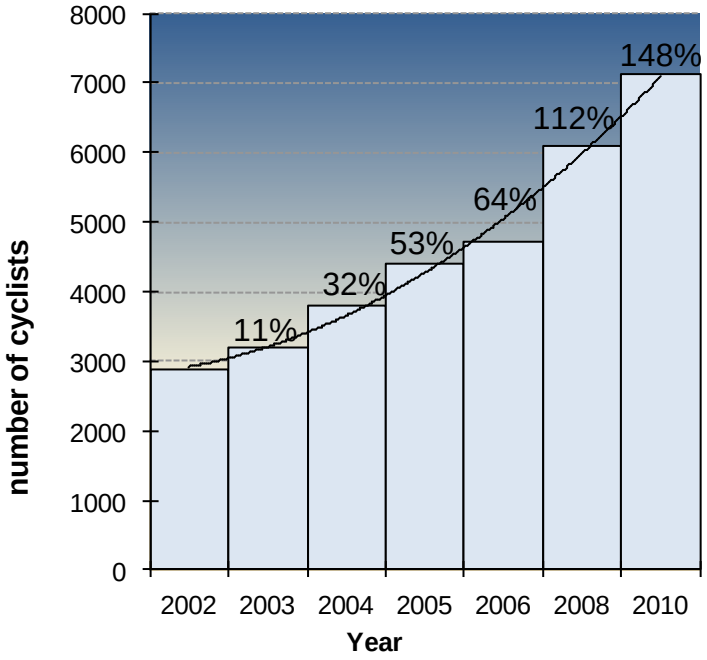
BICYCLE TRENDS IN CAMBRIDGE

Cambridge promotes bicycling as a healthy, environmentally friendly way of getting around as an important part of the City's efforts to improve mobility and protect our environment. Cambridge is well suited to bicycling and more people are using their bikes every day for commuting, shopping, and general transportation. This summary document provides some highlights about bicycling in the city.

More People Bicycling

Between 2002 and 2010, the number of people bicycling in Cambridge **rose by almost 150%**.



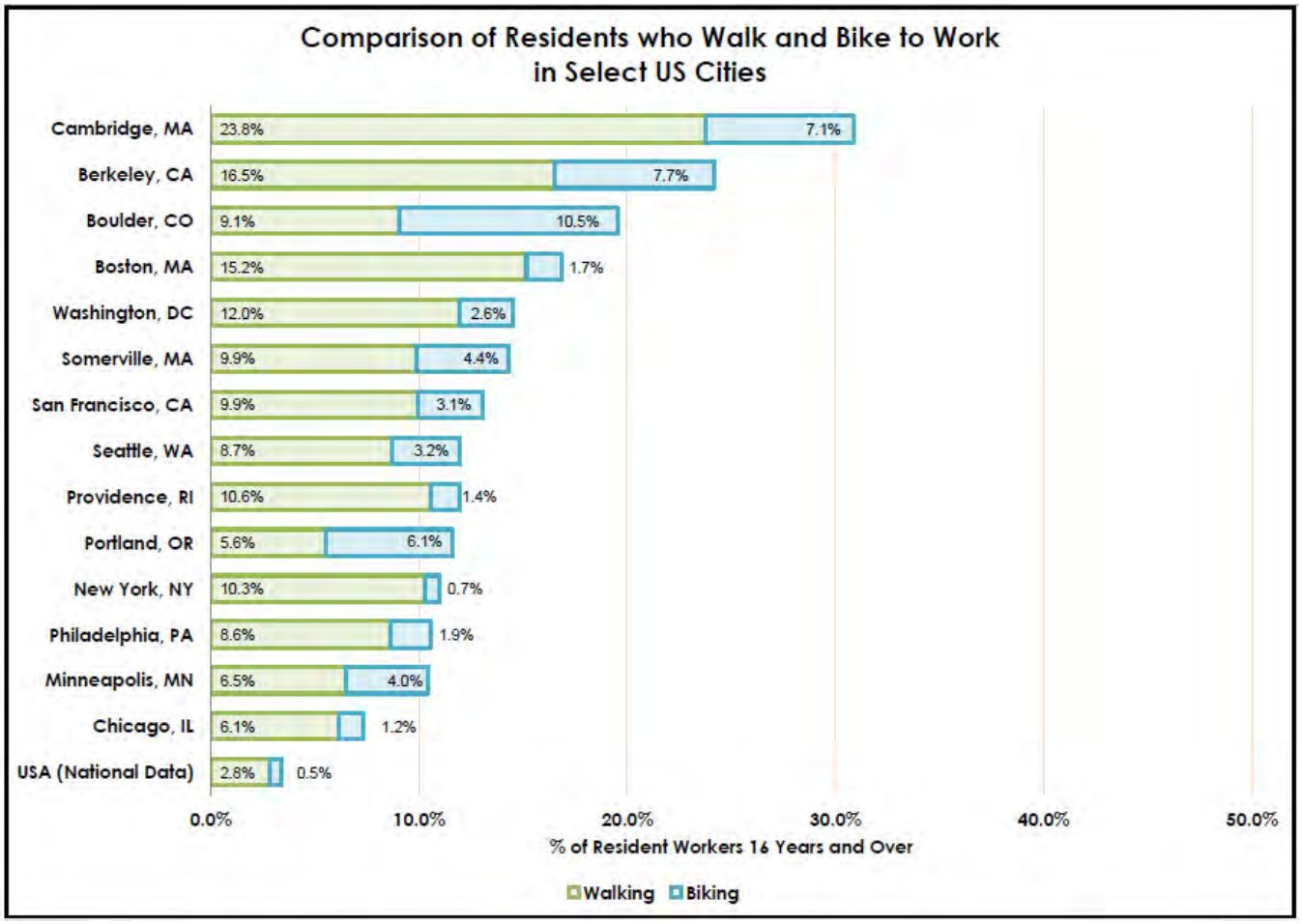
Numbers represent combined AM and PM peak hour cyclist counts at 15 locations on a fall weekday under similar weather conditions.

Percent values represent the percent increase in cyclists compared to 2002

Bicycle count data is collected at 17 intersections throughout the city during the early fall each year[1] on weekdays under similar weather circumstances and avoiding holiday weeks. Counts are conducted for two 2-hour periods, 7:30 – 9:30 a.m. and 5:00 – 7:00 p.m. The above graph shows the increases based on the morning and evening peak hours combined. The trend shows a clear rise in bicycle travel.

[1] Starting in 2008, counts are done biannually.

Bicycle Commuting



Source: American Community Survey 2008-2010

The percentage of Cantabrigians who commute by bicycle has also been rising steadily over the past two decades. The 1990 US Census reports 3% of residents commuting by bicycle; in 2000 that number was 4%; the American Community Survey 2008-2010 shows 7% (see chart).

2009-2011 travel surveys conducted through the CitySmart program demonstrated that 7-9% of Cambridge residents commute to work by bike.[2]

Nine percent of Cambridgeport residents commute by bike

[2] CitySmart is a Cambridge program using social marketing techniques on transportation choices. In-depth neighborhood travel surveys are undertaken as part of this program.

Bicycle Transportation

Commute trips tend to be the focus of transportation analysis and surveys, yet they represent less than 20% of all trips taken. Other trip purposes – shopping, leisure, personal business, recreation – constitute approximately 80% of trips.

The 2011 CitySmart survey showed an average of 65% of bicycle users took a shopping trip on the survey day. The survey also found that people who use bicycles for transportation take more trips per day than users of any other mode – about 5 trips per day on average.

Sixteen percent of Cambridgeport residents used a bicycle for transportation on a recent survey day.

On a national level, 2009 National Household Travel Survey (conducted by the Federal Highway Administration) showed that 12% of all people surveyed had ridden a bicycle during the week being surveyed.

How many bikes do we own?

The 2009 CitySmart survey showed that 65% of households own at least one bicycle and, on average, own 2.6 bicycles. This means that for every 100 households, there are 169 bicycles.

Other studies in the U.S. also show substantial bicycle ownership rates: Florida Metro Area Study (2003): 1.4 bikes/household; Winston-Salem, NC (2005): 78% of households had at least one bike; National Household Travel Survey (2001): 1 working adult bike/household.

Two-thirds of Cambridge households own bikes

Bike Crashes in Cambridge

Crash data was collected for all reported bicycle-motor vehicle crashes from 2004-2009. The data show that the number of crashes remained fairly constant, with a slight uptick in 2008-9 (see graph). The uptick is noted but could be due to a number of factors, including increased reporting or increased numbers of cyclists. City departments and particularly the Police Department have been working assiduously to ensure better and more consistent reporting of bike crashes over the past few years.

The raw numbers of crashes do not tell the whole story; it is essential that they be considered in the context of the numbers of cyclists. Ideally, what is desirable is to establish a crash rate: the number of crashes per cyclist per year or per mile traveled (these are measures by which motor vehicle crash rates are given). However, we do not have complete data for these measures, either within Cambridge or nationally.

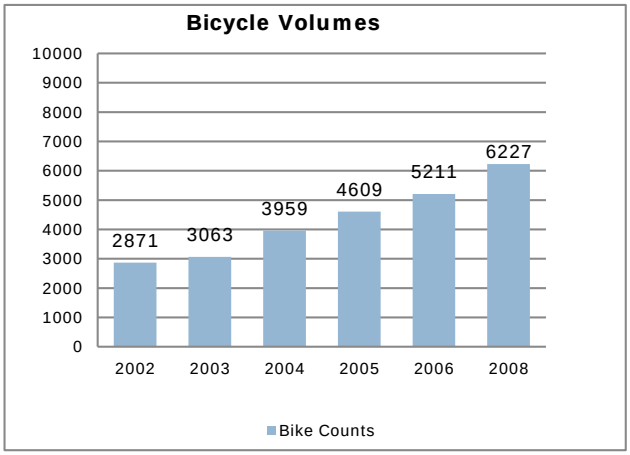
We do, however, have data on the numbers of cyclists in the city and the trends of increasing cyclists. One can compare the increase in the numbers of cyclists against the minimal change in the numbers of crashes to see that there is certainly not an increase in crashes commensurate with the increase in bicyclists.

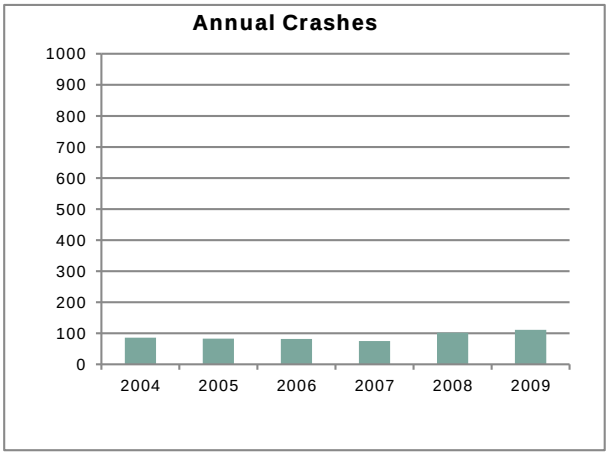
It is important to bear in mind that what these graphs show are trend comparisons, not rates. The number of crashes represents ALL reported crashes throughout the year, at all locations in the city, 24 hours/day and 365 days/year. The volume data represents the number of cyclists for a four-hour period on one day in the year.

The Cambridge trends correspond with international research demonstrating that as cycling participation increases, a cyclist is less likely to collide with a motor vehicle or suffer injury and death. Policies that increase bicycling appear to be an effective route to improving the safety of people bicycling.

Crash Data Summary:

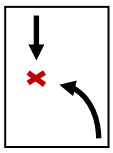
- 6 Year Survey: 2004-2009
- Average 90 crashes per year (539 total crashes analyzed from six years)
- 0 Fatalities



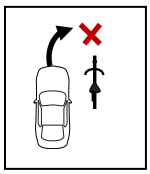


TYPES OF CRASHES

Left Turn Crash

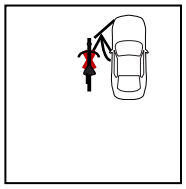


Right Turn Crash

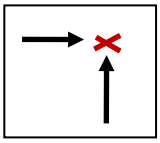


- **Turning Crashes – 34% of All Crashes**
  - 21% resulted from the motorist executing left turn into path of oncoming thru cyclist
  - 2% resulted from the bicyclist executing left turn into path of oncoming motor vehicle
  - 11% resulted in the motorist executing right turn into path of cyclist traveling along the right of the roadway
  -
- **Dooring – 20% of all crashes**
  - 87% resulted from the driver door being opened into traffic
  - 13% resulted from the passenger door being opened into traffic

Dooring Crash



- **Angle Crashes – 15% of all crashes**
  - 5% resulted from the bicyclist running a red light or stop sign
  - 2% resulted from a motor vehicle running a red light or stop sign
  - 8% resulted from unknown causes



Angle Crash

- **Other Types of Crashes – 31%**
  - Includes sideswipe, wrong way, crosswalk, etc.

- **Factors contributing to crashes**
  - View obstruction accounted for 6% of all crashes.
  - Red light and stop sign running accounted for 7% of all crashes [bikes and/or cars]

CRASH LOCATIONS

- Representing 39% of all crashes, un-signalized intersections were the most common crash location. Signalized intersections represented 29% and mid block locations represented 32% of all crashes.

OTHER POINTS OF INTEREST

- August and September experienced higher numbers of crashes (uncertain whether this relates to numbers of cyclists, since we do not have year-round data for comparison).
- Involved Parties largely originated within than 0-2 miles from Cambridge – 71% bicyclists, 44% drivers

- Crashes were most common during late afternoon and evening hours between 10am and 4pm, with 29% of all crashes.