

City of San Francisco 2009 Pedestrian Count Report

April 2010



SFMTA

Municipal Transportation Agency

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Introduction

Starting in September 2009, the San Francisco Municipal Transportation Agency (SFMTA) Pedestrian Program conducted its first annual Citywide Pedestrian Count. As awareness and concern about the relationship between transportation choices, global warming and public health grows, transportation agencies are finding an increasing need for pedestrian mobility data. In San Francisco, data about the number of people walking could be used to measure the progress of City policies and sustainability goals, determine the effect of pedestrian infrastructure improvements, measure the mode split between the City's transportation options, forecast future pedestrian demand, and determine pedestrian collision exposure rates. The exposure rate is the number of vehicle-pedestrian collisions at a specific location over a given period of time, divided by the actual or estimated total pedestrian volume over that same period. Exposure rate is a better indicator of pedestrian safety than simple collision history because it takes into account pedestrian volumes when comparing intersection safety. The pedestrian counts in this report are the first step in calculating exposure rates.

Background

According to the San Francisco 2008 Collision Report¹, about a fourth of San Francisco's 3,010 injury collisions (799) and half of the 27 fatal collisions (13) involved pedestrians. The 2008 total of 799 injury collisions involving a pedestrian as a party is almost the same as the figure of 796 injury collisions reported in 2007. In the first half of the decade pedestrian collisions came down from the over 1,000 incidents recorded annually in the 1990's. Further declines have unfortunately not been reported in 2007 or 2008. The number of fatal collisions involving a pedestrian decreased to 13 in 2008, the lowest total of the decade. This constitutes a reversal from the rise noted in 2007. With 824 pedestrians killed or injured in 2007, San Francisco is ranked by the state Office of Traffic Safety² as the county having the highest total rates of fatalities and injuries to pedestrians by both vehicle miles and by population, especially for those over 65 years of age. (See Appendix D for Collision Data and Appendix E for a discussion of statewide pedestrian safety rankings).

Because this is the first Citywide Pedestrian Count, we must look to other data sources for historical trends. The US Census Journey to Work data shows that for workers aged sixteen years or older, about ten percent walk to work in San Francisco. This figure has held steady in the years for which we have data: 2000 and 2006-2008. San Francisco's walking mode share for commute trips is high

¹ SFMTA San Francisco 2008 Collision Report, http://www.sfmta.com/cms/rtraffic/documents/Collision_report_2008.pdf

² California Office of Traffic Safety. <http://www.ots.ca.gov>

Differences in collision totals are due to the various ways collisions can occur and be classified by the SFPD using the State collision form.

compared to the averages for California and the US, both of which have held steady around three percent (See Appendix A).

Methodology:

2009 marks the first year of SFMTA's Citywide Pedestrian Count, which will continue with annual updates. The counts will take place every year in the first two full weeks of September, so as to comply with the suggested timeline for the Alta/ITE National Documentation Project, which would allow counts to be compared with nationwide data. Counts will take place annually at the same twenty-five locations throughout the city. Count locations were chosen based on known pedestrian volumes, land use, proximity to transit, and previous pedestrian and bicycle count locations. Additionally, the four highest injury vehicle-pedestrian collision locations during 2005-7 were all included in the 2009 count locations.

Counts are taken by SFMTA staff at intersections in order to measure the number of pedestrian crossings, which is the metric needed for exposure calculations. The number of pedestrians crossing at each crosswalk is recorded in fifteen minute increments for two hours. The counts are taken during the expected weekday morning or afternoon peak: Tuesday, Wednesday or Thursday from 7:00-9:00am or 4:00-6:00pm.

See Appendix B for the twenty-five count locations, the nearby land use, and the reasoning for choosing each location.

In addition to manual counts, the SFMTA will collect volume data using automatic counters. The SFMTA has purchased several automatic counters that will be rotated throughout the twenty-five locations. Initially, two weeks of data will be collected at each location. These data, combined with those from the manual counts, will be used to create an exposure model.

Results

Since this is the first year of pedestrian counts, there aren't previous years of data with which to compare. The following table shows both the two-hour volume, and using the fifteen-minute increments to calculate the peak hour, the peak hour volume.

Table 1: 2009 Pedestrian Volumes

Street	Cross Street	Date	AM/PM	2 HR Volume	Peak Hour	Peak Hr Volume
3rd Street	Howard	9/8/2009	4-6PM	2365	5-6pm	1387
4th Street	Market	9/17/2009	4-6PM	20084	5-6pm	10567
6th Street	Market	9/16/2009	4-6PM	6024	4:30-5:30pm	3118
6th Street	Mission	9/16/2009	4-6PM	2198	4:15-5:15	1156
7th Street	Folsom	9/17/2009	7-9AM	1195	8-9am	820
8th Street	Market	9/17/2009	4-6PM	6570	5-6pm	3524
9th Ave	Irving	9/15/2009	7-9AM	1192	8-9am	682
16th Street	Mission	9/15/2009	7-9AM	3391	8-9am	2074
18th Street	Castro	9/10/2009	4-6PM	1375	5-6pm	844
19th Ave	Taraval	9/9/2009	4-6PM	693	5-6pm	412
24th Street	Castro	9/15/2009	4-6PM	1341	4:15-5:15pm	683
25th Ave	Geary	9/9/2009	7-9AM	765	7:45-8:45am	473
34th Ave	Ulloa	9/9/2009	7-9AM	44	7:15-8:15am	24
Bayshore	Cortland	9/16/2009	7-9AM	114	7:30-8:30am	70
Beach	Hyde	9/16/2009	4-6PM	4062	4:15-5:15pm	2226
Chestnut	Steiner	9/15/2009	4-6PM	1450	5-6pm	745
Divisadero	Geary	9/10/2009	7-9AM	1808	7-8am	993
Embarcadero	Washington	9/10/2009	4-6PM	1008	5-6pm	570
Geary	Laguna	9/16/2009	7-9AM	487	7:30-8:30am	294
Geneva	Ocean	9/10/2009	4-6PM	808	4:15-5:15pm	414
Golden Gate	Jones	9/17/2009	7-9AM	1071	8-9am	650
Ingalls	Palou	9/17/2009	4-6PM	60	4-5pm	33
JFK	Stanyan	9/17/2009	4-6PM	831	5-6pm	438
Mission	Silver	9/17/2009	4-6PM	1374	4:15-5:15pm	730
Randall	San Jose	9/16/2009	7-9AM	533	8-9am	429

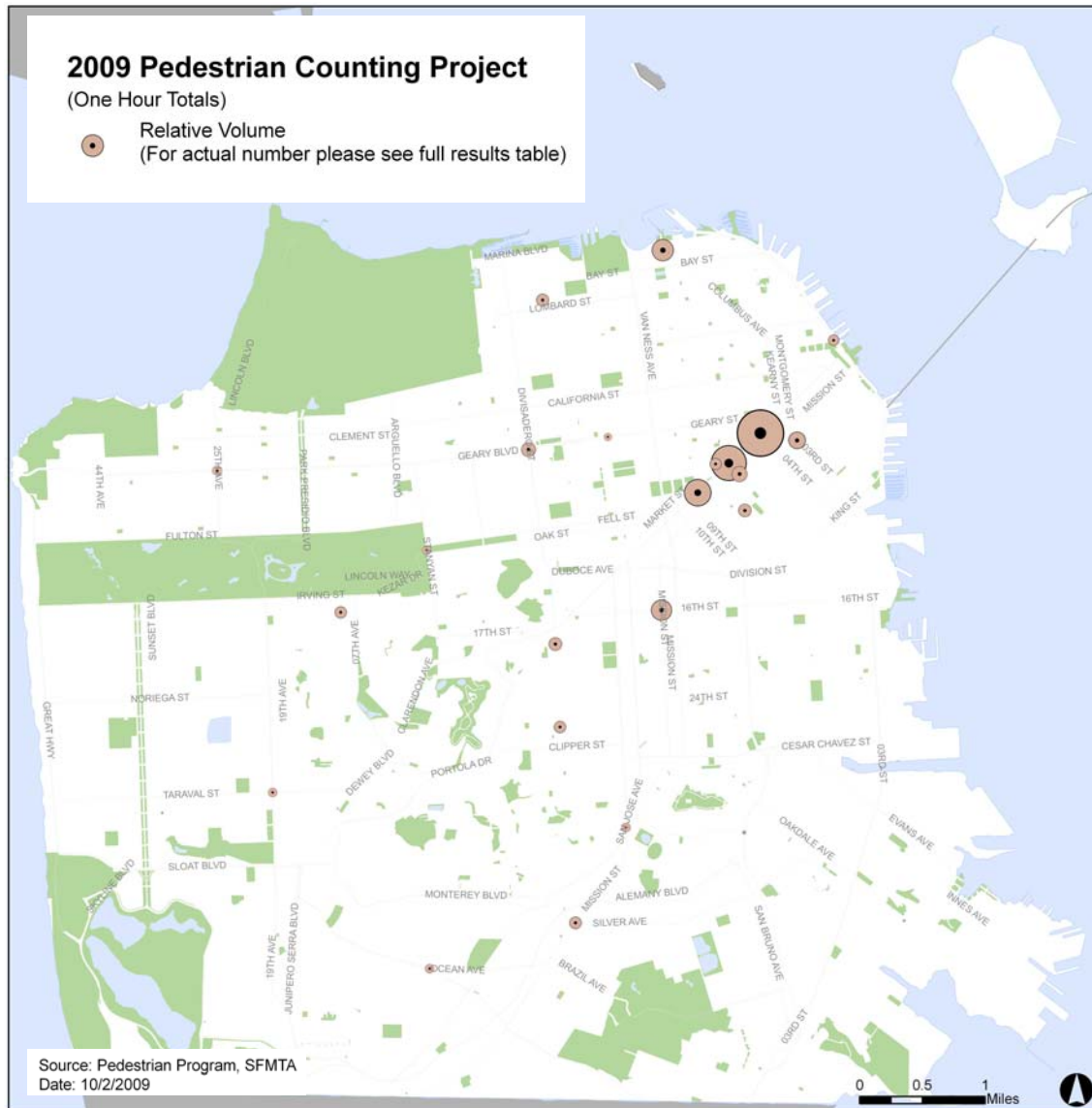


Figure 1: 2009 Pedestrian Volumes

Recommendations

While the 2009 counts went smoothly, a few general observations and comments are worth noting. First, the required person-power is difficult to obtain, especially since most summer interns do not work through September. It is recommended to solicit help from staff and interns up to three weeks in advance. Some summer interns continue to work part-time during the school year, so if given advance notice, many could incorporate these pedestrian counts into their schedules. It is foreseen that the automatic counters will be used in future years to supplement manual counts.

While most of the intersections were straightforward and routine to count, a few of them warrant comment. The Market Street intersections where counts were

conducted have multiple legs and require three counters because of both the high volumes of pedestrians and the distance between crosswalks. Downtown intersections such as Third and Howard Streets may experience fluctuations in the number of pedestrians crossing depending on whether a SF Giants home game is scheduled or not. This was not anticipated for the 2009 counts; the count at Third and Howard Streets took place from 4-6pm and a home game was scheduled for 7pm. In future years, care should be taken to avoid counts on ballgame days.

Recording weather conditions will help ensure that counts from year to year are directly comparable (See Appendix C for Weather Conditions).

Future organizers of the Citywide Pedestrian Count can use past volumes to determine which intersections might warrant more than one person counting and the use of one of our limited supply of click-counters.

Conclusion

The 2009 Citywide Pedestrian Count was successful in its goal of capturing a sample of pedestrian activity across the City. Combined with data that will be collected by automated counters, we will be able to extrapolate exposure rates at these locations.

The Citywide Pedestrian Count is an evolving project, one with a core foundation of established techniques and consistent methodology. However, new lessons will continue to be learned. It is important to make changes and improvements in the counts when circumstances warrant. In the future, new locations may be added, and the methodology may be further refined. As long as a careful eye is directed towards consistency, the goal of capturing walking trends in San Francisco will be met.

APPENDIX A: CENSUS DATA

Table A-1: Journey to Work Data- Walking Mode Share

	San Francisco	California	US
2000	9.8%	2.9%	2.9%
2006	10.4%	2.8%	3.0%
2007	10.4%	3.0%	3.0%
2008	10.2%	2.9%	2.9%

Source: 2000 U.S. Census, SF3, P30; 2006-08 American Community Survey, B08301

APPENDIX B: COUNT LOCATIONS

Table B-1: 2009 Count Locations

Street	Cross Street	Nearby Land Use	Reasoning
3rd Street	Howard	Commercial	MTC Regional Count Site
4th Street	Market	Commercial, Transit Connection	Top 5 High Incidence 4/28/09
6th Street	Market	Mixed Use Residential-Commercial	Top 5 High Incidence 4/28/09
6th Street	Mission	Mixed Use Residential-Commercial	Top 5 High Incidence 4/28/09
7th Street	Folsom	Commercial, School, Bike Lanes	MTC Regional Count Site
8th Street	Market	Commercial, Transit Connection	Top 5 High Incidence 4/28/09, Market St
9th Ave	Irving	Mixed Use Residential-Commercial	Signal Changes/Spatial Distribution
16th Street	Mission	Mixed Use Residential-Commercial, School	High Incidence 4/20/09 - not SOMA
18th Street	Castro	Mixed Use Residential-Commercial	High Incidence 4/20/09 - not SOMA
19th Ave	Taraval	Mixed Use Residential-Commercial, Transit Connection	High Incidence 4/20/09 - not SOMA
24th Street	Castro	Mixed Use Residential-Commercial	Duratherm Installation Counts
25th Ave	Geary	Mixed Use Residential-Commercial	Spatial Distribution
34th Ave	Ulloa	Residential	Spatial Distribution/Residential/Future Signal on Sunset
Bayshore	Cortland	Mixed Use Residential-Commercial	PMP Counts/Spatial Distribution
Beach	Hyde	Mixed Use Residential-Commercial, Open Space	City Planning's Fisherman's Wharf Counts
Chestnut	Steiner	Mixed Use Residential-Commercial	Suspected High Volume Not Near Transit
Divisadero	Geary	Mixed Use Residential-Commercial	MTC Regional Count Site
Embarcadero	Washington	Open Space, Commercial	MTC Regional Count Site
Geary	Laguna	Residential	High Incidence 4/20/09 - not SOMA, Geary BRT
Geneva	Ocean	SF State, Residential	MTC Regional Count Site
Golden Gate	Jones	Mixed Use Residential-Commercial, school	Top 5 High Incidence 4/28/09
Ingalls	Palou	Residential	Spatial Distribution, future redevelopment
JFK	Stanyan	Open Space, Residential	PMP Counts/GG Park
Mission	Silver	Mixed Use Residential-Commercial	High Incidence 4/20/09 - not SOMA
Randall	San Jose	Residential, School	Bike Counts

APPENDIX C: WEATHER

Table C-1: Weather Conditions at 2009 Count Locations

Street	Cross Street	Weather
3rd Street	Howard	66, sunny, windy
4th Street	Market	75, sunny
6th Street	Market	71, sunny
6th Street	Mission	71, clear
7th Street	Folsom	62, overcast
8th Street	Market	75, sunny
9th Ave	Irving	60, sunny
16th Street	Mission	60, sunny
18th Street	Castro	80, clear
19th Ave	Taraval	64, foggy , cool
24th Street	Castro	67, sunny, then foggy
25th Ave	Geary	57, gloomy overcast
34th Ave	Ulloa	57, overcast
Bayshore	Cortland	60, overcast
Beach	Hyde	71, sunny, then foggy
Chestnut	Steiner	67, sunny
Divisadero	Geary	70, clear
Embarcadero	Washington	80, sunny, warm
Geary	Laguna	60, overcast
Geneva	Ocean	80, sunny, warm
Golden Gate	Jones	62, sunny
Ingalls	Palou	75, sunny, clear
JFK	Stanyan	75, sunny, clear
Mission	Silver	68, clear, dry
Randall	San Jose	60, foggy, chilly

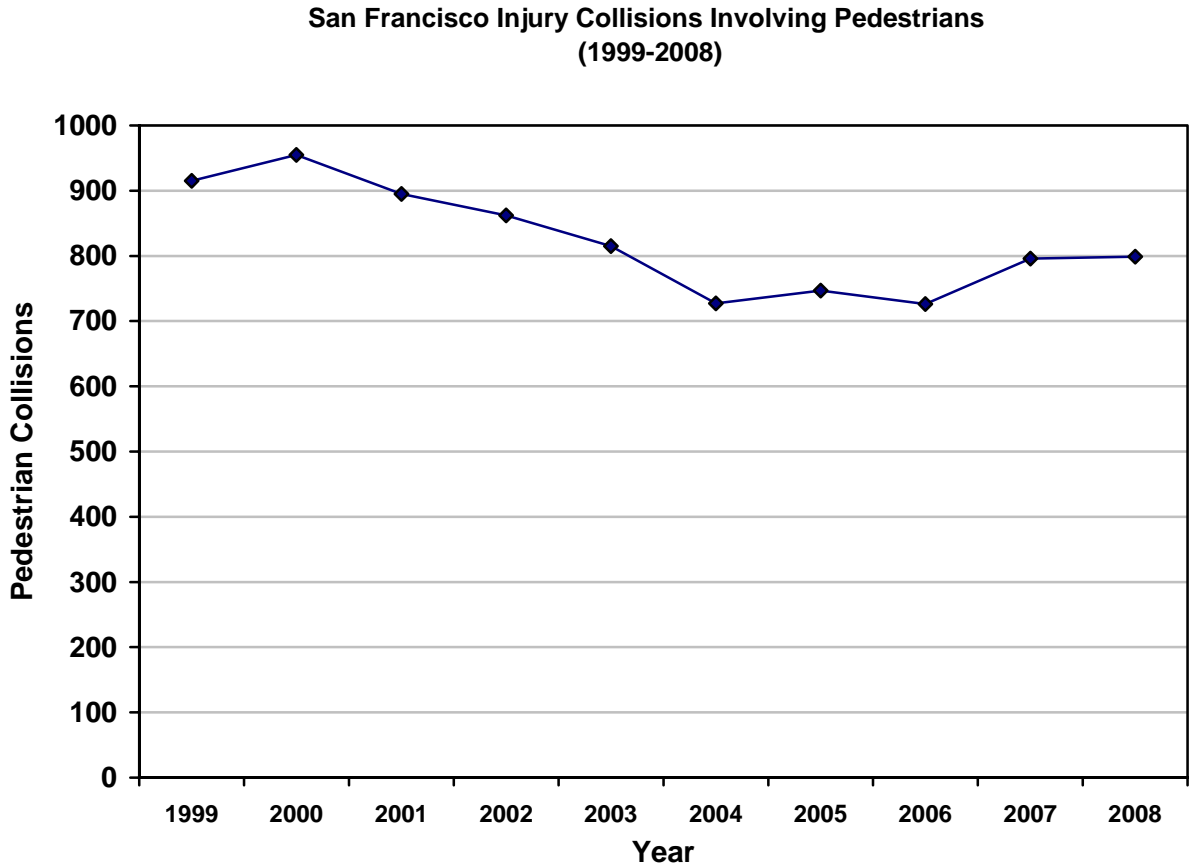
Source: The Weather Underground, Inc., <http://www.wunderground.com>

APPENDIX D: COLLISIONS

Table D-1: 2007 Non-Fatal Injury and Fatal Collisions Involving Pedestrians³

	Injury Collisions	Fatal Collisions
Number	799	13
Percent	27%	48%

Figure D-1: San Francisco Injury Collisions Involving Pedestrians (1998-2007)⁴

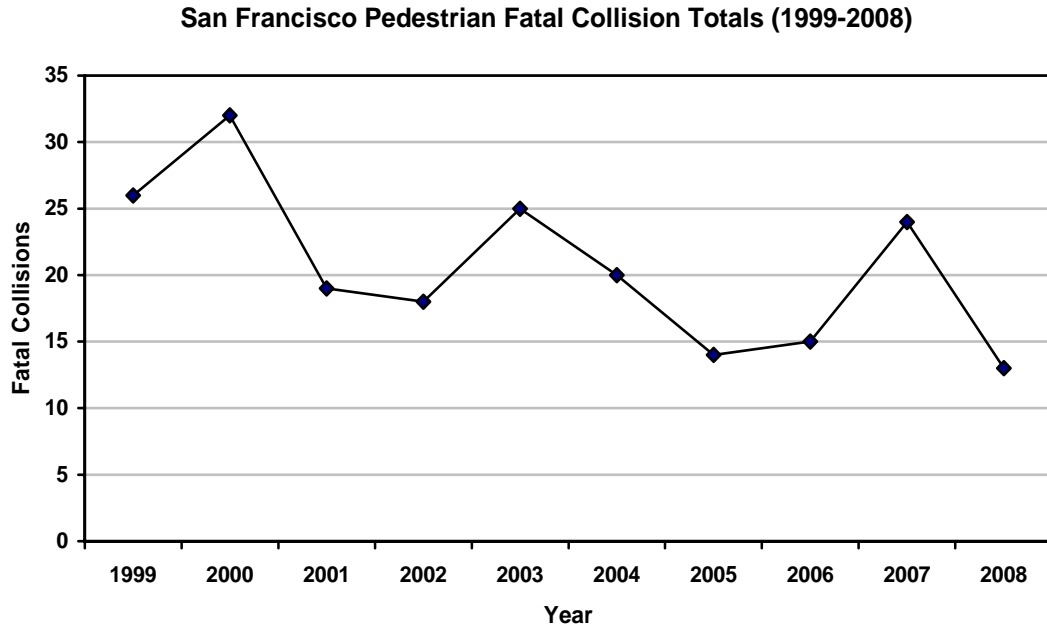


Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total	915	955	895	862	815	727	747	726	796	799

³ SFMTA San Francisco 2008 Collision Report, http://www.sfmta.com/cms/rtraffic/documents/Collision_report_2008.pdf

⁴ SFMTA San Francisco 2008 Collision Report, http://www.sfmta.com/cms/rtraffic/documents/Collision_report_2008.pdf

Figure D-2: San Francisco Pedestrian Fatal Collision Totals (1999-2008)⁵



Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total	26	32	19	18	25	20	14	15	24	13

Table D-2: Three Year Highest Injury Vehicle-Pedestrian Collision Intersections- Intersections with 7 or more collisions resulting in injury, 2006-2008⁶

Street A	Street B	2006-2008 Injury Collisions	2003-2005 Injury Collisions	Three year change
6 th Street / Market Street	Golden Gate / Taylor	11	4	+7
6th Street	Howard Street	9	3	+6
Jones Street	Golden Gate Ave.	7	4	+3
6 th Street	Mission Street	7	6	+1

⁵ SFMTA San Francisco 2008 Collision Report, http://www.sfmta.com/cms/rtraffic/documents/Collision_report_2008.pdf

⁶ SFMTA San Francisco 2008 Collision Report, http://www.sfmta.com/cms/rtraffic/documents/Collision_report_2008.pdf

APPENDIX E: IS SAN FRANCISCO AN UNSAFE CITY FOR PEDESTRIANS? (Excerpted from the 2008 Collision Report)

It is natural to want to compare safety statistics across cities in an effort to put collision numbers in a broader perspective. When such comparisons have been attempted, the headlines have usually been that San Francisco is one of “the least safe” or “most dangerous” cities for pedestrians in the country. These types of assessments are usually based on per capita rates that simply divide the annual number of pedestrian fatalities by a city’s population total. For example, in 2003 the National Highway Traffic Safety Administration (NHTSA) released a ranking in which San Francisco had the fourth highest per capita pedestrian fatality rate in the United States, ahead of Phoenix, Arizona but worse than Dallas, Texas.⁷ In 2007 San Francisco had the highest pedestrian injury collision per capita rate among the largest cities in California (Figure E-1). However, there are significant problems with comparing collision totals using per capita rates. Even after population size is accounted for, cities can have vastly different vehicular miles traveled, daytime populations, transportation networks, built densities, and walking rates. The Metropolitan Transportation Commission, when looking at similar per capita rates for the Bay Area, recognized that “San Franciscans likely make more trips by walking than residents of other, less dense cities, which may account for the higher number of pedestrian fatalities and injuries in San Francisco County.”⁸

To address these methodological issues, researchers from the Surface Transportation Policy Partnership (STPP) in the 1990’s developed the Pedestrian Danger Index (PDI). The PDI computes the rate of pedestrian deaths relative to the amount of walking work trips according to the Census. This measure of actual walking activity, imperfect as it is acknowledged to be, results in a more balanced comparison among urban areas. In a 2009 follow up report by STPP and Transportation for America, 39 other metro areas in the U.S. had a higher pedestrian fatal collision rate than the San Francisco-Oakland-Fremont metro area.⁹ Using a similar approach but focusing on all pedestrian injury collisions, SFMTA staff prepared Figure E-2 for the thirteen largest cities in California. Figures E-1 and E-2 show how simply adding walk trips to work results in a different perspective about the relationship between collision and population totals.

Comparisons such as these are not meant to minimize the importance of lowering the high number of pedestrian collisions in San Francisco and continuing to improve conditions for walking. Rather, an understanding of pedestrian statistics can serve to ease public fears that could discourage

⁷ “NHTSA Releases Major Research Report On Crashes Involving Pedestrians in U.S.,” NHTSA Press Release, Tuesday, April 22, 2003.

⁸ “Overview: Pedestrian Collisions,” Metropolitan Transportation Commission, from www.mtc.ca.gov.

⁹ “Dangerous by Design,” page 19, Transportation for America, 2009.

walking. Although further improvements are needed, walking in San Francisco today is a healthy, sustainable, and safe form of transportation.

FIGURE E-1
2007 Pedestrian Injury Collisions Per Capita
California Cities with more than 250,000 Population

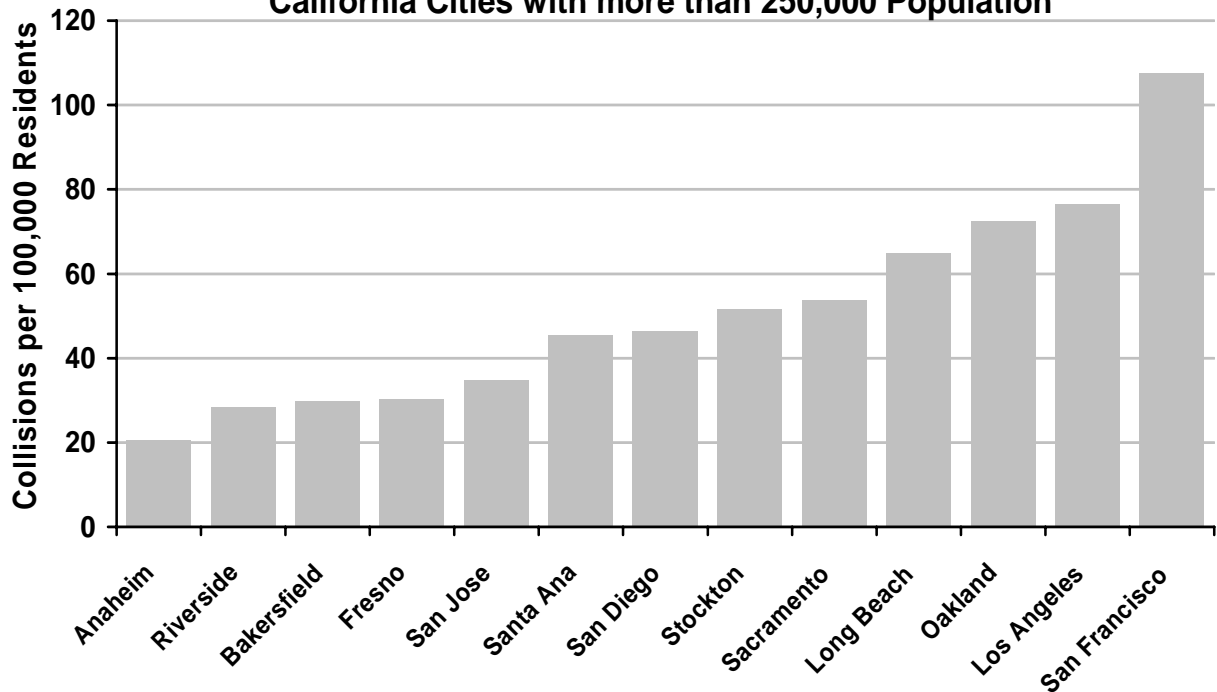


Figure E-1: 2007 Pedestrian Injury Collisions Per Capita
California Cities with more than 250,000 Population

City	2007 Population	2007 Pedestrian Injury Collisions	Pedestrian Injury Collisions per 100,000 residents
Anaheim	342,856	70	20
Riverside	316,154	90	28
Bakersfield	324,540	97	30
Fresno	476,460	144	30
San Jose	922,389	320	35
Santa Ana	327,780	149	45
San Diego	1,276,740	592	46
Stockton	295,070	152	52
Sacramento	451,404	242	54
Long Beach	458,302	297	65
Oakland	358,829	260	72
Los Angeles	3,806,003	2,906	76
San Francisco	764,976	822	107

Sources: U.S. Census Bureau, 2007 American Community Survey; California Office of Traffic Safety, 2007 OTS Collision Rankings

FIGURE E-2
2007 Pedestrian Injury Collisions Per Walk Trips to Work
California Cities with more than 250,000 Population

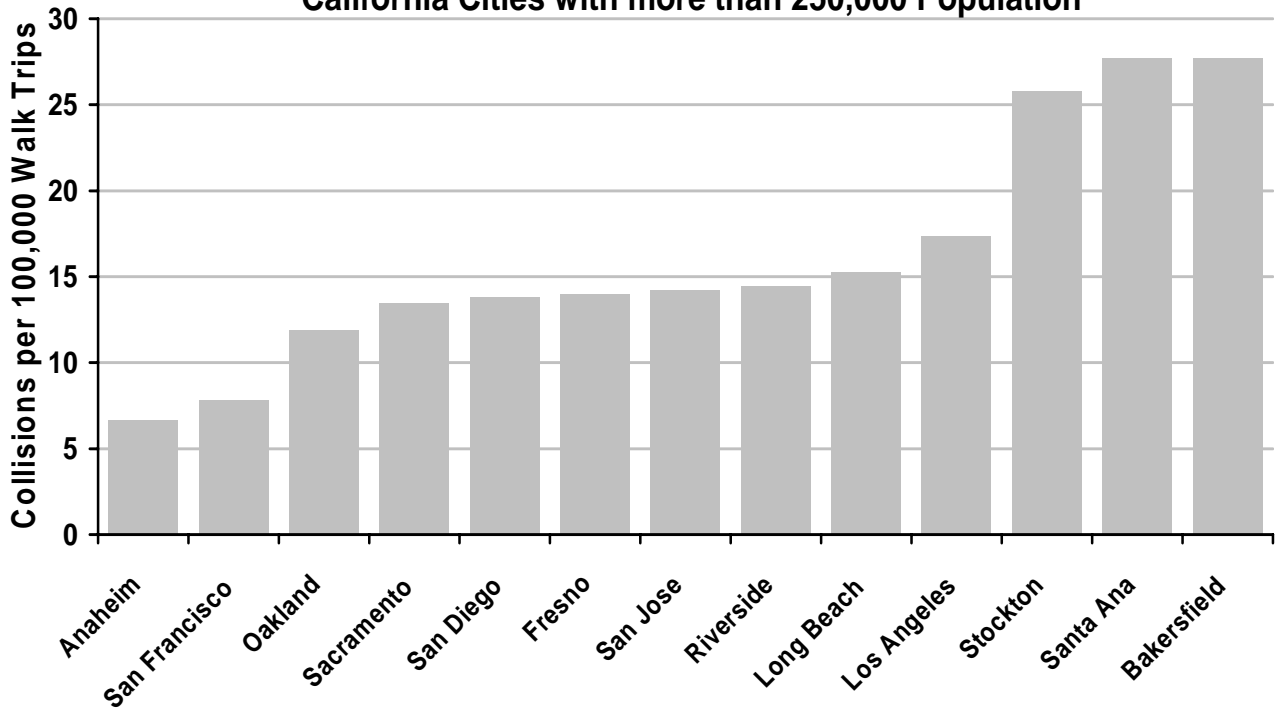


Figure E-2: 2007 Pedestrian Injury Collisions per Walk Trips to Work
California Cities with more than 250,000 Population

City	Walking work mode split	Estimated annual work walk trips	Pedestrian Injury Collisions per 100,000 work walking trips
Anaheim	2.56%	1,047,289	6.7
San Francisco	9.66%	10,491,404	7.8
Oakland	5.18%	2,184,525	11.9
Sacramento	3.43%	1,795,800	13.5
San Diego	2.65%	4,292,661	13.8
Fresno	2.03%	1,030,082	14.0
San Jose	1.96%	2,253,875	14.2
Riverside	1.72%	621,804	14.5
Long Beach	3.64%	1,947,014	15.3
Los Angeles	3.68%	16,720,650	17.4
Stockton	2.01%	588,693	25.8
Santa Ana	1.37%	537,593	27.7
Bakersfield	1.01%	349,879	27.7

Sources: U.S. Census Bureau, 2007 American Community Survey; California Office of Traffic Safety, 2007 OTS Collision Rankings