

# **San Francisco 2005 Collision Report**



**City and County of San Francisco  
Municipal Transportation Agency  
Department of Parking and Traffic  
Traffic Engineering Division**

**July 19, 2006**

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## REPORT HIGHLIGHTS

- Non-fatal injury collision totals for 2005 were 3,227, a six percent increase from the 2004 figure but lower than average annual totals during the past ten years.
- Non-fatal pedestrian injury collisions were 699 in 2005, up five percent from the 665 reported in 2004.
- Overall number of collisions leading to a fatality was 26 in 2005, the lowest total in the past ten years. Pedestrian fatal collisions were 14 in 2005, also the lowest total during the past ten years.

## INTRODUCTION

This report summarizes long-term collision trends. It also lists intersections with the highest collision totals in San Francisco. This information is used to help identify locations that may need special attention and evaluate progress of previous mitigation measures.

The intersections in this report are not a list of the "most dangerous" intersections in San Francisco. An increase in collisions at an intersection could be simply the result of random yearly fluctuations. Out of the thousands of intersections in San Francisco, in any one year some will have more collisions than usual, while other locations will have lower collisions than the expected annual average. Traffic volumes also play an important role in determining collision totals: the more people that use an intersection, the more likely a collision can be. The intersections listed in this report include some of the busiest in the city.

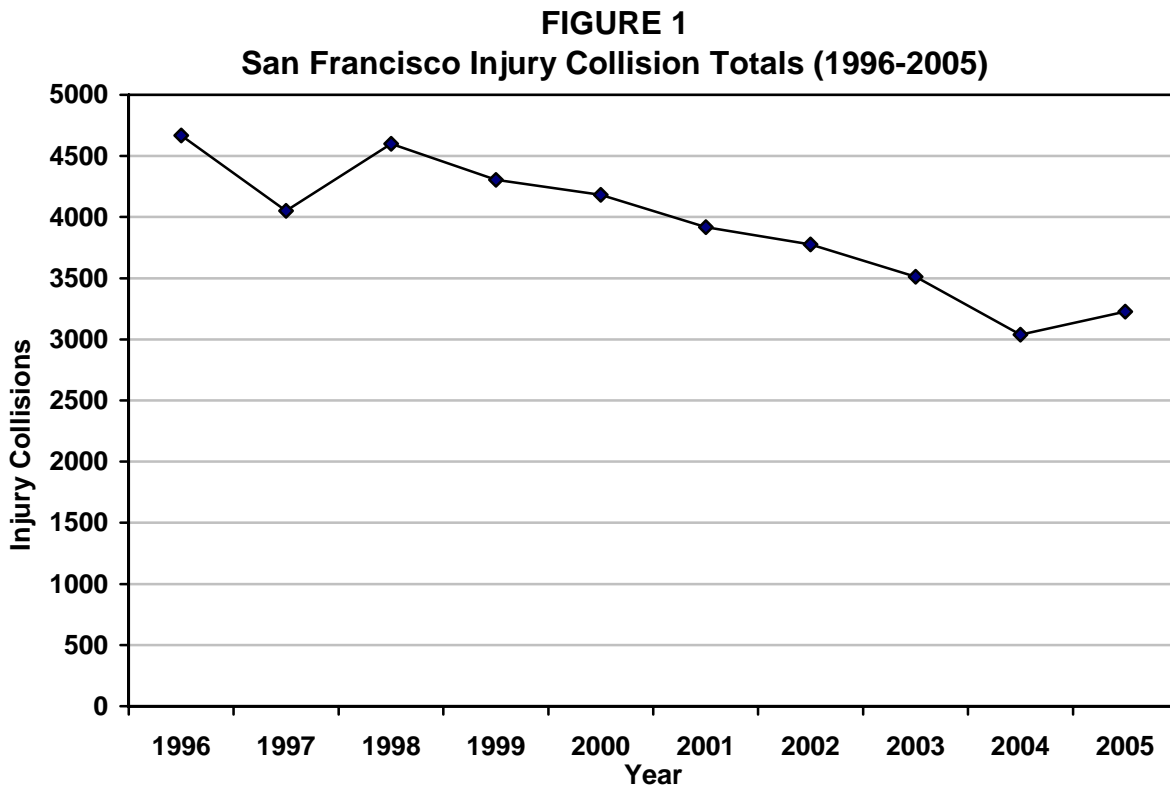
The source of the collision data is the Statewide Integrated Traffic Records Systems (SWITRS) maintained by the California Highway Patrol. The California Vehicle Code requires that local governments send police collision reports to the State. The California Highway Patrol provides summaries of these reported collisions, which are then processed by DPT to obtain intersection totals. The data used in this report excludes collisions that occurred on San Francisco freeways or private property but includes collisions on city streets that are classified as state highways (such as 19<sup>th</sup> or Van Ness Avenues). DPT received SWITRS totals for 2005 in June of 2006, thus delaying the production of this report.

Due to limited Police Department resources, in San Francisco property damage only (non-injury) collisions are typically not reported. Last year only 1,389 property damage collisions were reported, well below what would be expected given the 3,227 injury collisions reported during the same time period. Injury and fatal collisions are reported more consistently over time, however. This report focuses on collisions that involve an injury to at least one of the parties involved in order to minimize the influence that changes in reporting procedures can have on collision trend analysis.

## PART 1: CITYWIDE COLLISION TRENDS

Reported non-fatal injury collisions in San Francisco totaled 3,227 in 2005. This figure is the second lowest injury collision total of the past ten years (Figure 1) and up six percent from the 3,038 total in 2004. The total number of victims injured by these collisions was approximately 4,428. Although injury collisions increased in 2005 relative the previous annual total, there are fewer injury and fatal collisions being reported now than in the 1990's.

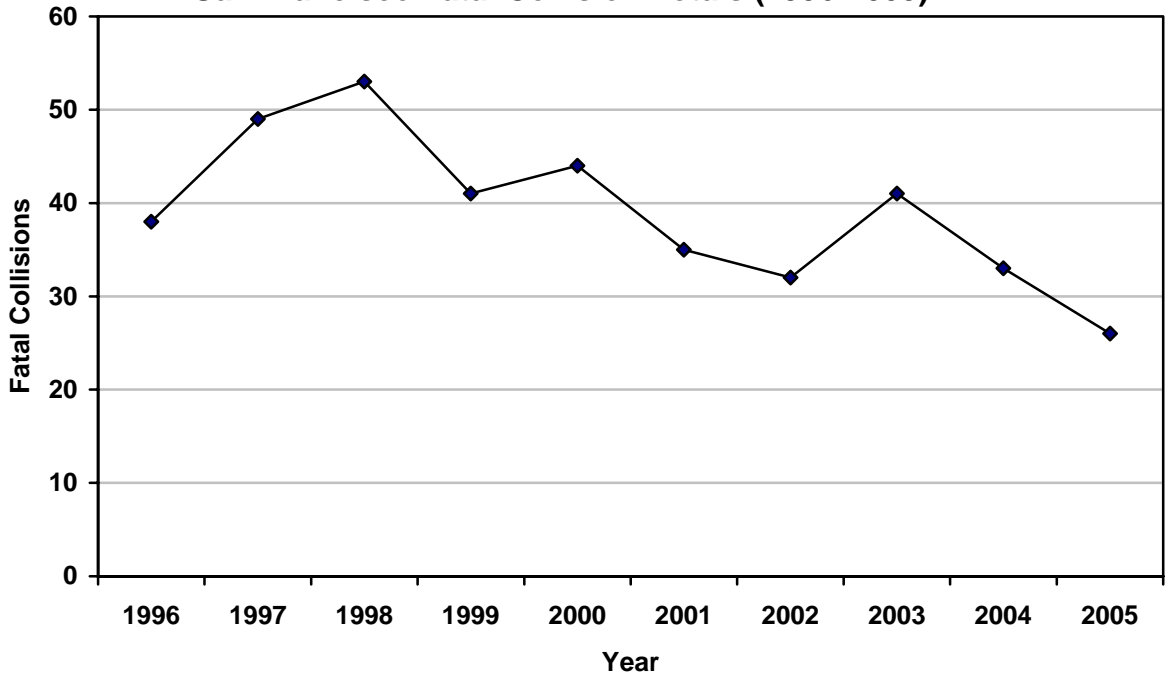
The number of collisions resulting in fatalities in 2005, 25, is below the average number of fatal collisions over the past ten years (Figure 2). In general, injury collisions are a more reliable indicator of collision trends over time. Fatal collisions, being rarer events, are more subject to random fluctuations from one year to the next. This is confirmed by noting the more significant year-to-year variance on Figure 2.



**FIGURE 1**  
**San Francisco Injury Collision Totals (1996-2005)**

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Total</b>	4669	4050	4599	4304	4182	3917	3777	3511	3038	3227

**FIGURE 2  
San Francisco Fatal Collision Totals (1996-2005)**



**FIGURE 2  
San Francisco Fatal Collision Totals (1996-2005)**

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Total</b>	38	49	53	41	44	35	32	41	33	26

Table 1 lists the previous five-year injury collisions according to the three non-fatal injury severity categories used by the State and the San Francisco Police Department. Severe injuries appear to be more static than the two other injury categories.

**TABLE 1  
2001-2005 Non-Fatal Injury and Fatal Collisions  
Citywide Collisions**

Year	Complaint of Pain	Other Visible Injury	Severe Injury
<b>2005</b>	2118	936	173
<b>2004</b>	2006	882	150
<b>2003</b>	2411	942	157
<b>2002</b>	2505	1126	145
<b>2001</b>	2559	1176	182

Tables 2 and 3 breakdown injury collision totals by month and day of the week. Collisions in general are spread out evenly throughout the year, with the winter months of December through February posting the lowest monthly totals. Sunday is predictably the lowest day of the week for collisions.

**TABLE 2  
2005 Non-Fatal Injury Collisions by Month**

<b>Year</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>2005</b>	244	225	283	270	299	295	252	250	287	289	295	238

**TABLE 3  
2005 Non-Fatal Injury Collisions by Day of the Week**

<b>Year</b>	<b>Sunday</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>
<b>2005</b>	390	472	484	478	466	490	447

Table 4 lists the most common injury collision causes as categorized by the State collision form. "Primary" refers to the most likely reason for the collision, although typically there are multiple factors involved. "Violation of traffic signal and signs" is a category that includes both violation of traffic signals and STOP signs. Violation of vehicle right-of-way refers to a motorist's failure to yield to oncoming or cross traffic.

**TABLE 4  
2005 Non-Fatal Injury Collisions by Primary Collision Causes**

<b>Cause</b>	<b>Total</b>	<b>Percent</b>
<b>Unsafe Speed</b>	722	22
<b>Violation of Traffic Signals and Signs</b>	530	16
<b>Vehicle Right-of-Way Violations</b>	436	14
<b>Driver Violations of Pedestrian Right-of-Way</b>	266	8
<b>Violations by the Pedestrian</b>	244	8
<b>Improper Turning</b>	207	6
<b>Driving Under Influence</b>	117	4
<b>Other</b>	705	22

### PART 3: HIGHEST COLLISION INTERSECTIONS

As documented in previous annual reports, the number of intersections with double digit injury collision totals has gradually decreased. Last year only one location reported ten or more injury or fatal collisions. This is thanks in part to the City's targeted safety efforts (see additional discussion in Part 6). Table 5 lists the locations with the most collisions reported during 2005.

**TABLE 5**  
**2005 Highest Injury Collision Total Intersections**  
**Intersections with 7 or more collisions resulting in injury during 2005**

<b>Street A</b>	<b>Street B</b>	<b>Injury Collisions</b>	<b>Notes</b>
9 <sup>th</sup> St.	Harrison St.	10	Signal retiming, all-red phase (2006)
Gough St.	Market St.	9	Signal modification under design
5 <sup>th</sup> St.	Brannan St.	8	Under review
8 <sup>th</sup> St.	Mission St.	8	Added all red phase (2006)
Geary Blvd	Steiner St.	8	New signal heads installed (2005)
19 <sup>th</sup> Ave.	Junipero Serra	7	On State Route 1 (Caltrans)
Cesar Chavez	Mission St.	7	Under review
16 <sup>th</sup> St.	Potrero Ave.	7	Completed signal upgrade (2006)
Alemany Blvd	Sickles Ave.	7	Signal upgrade candidate
Turk St.	Van Ness Ave.	7	Signal timing modified (2005)

Some of the most effective safety improvements DPT has implemented involve signalization changes. Hardware changes, such as signal modifications and upgrades, can improve safety by making signal indications more visible or by adding new features such as countdown pedestrian signals. These changes typically involve construction work that is paid for through the City's transportation sales tax or grant funds. Signal timing changes can improve safety by adjusting the sequencing or duration of certain intervals. A treatment that can sometimes improve traffic safety at signalized intersections is to add an "all-red" phase lasting one to two seconds during which signals are red for all approaches. In order to ensure the effectiveness of all-red phases DPT will continue to apply this signal change selectively.

Both 9<sup>th</sup> at Harrison Street and Gough at Market Streets are intersections impacted by detoured traffic from the closure of the Central Freeway in 1996. The opening of Octavia Boulevard on September, 2005 may alleviate some of the traffic congestion at these and other nearby intersections. DPT has already made signal timing, parking and lane striping adjustments in the Civic Center area in light of the anticipated and measured changes in traffic patterns.

The intersections of 5<sup>th</sup> Street at Brannan Street as well as Cesar Chavez Street at Mission Street are new to this list and will be reviewed by DPT staff. The City has been working with the State to fund signal upgrades at the intersections along 19<sup>th</sup> and Van Ness Avenues, major arterial streets with relatively old infrastructure.

Table 6 lists the intersections with the highest number of injury collisions over the past three years. A longer analysis period assists in identifying locations that may be worsening over time, although these lists could also include intersections that are improving due to actions already taken by the City. As the overall safety of specific intersections has improved, fewer intersections have been recording 20 or more injury collisions in a three-year period. For example, for the three-year period 1995-1997, 52 intersections had recorded 20 or more injury collisions; for 2003-2005 that same total is down to just 3.

**TABLE 6**  
**Three-Year Highest Injury Collision Intersections**  
**Intersections with more than 20 collisions resulting in injury, 2003-2005**

<b>Street A</b>	<b>Street B</b>	<b>Injury Collisions</b>	<b>Notes</b>
Gough Street	Market Street	23	Signal modification under design
Bayshore Blvd	Silver Avenue	20	Caltrans traffic signal
19 <sup>th</sup> Avenue	Sloat Blvd.	20	On State Routes 1, 35 (Caltrans)

#### **PART 4: COLLISIONS BY PARTY TYPE**

Table 7 details the collisions by mode or party type. The most common collision is between two motor vehicles, comprising over half of injury collisions reported last year. Approximately 22 percent of San Francisco injury collisions and 54 percent of fatal collisions involve pedestrians. The high percentage of collisions that are pedestrian-related has remained a concern and has led to increased funding of programs to improve pedestrian safety. It should be pointed out that the higher number of people walking in San Francisco should result in above average percentage of pedestrian collisions relative to other cities that are more motor vehicle dependent. Per capita pedestrian collision comparisons with other cities are unreliable for this reason.

**TABLE 7  
2005 Non-Fatal Injury and Fatal Collisions by Parties Involved**

<b>Collision Type</b>	<b>Total Injury</b>	<b>Percent Injury</b>	<b>Total Fatal</b>	<b>Percent Fatal</b>
<b>Two or More Motor Vehicles</b>	1796	56	3	12
<b>Motor Vehicle and Pedestrian</b>	699	22	14	54
<b>Motor Vehicle and Bicycle</b>	285	9	1	4
<b>Motor Vehicle and Fixed Object</b>	154	5	5	19
<b>Parked Vehicle Collision</b>	132	4	1	4
<b>All Others</b>	161	5	2	8
<b>Total</b>	<b>3227</b>	<b>100</b>	<b>26</b>	<b>100</b>

**Bicycle Collision Totals**

Citywide bicycle injury totals for 2005 are up from the totals reported in 2004 but still following a relatively stable pattern. There was one fatal collision involving a motor vehicle and a bicyclist in 2005, with an additional bicycle fatality listed as a non-collision incident.

**TABLE 5  
Injury and Fatal Vehicle Collision Totals Involving Bicycles, 2001-2005**

<b>Type</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>Non-Fatal Injury Collisions</b>	335	284	268	272	285
<b>Fatal Collisions</b>	4	1	1	1	1

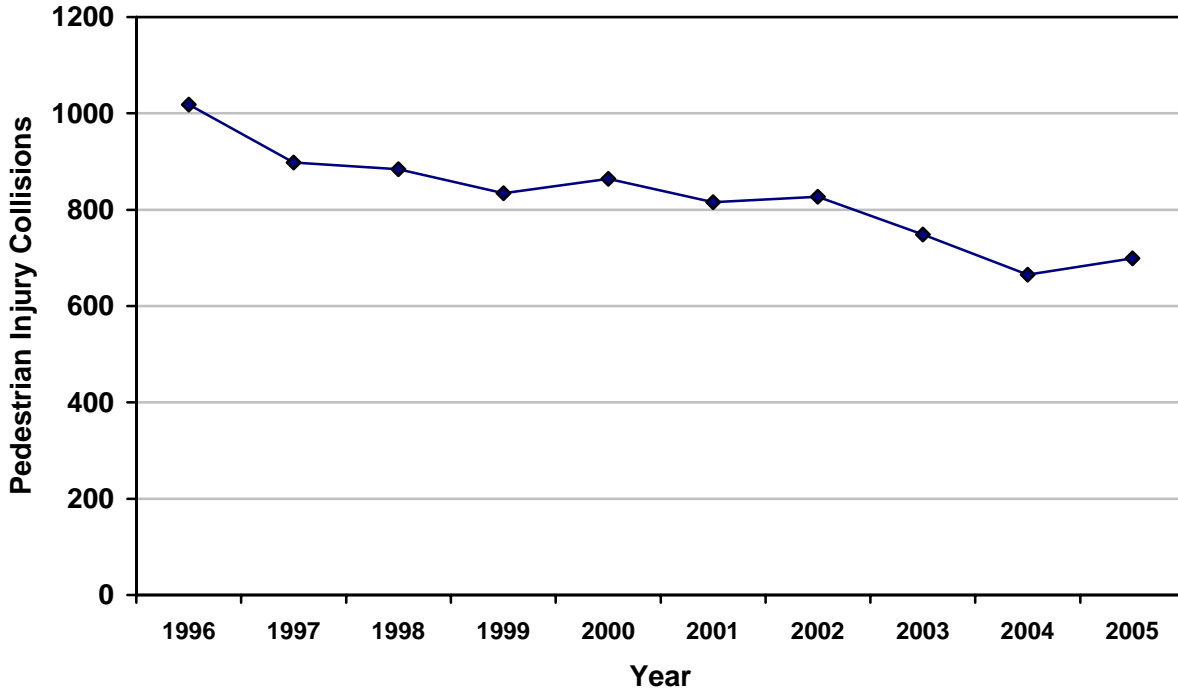
The Municipal Transportation Agency Bicycle Program will be preparing a more detailed report analyzing bicycle-specific collision trends and statistics.

**Pedestrian Collisions**

The 2005 total of 699 pedestrian injury collisions is up 5 percent from the 2004 total, which had been the lowest in the past decade (Figure 3). Because this increase follows

a similar citywide increase in vehicle only collisions, it is more likely that the rise is due to an overall fluctuation in aggregate collision totals than due to factors specific to pedestrian safety. Pedestrian injury collisions are down 31 percent from the 1996 total. The number of pedestrian fatal collisions decreased to 14 and was the lowest among previous yearly totals (Figure 4). Annual pedestrian fatality collision totals do fluctuate more and have been in the range of 30 to 15 incidents a year.

**FIGURE 3**  
**San Francisco Pedestrian Non-Fatal Injury Collision (1996-2005)**

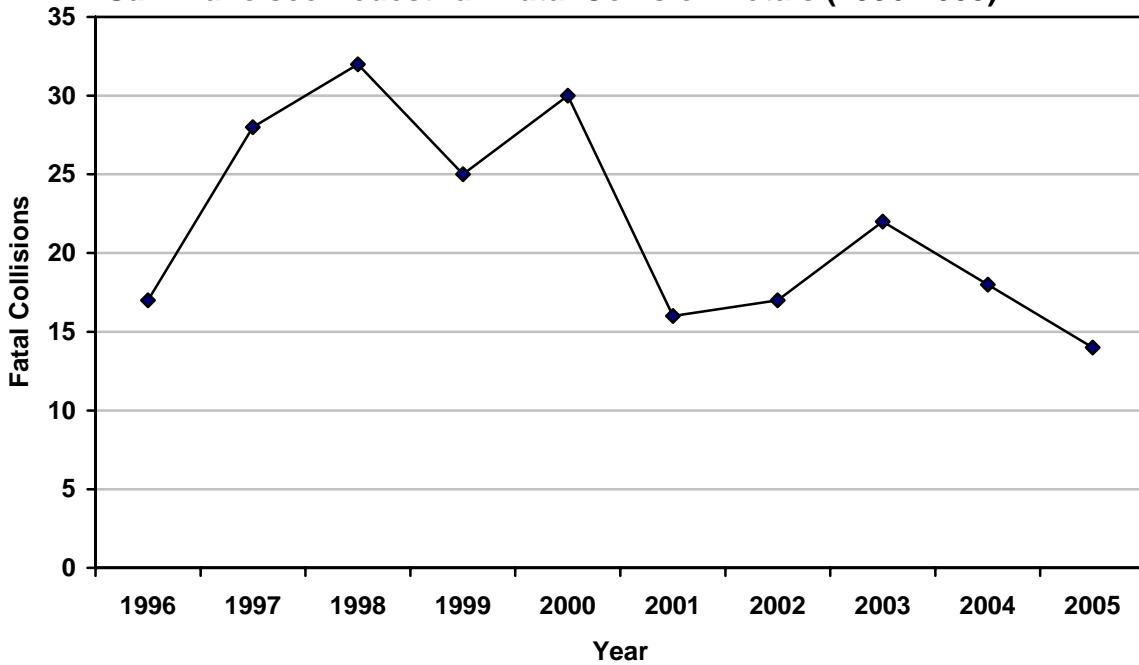


**Figure 3**  
**San Francisco Pedestrian Non-Fatal Injury Collision (1996-2005)**

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Total</b>	1018	898	884	834	864	816	827	749	665	699

The City has been implementing a variety of measures to improve pedestrian safety, including the upgrade of various pedestrian signs, modification of crosswalk markings to the ladder-style at designated school crosswalks and mid-block locations, signal timing changes, installation of countdown devices, traffic calming measures, targeted police enforcement, and improved education programs. Signal upgrades also benefit pedestrians by installing pedestrian signals at intersections where these devices are currently not present or by making motorists less likely to disobey signal indications (Table 6). The Municipal Transportation Agency is also working on a Pedestrian Master Plan for San Francisco which will seek to guide future funding decisions.

**FIGURE 4  
San Francisco Pedestrian Fatal Collision Totals (1996-2005)**



**FIGURE 4  
San Francisco Pedestrian Fatal Collision Totals (1996-2005)**

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Total</b>	17	28	32	25	30	16	17	22	18	14

**Table 6  
Intersections with 10 or more vehicle-pedestrian injury collisions, 2001-2005**

Street A	Street B	Injury Collisions	Notes
16 <sup>th</sup> Street	Potrero Ave.	14	Signal upgrade completed (2006)
16 <sup>th</sup> Street	Mission St.	13	Pending signal upgrade
18 <sup>th</sup> Street	Mission St.	10	Pending signal upgrade
6 <sup>th</sup> Street	Mission St.	10	Signal upgrade completed (2003)
4 <sup>th</sup> / Stockton	Market St.	10	Signal timing changes (2005)

The State collision reporting system distinguishes whether pedestrian was walking at a crosswalk or not. Table 7 provides the non-fatal injury and fatal collision totals for two categories, crossing at an intersection crosswalk and crossing outside of a crosswalk. The injury collision pattern is similar to that previously discussed: fewer collisions in 2004 and 2005 compared to the 2001 through 2003 annual totals.

**TABLE 7  
Injury and Fatal Collision Pedestrian Collisions and Crosswalks, 2001-2005**

<b>Type</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>Crossing not in crosswalk</b>	252	198	215	182	193
<b>At intersection crosswalk</b>	469	458	435	405	412

### **Motorcycle Collisions**

Table 8 summarizes the number of injury and fatal collisions that had as one of its parties a motorcycle. Injury collision total is down 40 percent in 2005 compared to the 2001 figure. The increase in injury collisions in 2005 mirrors those of other collision types.

**TABLE 8  
Injury and Fatal Collision Totals Involving Motorcycles, 2001-2005**

<b>Type</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>Non-Fatal Injury Collisions</b>	426	346	328	217	250
<b>Fatal Collisions</b>	7	2	6	3	3

## **PART 5: COLLISIONS AT UNSIGNALIZED INTERSECTIONS**

Due to their higher traffic volumes, the intersections with the highest collision totals in the City are usually signalized. Mitigation measures for lower volume intersections are generally different than those for signalized intersections. They can include installation of additional STOP signs, new traffic signals, and the introduction of additional traffic or parking regulations.

Table 9 includes the highest injury collision intersections during the five-year period from 2001 to 2005. It includes some intersections that will be signalized in the future.

**Table 9**  
**Injury Collisions at Unsignalized Intersections**  
**Intersections with 10 or more collisions resulting in injury, 2001-2005**

Street A	Street B	Injury Collisions	Notes
Sunset Blvd.	Kirkham St.	14	Under review
Blake St.	Geary Blvd.	12	To be signalized (Prop K Sales Tax)
3 <sup>rd</sup> St.	Stevenson St.	12	To be signalized (Private Funding)
41 <sup>st</sup> Ave.	Lincoln Way	11	Improved STOP sign visibility (2006)
15 <sup>th</sup> Ave.	Geary Blvd.	11	To be signalized (Prop K Sales Tax)
14 <sup>th</sup> St.	Harrison St.	10	All-way STOP installation (2006)
6 <sup>th</sup> St.	Jessie St.	10	Visibility red zones (2006)
6 <sup>th</sup> St.	Ahern Way	10	Improving (striping changes in 2004)
McAllister St.	Masonic Ave.	10	Added visibility red zone (2003)
Ulloa St.	Sunset Blvd.	10	Under review

Below we highlight how three different types of traffic control changes can, under the proper conditions, significantly improve the safety of specific intersections.

14<sup>th</sup> and Funston Avenues at Geary Boulevard. In 2000 the City implemented a “Right Turn Only” regulation at these two intersections adjacent to Park Presidio Boulevard. The close proximity to a traffic signal made restricting through movements a preferable option to signalization. In the five years prior to the restriction these two locations had a combined injury total of 18 collisions. Between 2001 and 2005, the injury collision total dropped to only 4, a 78 percent drop in incidents.

19<sup>th</sup> Avenue and Geary Boulevard. A new signal was activated on September of 2002 at this commercial intersection. For the three years prior to 2002, 19<sup>th</sup> Avenue and Geary Boulevard had recorded 11 injury collisions, 5 of these pedestrian-related. In the three years after signal activation (2003-2005), the intersection has only reported one injury collision. Installing a traffic signal in this case reduced collisions by 91 percent.

Girard and Silliman Streets. As part of its citywide review of collision hot spots, DPT in 2002 identified this location as a problem intersection and installed an all-way STOP. Between 1999 and 2001 the intersection had reported 9 collisions. For the three-year period after the new STOP signs went in, there has been only one collision reported. The installation of two STOP signs led to a drop in collisions of 89 percent.

## PART 6: A LOOK BACK TO 1995

As previously noted, the number of collisions being reported at the highest injury intersections in San Francisco has declined during the past decade. Ten years ago it was not uncommon for the highest collision tables to be comprised of intersections with annual totals in the mid to upper teens. By comparison, between 2003 and 2005 only one intersection had an annual injury total above 9.

**TABLE 10**  
**Intersections with 13 or more injury collisions reported in 1995**  
**compared to injury collision totals reported in 2005**

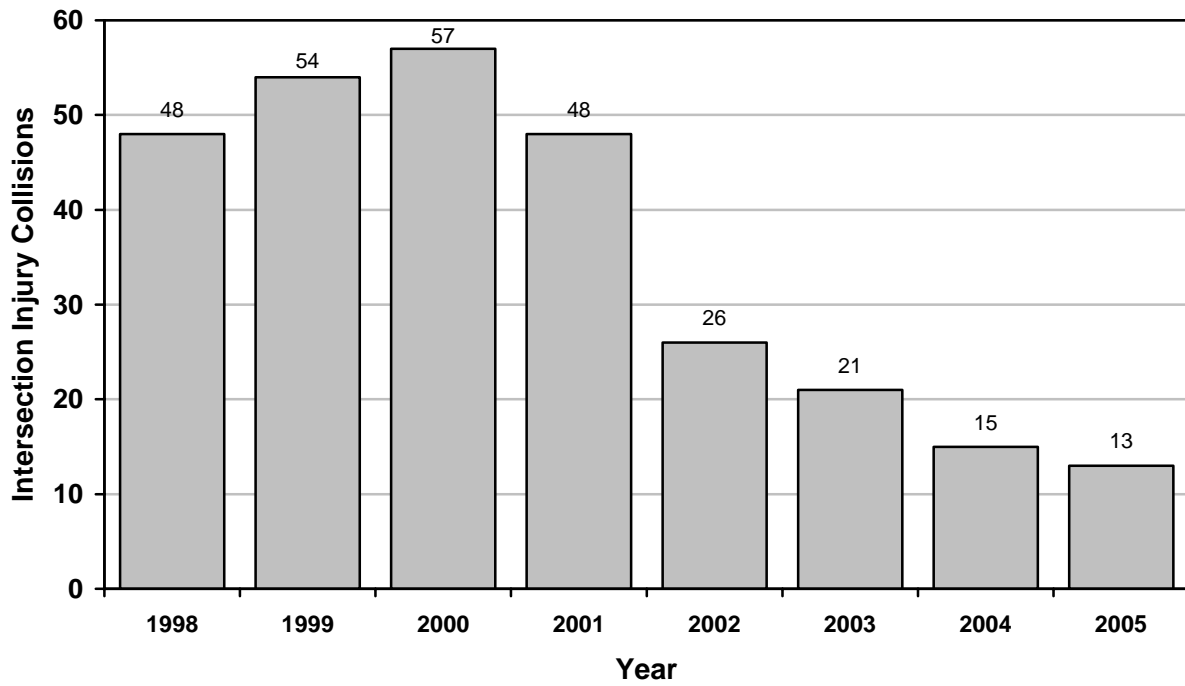
<b>Street A</b>	<b>Street B</b>	<b>1995 Injury Collisions</b>	<b>2005 Injury Collisions</b>	<b>Percentage Change</b>
19 <sup>th</sup> Avenue	Sloat Boulevard	19	6	- 68 %
6 <sup>th</sup> Street	Bryant Street	18	3	- 83 %
5 <sup>th</sup> Street	Folsom Street	15	3	- 80 %
Broadway	Van Ness Ave	15	6	- 60 %
3 <sup>rd</sup> Street	Folsom Street	14	1	- 93 %
4 <sup>th</sup> Street	Mission Street	14	4	- 71 %
5 <sup>th</sup> Street	Howard Street	14	2	- 86 %
1 <sup>st</sup> Street	Howard Street	13	2	- 85 %

Table 10 is a summary of the top injury locations of 1995, with collision totals provided for 2005. All intersections have recorded significant drops in reported collisions, improvements that have been enduring. In the mid 1990's, the City started upgrading all the traffic signals in the South of Market Street area using transportation sales tax funds. These improvements included the addition of overhead signal heads, new pedestrian signals, and relocated signal poles. With these improvements locations such as 6<sup>th</sup> and Bryant Streets, which used to be regularly listed as a high collision location, posted decreases in annual collision totals in excess of 80 percent.

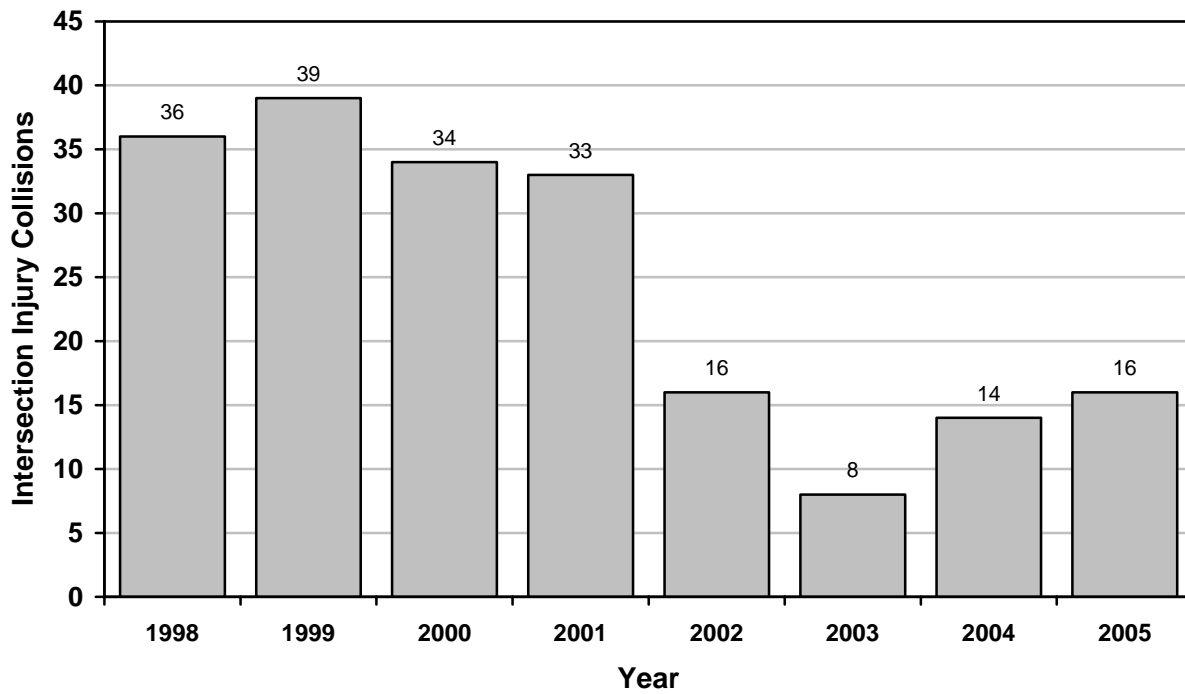
## PART 7: SIGNAL UPGRADES AS SAFETY IMPROVEMENTS

Two streets that underwent traffic signal upgrades in 2001 are Oak and Brannan Streets. Signal improvements included overhead signals, pedestrian signals, and changed signal timing. These changes were completed in early 2002. Figures 6 and 7 show how injury intersection collision totals along these streets noticeably dropped in the order of 50 percent four years after the upgrade compared to the four years prior.

**FIGURE 6**  
**All Intersection Injury Collisions on Brannan Street (1998-2005)**



**FIGURE 7**  
**All Intersection Injury Collisions on Oak Street (1998-2005)**



## PART 8: FACTORS INFLUENCING COLLISION TRENDS

A region's collision trends can be influenced by many factors, some difficult to control or measure. Among some of the key factors that can influence San Francisco's long-term collision trends are:

- Demographic changes that affect the number of drivers, pedestrians and other users of the streets in a certain population group (such as teenage drivers).
- Economic fluctuations that lead to more driving, whether these be commuters (jobs), visitors (tourism), or residents (population growth).
- Other social incentives that change the amount of driving individuals engage in (such as higher gas prices or improved public transit).
- Long-term improvements in vehicular technology and safety standards.
- Changes in local enforcement levels or fines, making drivers less or more willing to engage in risky driving practices.
- Cultural changes and educational efforts that lead to fewer injuries (increased seat belt usage) or decreased safety (increased cell phone usage).
- Improvements in street conditions and traffic engineering.

The annual collision totals reported in any one year are a result of an unknown and fluctuating combination of these factors. Whether San Francisco's totals will increase or decrease from one year to the next is thus impossible to predict in advance.

Figure 8 below attempts to draw some preliminary correlations between recent changes in congestion levels and the drop in collisions noted in 2004 and subsequent increase last year. There appears to be some relationship between regional freeway congestion levels as measured by Metropolitan Transportation Commission<sup>1</sup> and annual injury collision totals. The increases in freeway congestion levels are relevant to City streets because they are linked to an "improving economy creating more jobs and commuters"<sup>2</sup>. Additional driving related to employment increases would be expected to result in more driving and pedestrian activity, and thus more potential for crashes.

The relationship that may exist between economy growth and collisions is not constant and absolute. Injury collision totals in San Francisco were continually decreasing during a period in the mid to late 1990's of accelerating economic growth and traffic activity. Other factors were leading collision totals down during this period of economic expansion, of which street improvements mentioned in this report likely played a role.

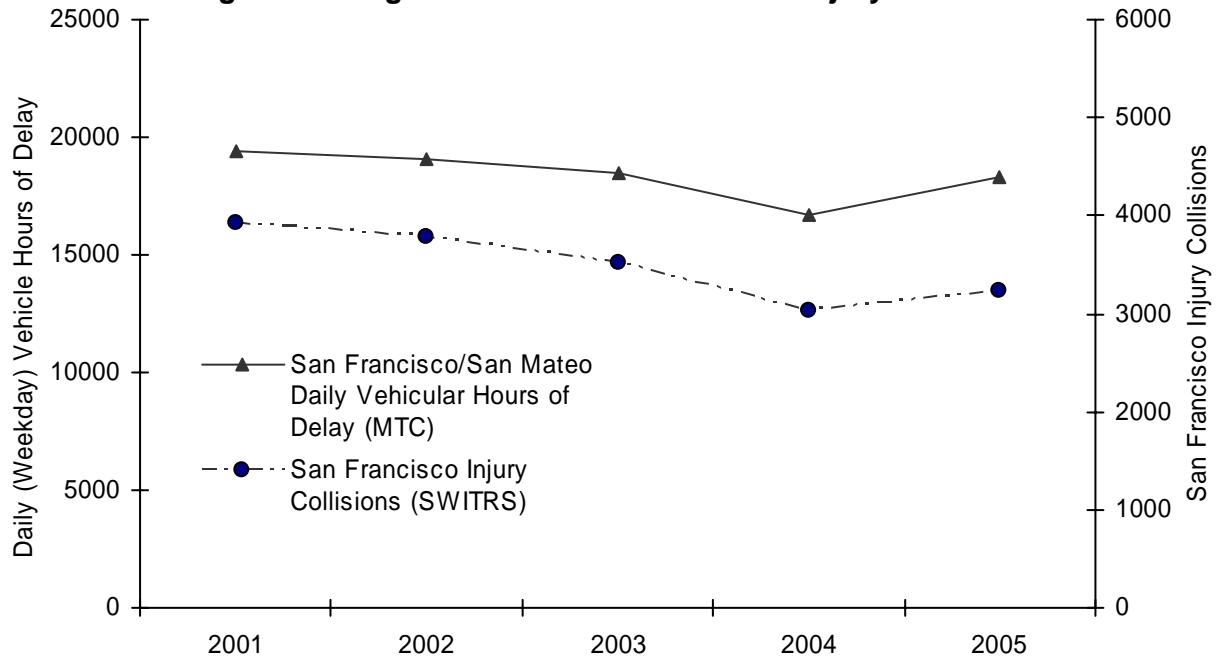
Further improvements in traffic safety will require the hard work and cooperation of both City staff and the public. Through concerted education, engineering and enforcement efforts San Francisco will be able to enjoy safer streets for everyone.

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<sup>1</sup> Metropolitan Transportation Commission, "Congestion Up 9 Percent on Area Freeways in 2005," June 20, 2006.

<sup>2</sup> San Francisco *Examiner*, "Traffic congestion worsens," June 21, 2006.

**FIGURE 8**  
**Regional Congestion and San Francisco Injury Collisions**



**FIGURE 8**  
**Regional Congestion and San Francisco Injury Collisions**

Year	2001	2002	2003	2004	2005
<b>Daily (Weekday) Vehicle Hours of Delay</b>	19400	19100	18500	16700	18300
<b>San Francisco Injury Collisions</b>	3917	3777	3511	3038	3227