SFMTA
Municipal
Transportation
Agency

San Francisco 2012-2015 Collisions Report

November 3, 2016

SUSTAINABLE STREETS DIVISION Transportation Engineering

CONTENTS

SUMMARY

The San Francisco Municipal Transportation Agency (SFMTA) analyzed San Francisco Police Department-reported injury and fatal collision data through 2015.

Key Findings

- **Fatal Collisions:** Since 2009, the number of fatal collisions has varied only slightly, following a 20-year of rough decline. From 2010 to 2013, the annual totals increased from 22 to 33, then declined to 31 in both 2014 and 2015.
- **Non-Fatal Injury Collisions:** The annual total of roughly 3,100 has changed little since 2006.
- **Fatal Pedestrian Collisions:** While the number of pedestrian fatalities in San Francisco can vary widely from year to year, it has remained relatively flat in the past decade. In 2015 20 people died walking on San Francisco's streets.
- **Pedestrian Collisions:** In 2015, 724 pedestrians were injured in collisions, which marks a decline since the annual totals reported spiked to 954 in 2012.
- **Bicycle Collisions:** After a steady six-year increase, injury collisions involving people on bikes dropped slightly from 2013 to 2015. However, 2015 saw the highest number of severe and fatal bicycle-involved collisions since 2006.

ABOUT THIS REPORT

The San Francisco Collisions Report is created by the San Francisco Municipal Transportation Agency (SFMTA) to monitor trends in police-reported injury collisions and high-injury intersections. This report focuses on providing crash data and is not intended to provide a comprehensive list of actions San Francisco is taking to improve safety. The Collisions Report focuses on multi-year statistical trends to provide an accurate picture of the safety record on San Francisco's streets. Short-term annual changes in collisions at any intersection, street, or citywide can vary widely from statistical averages due to random factors, even when the conditions of the location have not changed. To account for those factors, this report compares data from recent years to data from as early as 1990.

Delays and Changes since Last Report

Since the previous 2010-2011 Collisions Report published in 2012, production of this report was delayed due to problems validating data during the transition to a new reporting system that relies on local data rather than state data. Until 2012, the SFMTA received collision data through the Statewide Integrated Traffic Records Systems (SWITRS), which is maintained by the California Highway Patrol (CHP). California Vehicle Code (CVC) Section 20008 requires that local governments send their police collision reports to the State. The CHP then enters the data into its own database and reports it as official data. However, there has traditionally been a one- to two-year lag for an annual set of data to be considered official by the CHP.

New Locally-Based Data Reporting

Since 2013, collision data has instead been reported directly by the San Francisco Police Department (SFPD) and validated by the Department of Public Health (DPH) and the SFMTA. Some data included in this report may still be subject to revision and may not coincide with numbers reported at the state level by SWITRS.

Data Not Included

Non-Injury Collisions: Due to limited police staff resources, non-injury collisions (with property damage only) in San Francisco are generally underreported and are therefore not included in this report.

Collisions Outside of Local Jurisdiction: Some collisions are not included in this report due to and differences in reporting procedures.

These include:

- **Freeway collisions.** Freeways are not under the jurisdiction of the City and County of San Francisco, and collisions that occur on them are reported to the California Department of Transportation (Caltrans) and the CHP. However, crashes on city streets that are state- designated highways (such as Van Ness Avenue) are included in this report since the responding agency is the SFPD.

- **Crashes in the Presidio of San Francisco.** The Presidio is under the jurisdiction of the National Park Service and not the SFPD or the SFMTA.

Underreported Injury Collisions: While injury collisions tend to be reported more consistently than non-injury collisions, unfortunately not all injury collisions are captured by police reports. These include crash types such as solo falls by people on bicycles[1] and certain types of pedestrian-involved crashes[2]. The extent of this underreporting will be better understood with DPH's comprehensive transportation-related injury surveillance system, which will be released later this year.

[1] "Using trauma center data to identify missed bicycle injuries and their associated costs" (Lopez et al, 2012) http://www.ncbi.nlm.nih.gov/pubmed/23032807

[2] "San Francisco pedestrian injury surveillance: Mapping, under-reporting, and injury severity in police and hospital records" (Sciortino et al, 2005) http://www.sciencedirect.com/science/article/pii/S0001457505001053

PART 1: CITYWIDE INJURY AND FATAL COLLISION TRENDS

Reported non-fatal injury collisions in San Francisco have remained around 3,100 a year during the last four reporting years (Figure 1). While non-fatal injury collisions steadily declined until 2006, falling below 3,000, annual totals have unfortunately flattened and not continued the decreasing trend. The overall collision rate for the city however may be improving given the growing population and economic activity in San Francisco in recent years. However, the ultimate goal is for severe crash totals to decrease regardless of whether transportation activity in the city is increasing or decreasing.

The annual number of collisions resulting in fatalities has also remained relatively stable in the past four years at around 30 (Figure 2). In 2015 20 people were killed while walking, 4 while cycling, 6 while riding a motorcycle, and one while driving a motor vehicle. Motorcycle riders constitute a high percentage of deaths (19 percent in 2015). Like with overall injury collisions, the long-term trends are positive but the short-term trends in the past decade are discouraging as the annual totals appear to have stagnated. It is San Francisco's goal under Vision Zero to eliminate all fatal collisions by the year 2024. This recent trend suggests the City must take a different approach to reach that ambitious goal – and City agencies are coordinating to that end.[3]

[3] For more information about San Francisco' Vision Zero initiative, including additional crash data, maps, and actions taken, see www.visionzerosf.org

Figure 1: San Francisco Non-Fatal
Injury Collision Totals (1990-2015)

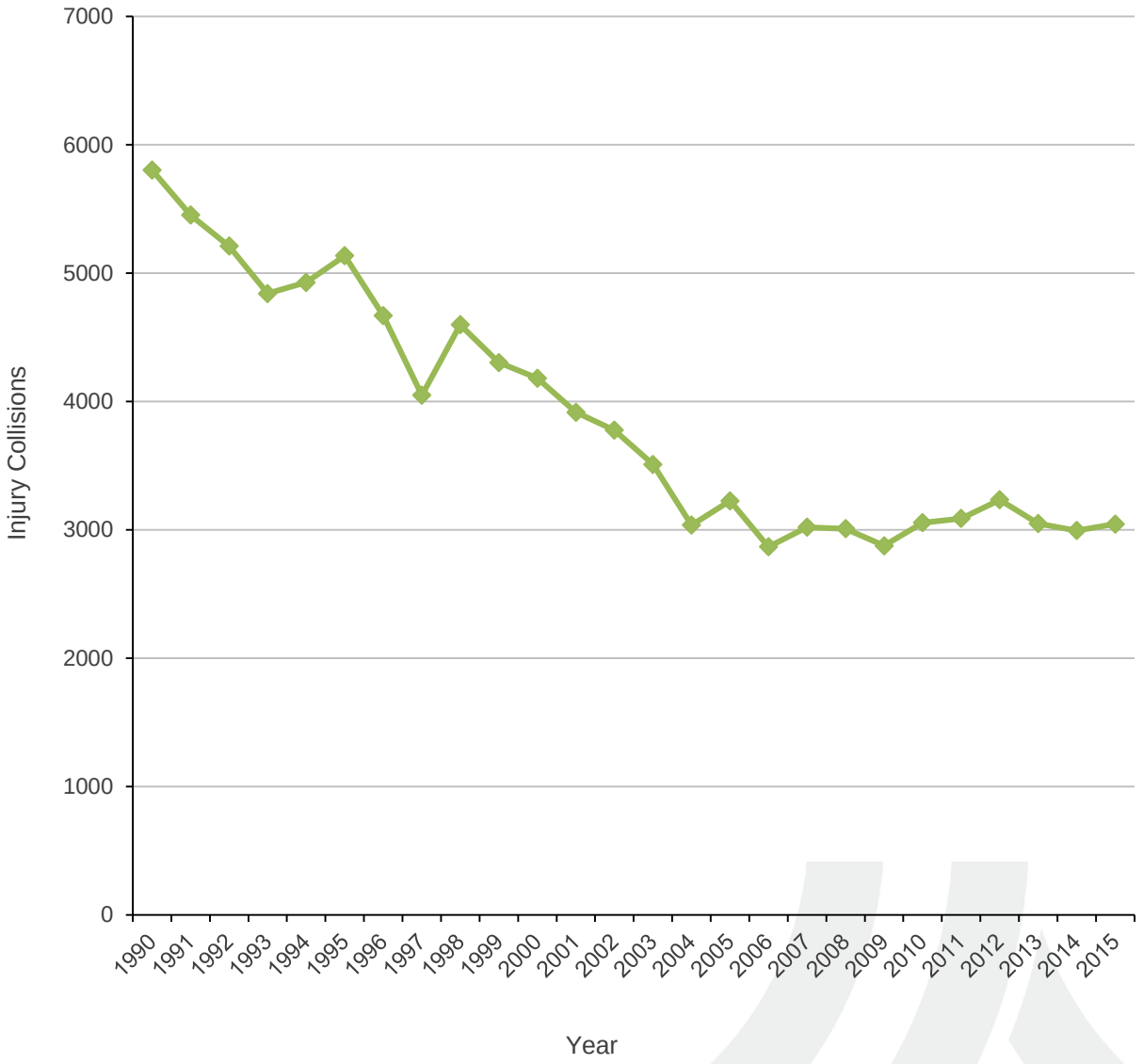


Figure 1: San Francisco Non-Fatal
Injury Collision Totals (1990-2015)

Year	1990	2000	2010	2011	2012	2013	2014	2015
Total	5,804	4,182	3,056	3,089	3,235	3,049	2,995	3,046

Figure 2: San Francisco
Fatal Collision Totals (1990-2015)

Figure 2: San Francisco
Fatal Collision Totals (1990-2015)

Year	1990	2000	2010	2011	2012	2013	2014	2015
Total	64	44	22	28	29	33	31	31

In general, injury collisions tend to be a more reliable indicator of global long-term collision trends because fatal collisions, being fewer in number, are subject to sharper fluctuations from year to year. This is illustrated in the higher annual percentage variance seen in Figure 2 compared to Figure 1.

Figure 3 lists the previous five-year non-fatal injury collision totals according to the three non-fatal injury severity categories used by the SFPD, consistent with state requirements. The percentage of “severe injury” collisions have increased over the past five years, going from 191 in 2012 to 221 in 2015, counter to the City’s stated goals to reduce the incidence of the most severe crashes happening on San Francisco’s streets.

Figure 3: San Francisco
2012-2015 Injury Collision Severity

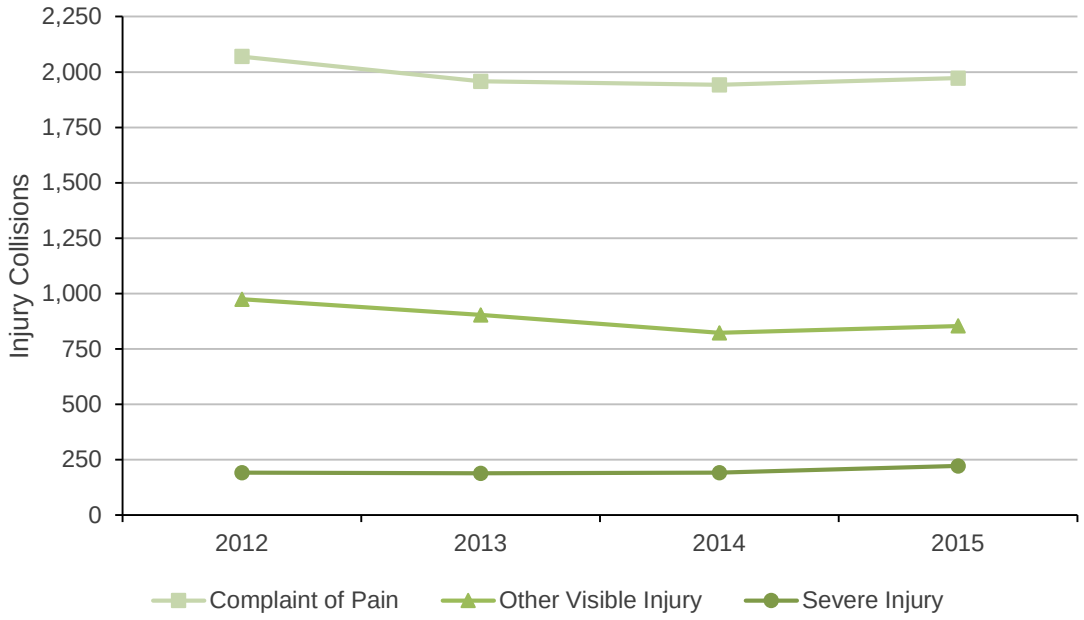


Figure 3: San Francisco
2012-2015 Injury Collision Severity

Year	Complaint of Pain	Complaint of Pain %	Other Visible Injury	Other Visible Injury %	Severe Injury	Severe Injury %	Total
2012	2,070	64%	974	30%	191	6%	3,235
2013	1,958	64%	903	30%	188	6%	3,049
2014	1,942	66%	822	28%	191	6%	2,955
2015	1,972	65%	853	28%	221	7%	3,046

PART 2: COLLISION TYPES AND CAUSES

Figure 4 shows 2012-2015 injury collision totals by primary collision type. The two most common types of collisions, broadsides and vehicle-pedestrian, together comprise 52 percent of injury collisions.

Figure 4: 2012-2015 Injury and Fatal
Collisions by Collision Type (Total of 12,409)

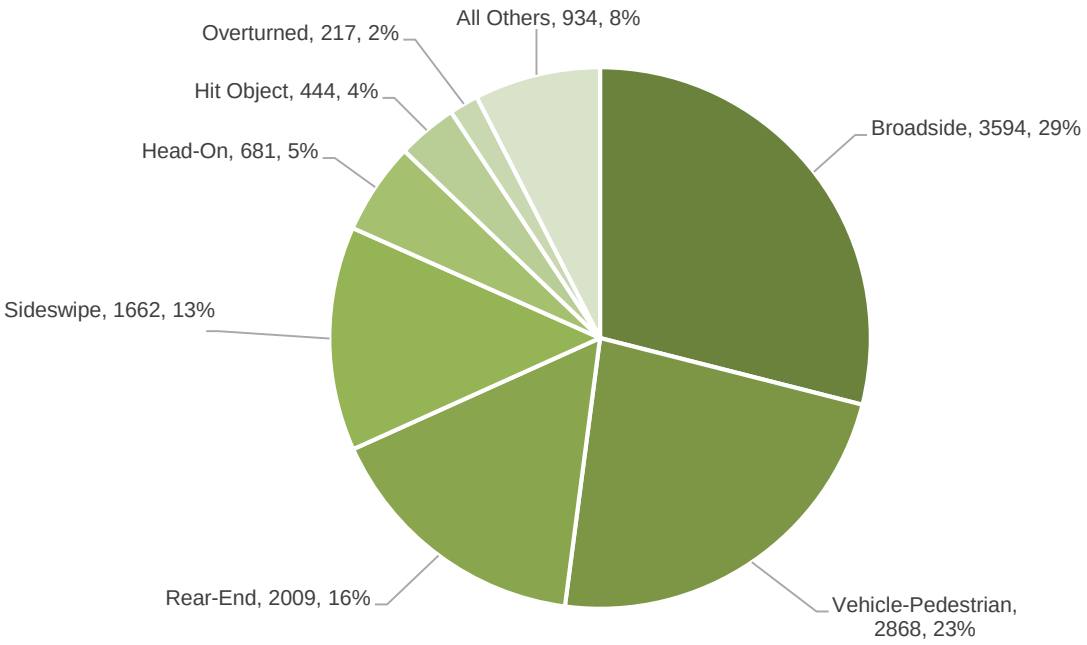


Figure 4: 2012-2015 Injury and Fatal
Collisions by Collision Type (Total of 12,409)

Collision Type	Collisions	Percent
Broadside	3594	29%
Vehicle-Pedestrian	2868	23%
Rear-End	2009	16%
Sideswipe	1662	13%
Head-On	681	5%
Hit Object	444	4%
Overturned	217	2%
All Others	934	8%

Figure 5 shows 2012-2015 top CVC violations which resulted in injury collisions. The top CVC violation cause is CVC 22350, travelling at a speed “unsafe for conditions” (which does not necessarily mean over the posted speed limit). In reality, collisions are often the result of more than one single primary cause or set of conditions.

The Appendix has a fuller description of the California Vehicle Code violations at issue. Three violations comprise over one-third of crash totals: unsafe speed for conditions, failure to yield to pedestrians, and red light running. These three along with turning and STOP sign violations are part of the SFPD’s “Focus on the Five” campaign which seeks to increase enforcement emphasis on behaviors most likely to result in injury. The recent trend for injury crashes related to these violation categories is provided in Figure 6.

Figure 5: 2012-2015 Most Common Non-Fatal Injury Collision Factors (Total of 12,285)

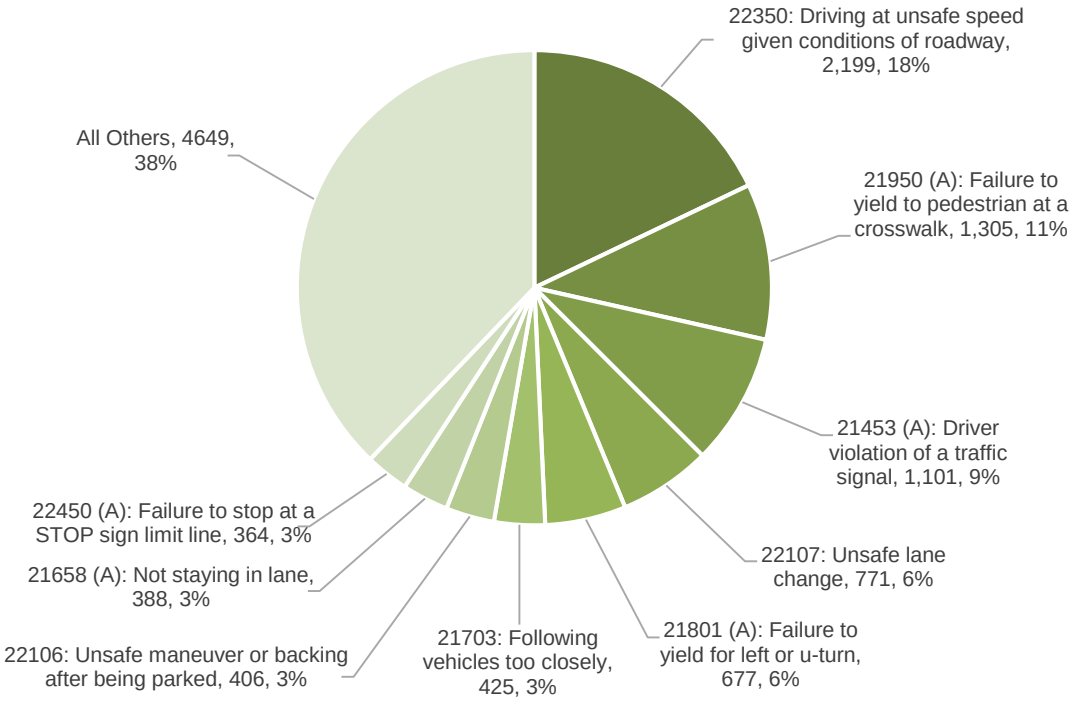


Figure 5: 2012-2015 Most Common Non-Fatal Injury Collision Factors (Total of 12,285)

CVC Violation	Collisions	Percent
22350: Driving at unsafe speed given conditions of roadway	2,199	18%
21950 (A): Failure to yield to pedestrian at a crosswalk	1,305	11%
21453 (A): Driver violation of a traffic signal	1,101	9%
22107: Unsafe lane change	771	6%
21801 (A): Failure to yield for left or u-turn	677	6%
21703: Following vehicles too closely	425	3%
22106: Unsafe maneuver or backing after being parked	406	3%
21658 (A): Not staying in lane	388	3%
22450 (A): Failure to stop at a STOP sign limit line	364	3%
All Others	4649	38%

Figure 6: 2012-2015 Non-Fatal Injury
Collisions for California Vehicle Codes in
SFPD's "Focus on the Five" Traffic Enforcement Initiative

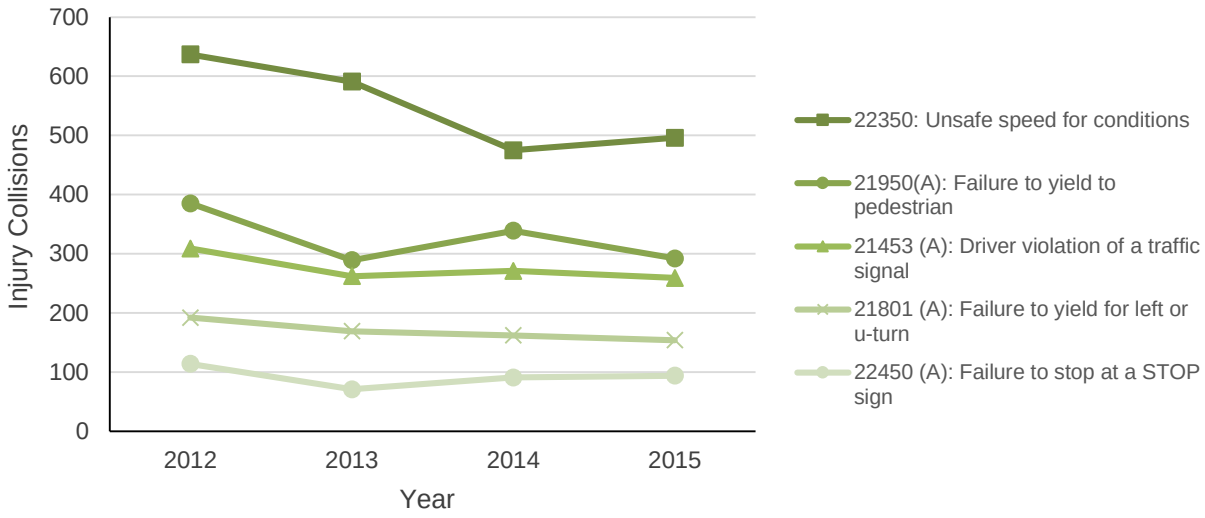


Figure 6: 2012-2015 Non-Fatal Injury
Collisions for California Vehicle Codes in
SFPD's "Focus on the Five" Traffic Enforcement Initiative

CVC Violation	2012	2013	2014	2015
22350: Unsafe speed for conditions	637	591	475	496
21950(A): Failure to yield to pedestrian	385	289	339	292
21453 (A): Driver violation of a traffic signal	309	262	271	259
21801 (A): Failure to yield for left or u-turn	192	169	162	154
22450 (A): Failure to stop at a STOP sign	114	71	91	94

PART 3: HIGHEST COLLISION INTERSECTIONS

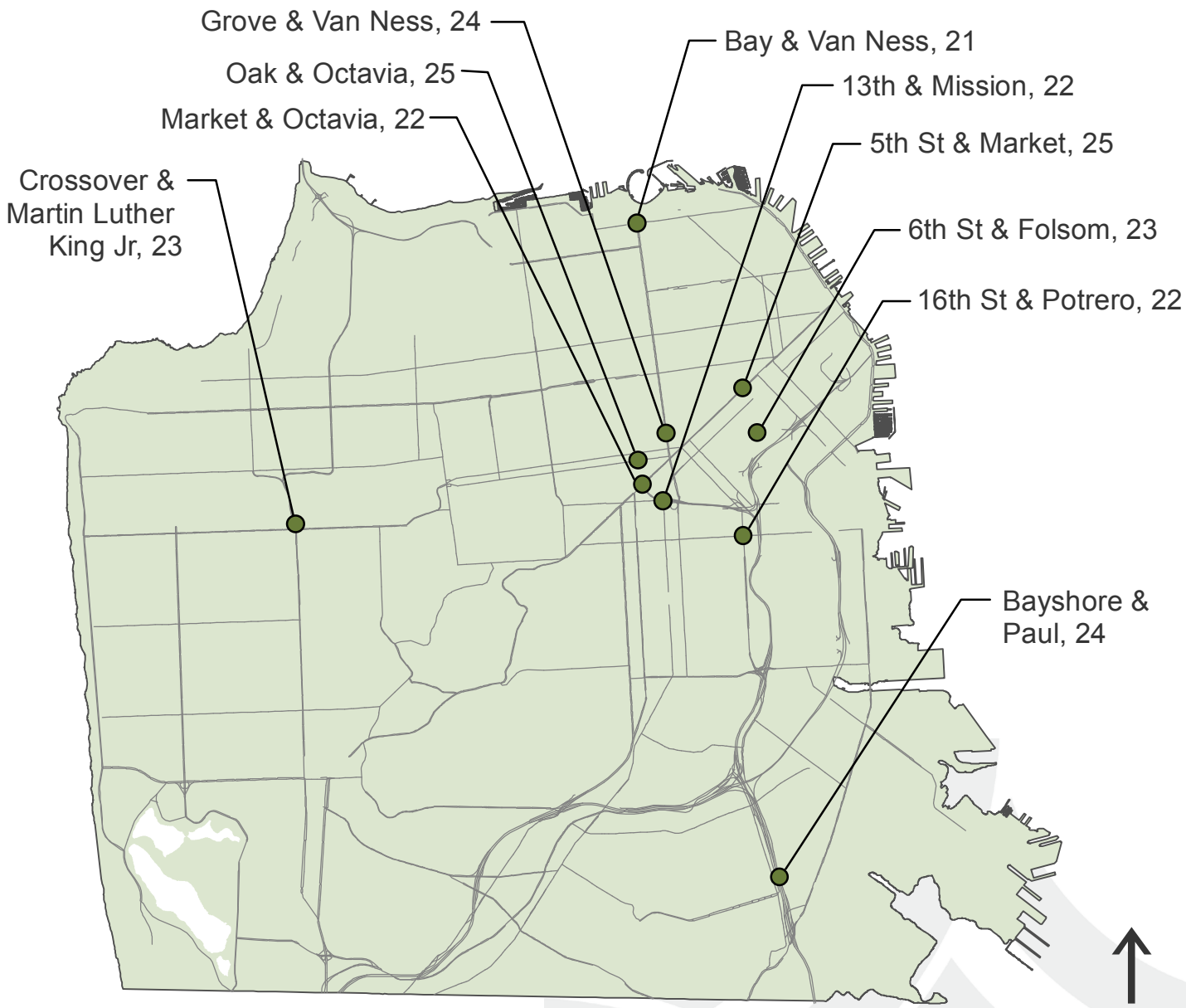
About two-thirds of injury collisions in San Francisco occur at intersections. As documented in previous annual collision reports, the number of intersections with double digit annual injury collision totals has decreased thanks in part to San Francisco's targeted safety efforts. The top recorded annual intersection injury crash total for 2014 and 2015 was 9.

Table 1 is a list of the ten highest injury collision intersections for the most recent four-year period, 2012-2015. It lists also the number of crashes that involved a pedestrian or a bicycle. A map of these locations is also provided in Figure 7. 5th and Market streets had four crashes that involved a person on a bicycle colliding with a pedestrian. This extended analysis period identifies locations that have had cumulative higher totals. Figures 8 through 17 describe the ten-year collision pattern for these ten intersections.

Table 1: Four-Year Highest Injury Collision Intersections,
2012-2015 Intersections with 21 or More Injury Collisions

Street A	Street B	2012-2015 Injury Collisions	2012-2015 Pedestrian Involved	2012-2015 Bicycle Involved
5th Street	Market Street	25	14	12
Oak Street	Octavia Street	25	2	2
Bayshore Boulevard	Paul Avenue	24	6	2
Grove Street	Van Ness Avenue	24	6	3
Crossover Drive	Martin Luther King Jr Drive	23	0	4
6th Street	Folsom Street	23	2	8
13th Street/Division	Mission/Otis Streets	22	4	5
16th Street	Potrero Avenue	22	10	4
Market Street	Octavia Boulevard	22	4	15
Bay Street	Van Ness Avenue	21	2	2

Figure 7: Four-Year Highest Injury Collision Intersections,
2012-2015 Intersections with 21 or More Injury Collisions



1. 5th and Market Streets

2012-2015 injury collisions: 25

Primary Collision Factors: CVC 22350: Speeding (20 percent), CVC 22101 (D): illegal turns (16 percent), CVC 21456 (B): pedestrians starting during countdown (16 percent)

Primary Collision Types: Vehicle-pedestrian (40 percent), sideswipe (16 percent).

Engineering Changes: In 2015 the SFMTA implemented the Safer Market Street project. This project included significant turn restrictions at a number of locations on the downtown portion of Market Street. Intersection signal timing changes in 2016 added pedestrian leading intervals. This intersection, along with other Market Street intersections, is under review for more significant long-term changes under the Better Market Street project. Intersection may also be affected by short-term transit reroutes due to the Central Subway Stockton Street closure.

Collision Trend: Increase in collision totals since 2006 but with a drop recorded in 2015. The intersection had the highest vehicle-pedestrian totals for the 2012-2015 reporting period (14 injury pedestrian crashes) and is also a high bicycle crash location.

Figure 8: 5th Street and Market Street,
Injury Collisions (2005-2015)

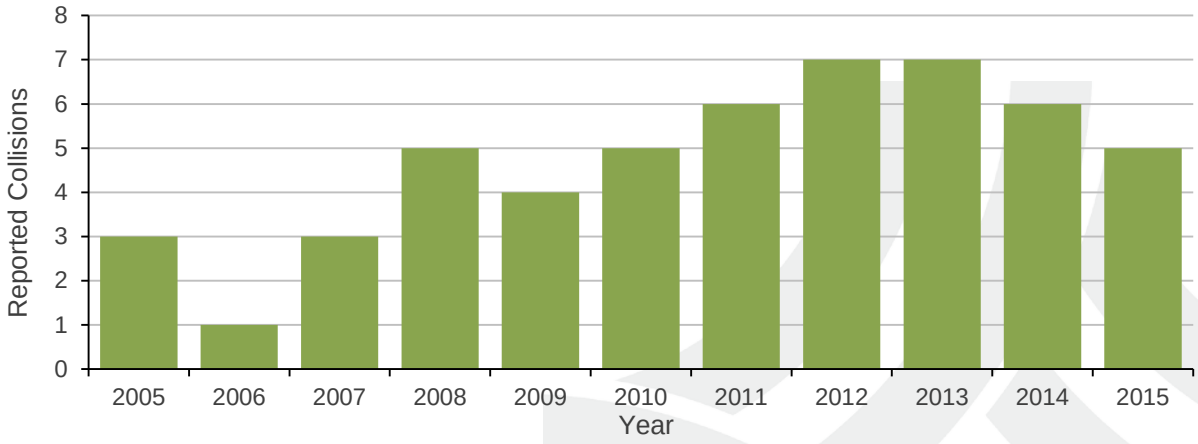


Figure 8: 5th Street and Market Street,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	3	1	3	5	4	5	6	7	7	6	5

2. Oak Street and Octavia Boulevard

2012-2015 injury collisions: 25

Primary Collision Factor: CVC 21453 (A): Driver violation of a traffic signal (40 percent)

Primary Collision Types: Broadsides (58 percent)

Engineering Changes: The Oak Street approach to Octavia was last reconfigured in April of 2015 to remove queuing and merging problems present with heavy right turns. New signal mast arm and overhead lane control signs were added as well. Intersection has a red light camera, with additional photo enforcement of the right turn lanes on Oak Street currently in design. Location is pending for additional median work as part of a larger set of roadway adjustments being evaluated for Octavia Boulevard.

Collision Trend: Decline from 2006 to 2009. Intersection has been averaging over 6 injury crashes a year since 2013. It is premature to estimate how 2015 engineering changes will affect the crash history going forward.

Figure 9: Oak Street and Octavia Boulevard,
Injury Collisions (2005-2015)

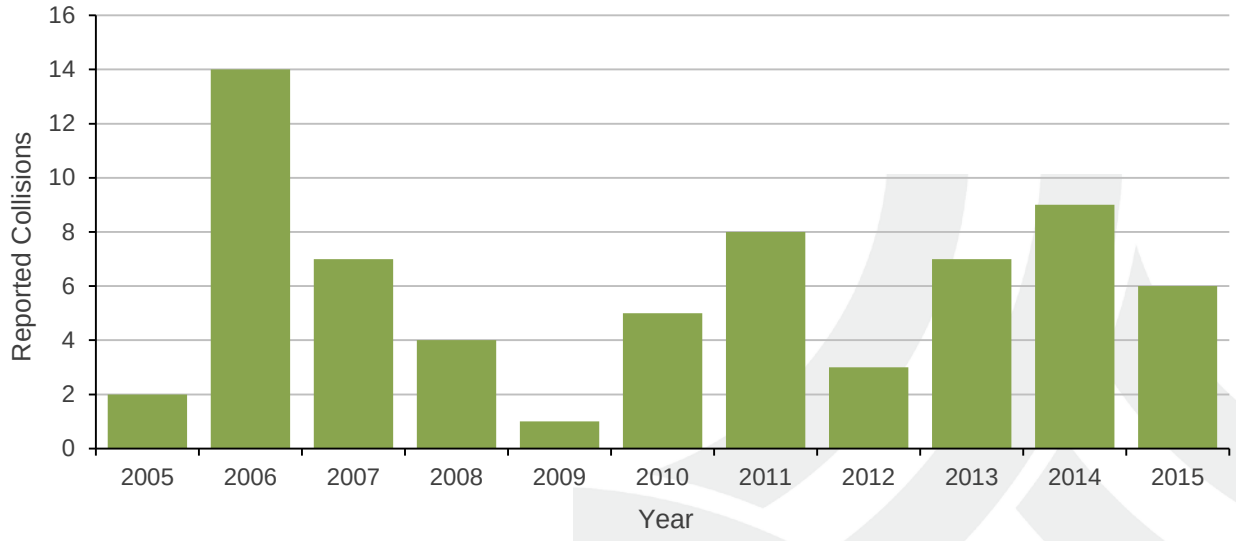


Figure 9: Oak Street and Octavia Boulevard,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	2	14	7	4	1	5	8	3	7	9	6

3. Bayshore Boulevard and Paul Avenue

2012-2015 injury collisions: 24

Primary Collision Factors: CVC 21801 (A): Failure to yield for left or U-turn (33 percent), CVC 21950 (A): Failure to yield to pedestrian at a crosswalk (25 percent), CVC 21453 (A): Driver violation of a traffic signal (17 percent)

Primary Collision Types: Broadsides (29 percent), head-on (25 percent) and vehicle-pedestrian (25 percent)

Engineering Changes: The SFMTA completed a major signal upgrade at this location in 2014 that added new pedestrian signal controls, mast arms, and provided protected signalized left turns from Bayshore Boulevard. The significant drop in collisions in 2015 suggest these changes improved the safety of the intersection, though location will be continued to be monitored.

Collision Trend: Sharp increase in crashes in 2012-2013 but an equally sharp drop after the SFMTA traffic signal project was completed.

Figure 10: Bayshore Boulevard and Paul Avenue,
Injury Collisions (2005-2015)

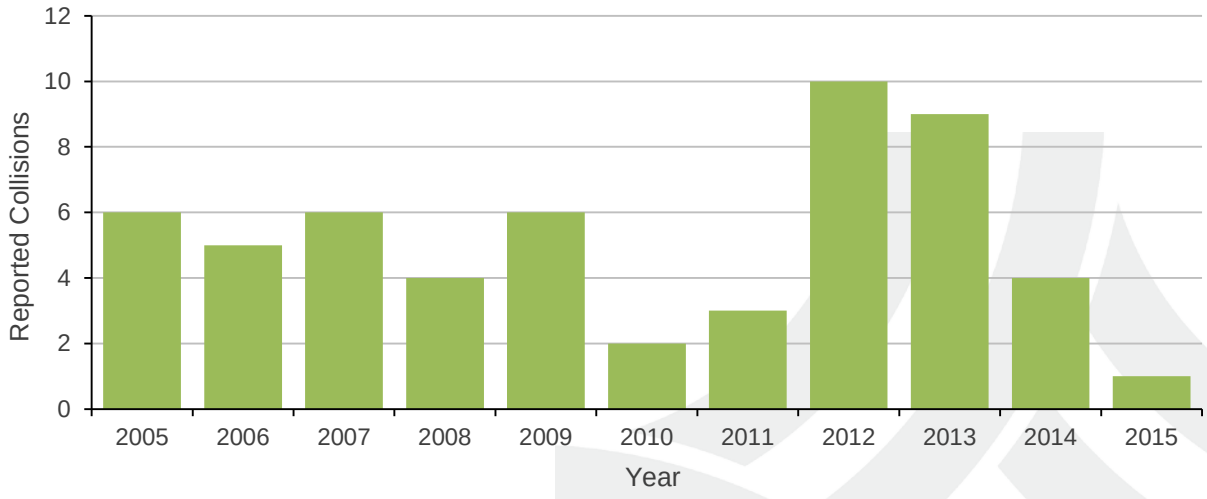


Figure 10: Bayshore Boulevard and Paul Avenue,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	6	5	6	4	6	2	3	10	9	4	1

4. Grove Street and Van Ness Avenue

2012-2015 injury collisions: 24

Primary Collision Factors: CVC 21950 (A): Failure to yield to pedestrian at a crosswalk (17 percent), CVC 21801 (A): Failure to yield for left or U-turn (17 percent), CVC 21453 (A): Driver violation of a traffic signal (13 percent)

Primary Collision Causes: Broadsides (46 percent) and vehicle-pedestrian (25 percent).

Engineering Changes: Intersection is pending major redesign as part of the Van Ness Avenue Bus Rapid Transit (BRT) project starting construction in November of 2016. Left turns from Van Ness Avenue will be prohibited shortly, a factor in some of the recent collisions being reported. Major signal upgrade with mast arms pending.

Collision Trend: Increasing, with 2014-2015 the worst two years in the past decade.

Figure 11: Grove Street and Van Ness Avenue,
Injury Collisions (2005-2015)

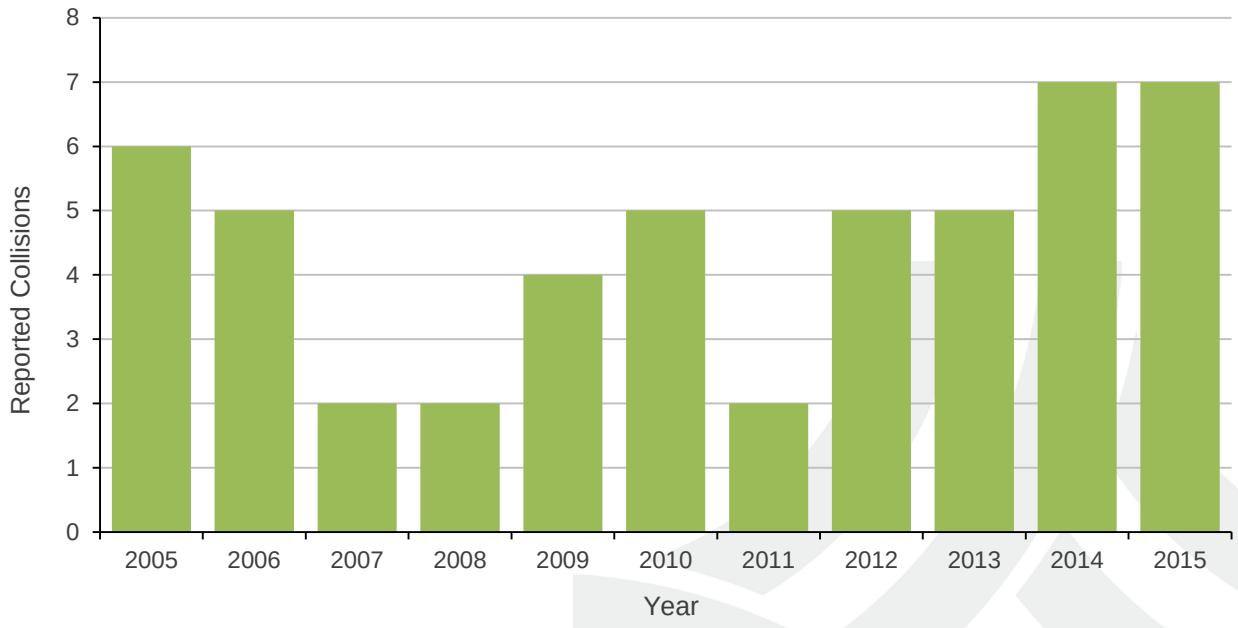


Figure 11: Grove Street and Van Ness Avenue,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	6	5	2	2	4	5	2	5	5	7	7

5. 6th Street and Folsom Street

2012-2015 injury collisions: 23

Primary Collision Factors: CVC 21453 (A): Driver violation of a traffic signal (39 percent), CVC 22350: Unsafe speed for conditions (17 percent), CVC 22107: unsafe lane change (13 percent)

Primary Collision Types: Broadsides (61 percent) and rear-end (22 percent)

Engineering Changes: Signal was retimed in October of 2015 to update yellows and all-red phases. Buffered bicycle lane was installed along Folsom Street from 11th to 4th Streets in 2013. New red light camera installation pending. Longer-term street design evaluation of both the 6th Street and Folsom Street corridors underway.

Collision Trend: 2013 had a notable spike in annual crash totals.

Figure 12: 6th Street and Folsom Streets,
Injury Collisions (2005-2015)

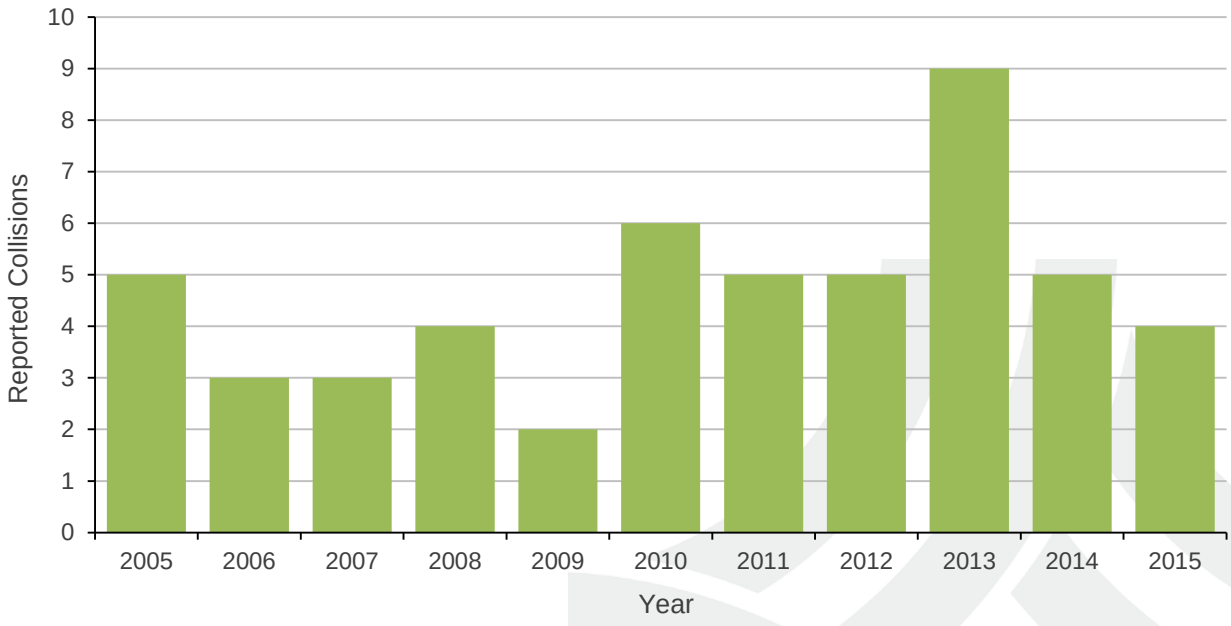


Figure 12: 6th Street and Folsom Streets,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	5	3	3	4	2	6	5	5	9	5	4

6. Crossover Drive and Martin Luther King Jr. Drive

2012-2015 injury collisions: 23

Primary Collision Factors: CVC 21801 (A): Failure to yield for left or U-turn (39 percent), CVC 21453 (A): Driver violation of a traffic signal (17 percent), CVC 22107: unsafe lane change (17 percent)

Primary Collision Types: Broadsides (42 percent) and head-on (25 percent)

Engineering Changes: A number of crashes are occurring due to left turns from Martin Luther King Jr. Drive onto Crossover Drive. SFMTA is working with Caltrans, which has jurisdiction over Crossover Drive (State Route 1), to consider signal phasing changes for these left turns.

Collision Trend: New location to the high injury list. Increase in collision totals since 2012, with 2013 and 2015 recording the highest annual totals in recent history.

Figure 13: Crossover and Martin Luther King Jr. Drives,
Injury Collisions (2005-2015)

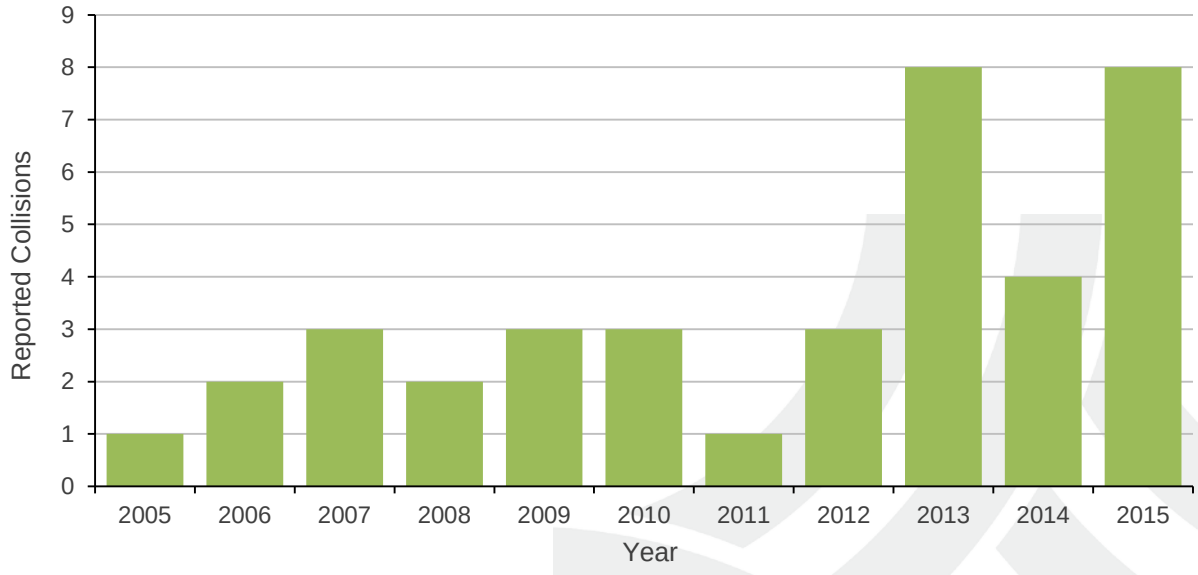


Figure 13: Crossover and Martin Luther King Jr. Drives,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1	2	3	2	3	3	1	3	8	4	8

7. 13th, Mission, and Otis Streets

2012-2015 injury collisions: 22

Primary Collision Factors: CVC 22101 (D): Illegal turning movement at intersection (23 percent), CVC 21453 (A): Driver violation of a traffic signal (14 percent), CVC 22350: Unsafe speed for conditions (14 percent)

Primary Collision Types: Broadsides (50 percent) and vehicle-pedestrian (19 percent)

Engineering Changes: Intersection was reviewed in 2011 and SFMTA modified the all-red signal clearance phases, pedestrian crossing times, and coordination with adjacent traffic signals. Intersection was retimed again in 2015 with new all-reds, leading pedestrian intervals, and yellow times.

Collision Trend: Location has had a varying collision pattern, with collisions most recently decreasing since a high of 2012.

Figure 14: 13th, Mission and Otis Streets,
Injury Collisions (2005-2015)

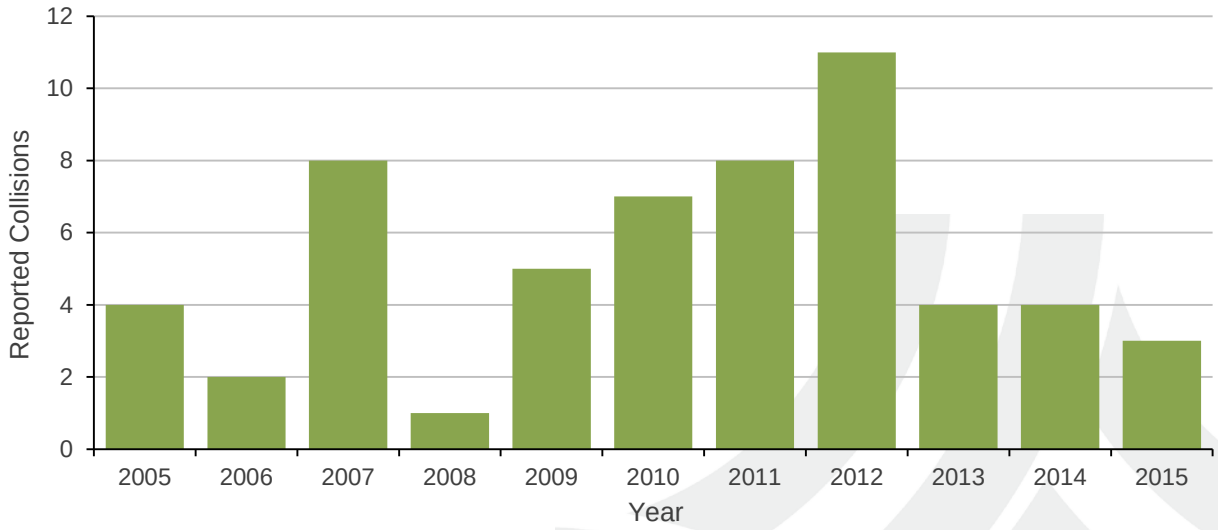


Figure 14: 13th, Mission and Otis Streets,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	4	2	8	1	5	7	8	11	4	4	3

8. 16th Street and Potrero Avenue

2012-2015 injury collisions: 22

Primary Collision Factors: CVC 22350: Unsafe speed for conditions (23 percent), CVC 21950 (A): Failure to yield to pedestrian at a crosswalk (14 percent), 21453 (D): Pedestrian violation of traffic signal (14 percent)

Primary Collision Types: Vehicle-pedestrian (43 percent) and broadside (24 percent)

Engineering Changes: Major signal upgrade completed in 2005. Added new timing plan in 2014 with new yellow timing and leading pedestrian intervals. Intersection area pending further redesign as part of 16th Street Muni Forward project.

Collision Trend: Two high annual total spikes in 2009 and 2015, with variable pattern in between.

Figure 15: 16th Street and Potrero Avenue,
Injury Collisions (2005-2015)

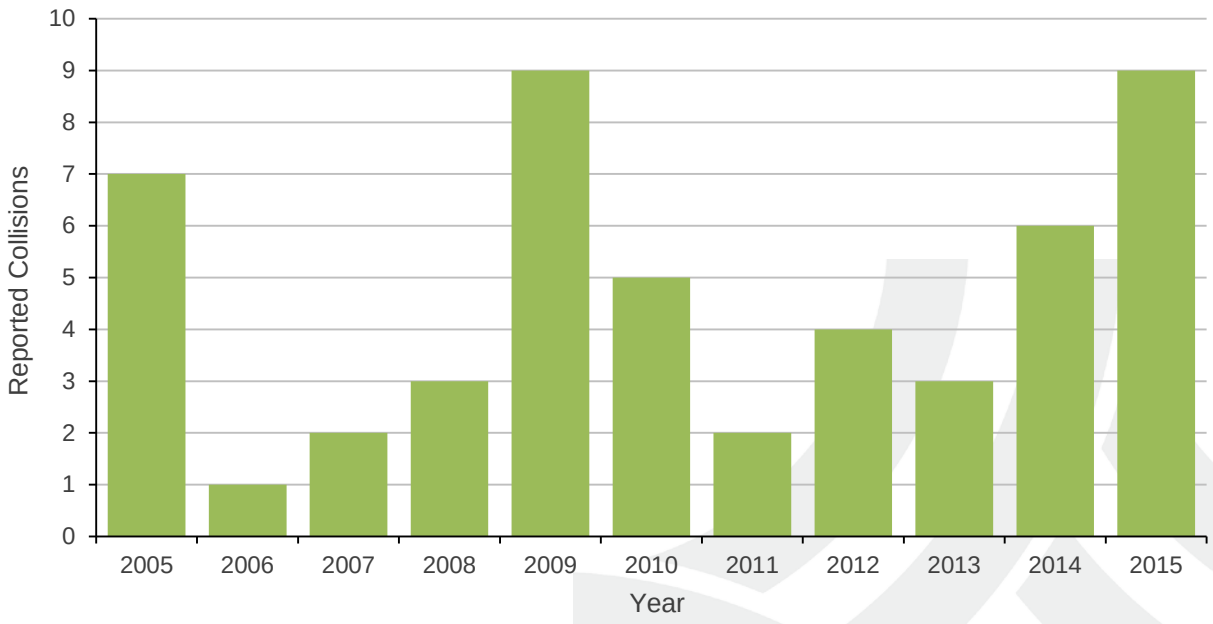


Figure 15: 16th Street and Potrero Avenue,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	7	1	2	3	9	5	2	4	3	6	9

9. Market Street and Octavia Boulevard

2012-2015 injury collisions: 22

Primary Collision Factor: CVC 22101 (D): Illegal turning movement at intersection (50 percent)

Primary Collision Types: Broadside (56 percent), vehicle-bicycle (68 percent).

Engineering Changes: Intersection completely redesigned as part of Octavia Boulevard project (opening date September 2005). City has taken a number of enforcement, signage, timing, and channelizing measures to improve compliance with right-turn restriction on eastbound Market, a key source of collisions. Location is controlled by automated enforcement of illegal right turns from eastbound Market Street since 2013. Crosswalks markings were upgraded in 2012. Pending capital changes as part of Octavia Boulevard redesign study.

Collision Trend: Decrease in collision totals since high of 14 injury crashes in 2011.

Figure 16: Market Street and Octavia Boulevard,
Injury Collisions (2005-2015)

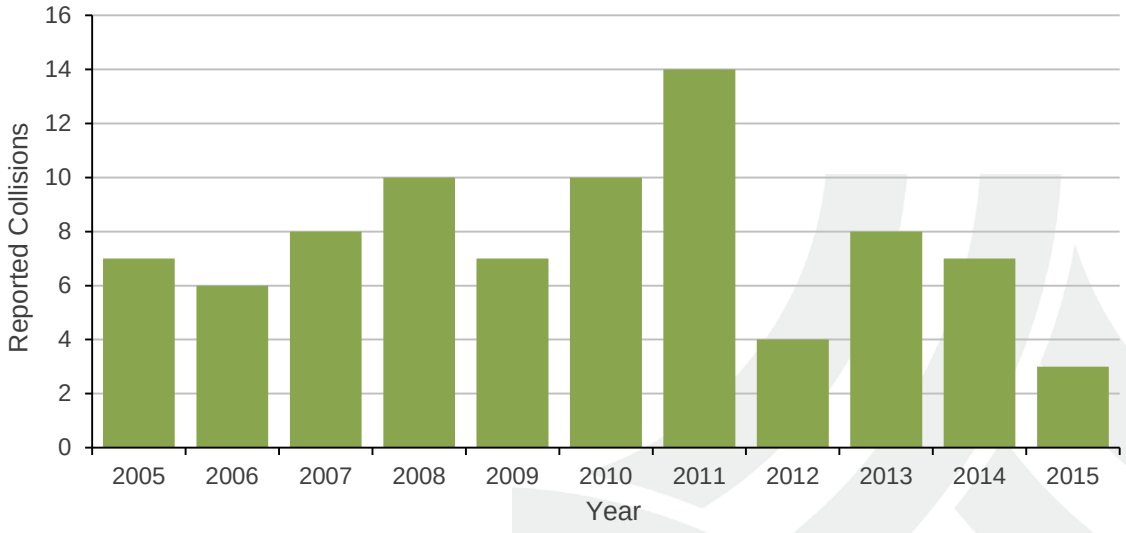


Figure 16: Market Street and Octavia Boulevard,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	7	6	8	10	7	10	14	4	8	7	3

10. Bay Street and Van Ness Avenue

2012-2015 injury collisions: 21

Primary Collision Factors: CVC 21801 (A): Failure to yield for left or U-turn (38 percent), CVC 21453 (A): Driver violation of a traffic signal (14 percent)

Primary Collision Types: Broadsides (39 percent) and head-on (35 percent)

Engineering Changes: Intersection reviewed in 2016. Pending signal upgrade as part of Van Ness Avenue Bus Rapid Transit (BRT) project to add mast arms and potential left turn phasing for northbound Van Ness Avenue.

Collision Trend: Unchanged collision total under five a year from 2007 to 2013, but recent spike in 2014-2015 places it in the high crash intersection list.

Figure 17: Bay Street and Van Ness Avenue,
Injury Collisions (2005-2015)

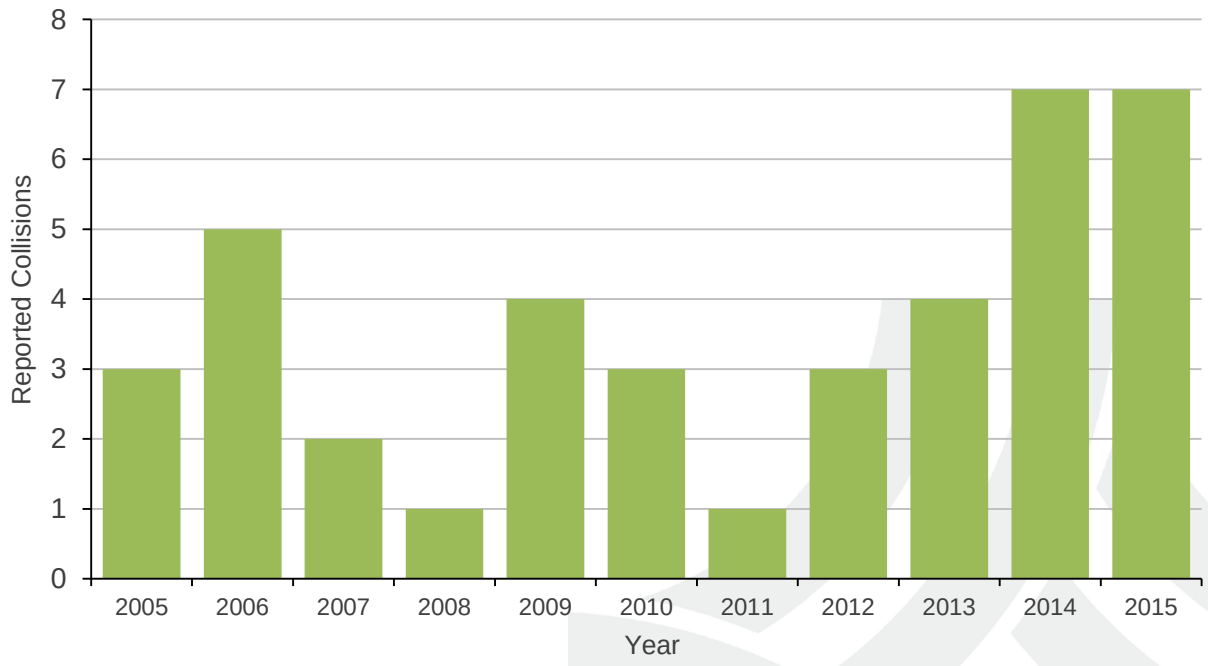


Figure 17: Bay Street and Van Ness Avenue,
Injury Collisions (2005-2015)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	3	5	2	1	4	3	1	3	4	7	7

PART 4: PEDESTRIAN AND BICYCLE COLLISIONS

A high percentage of San Francisco injury crashes involve vulnerable road users. Approximately a fourth of San Francisco's vehicle injury collisions involve pedestrians (Table 2). Well over half of fatal crashes (61 percent) involved pedestrians and they also constituted the highest percentage of crashes with severe injuries (38 percent).

Injury collisions involving people riding bicycles are also high as a percentage of their share of roadway usage. Bicycle crashes have increased as a share of the City's reported injury total, nearly doubling in the past ten years. From 2002 to 2005, eight percent of injury collisions involved a person riding a bicycle. That total is now 17 percent.[4]

Table 2: Motor Vehicle Involved With Injury Collisions (2012-2015)

Motor Vehicle Involved With	Fatal		Severe Injury		Other Visible Injury		Complaint of Pain		Total	
	Total	%	Total	%	Total	%	Total	%	Total	%
Pedestrian	76	61%	303	38%	994	28%	1,762	22%	3,135	25%
Other Motor Vehicle	22	18%	200	25%	981	28%	4,133	52%	5,336	43%
Bicycle	11	9%	131	17%	876	25%	1,032	13%	2,050	17%
Parked Motor Vehicle	3	2%	36	5%	162	5%	271	3%	472	4%
Fixed Object	10	8%	52	7%	193	5%	243	3%	498	4%
Other	2	2%	69	9%	346	10%	501	6%	918	7%
Total	124		791		3552		7942		12409	

[4] Past research has found that cyclist injuries, particularly cyclist only, are under-reported in police data. The comprehensive surveillance system to be released this year by SFDPH will help address this data gap.

Pedestrian-Involved Collisions

The 2015 total of 724 injury collisions involving a pedestrian is one of the lowest reported in the past decade and significantly down from the total reported in 2012 (Figure 18). Up to the year 2004, pedestrian collisions continued a steady decline from the over 1,000 incidents that were recorded annually in the 1990's. Since 2004 pedestrian injury collision totals have unfortunately not declined further, remaining above the 700 a year level.

Figure 18: San Francisco Injury Collisions Involving Pedestrians (2000-2015)

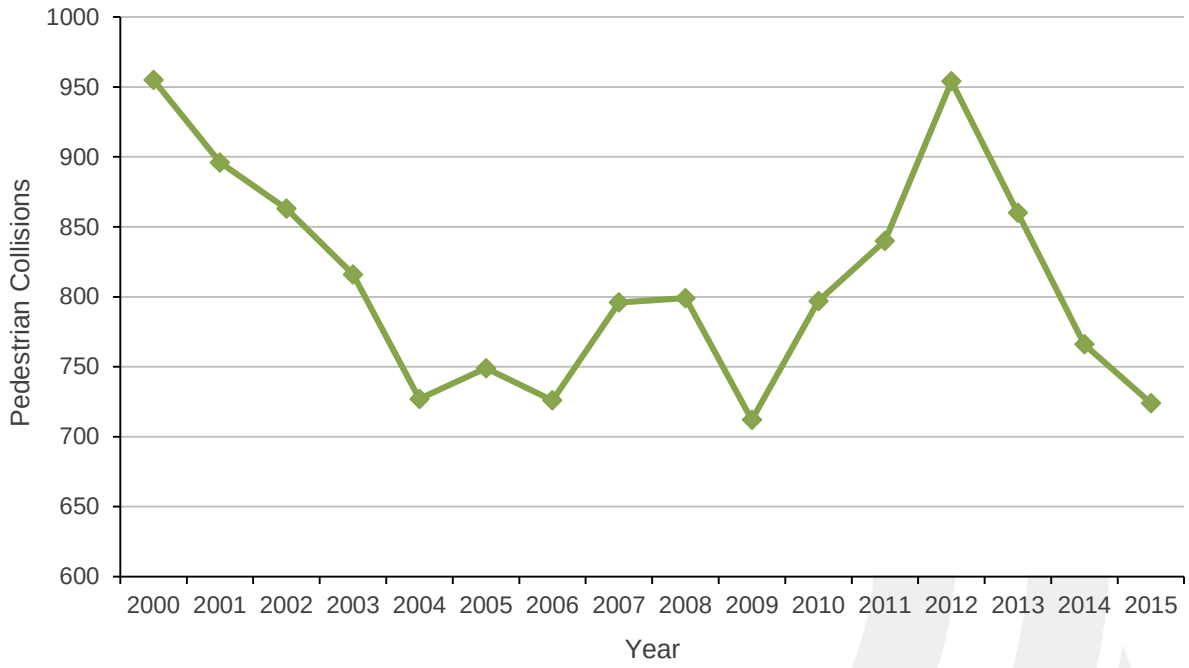


Figure 18: San Francisco Injury Collisions Involving Pedestrians (2000-2015)

Year	2000	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	955	726	796	799	712	797	840	954	860	766	724

The number of fatal collisions involving a pedestrian was 20 in 2015, tied for second highest of the past ten years (Figure 19). More than half of San Francisco's fatal collisions involve pedestrians. The City has yet to average less than one pedestrian fatality a month in any one year. While San Francisco has not seen a reduction in traffic fatalities in the last decade, the City fortunately has not experienced an increase in traffic fatalities, which is the national trend. Current estimates by the federal government indicate pedestrian fatalities in the United States increased 10 percent in 2015 compared to 2014.[5] It is critical that San Francisco continue to reduce traffic fatalities even if overall motor vehicle miles driven or pedestrian activity increases.

Figure 19: San Francisco Pedestrian
Fatal Collision Totals (2000-2015)

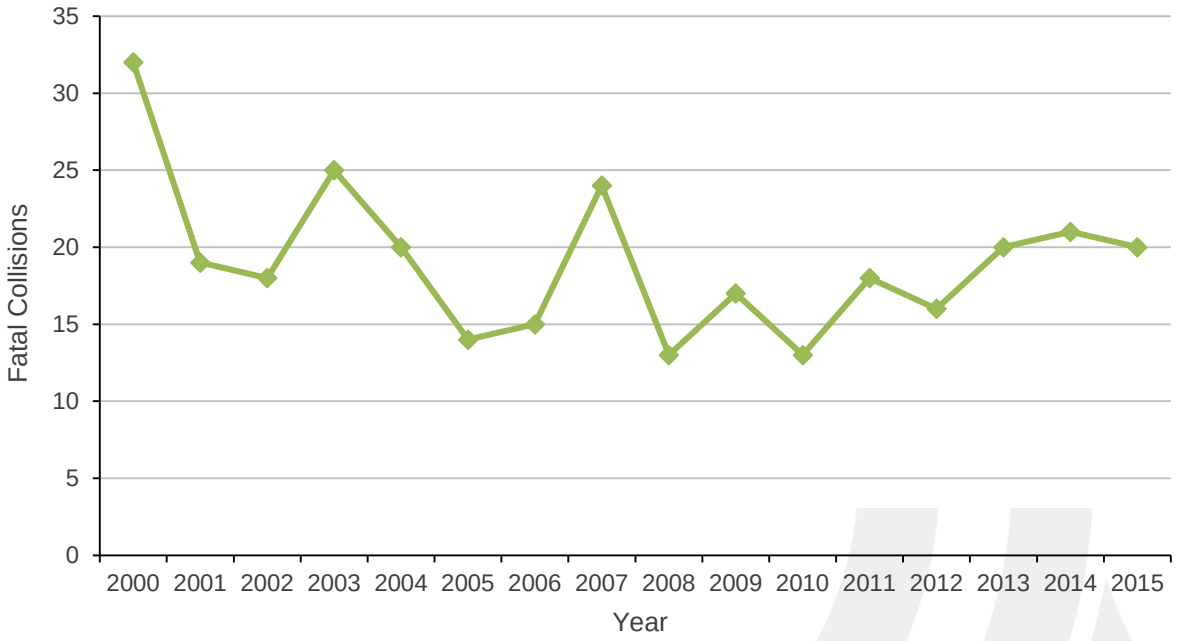


Figure 19: San Francisco Pedestrian
Fatal Collision Totals (2000-2015)

Year	2000	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	32	15	24	13	17	13	18	16	20	21	20

[5] See National Highway Traffic Safety Administration, *Early Estimate of Motor Vehicle Traffic Fatalities in 2015,* https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812269 and *Early Estimate of Motor Vehicle Traffic Fatalities for the First Half (Jan-Jun) of 2016*, https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812332

Figure 20 summarizes which CVC violations are associated with vehicle-pedestrian crashes. The most common violations on the part of motorists are failure to yield at crosswalks (CVC 21950 A) and unsafe speed (CVC 22350). Common right-of-way violations are when motorists are making left or right turns at intersections, or when a vehicle fails to yield at a crosswalk when going straight. About two-thirds of collisions are the fault of the vehicle driver according to the SFPD collision reports. The most common violations by pedestrians are failure to yield right-of-way outside crosswalk (CVC 21954 A) and crossing between signalized intersections (CVC 21955).

Figure 20: 2012-2015 Pedestrian Injury and Fatal Collisions by CVC Violation (Total of 3,304)

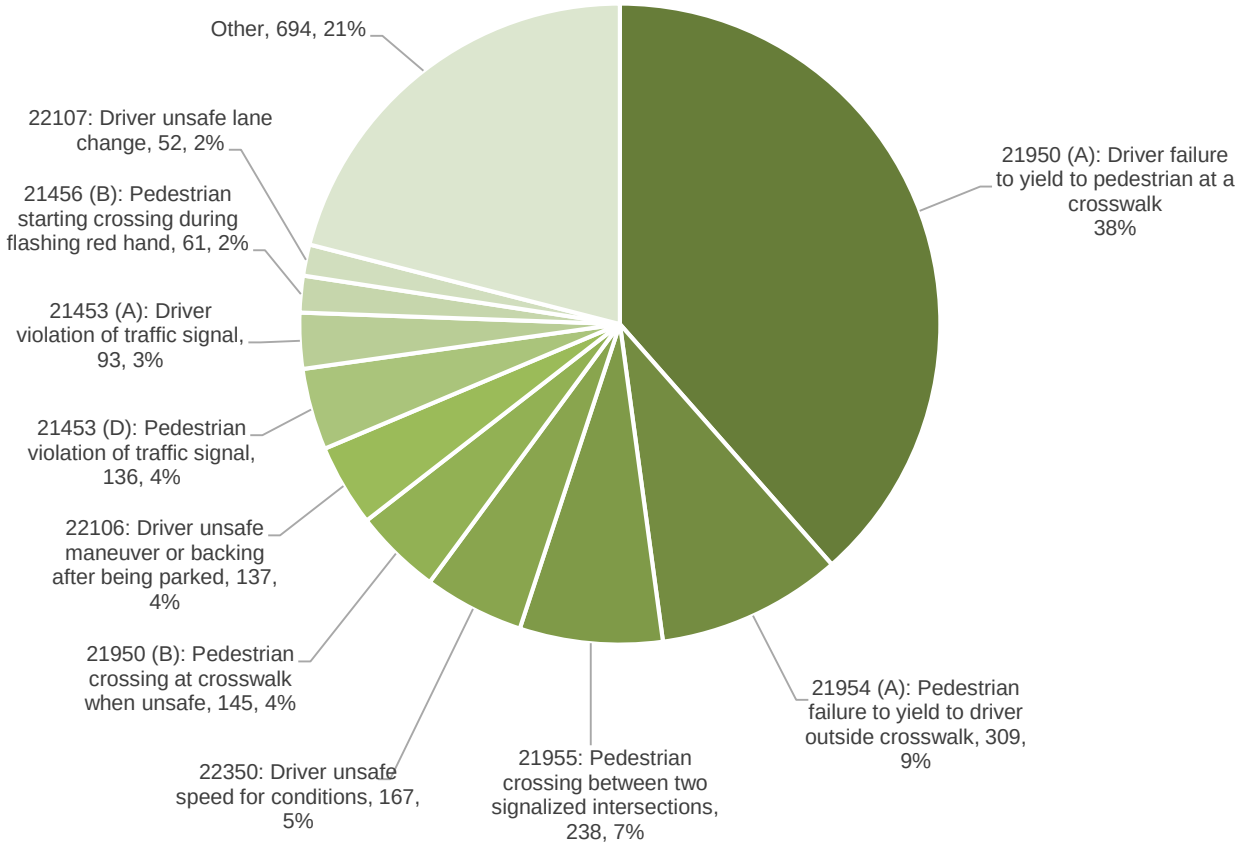


Figure 20: 2012-2015 Pedestrian Injury and Fatal Collisions by CVC Violation (Total of 3,304)

CVC Violation	Collisions	Percent
21950 (A): Driver failure to yield to pedestrian at a crosswalk	1272	38%
21954 (A): Pedestrian failure to yield to driver outside crosswalk	309	9%
21955: Pedestrian crossing between two signalized intersections	238	7%
22350: Driver unsafe speed for conditions	167	5%
21950 (B): Pedestrian crossing at crosswalk when unsafe	145	4%
22106: Driver unsafe maneuver or backing after being parked	137	4%
21453 (D): Pedestrian violation of traffic signal	136	4%
21453 (A): Driver violation of traffic signal	93	3%
21456 (B): Pedestrian starting crossing during flashing red hand	61	2%
22107: Driver unsafe lane change	52	2%
Other	694	21%

Table 3 shows highest injury vehicle-pedestrian collision locations for the four-year period 2012-2015. A map of these locations is provided in Figure 21. The top two crash locations are now on 5th Street, with the top location being 5th and Market Streets. Previous high crash locations had been on the 6th Street corridor, where the SFMTA has undertaken measures in the past to improve pedestrian safety conditions, including signal timing, new signals, and lane control changes. Many of the intersections in Table 3 are in the Tenderloin.[6] In 2015 the SFMTA implemented a targeted effort to improve pedestrian safety in the Tenderloin by improving sight lines at intersection corners through parking removals.

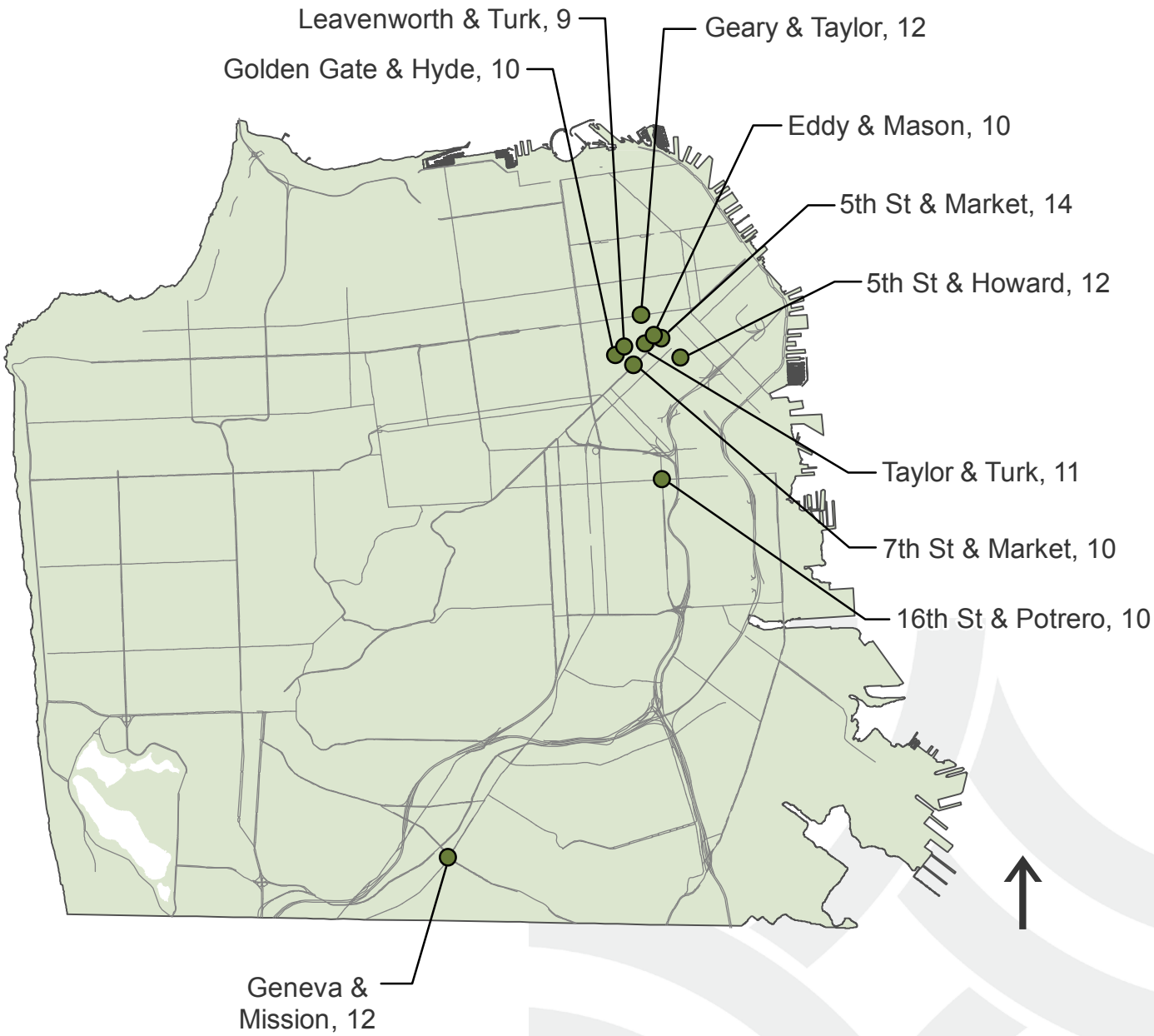
Through Vision Zero, traffic safety project prioritization is being focused on the High Injury Network, the 12 percent of city streets that captures 70 percent of severe and fatal collisions[7].

Table 3: Four-Year Highest Injury Vehicle-Pedestrian Collision Intersections
Intersections with Nine or More Injury Collisions, 2012-2015

Street A	Street B	2012-2015 Injury Collisions
5th Street	Market Street	14
5th Street	Howard Street	12
Geary Street	Taylor Street	12
Geneva Avenue	Mission Street	12
Taylor Street	Turk Street	11
Golden Gate Ave	Hyde Street	10
7th Street	Market Street	10
Eddy Street	Mason Street	10
16th Street	Potrero Avenue	10
Leavenworth Street	Turk Street	9

[6] For historical background on the highest crash areas for pedestrians as well as measures that can be used to improve pedestrian safety see San Francisco's WalkFirst website: http://walkfirst.sfplanning.org/
[7] For maps of the current High Injury Network see http://visionzerosf.org/maps-data/

Figure 21: Four-Year Highest Injury Vehicle-Pedestrian Collision Intersections
Intersections with Nine or More Injury Collisions, 2012-2015



Bicycle-Involved Collisions

There were 653 injury collisions in 2012 involving a bicycle as a party, the highest total in the past decades. The 2013-2015 injury collision total dropped and has now stabilized in the mid to upper 500's (Figure 22). While the exact reasons for the increase in injuries since 2006 are not known, it coincided with an increase in the number of people riding on city streets during the same period, as measured by annual counts taken by the SFMTA.[8] From 2010 to 2014 the SFMTA made bicycle related improvements on approximately 160 lane miles of city streets, which is approximately 37 percent of San Francisco's bicycle route network. Much work remains to identify and complete safety projects on the bicycle High Injury Network.[9]

Figure 22: San Francisco Injury Collisions
Involving Bicycles (2001-2015)

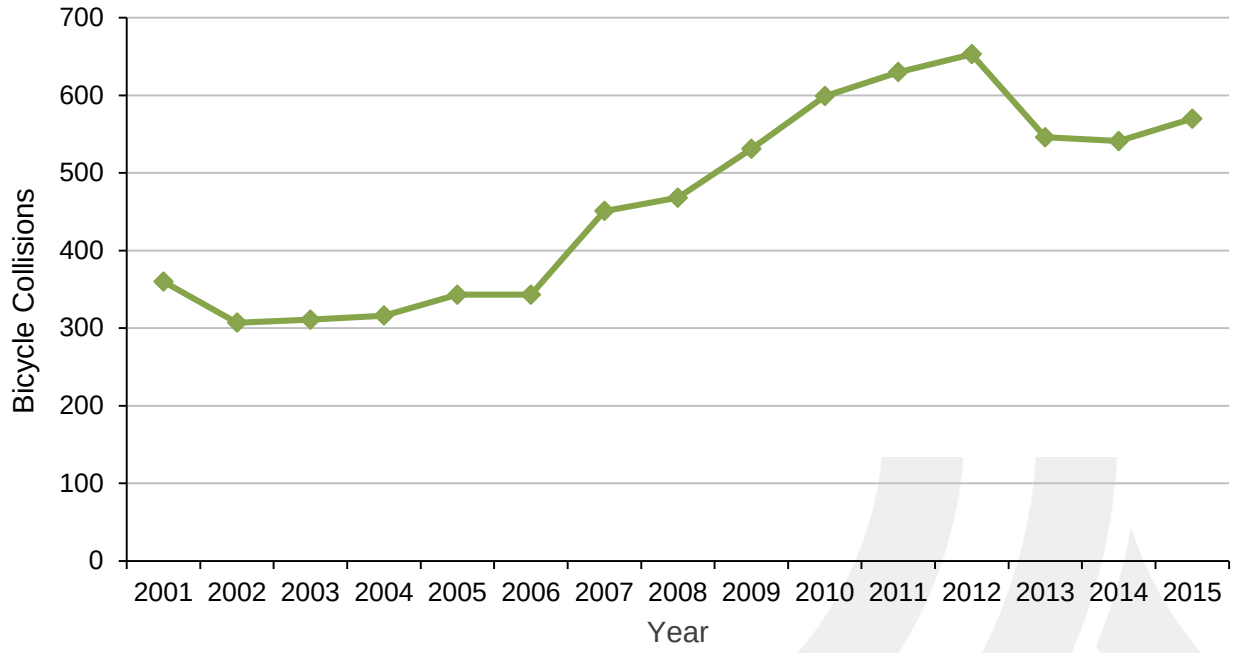


Figure 22: San Francisco Injury Collisions
Involving Bicycles (2001-2015)

Year	2001	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	364	343	451	468	532	601	630	653	546	541	570

[8] See SFMTA *Annual Bicycle Count Report 2015*. www.sfmta.com
[9] For maps of the current High Injury Network see http://visionzerosf.org/maps-data/

Figure 23 summarizes fatal and severe bicycle collision totals for 2006-2015. 2015 had the highest totals by severity, with 50 severe injury collisions and 4 fatalities.

Figure 23: Fatal and Severe Injury Collisions Involving Bicycles (2006-2015)

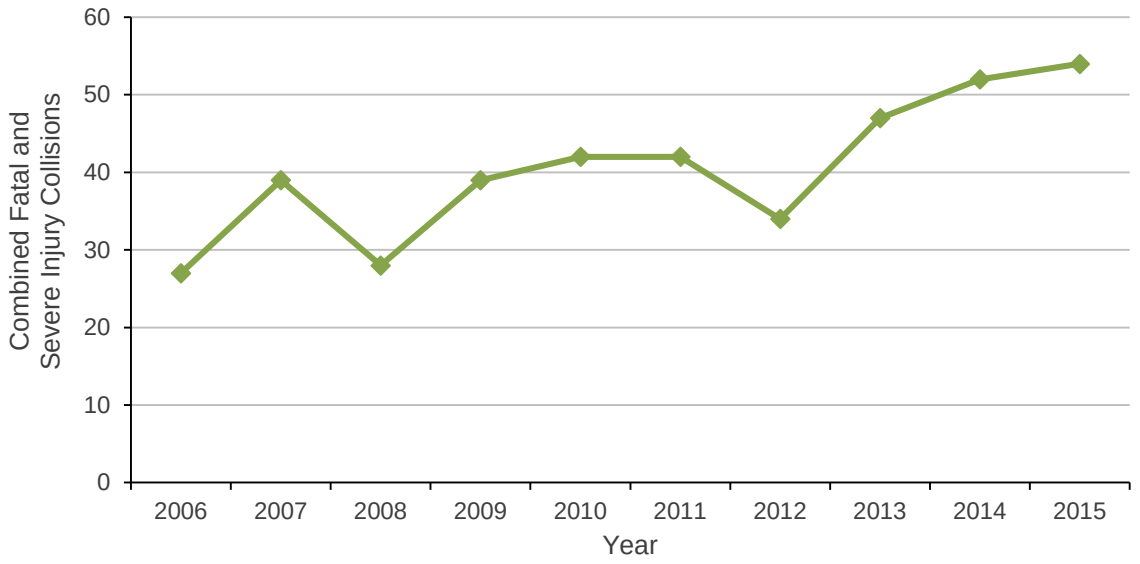


Figure 21: Fatal and Severe Injury Collisions Involving Bicycles (2006-2015)

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatal Collisions	2	1	3	1	2	4	2	3	3	4
Severe Collisions	25	38	25	38	40	38	32	44	49	50
Combined Severe and Fatal Collisions	27	39	28	39	42	42	34	47	52	54

Figure 24 presents the primary collision type for injury collisions involving at least one party on a bicycle. The most common crash pattern are broadsides and sideswipes.

Figure 24: 2012-2015 Bicycle Injury and Fatal Collisions by Primary Collision Type (Total of 2,310)

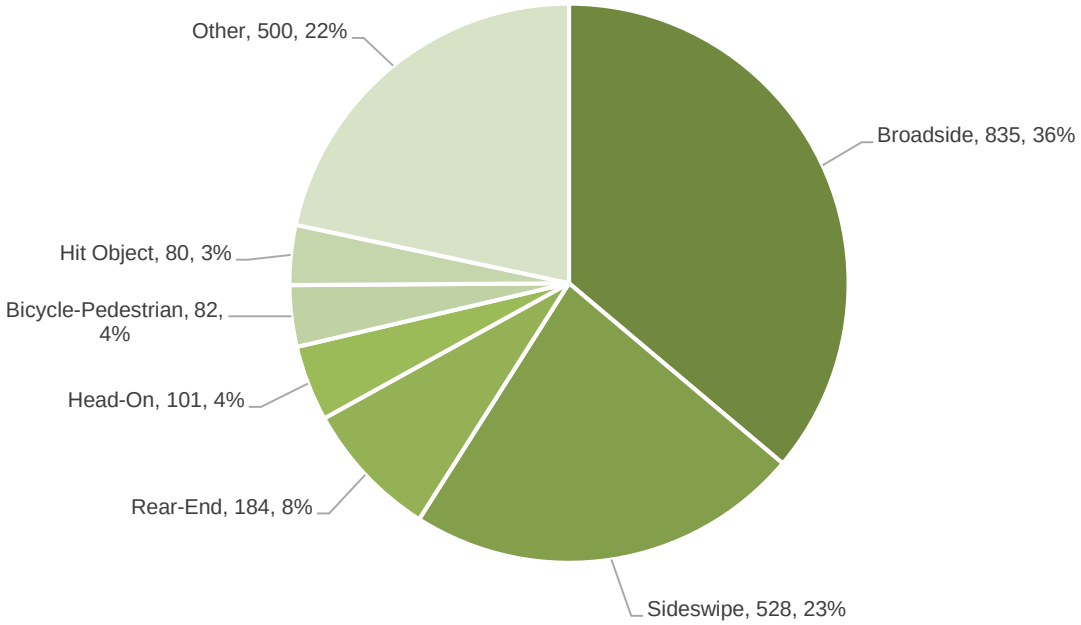


Figure 24: 2012-2015 Bicycle Injury and Fatal Collisions by Primary Collision Type (Total of 2,310)

Type	Collisions	Percent
Broadside	835	36%
Sideswipe	528	23%
Rear-End	184	8%
Head-On	101	4%
Bicycle-Pedestrian	82	4%
Hit Object	80	3%
Other	500	22%

Figures 25 and 26 present CVC violation factors for bicycle injury collisions, showing the top violation factors for when a bicyclist is not the party at fault versus being the party at fault, respectively. Fault for collisions seems to be evenly split among bicycle riders and drivers according to SFPD collision reports.

For injury collisions where the bicyclist is likely not the party at fault, nearly half of the collisions are attributed to three violation factors. These factors are driver unsafe lane changes (CVC 22107), driver opening door into moving traffic (CVC 22517), and driver failure to yield when making a left or U-turn (CVC 21801 A).

According to CVC 22517 it is illegal to open a door into “moving traffic.” This violation is a significant bicycle safety concern, since “dooring” collisions can result in injury to those riding close to parked vehicles. Reported injury crashes involving CVC 22517 violations and a person riding a bicycle constitute about 16 percent of injury bicycle crash totals in crashes where the bicyclist was not at fault (203 injury crashes 2012-2015).

For injury collisions where the bicyclist was likely the party at fault, the top violation factors were unsafe speed (CVC 22350), bicycle violation of a traffic signal (CVC 21453 A), and bicycle failure to stop at a STOP sign (CVC 22450 A).

Figure 25: 2012-2015 Bicycle Injury and Fatal Collisions
by CVC Violation, Bicyclist Likely Not Fault (Total of 1,235)

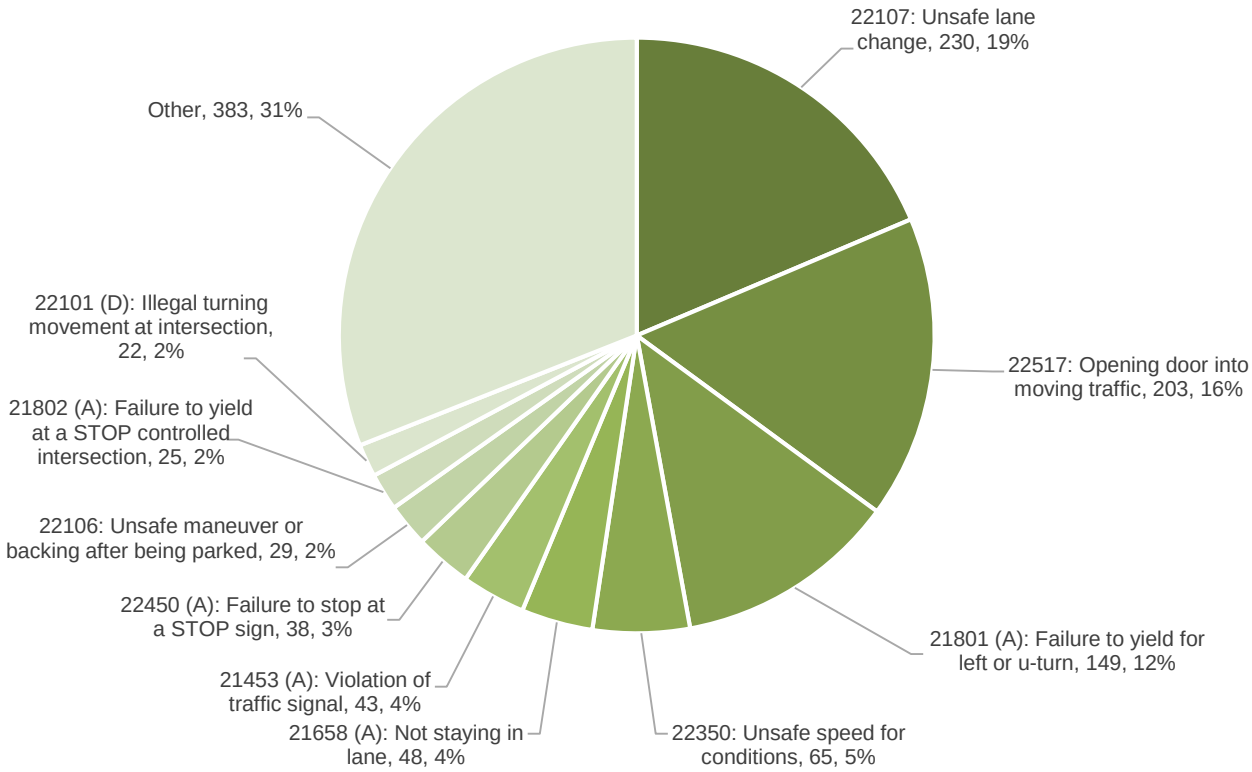


Figure 25: 2012-2015 Bicycle Injury and Fatal Collisions
by CVC Violation, Bicyclist Likely Not Fault (Total of 1,235)

CVC Violation	Collisions	Percent
22107: Unsafe lane change	230	19%
22517: Opening door into moving traffic	203	16%
21801 (A): Failure to yield for left or u-turn	149	12%
22350: Unsafe speed for conditions	65	5%
21658 (A): Not staying in lane	48	4%
21453 (A): Violation of traffic signal	43	3%
22450 (A): Failure to stop at a STOP sign	38	3%
22106: Unsafe maneuver or backing after being parked	29	2%
21802 (A): Failure to yield at a STOP controlled intersection	25	2%
22101 (D): Illegal turning movement at intersection	22	2%
Other	383	31%

Figure 26: 2012-2015 Bicycle Injury and Fatal Collisions
by CVC Violation, Bicyclist Likely at Fault (Total of 1075)

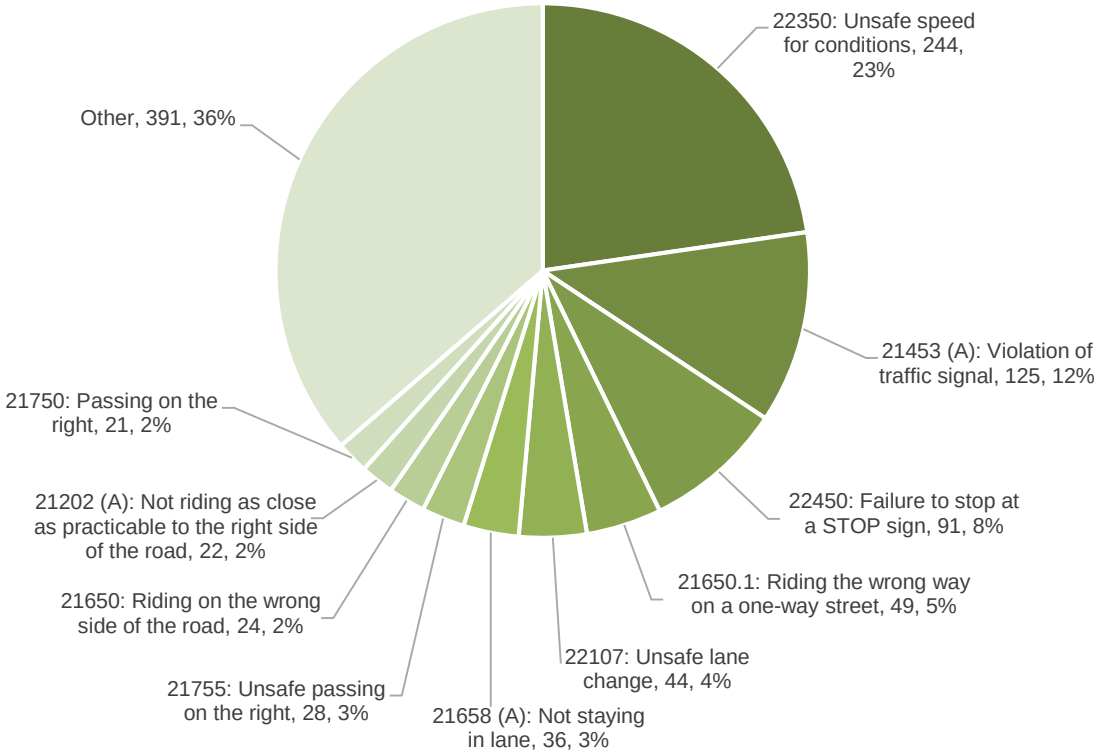


Figure 26: 2012-2015 Bicycle Injury and Fatal Collisions
by CVC Violation, Bicyclist Likely at Fault (Total of 1075)

CVC Violation	Collisions	Percent
22350: Unsafe speed for conditions	244	23%
21453 (A): Violation of traffic signal	125	12%
22450 (A): Failure to stop at a STOP sign	91	8%
21650.1: Riding the wrong way on a one-way street	49	5%
22107: Unsafe lane change	44	4%
21658 (A): Not staying in lane	36	3%
21755: Unsafe passing on the right	28	3%
21650: Riding on the wrong side of the road	24	2%
21202 (A): Not riding as close as practicable to the right side of the road	22	2%
21750: Passing on the right	21	2%
Other	391	36%

Table 4 is a list of the highest bicycle injury intersections for the last four years on record. A map of these locations is provided in Figure 27. The top two locations, Market Street at Octavia Boulevard and 5th and Market Streets, have been discussed in Part 3 of this report. At Market Street and Octavia Boulevard, four-year intersection bicycle crash totals have been cut in half relative to the previous four year period (2008-2011).

The SFMTA made bicycle lane striping changes on Market Street at Valencia Street in 2011 to reduce the likelihood of Market Street right-turn hook collisions, as well as a protected left turn bike treatment in 2012. Collisions at that intersection have also dropped by half from the previous four year period (2008-2011).

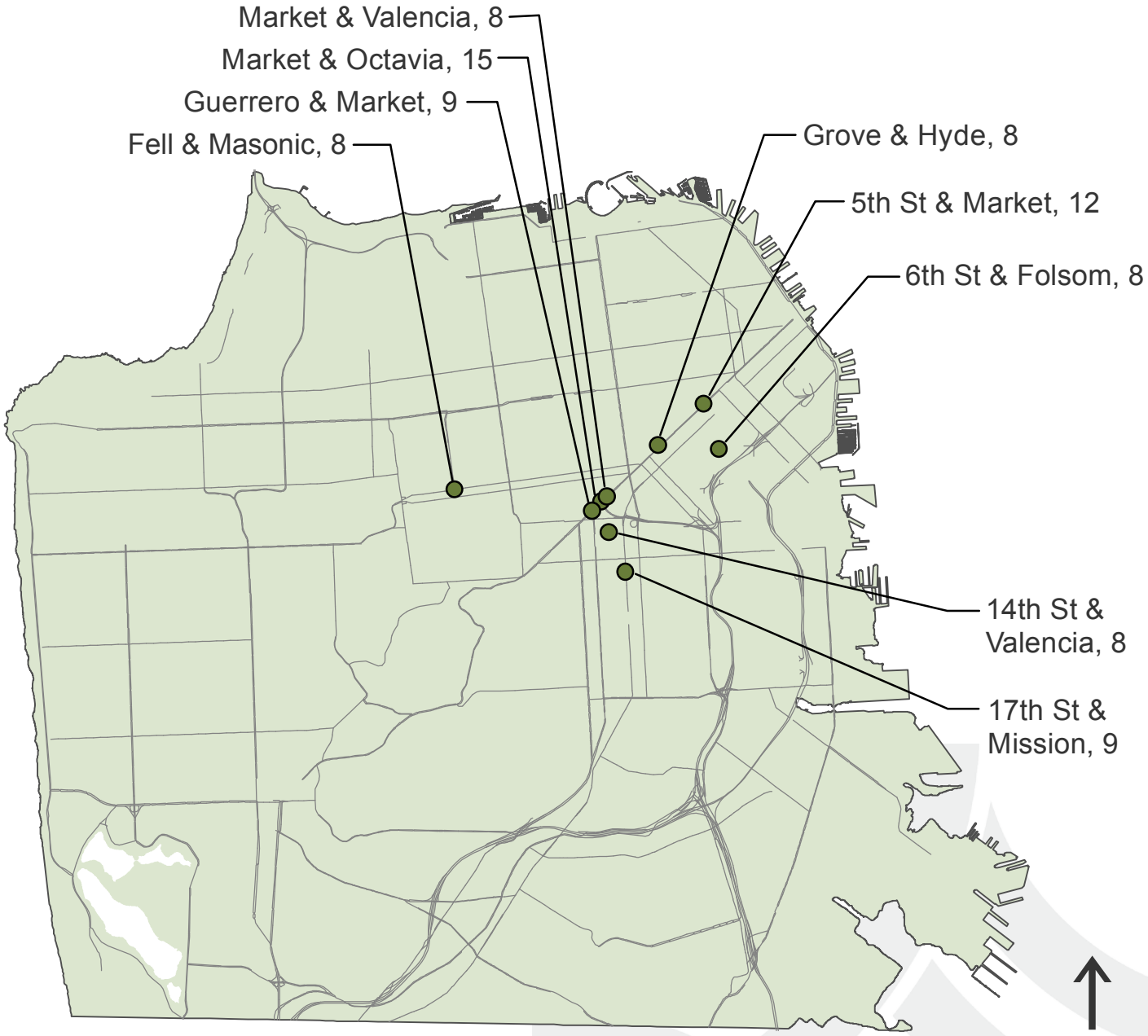
Guerrero and Market Streets, 6th and Folsom Streets, and Grove and Hyde Streets are being actively studied as part of existing corridor projects. These projects will review the collision histories and recommend treatments to reduce the number of bicycle collisions.

The remaining four locations on the list will be reviewed as part of on-going corridor planning studies or bicycle spot improvement program.

Table 4: Highest Bicycle Involved Injury Collision Intersections
8 or more injury reported collisions (2012-2015)

Street A	Street B	2012-2015 Injury Collisions
Market Street	Octavia Boulevard	15
5th Street	Market	12
17th Street	Mission Street	9
Guerrero Street	Market Street	9
14th Street	Valencia Street	8
6th Street	Folsom Street	8
Grove Street	Hyde Street	8
Fell Street	Masonic Avenue	8
Market Street	Valencia Street	8

Figure 27: Highest Bicycle Involved Injury Collision Intersections
8 or more injury reported collisions (2012-2015)



PART 5: OTHER COLLISION TOPICS

Figure 28 shows collision trends for collisions where an SFPD officer determined there was red light running on the part of one of the parties. 2015 reported the lowest total in 20 years (263).

Figure 28: Red Light Running Injury and Fatal Collisions, CVC 21453 (A) Violations (2000-2015)

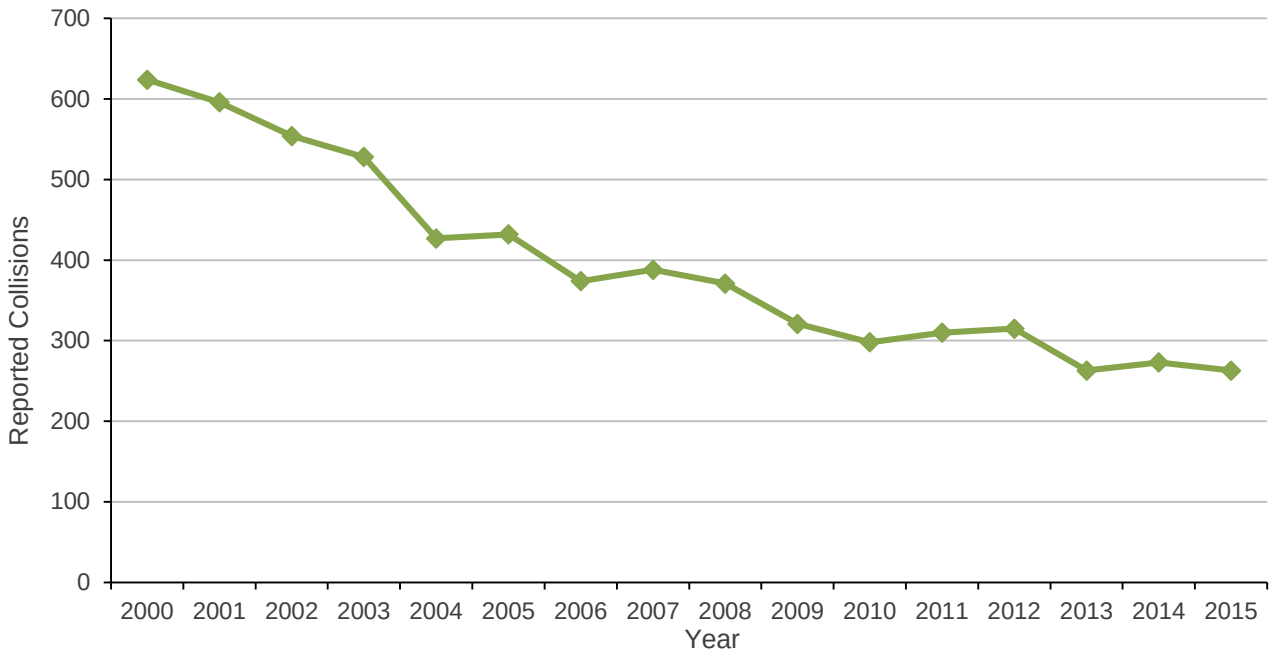


Figure 28: Red Light Running Injury and Fatal Collisions, CVC 21453 (A) Violations (2000-2015)

Year	2000	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	624	374	388	371	321	298	310	315	263	274	263

Figure 29 shows collision trends for collisions where a motor vehicle was involved with another motor vehicle. Collisions reached their lowest recorded levels in 2014 after a steady decline in the previous two decades. Vehicle on vehicle collisions are down by more than 50 percent from the levels recorded in the late 1990s. It is difficult to ascertain what factors led to a decline in injury vehicular crashes until the mid-2000s, followed by a leveling out pattern. In addition to all the safety measures described in this report, particularly signal visibility upgrades, improvements in vehicular technology and

safety devices could be a factor in preventing collisions or reducing the severity of crashes to their occupants when only motor vehicles are involved.

Figure 29: Injury and Fatal Collisions,
Motor Vehicle with Motor Vehicle (2000-2015)

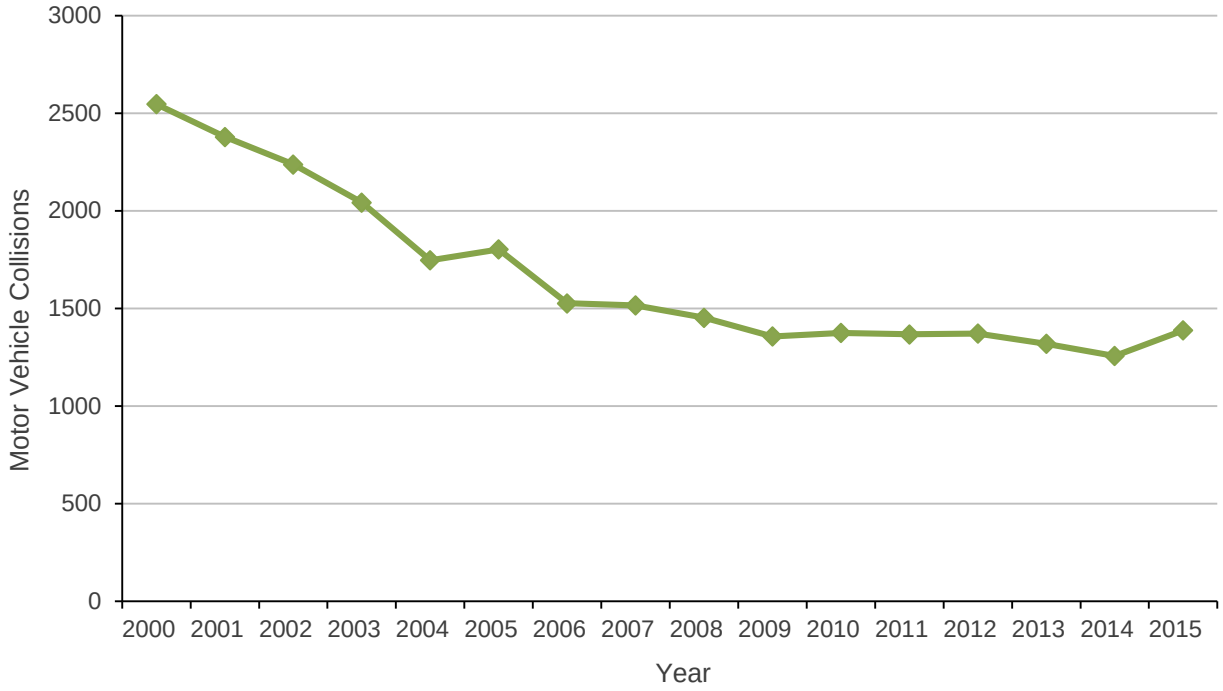


Figure 29: Injury and Fatal Collisions,
Motor Vehicle with Motor Vehicle (2000-2015)

Year	2000	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	2,547	1,527	1,516	1,453	1,357	1,375	1,368	1,372	1,319	1,257	1,388

More than one out of every 10 injury collisions in San Francisco results in someone leaving the scene without identifying themselves to the victims involved. This violation of the California Vehicle Code is known as a “hit and run” crash. Hit and run crashes are a higher percentage of fatal and severe injury collisions, where close to 14 percent of crashes reported are hit and run. Hit and run collisions that involve injury or death to a person can be prosecuted as felonies. Figure 30 presents hit and run collisions by injury severity as a percentage of total injury collisions for 2012-2015.

Figure 30: Hit and Run Collisions by Injury Severity
as a Percentage of Total Injury Collisions (2012-2015)

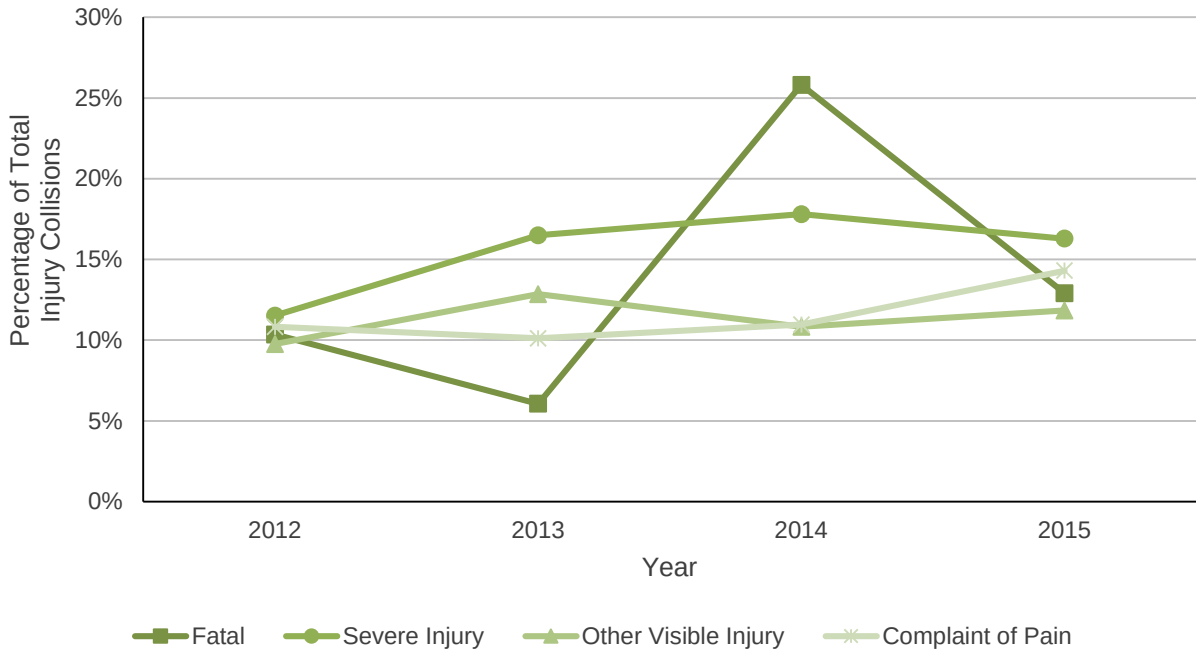


Figure 30: Hit and Run Collisions
by Injury Severity (2012-2015)

Injury Severity	2012	2013	2014	2015
Fatal	10%	6%	26%	13%
Severe Injury	12%	16%	18%	16%
Other Visible Injury	10%	13%	11%	12%
Complaint of Pain	11%	10%	11%	14%

In Figure 31 an “intersection” crash is any crash occurring within 20 feet of the junction of two or more streets, and any rear-end collision occurring within 150 feet of a street junction. All other crashes are considered to be “mid-block.” By this definition used in San Francisco, a majority of injury collisions occur at or near intersections (over 70 percent).

Figure 31: Injury Crashes by
Street Location (2012-2015)

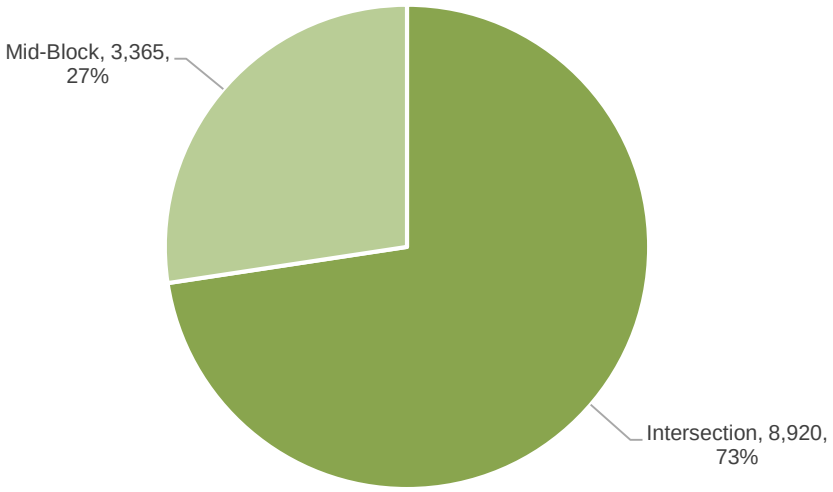


Figure 31: Injury Crashes by
Street Location (2012-2015)

	Vehicle-Vehicle	Vehicle-Bicycle	Vehicle-Pedestrian	Total
Intersection	4,111 (77%)	1,349 (65%)	2,297 (73%)	8,920 (73%)
Mid-Block	1,225 (23%)	701 (35%)	838 (27%)	3,365 (27%)

Table 5 reports on other factors associated with injury crashes. Alcohol is involved in nearly one in ten crashes despite decades of educational campaigns on the topic.

Table 5: Other Associated Factors
Reported in Injury Crashes (2015 Only)

Associated Factor	Total	Percent
Alcohol Involved	277	9%
Road Surface Wet	156	5%
At Night (Dark)	906	30%

Figures 29 and 30 summarizes frequency of crashes by day of the week and month. Weekdays excluding Monday and the month of October have the highest totals.

Figure 32: Injury Crashes by
Day of the Week (2012-2015)

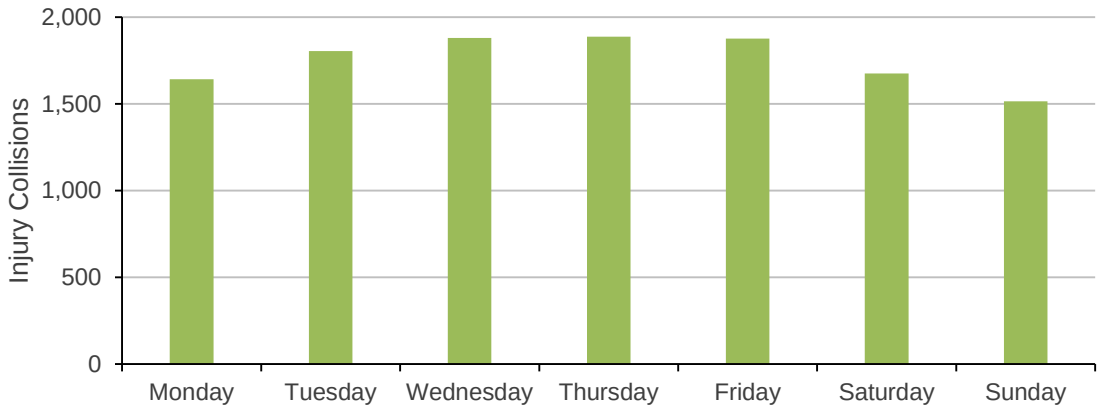


Figure 32: Injury Crashes by
Day of the Week (2012-2015)

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1,642	1,805	1,881	1,888	1,877	1,676	1,516

Figure 33: Injury Crashes by
Month of the Year (2012-2015)

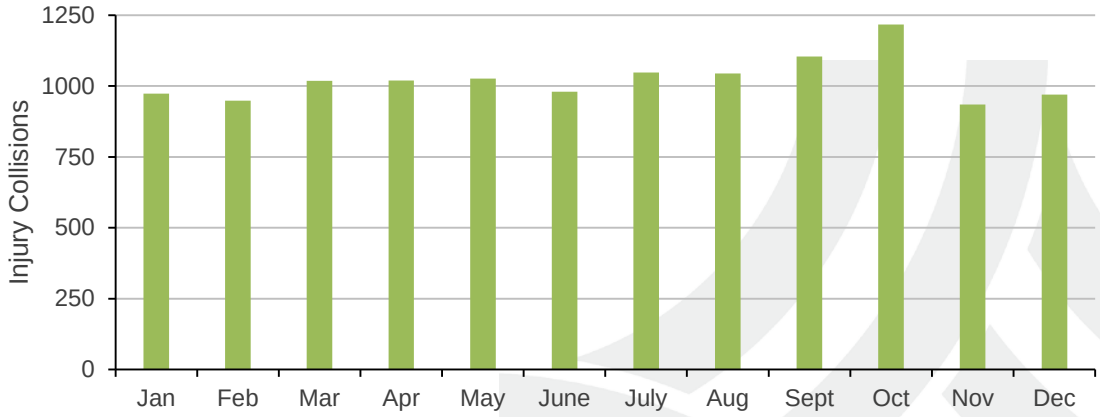


Figure 33: Injury Crashes by
Month of the Year (2012-2015)

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
973	948	1,019	1,020	1,026	980	1,048	1,045	1,104	1,217	935	970

Figure 34 shows CVC 21950 (A) pedestrian right of way violations at crosswalks by vehicle movement. Nearly three-quarters of these collisions are caused by turning vehicles. Of these turning collisions, a pedestrian is almost three times more likely to be struck by a left turning vehicle than a right turning vehicle.

Figure 34: Injury Vehicle-Pedestrian Collisions by
Vehicle Turning Movement when CVC Violation is
CVC 21950 (A) Pedestrian Right-of Way Violation (2012-2015)

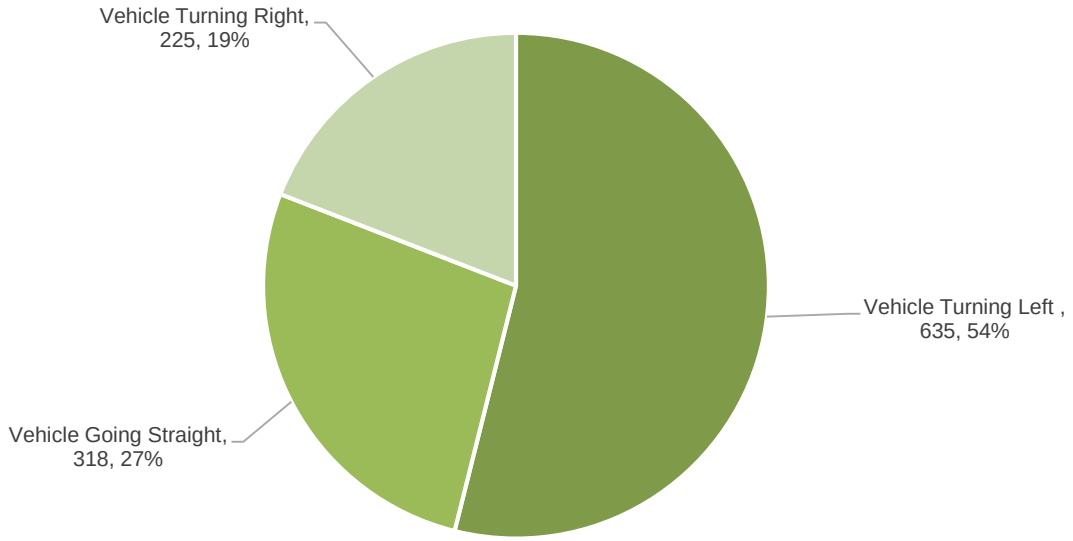


Figure 34: Injury Vehicle-Pedestrian Collisions by
Vehicle Turning Movement when CVC Violation is
CVC 21950 (A) Pedestrian Right-of Way Violation (2012-2015)

Movement	Total	Percent of Total
Vehicle Turning Left	635	54%
Vehicle Going Straight	318	27%
Vehicle Turning Right	225	19%
Total	1,178	

Figure 35 shows the breakdown of injury collisions by age and party type. This data includes all parties to a collision, not just the primary party determined to be at fault.

Figure 35: Injury Collisions by
Age and Party Type (2012-2015)

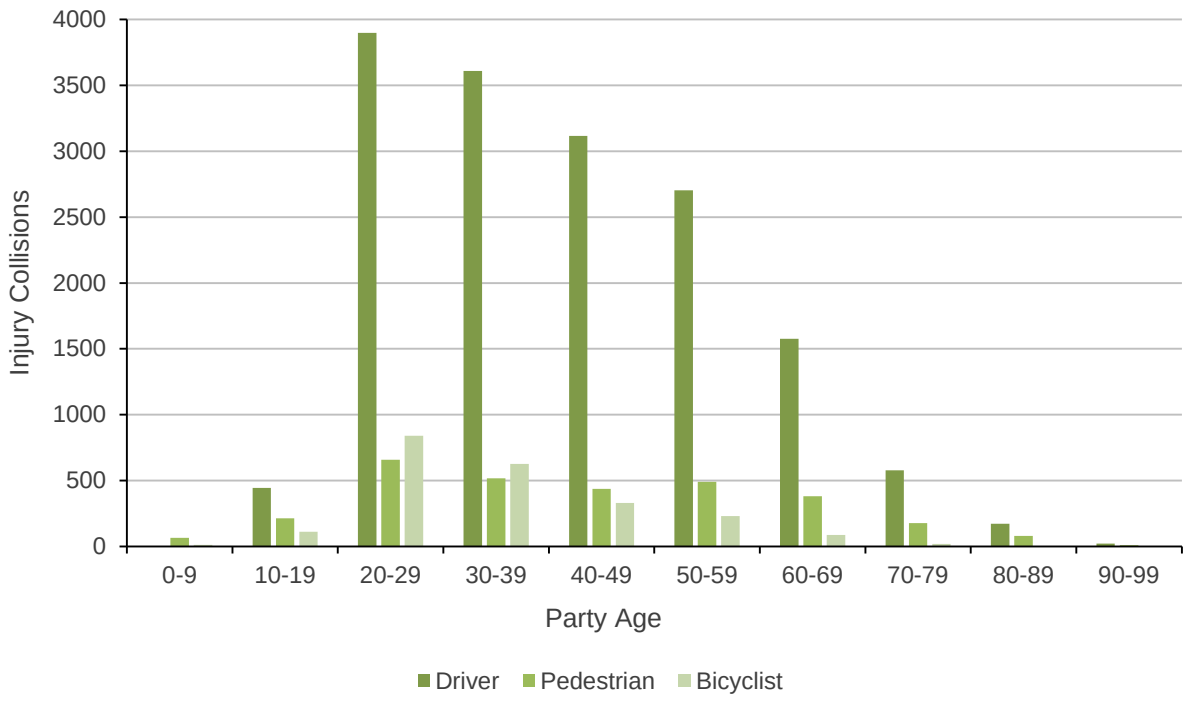


Figure 35: Injury Collisions by
Age and Party Type (2012-2015)

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Driver	1	444	3898	3610	3117	2704	1577	578	171	22
Pedestrian	66	214	659	516	436	489	382	177	79	9
Bicyclist	11	110	841	627	330	230	87	19	1	0

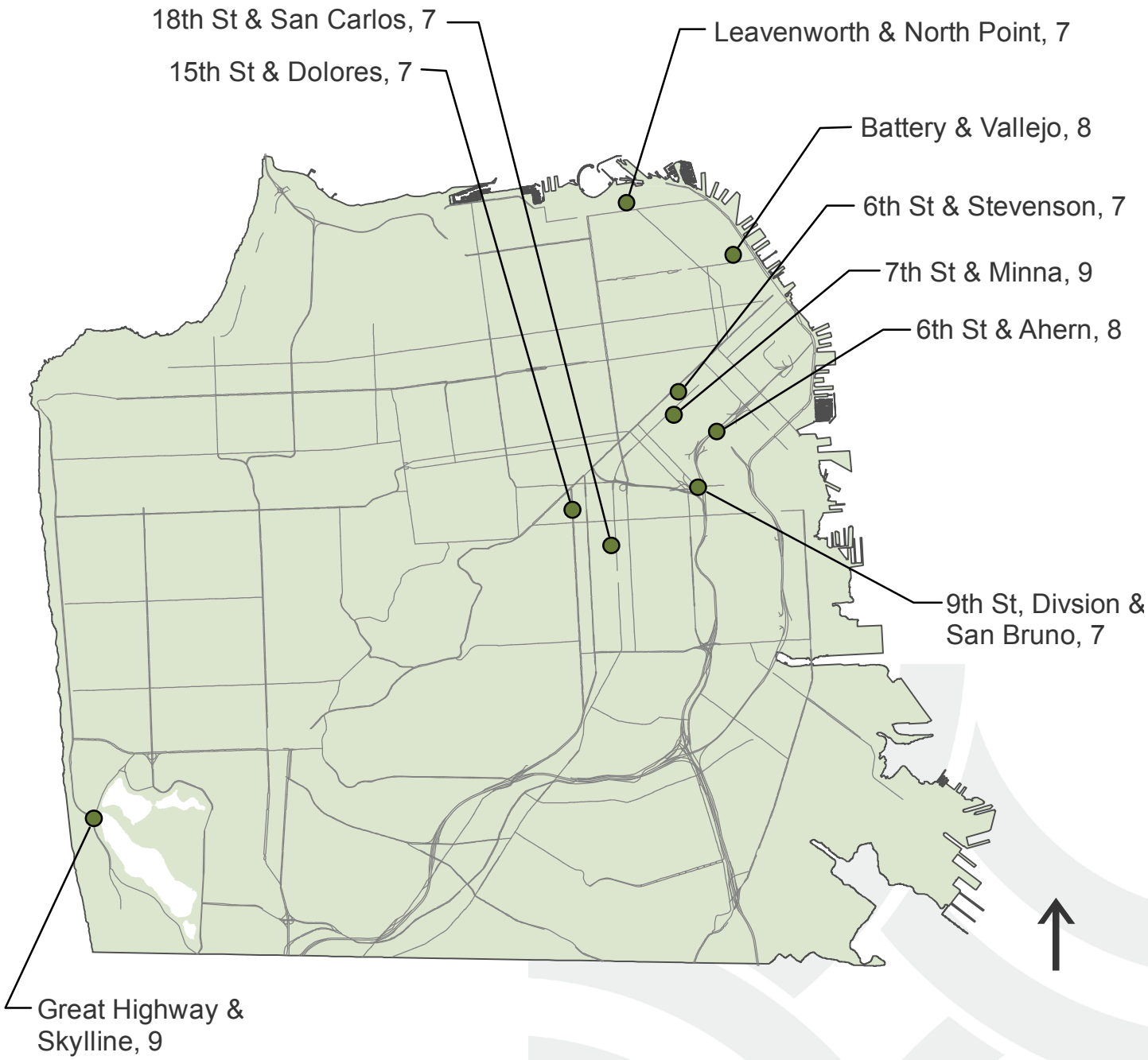
PART 6: COLLISIONS AT LOCATIONS WITHOUT A TRAFFIC SIGNAL

Due to their higher traffic volumes, the intersections with the highest collision totals in the City are 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, new traffic regulations, or parking restrictions. Table 8 includes the highest reported non-signalized collision intersections for 2012-2015 along with a brief note on actions being taken. A map of these locations is provided in Figure 36.

Table 6: Highest Four-Year Reported Collisions at Unsignalized Intersections with 7 or more reported collisions (2012-2015)

Intersection	Total	Note
Great Highway and Skyline Blvd	9	Under joint city and state study for a new traffic signal
7th and Minna Streets	9	To be signalized (Contract 64)
6th and Ahern Streets	8	Ahern under study as part of new building development
Battery and Vallejo Streets	8	“Cross Traffic Does not Stop” sign (2016)
15th and Dolores Streets	7	To be signalized (Contract 64)
18th and San Carlos Streets	7	Under review for traffic improvements
Leavenworth and North Point Streets	7	Under review for traffic improvements
6th and Stevenson Streets	7	6th Street Improvement Project (under study)
9th Street, Division Street, and San Bruno Avenue	7	Intersection to be redesigned (2016)

Figure 36: Highest Four-Year Reported Collisions at Unsignalized Intersections with 7 or more reported collisions (2012-2015)



PART 7: COLLISIONS BY SFPD STATIONS

The final part of the report summarizes collision statistics by the 10 San Francisco Police Department stations. Table 7 breaks down injury collisions by percent of the San Francisco total occurring in each station. A map of the SFPD station areas is provided in Figure 37. As can be expected, not all SFPD stations have the same collision statistics due to their varying size and geographic location. Northern and Southern Stations in the northeast quadrant comprise together about a quarter of injury collisions and 45 percent of all red light running collisions (CVC 21453A). About 30 percent of the city's traffic signals are located in the Northern and Southern Station boundaries. Central Station has the highest percentage of San Francisco's pedestrian-related crashes (16%), including collisions associated with a person driving a vehicle failing to yield the right of way to pedestrians. This collision cause (CVC 21950A) can be due to vehicles failing to yield when proceeding straight through a crosswalk that does not have a STOP sign or traffic signal, or whenever a vehicle makes a right or left turn and a person walking parallel had right-of-way. Over half of failure to yield to pedestrian injury collisions involve left turns (Figure 34).

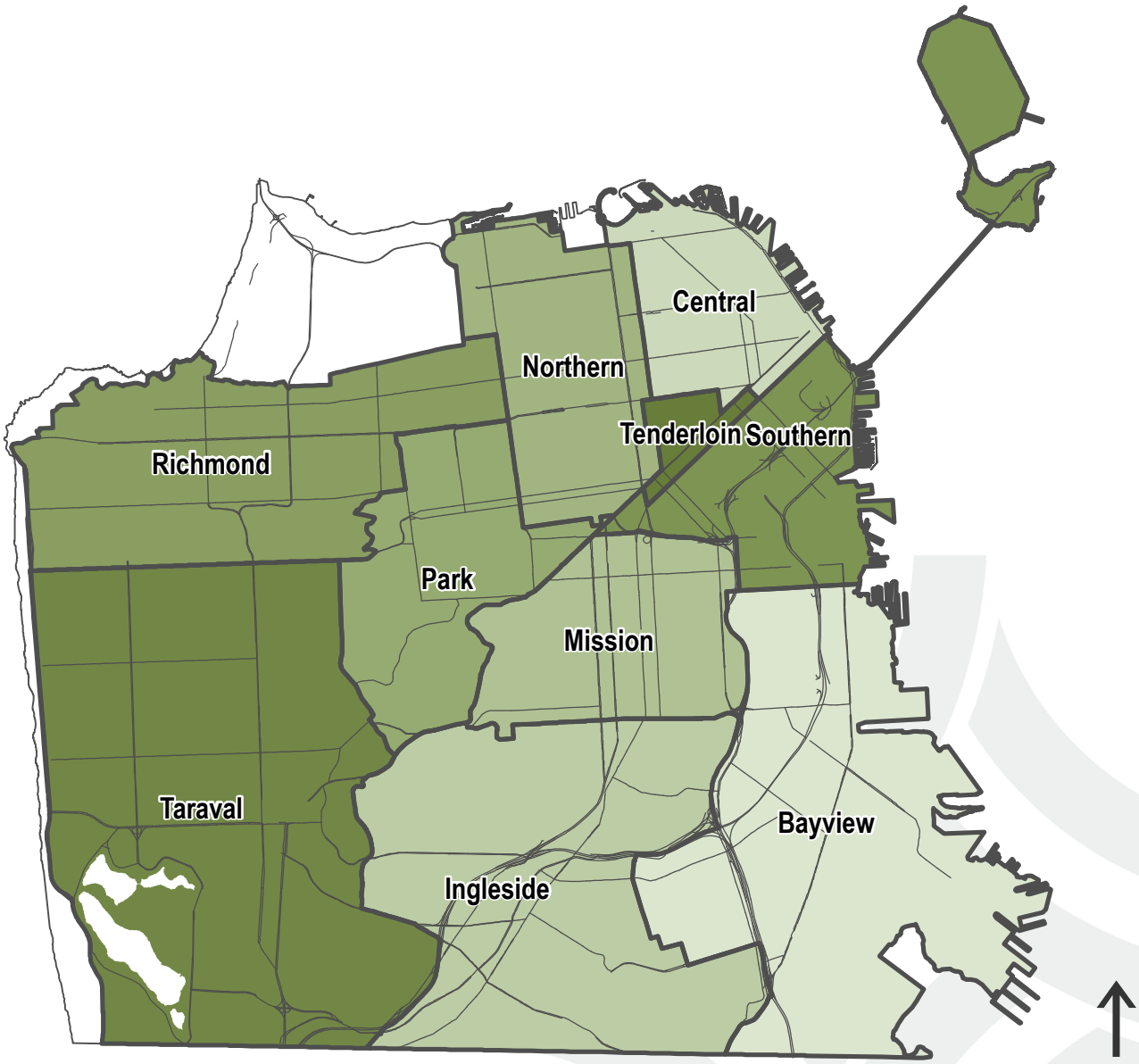
Table 7: Total and Percentage of San Francisco Injury Collisions that Occur In Each SFPD Station Area (2012-2015)

	Total Injury	Pedestrian Involved	Bicycle Involved	CVC 22350	CVC 21950 (A)	CVC 21801 (A)	CVC 21453 (A)	CVC 22450 (A)
Central	1281 (10%)	493 (16%)	247 (12%)	165 (7%)	216 (16%)	32 (5%)	139 (12%)	12 (3%)
Southern	1682 (14%)	398 (13%)	412 (20%)	253 (11%)	150 (11%)	101 (15%)	141 (13%)	19 (5%)
Bayview	878 (7%)	175 (6%)	74 (4%)	181 (8%)	58 (4%)	34 (5%)	41 (4%)	63 (17%)
Mission	1687 (14%)	402 (13%)	469 (23%)	289 (13%)	143 (11%)	150 (22%)	118 (11%)	41 (11%)
Northern	1971 (16%)	451 (14%)	323 (16%)	293 (13%)	224 (17%)	112 (16%)	356 (32%)	39 (11%)
Park	628 (5%)	153 (5%)	128 (6%)	137 (6%)	70 (5%)	39 (6%)	33 (3%)	19 (5%)
Richmond	987 (8%)	205 (7%)	158 (8%)	169 (8%)	119 (9%)	78 (11%)	72 (6%)	45 (12%)
Ingleside	1121 (9%)	246 (8%)	150 (7%)	263 (12%)	124 (9%)	68 (10%)	75 (7%)	55 (15%)
Taraval	1343 (11%)	306 (10%)	129 (6%)	329 (15%)	143 (11%)	49 (7%)	55 (5%)	70 (19%)
Tenderloin	681 (5%)	294 (9%)	176 (9%)	81 (4%)	76 (6%)	4 (1%)	74 (7%)	1 (0%)
Total	12409	3135	2050	2222	1333	688	1121	371

Note: Totals and percentages do not add up due to shared collision along boundaries and other factors

In the following pages, for each SFPD station a figure is provided that summarizes the top CVC violations which resulted in injury collisions as a percentage of that station's collision total for 2012-2015. Six tables provide the top crash locations for the CVC violations that are currently part of the SFPD's "Focus on the Five" campaign. Collisions occurring on boundary streets are reported for both stations. These tables will be used by both the SFMTA and the SFPD to further refine hot spot enforcement and engineering measures. For some intersections, collision totals reflect conditions prior to completion of recent improvement projects, such as new or improved traffic signals.

Figure 37: Map of SFPD Station Areas



A. CENTRAL STATION

Figure 38: Injury Collisions by CVC Violation (2012-2015)

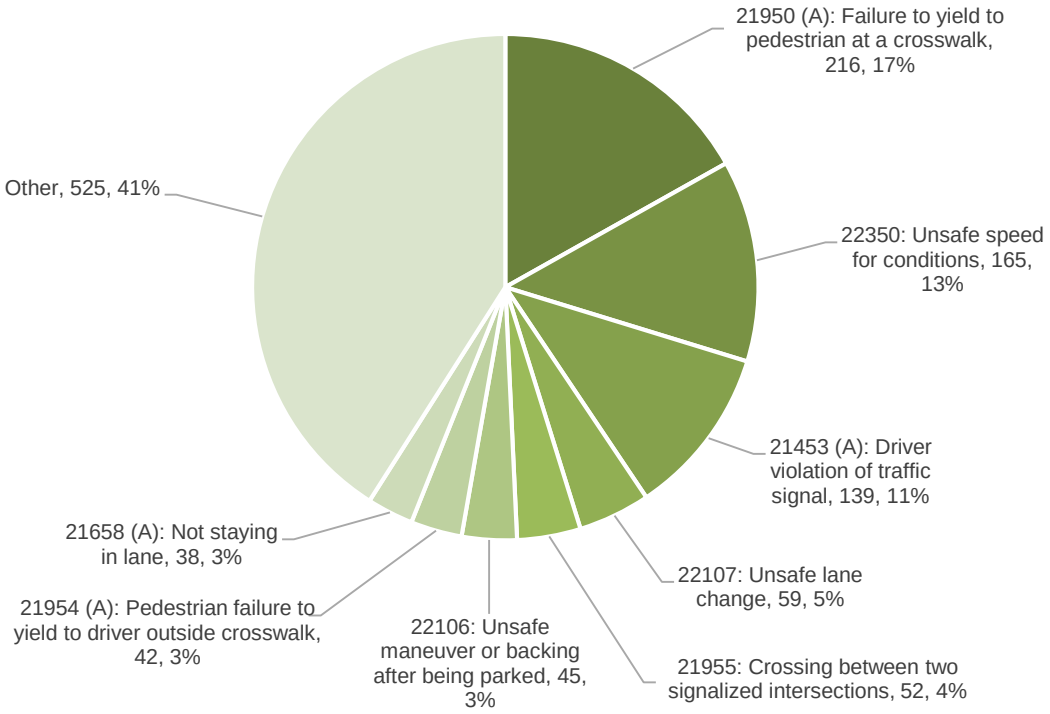


Figure 38: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
21950 (A): Failure to yield to pedestrian at a crosswalk	216	17%
22350: Unsafe speed for conditions	165	13%
21453 (A): Driver violation of traffic signal	139	11%
22107: Unsafe lane change	59	5%
21955: Crossing between two signalized intersections	52	4%
22106: Unsafe maneuver or backing after being parked	45	4%
21954 (A): Pedestrian failure to yield to driver outside crosswalk	42	3%
21658 (A): Not staying in lane	38	3%
Other	525	41%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

Market and New Montgomery Streets	4
Battery and California Streets	3

Top Injury Collision Mid-Block Segments CVC 22350 Unsafe Speed for Conditions (2012-2015)

The Embarcadero from Broadway to Washington St	4
Market Street from Annie St to Montgomery St	4

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

Geary and Taylor Streets	7
Bush and Kearny Streets	5
Broadway and Montgomery St	4
Bush and Hyde Streets	4
California and Hyde Streets	4
Columbus Ave and Union St	4
Front and Pine Streets	4
Pacific Ave and Powell	4

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Bay Street and Van Ness Ave	9
Columbus Ave and Jackson St	2
Drumm and Washington Streets	2

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

Battery and Pine Streets	12
Geary and Leavenworth	5
Battery and Broadway	4
Battery and California Streets	4
Battery and Washington Streets	4
Clay and Sansome Streets	4
Geary and Taylor Streets	4
Sacramento and Montgomery Streets	4

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)
Not listed due to lower intersection totals (1 or lower)

B. SOUTHERN STATION

Figure 39: Injury Collisions by CVC Violation (2012-2015)

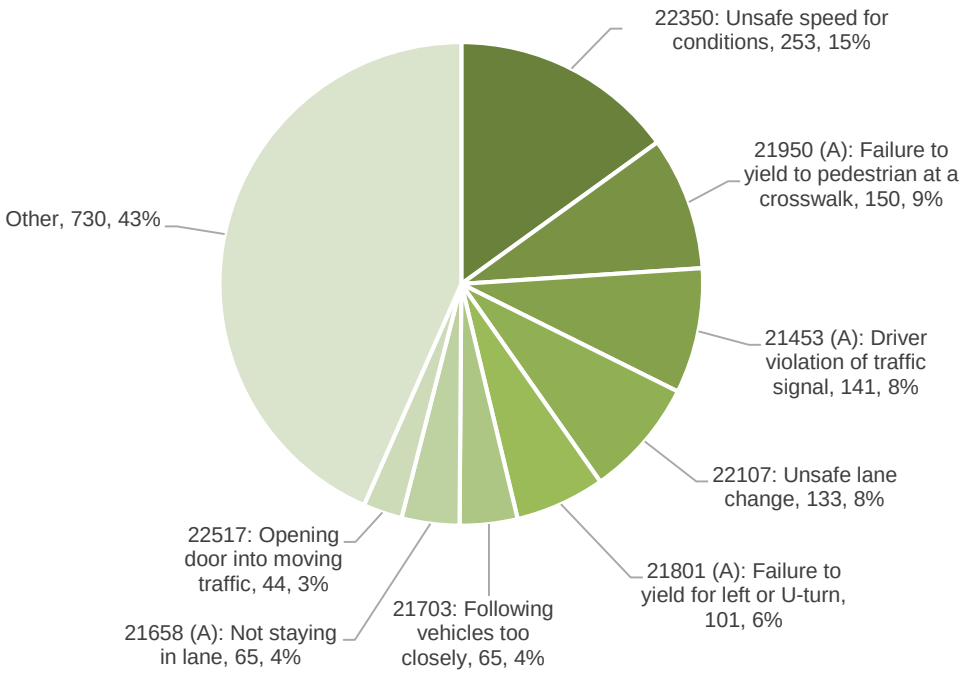


Figure 39: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	253	15%
21950 (A): Failure to yield to pedestrian at a crosswalk	150	9%
21453 (A): Driver violation of traffic signal	141	8%
22107: Unsafe lane change	133	8%
21801 (A): Failure to yield for left or U-turn	101	6%
21703: Following vehicles too closely	65	4%
21658 (A): Not staying in lane	65	4%
22517: Opening door into moving traffic	44	3%
Other	730	43%

Top Injury Collision Intersection CVC 22350 Unsafe Speed for Conditions (2012-2015)

Guerrero and Market Streets	5

Top Injury Collision Mid-Block Segments CVC 22350 Unsafe Speed for Conditions (2012-2015)

Harrison Street from Lapu Lapu to 4th Street	3
King Street from 3rd Street to 4th Street	3
The Embarcadero from Folsom Street to Harrison Street	3

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

5th Street and Howard Street	7
6th Street and Howard Street	6
10th Street and Harrison Street	5
8th Street and Folsom Street	5
3rd Street and Howard Street	5

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

7th Street and Brannan Street	7
7th Street and Townsend Street	6
Fremont and Harrison Street	6
5th Street and Harrison Street	4

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

6th Street and Folsom Street	9
8th Street and Folsom Street	7
2nd Street and Folsom Street	4
4th Street and Harrison Street	4
6th Street and Bryant Street	4
8th Street and Brannan Street	4
Gough and Market Streets	4

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

15th Street and Vermont Street	3
17th Street and Vermont Street	3

C. BAYVIEW STATION

Figure 40: Injury Collisions by CVC Violation (2012-2015)

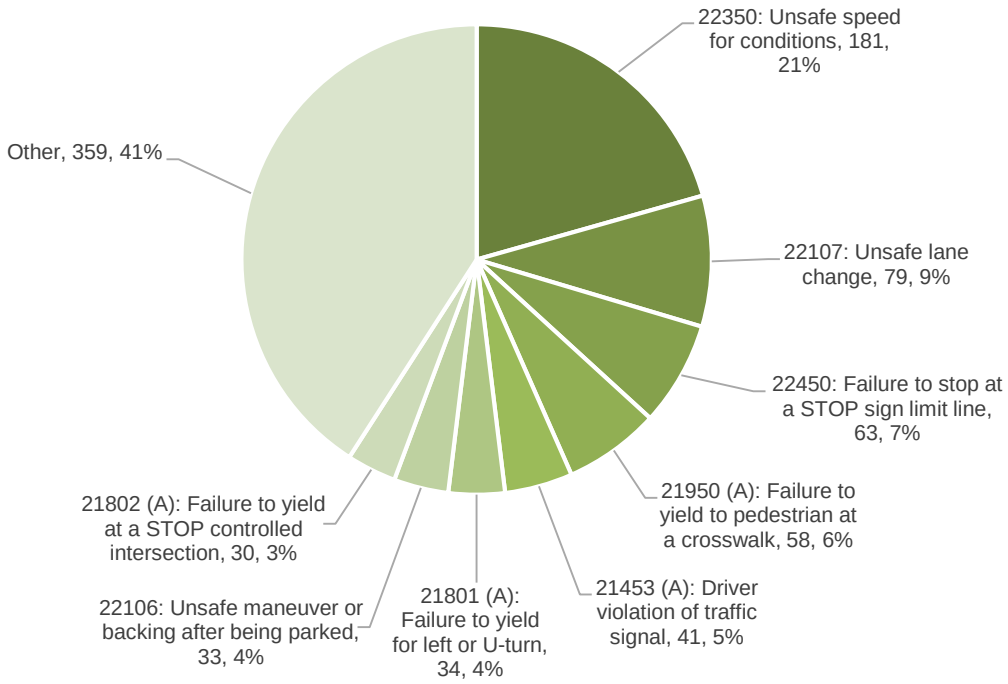


Figure 40: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	181	21%
22107: Unsafe lane change	79	9%
22450 (A): Failure to stop at a STOP sign limit line	63	7%
21950 (A): Failure to yield to pedestrian at a crosswalk	58	7%
21453 (A): Driver violation of traffic signal	41	5%
21801 (A): Failure to yield for left or U-turn	34	4%
22106: Unsafe maneuver or backing after being parked	33	4%
21802 (A): Failure to yield at a STOP controlled intersection	30	3%
Other	359	41%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

Bayshore Blvd and Jerrold Ave	3
Bayshore Blvd and Paul Ave	3
Cesar Chavez and Connecticut Streets	3

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

Palou Avenue from Rankin Street to Selby Street	3

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

Bayshore Blvd and Paul Ave	6
Bayshore Blvd and Silver Ave	4
Bacon Street and San Bruno Ave	3
Bayshore Blvd and Cortland Ave	2
Felton Ave and San Bruno Ave	2
Paul Ave and San Bruno Ave	2

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Bayshore Blvd and Paul Ave	8
Cesar Chavez and Connecticut Streets	5
Bacon Street and Bayshore Blvd	4

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

Bayshore Blvd and Paul Ave	4
3rd Street and Thornton Ave	3
3rd Street and La Salle Ave	3

Top Injury Collision Intersection CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

Fitzgerald and Jennings Streets	3

D. MISSION STATION

Figure 41: Injury Collisions by CVC Violation (2012-2015)

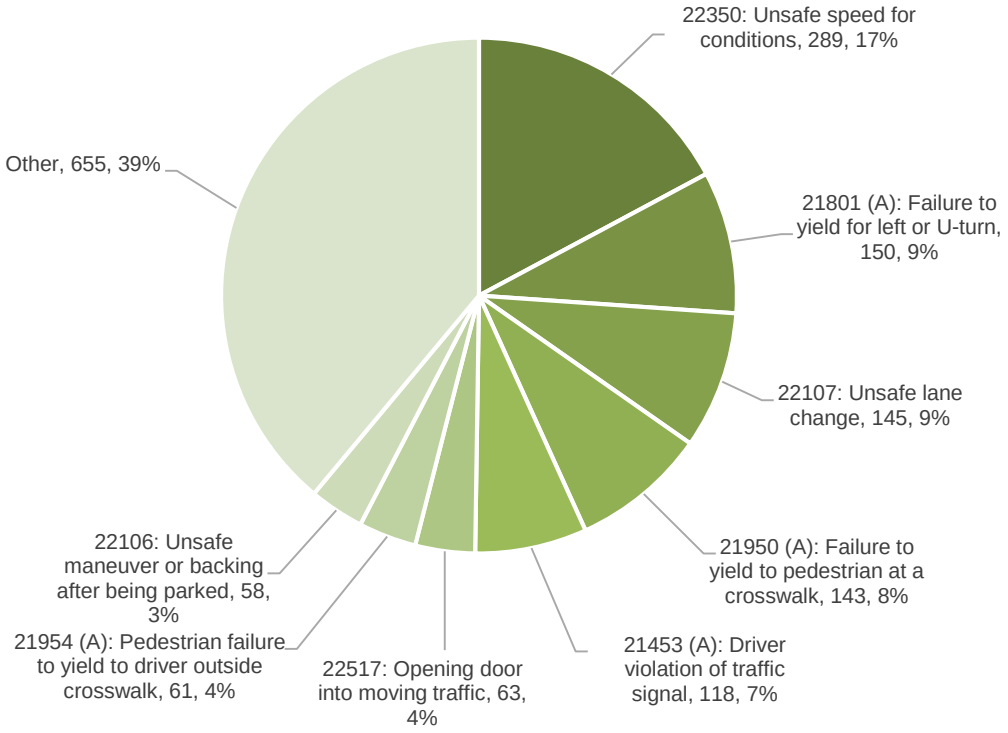


Figure 41: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	289	17%
21801 (A): Failure to yield for left or U-turn	150	9%
22107: Unsafe lane change	145	9%
21950 (A): Failure to yield to pedestrian at a crosswalk	143	9%
21453 (A): Driver violation of traffic signal	118	7%
22517: Opening door into moving traffic	63	4%
21954 (A): Pedestrian failure to yield to driver outside crosswalk	61	4%
22106: Unsafe maneuver or backing after being parked	58	3%
Other	655	39%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

Castro and Market Streets	5
16th Street and Potrero Avenue	5
19th Street and Mission Street	4
16th Street and South Van Ness Ave	4

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

17th Street from Church Street to Sanchez Street	4

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

16 Street and Capp Street	5
16th Street and Valencia Street	4
Cesar Chavez and Mission Streets	4
14th Street and Folsom Street	4

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

16th Street and Guerrero Street	7
13th Street and Folsom Street	6
17th Street and Guerrero Street	5
Diamond Heights Boulevard and Portola Drive	5
24th Street and Potrero Avenue	5

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

13th Street and South Van Ness Ave	5
Eureka and Market Streets	4
13th Street and Mission/Otis Streets	4
15th Street and South Van Ness Ave	4
15th Street and Folsom Street	4
17th Street and Folsom Street	4

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

15th Street and Dolores Street	2
22nd Street and Capp Street	2
17th Street and Harrison Street	2
20th Street and Harrison Street	2
21st Street and Harrison Street	2

E. NORTHERN STATION

Figure 42: Injury Collisions by CVC Violation (2012-2015)

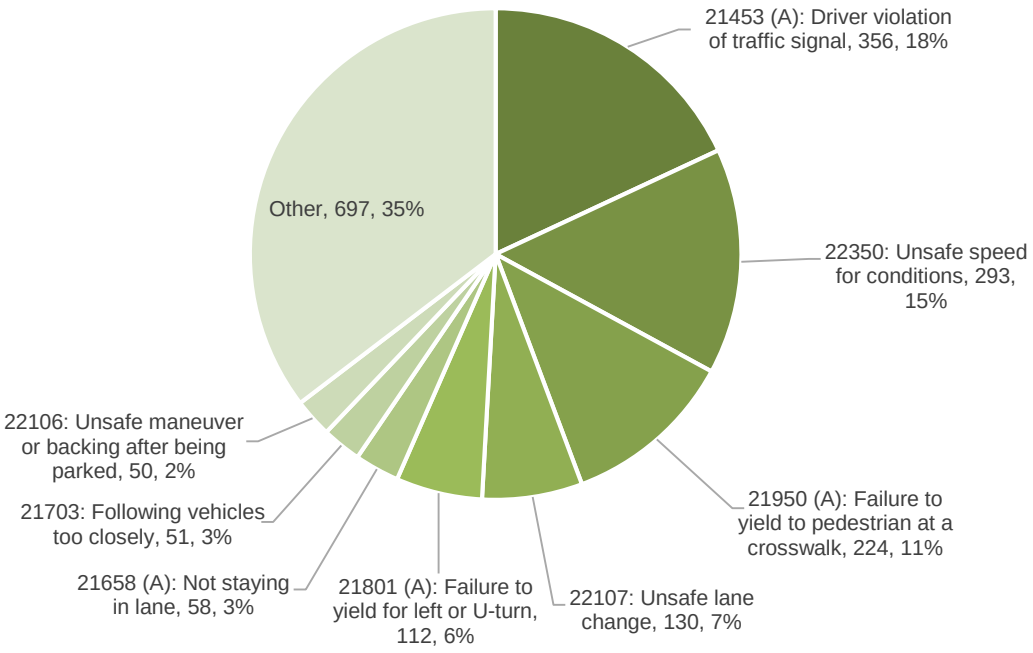


Figure 42: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
21453 (A): Driver violation of traffic signal	356	18%
22350: Unsafe speed for conditions	293	15%
21950 (A): Failure to yield to pedestrian at a crosswalk	224	11%
22107: Unsafe lane change	130	7%
21801 (A): Failure to yield for left or U-turn	112	6%
21658 (A): Not staying in lane	58	3%
21703: Following vehicles too closely	51	3%
22106: Unsafe maneuver or backing after being parked	50	3%
Other	697	35%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

O'Farrell Street and Van Ness Ave	5
Divisadero and Lombard Streets	4
Fillmore and Lombard Streets	4
Turk Street and Van Ness Ave	4

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

Not listed due to lower intersection totals (2 or lower)

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

Franklin and O'Farrell Streets	7
Geary Blvd and Laguna Street	6
Gough and Pine Streets	5
Broadway and Polk Street	4
Franklin Street and Golden Gate Avenue	4
Geary Blvd and Van Ness Avenue	4
Grove Street and Van Ness Avenue	4
Hayes and Laguna Streets	4
Sutter and Webster Streets	4

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Bay Street and Van Ness Avenue	9
Hayes Street and Van Ness Avenue	6

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

Golden Gate Ave and Webster St	8
Broadway and Van Ness Avenue	8
Bush and Divisadero Streets	7
Fillmore Street and Geary Blvd	7
Sutter Street and Van Ness Avenue	7

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

Haight and Pierce Streets	3
Page and Scott Streets	3

F. PARK STATION

Figure 43: Injury Collisions by CVC Violation (2012-2015)

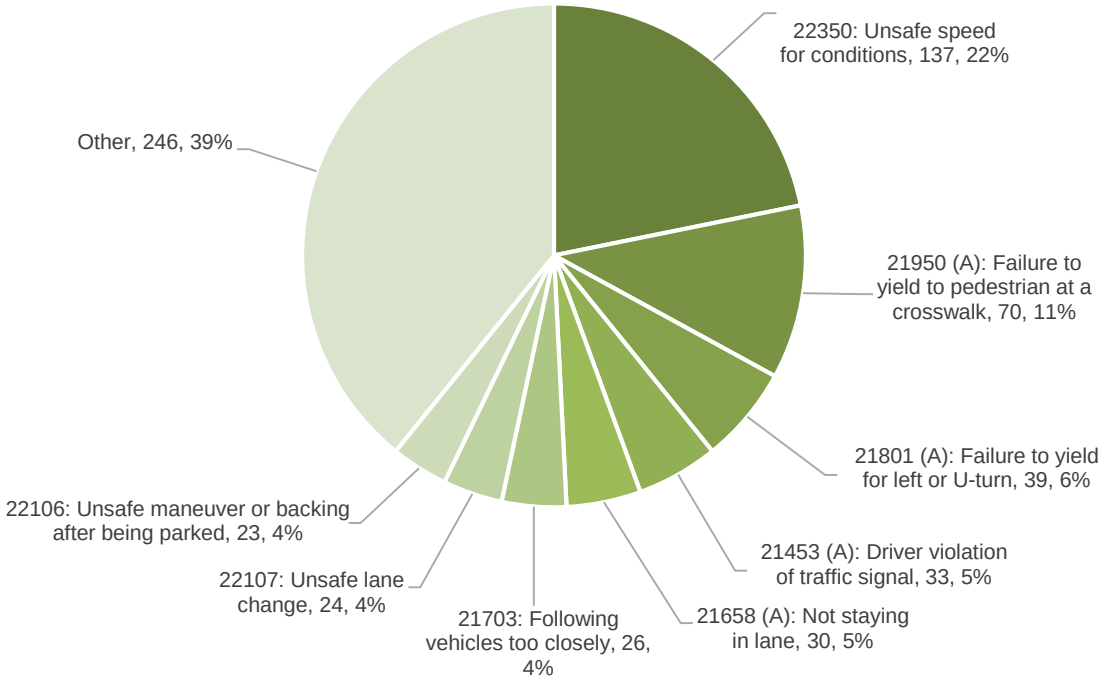


Figure 43: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	137	22%
21950 (A): Failure to yield to pedestrian at a crosswalk	70	11%
21801 (A): Failure to yield for left or U-turn	39	6%
21453 (A): Driver violation of traffic signal	33	5%
21658 (A): Not staying in lane	30	5%
21703: Following vehicles too closely	26	4%
22107: Unsafe lane change	24	4%
22106: Unsafe maneuver or backing after being parked	23	4%
Other	246	39%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

3rd Avenue and Lincoln Way/Frederick Street	4
7th Avenue and Lincoln Way	3

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

Kezar Drive from Arguello Boulevard to Waller Street	3
Kezar Drive from John F. Kennedy Drive to Waller Street	3

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

Masonic Avenue and Oak Street	4
Clayton and Haight Streets	3
Fulton Street and Masonic Avenue	3
Haight Street and Masonic Avenue	3

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Hayes Street and Masonic Avenue	4
Masonic Avenue and Oak Street	3

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

Fell Street and Masonic Avenue	5
Broderick Street and Fulton Street	3

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

Fulton and Lyon Streets	3
14th Street and Sanchez Street	2

G. RICHMOND STATION

Figure 44: Injury Collisions by CVC Violation (2012-2015)

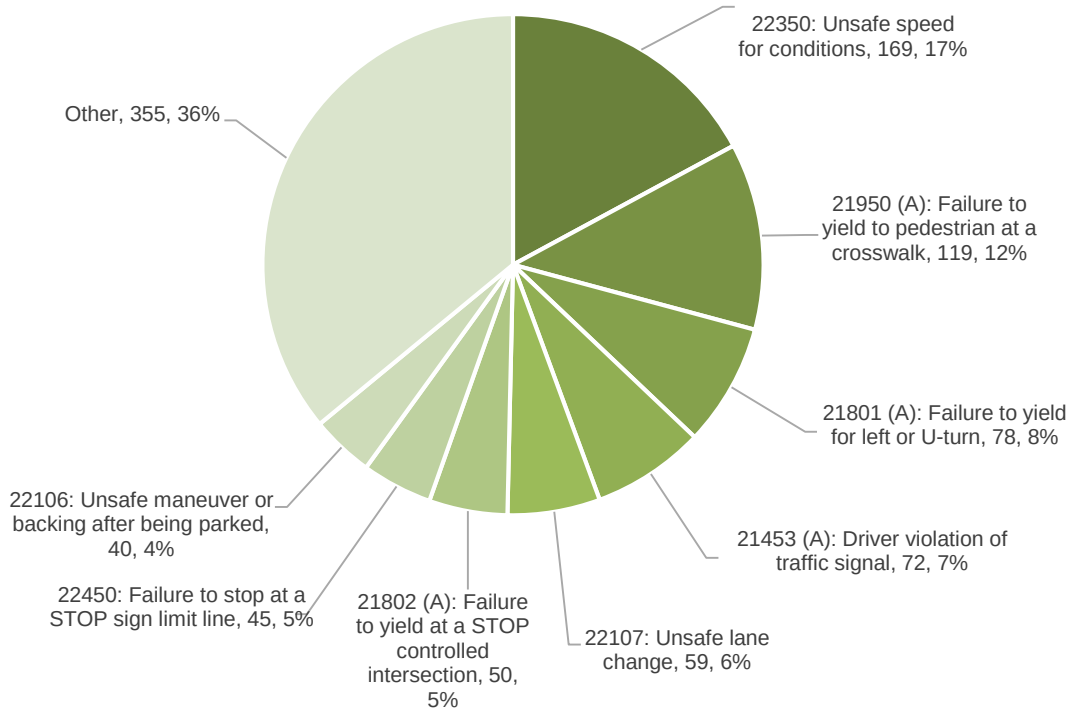


Figure 44: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	169	17%
21950 (A): Failure to yield to pedestrian at a crosswalk	119	12%
21801 (A): Failure to yield for left or U-turn	78	8%
21453 (A): Driver violation of traffic signal	72	7%
22107: Unsafe lane change	59	6%
21802 (A): Failure to yield at a STOP controlled intersection	50	5%
22450 (A): Failure to stop at a STOP sign limit line	45	5%
22106: Unsafe maneuver or backing after being parked	40	4%
Other	355	36%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

Fulton Street and Park Presidio Boulevard	8
Anza Street and Park Presidio Boulevard	4
Great Highway and Lincoln Way	3
11th Avenue and Geary Boulevard	3
Baker Street and Geary Boulevard	3

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

Park Presidio Bypass from Crossover Drive to Fulton Street	17
Crossover Drive from Martin Luther King Jr. Drive to Park Presidio Bypass	4

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

33rd Avenue and Balboa Street	4
11th Avenue and California Street	3
19th Avenue and California Street	3
26th Avenue and Geary Blvd	3

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Crossover Drive and Martin Luther King Jr. Drive	9
Arguello Boulevard and Fulton Street	6
36th Avenue and Fulton Street	5
8th Avenue and Fulton Street	4
12th Avenue and Geary Boulevard	3
25th Avenue and Balboa Street	3

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

Pine Street and Presidio Avenue	5
Crossover Drive and Martin Luther King Jr. Drive	4
4th Avenue and California Street	4

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

5th Avenue and California Street	3
4th Avenue and Anza Street	3

H. INGLESIDE STATION

Figure 45: Injury Collisions by CVC Violation (2012-2015)

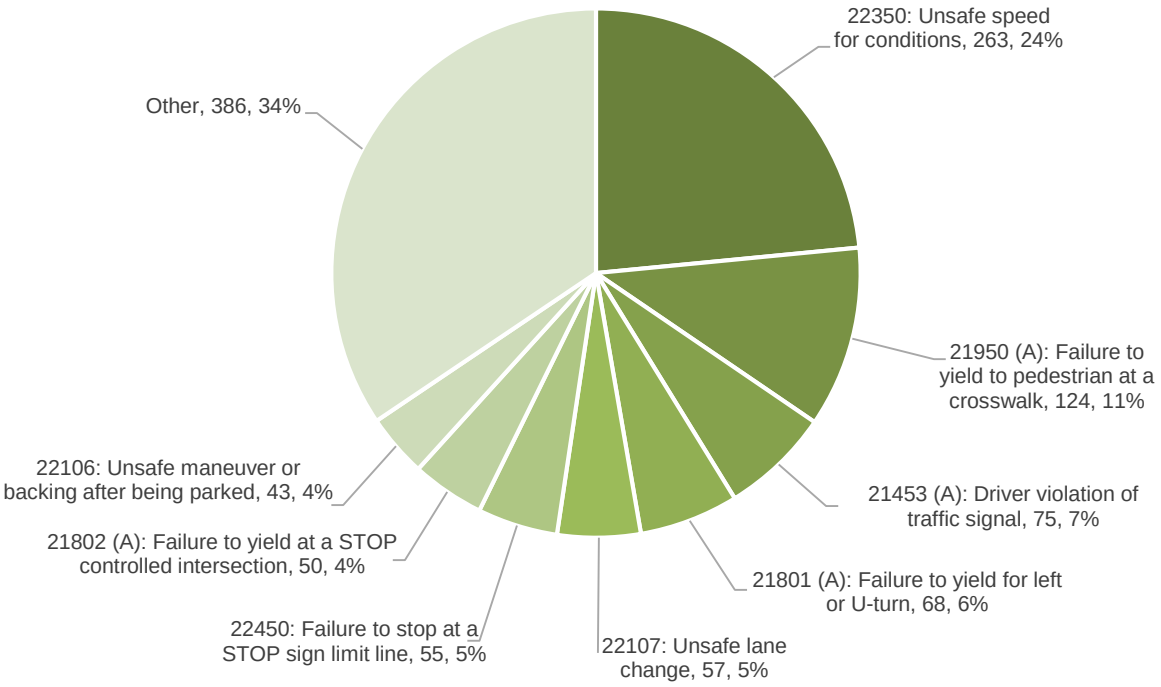


Figure 45: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	263	23%
21950 (A): Failure to yield to pedestrian at a crosswalk	124	11%
21453 (A): Driver violation of traffic signal	75	7%
21801 (A): Failure to yield for left or U-turn	68	6%
22107: Unsafe lane change	57	5%
22450 (A): Failure to stop at a STOP sign limit line	55	5%
21802 (A): Failure to yield at a STOP controlled intersection	50	4%
22106: Unsafe maneuver or backing after being parked	43	4%
Other	386	34%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

Bayshore Boulevard and Hester Avenue/3rd Street	5
Alemany Boulevard and Justin Drive	3
Arleta Avenue, San Bruno and Bayshore Boulevard	3
Geneva Avenue and I-280 Ramps	3
Ocean Avenue and San Jose Avenue	3

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

O'Shaughnessy Boulevard from Bosworth Street to Malta Drive	4
Mission Street from Cesar Chavez Street to Precita Avenue	4
Alemany Boulevard from US 101 Ramp to San Bruno Avenue	3

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

Geneva Avenue and Mission Street	5
Cortland Avenue and Mission Street	4
Alemany Boulevard and Niagara Avenue	3
Diamond Heights Boulevard and Portola Drive	3
Farragut Avenue and Mission Street	3
Highland Avenue and Mission Street	3
Mission Street and Rolph Street	3

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Diamond Heights Boulevard and Portola Drive	5
Alemany Boulevard and Santa Rosa Avenue	5
Geneva Boulevard and San Jose Avenue	4
Alemany Boulevard and Ocean Avenue	4

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

Alemany Boulevard and Sickles Avenue	6
Alemany Boulevard and Farragut Avenue	5
30th Street and San Jose Avenue	5
29th Street and San Jose Avenue	5

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

Not listed due to lower intersection totals (2 or lower)

I. TARAVAL STATION

Figure 46: Injury Collisions by CVC Violation (2012-2015)

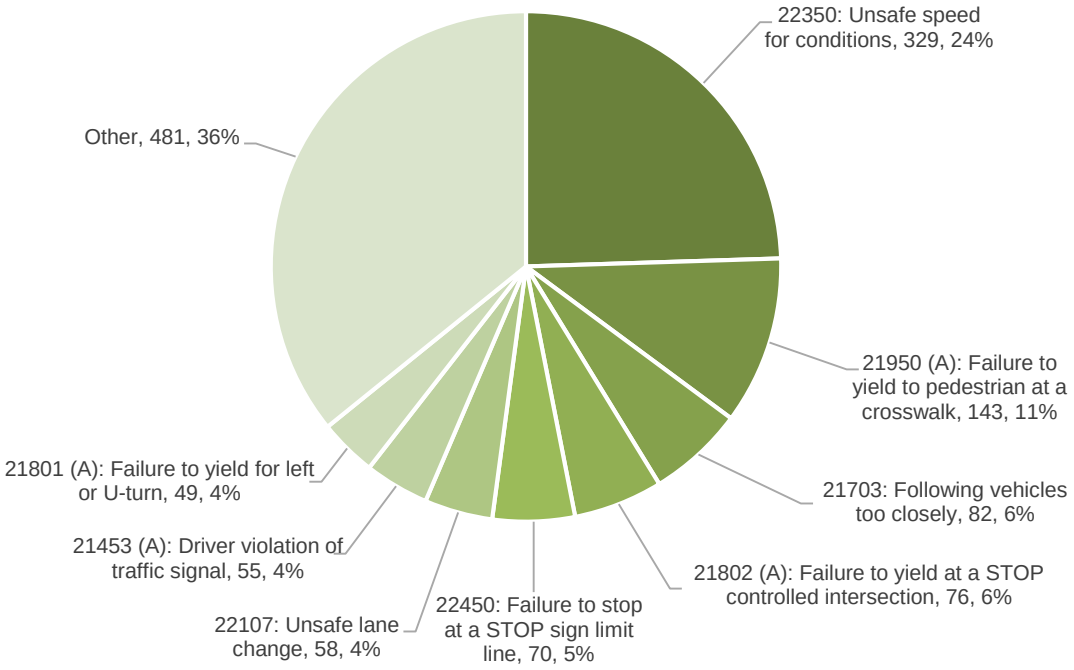


Figure 46: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	329	24%
21950 (A): Failure to yield to pedestrian at a crosswalk	143	11%
21703: Following vehicles too closely	82	6%
21802 (A): Failure to yield at a STOP controlled intersection	76	6%
22450 (A): Failure to stop at a STOP sign limit line	70	5%
22107: Unsafe lane change	58	4%
21453 (A): Driver violation of traffic signal	55	4%
21801 (A): Failure to yield for left or U-turn	49	4%
Other	481	36%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

19th Avenue and Junipero Serra Boulevard	7
John Muir Drive and Skyline Boulevard	6
19th Avenue and Crespi Drive	6
19th Avenue and Taraval Street	4
19th Avenue and Winston Street	4
37th Avenue and Lincoln Way	4
Lake Merced Boulevard and Winston Drive	4

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

Lake Merced Boulevard from Font Boulevard to Higuera Avenue	6
Great Highway from Lincoln Way to Sloat Boulevard	4
Great Highway from Skyline Boulevard to Sloat Boulevard	3
Lake Merced Boulevard from Clearfield Drive to Sunset Boulevard	3

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

Sunset Boulevard and Yorba Street	5
Claremont, Dewey, Kensington, Montalvo, Taraval (Dewey Circle)	3

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Not listed due to lower intersection totals (2 or lower)

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

19th Avenue and Winston Drive	3
Geneva Avenue and I-280 Ramps	3
Junipero Serra Boulevard and Ocean Avenue	3
Noriega Street and Sunset Boulevard	3

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

Great Highway and Skyline Boulevard	3
Broad Street and Capitol Avenue	3

J. TENDERLOIN STATION

Figure 47: Injury Collisions by CVC Violation (2012-2015)

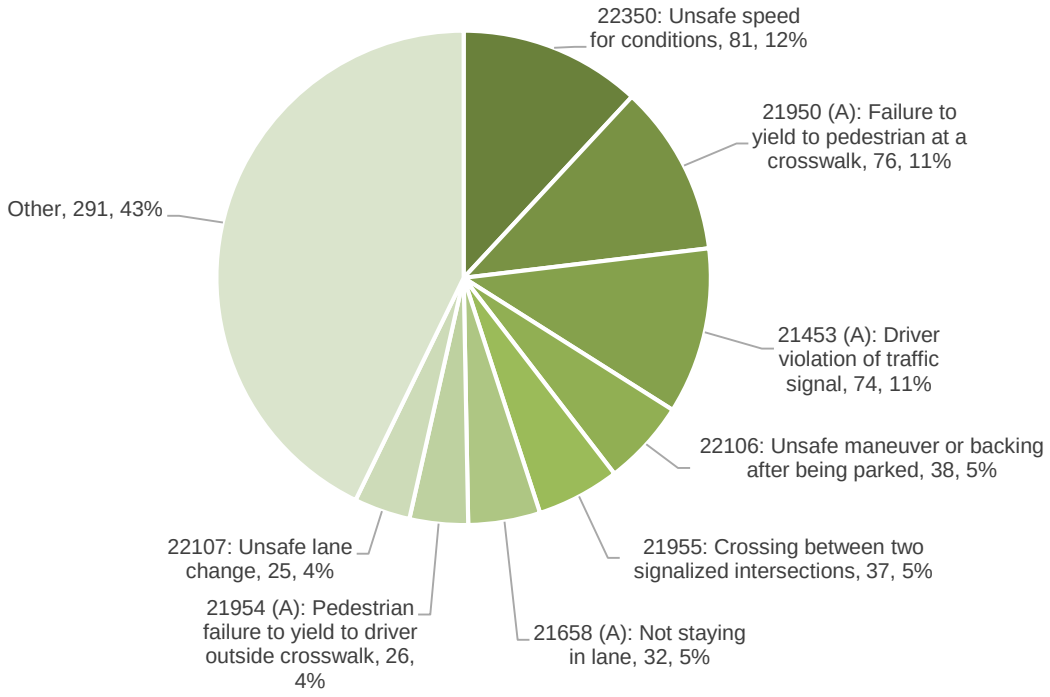


Figure 47: Injury Collisions by CVC Violation (2012-2015)

CVC Violation	Collisions	Percent of Total
22350: Unsafe speed for conditions	81	12%
21950 (A): Failure to yield to pedestrian at a crosswalk	76	11%
21453 (A): Driver violation of traffic signal	74	11%
22106: Unsafe maneuver or backing after being parked	38	6%
21955: Crossing between two signalized intersections	37	5%
21658 (A): Not staying in lane	32	5%
21954 (A): Pedestrian failure to yield to driver outside crosswalk	26	4%
22107: Unsafe lane change	25	4%
Other	291	43%

Top Injury Collision Intersections CVC 22350 Unsafe Speed for Conditions (2012-2015)

5th Street and Market Street	5
8th Street and Market Street	4
4th Street and Market Street	3

Top Injury Collision Mid-Block Segment CVC 22350 Unsafe Speed for Conditions (2012-2015)

Market Street from 7th Street to 8th Street	5

Top Injury Collision Intersections CVC 21950(A) Failure to Yield to Pedestrian (2012-2015)

Eddy and Mason Streets	8
4th Street and Market Street	4
Leavenworth and Turk Streets	4
Taylor and Turk Streets	4
Eddy and Larkin Streets	3
Ellis and Jones Streets	3
Ellis and Leavenworth Streets	3
Ellis and Taylor Streets	3
Hyde and McAllister Streets	3
Hyde Street and Golden Gate Avenue	3
Larkin and O'Farrell Streets	3

Top Injury Collision Intersections CVC 21801(A) Failure to Yield When Turning (2012-2015)

Hyde Street and McAllister Street	2

Top Injury Collision Intersections CVC 21453(A) Red Light Running (2012-2015)

Ellis and Taylor Streets	6
Eddy and Leavenworth Streets	5
Eddy and Mason Streets	5
Eddy and Larkin Streets	4
Hyde Street and Golden Gate Avenue	4
Leavenworth Street and Turk Street	4

Top Injury Collision Intersections CVC 22450 (A) Failure to Stop at a STOP Sign (2012-2015)

Not listed due to lower intersection totals (1 or lower)

PART 8: CITYWIDE GENERAL COLLISION FACTORS

Top Citywide Injury Collision Mid-Block Segments for CVC 22350
Unsafe Speed for Conditions (2012-2015)

Park Presidio Bypass from Crossover Drive to Fulton Street	17
Lake Merced Boulevard from Font Boulevard to Higuera Drive	6
Crossover Drive from John F. Kennedy Drive to Martin Luther King Jr. Drive	4

Top Citywide Injury Collision Intersections for CVC 22350
Unsafe Speed for Conditions (2012-2015)

Crossover Drive and Park Presidio Drive	10
Fulton Street and Park Presidio Bypass	8
19th Avenue and Junipero Serra Drive	7

Top Citywide Injury Collision Intersections for CVC 21453 (A)
Driver Violation of a Traffic Signal (2012-2015)

Battery Street and Pine Street	12
Oak Street and Octavia Boulevard	10
6th Street and Folsom Street	9
Golden Gate Avenue and Webster Street	8
Broadway and Van Ness Avenue	8
Bush Street and Divisadero Street	7

Top Citywide Injury Collision Intersections for CVC 21950 (A) Failure to
Yield to Pedestrian at Crosswalk (2012-2015)

Eddy Street and Mason Street	8
5th Street and Howard Street	7
Franklin Street and O'Farrell Street	7
Geary Street and Taylor Street	7
Bayshore Boulevard and Paul Avenue	6
6th Street and Howard Street	6
Geary Boulevard and Laguna Street	6

Top Citywide Injury Collision Intersections for CVC 21801 (A)
Failure to Yield for Left or U-Turn (2012-2015)

Crossover Drive and Martin Luther King Jr Drive	9
Bay Street and Van Ness Avenue	8
Bayshore Boulevard and Paul Avenue	8

Top Citywide Injury Collision Intersections for CVC 21954 (A)
Pedestrian Failure to Yield to Driver Outside Crosswalk (2012-2015)

Geary Boulevard and Webster Street	3
17th Street and Treat Avenue	2
6th Street and Natoma Street	2
9th	5
16th Street and Potrero Avenue	5
Taylor Street and Turk Street	5

Top Citywide Injury Collision Mid-Block Segment for CVC 21954 (A)
Pedestrian Failure to Yield to Driver Outside Crosswalk (2012-2015)

Church Street from Reservoir Street to Duboce Avenue	3

Top Citywide Injury Collision Mid-Block Segment for CVC 21955
Pedestrian Crossing between Two Signalized Intersections (2012-2015)

Ellis Street from Jones to Leavenworth Streets	3

Top Citywide Injury Collision Intersections CVC 22101 (D)
Illegal Turn (2012-2015)

Market Street and Octavia Boulevard	11
Duboce Avenue and Mission/Otis Streets	5
6th Street and Ahern Way	4
24th Street and Dolores Street	4
5th Street and Market Street	4

Top Citywide Injury Collision Intersections CVC 21703
Following Vehicles Too Closely (2012-2015)

19th Avenue and Sloat Boulevard	4
19th Avenue and Crespi Drive	4
19th Avenue and Junipero Serra Blvd	4

Top Citywide Injury Collision Mid-Block Segment CVC 22107
Unsafe Lane Change (2012-2015)

Market Street from 15th Street to Church Street	3
The Embarcadero from Don Chee Way to Washington Street	3

Top Citywide Injury Collision Mid-Block Segment CVC 22106
Unsafe Backing or Maneuver After Being Parked (2012-2015)

Eddy Street from Hyde Street to Leavenworth Street	3

Top Citywide Injury Collision Intersections “Alcohol Involved” (2012-2015)

Duboce Avenue and Valencia Street	5
3rd Street and Palou Avenue	4
4th Street and Harrison Street	4
9th Street and Mission Street	4
Castro Street and Market Street	4

Top Citywide Injury Collision Mid-Block Segment “Alcohol Involved” (2012-2015)

Mission Street from 23rd Street to 24th Street	4

Top Citywide Injury Collision Intersections coded “Hit and Run” (2012-2015)

6th Street and Mission Street	5
Duboce Avenue and Valencia Street	5
Hyde Street and Golden Gate Avenue	5
Market Street and Octavia Boulevard	5
Polk Street and Post Street	5
Taylor Street and Turk Street	5

Top Citywide Injury Collision Mid-Block Segments coded “Hit and Run” (2012-2015)

16th Street from Hampshire Street to Bryant Street	5
Mission Street from 23rd Street to 24th Street	4
The Embarcadero from Don Chee Way to Washington Street	4
The Embarcadero from Washington Street to Broadway	4
Van Ness Avenue from Broadway to Pacific Avenue	4

Top Citywide Injury Collision Intersections at Night (2012-2015)

Oak Street and Octavia Boulevard	13
6th Street and Folsom Street	11
7th Street and Mission Street	11
14th Street and Mission Street	10
2nd Street and Folsom Street	10
Crossover Drive and Martin Luther King Jr Drive	10
Grove Street and Van Ness Avenue	10
Masonic Avenue and Oak Street	10

Top Citywide Injury Collision Mid-Block Segments at Night (2012-2015)

Park Presidio Bypass from Crossover Drive to Fulton Street	9
Castro Street from 17th Street to 18th Street	7

Report prepared by:
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APPENDIX
FULL TEXT OF REFERENCED CALIFORNIA VEHICLE CODE SECTIONS

21202

(a) Any person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at that time shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:
(1) When overtaking and passing another bicycle or vehicle proceeding in the same direction.
(2) When preparing for a left turn at an intersection or into a private road or driveway.
(3) When reasonably necessary to avoid conditions (including, but not limited to, fixed or moving objects, vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes) that make it unsafe to continue along the right-hand curb or edge, subject to the provisions of Section 21656. For purposes of this section, a "substandard width lane" is a lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the lane.
(4) When approaching a place where a right turn is authorized.
(b) Any person operating a bicycle upon a roadway of a highway, which highway carries traffic in one direction only and has two or more marked traffic lanes, may ride as near the left-hand curb or edge of that roadway as practicable.

21453

(a) A driver facing a steady circular red signal alone shall stop at a marked limit line, but if none, before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection, and shall remain stopped until an indication to proceed is shown, except as provided in subdivision (b).
(b) Except when a sign is in place prohibiting a turn, a driver, after stopping as required by subdivision (a), facing a steady circular red signal, may turn right, or turn left from a one-way street onto a one-way street. A driver making that turn shall yield the right-of-way to pedestrians lawfully within an adjacent crosswalk and to any vehicle that has approached or is approaching so closely as to constitute an immediate hazard to the driver, and shall continue to yield the right-of-way to that vehicle until the driver can proceed with reasonable safety.
(c) A driver facing a steady red arrow signal shall not enter the intersection to make the movement indicated by the arrow and, unless entering the intersection to make a

movement permitted by another signal, shall stop at a clearly marked limit line, but if none, before entering the crosswalk on the near side of the intersection, or if none, then before entering the intersection, and shall remain stopped until an indication permitting movement is shown.
(d) Unless otherwise directed by a pedestrian control signal as provided in Section 21456, a pedestrian facing a steady circular red or red arrow signal shall not enter the roadway.

21456

Whenever a pedestrian control signal showing the words “WALK” or “WAIT” or “DONT WALK” or other approved symbol is in place, the signal shall indicate as follows:
(a) “WALK” or approved “Walking Person” symbol. A pedestrian facing the signal may proceed across the roadway in the direction of the signal, but shall yield the right-of-way to vehicles lawfully within the intersection at the time that signal is first shown.
(b) Flashing or steady “DONT WALK” or “WAIT” or approved “Upraised Hand” symbol. No pedestrian shall start to cross the roadway in the direction of the signal, but any pedestrian who has partially completed crossing shall proceed to a sidewalk or safety zone or otherwise leave the roadway while the “WAIT” or “DONT WALK” or approved “Upraised Hand” symbol is showing.

21650

Upon all highways, a vehicle shall be driven upon the right half of the roadway, except as follows:
(a) When overtaking and passing another vehicle proceeding in the same direction under the rules governing that movement.
(b) When placing a vehicle in a lawful position for, and when the vehicle is lawfully making, a left turn.
(c) When the right half of a roadway is closed to traffic under construction or repair.
(d) Upon a roadway restricted to one-way traffic.
(e) When the roadway is not of sufficient width.
(f) When the vehicle is necessarily traveling so slowly as to impede the normal movement of traffic, that portion of the highway adjacent to the right edge of the roadway may be utilized temporarily when in a condition permitting safe operation.
(g) This section does not prohibit the operation of bicycles on any shoulder of a highway, on any sidewalk, on any bicycle path within a highway, or along any crosswalk

or bicycle path crossing, where the operation is not otherwise prohibited by this code or local ordinance.
(h) This section does not prohibit the operation of a transit bus on the shoulder of a state highway in conjunction with the implementation of a program authorized pursuant to Section 148.1 of the Streets and Highways Code on state highways within the areas served by the transit services of the Monterey-Salinas Transit District or the Santa Cruz Metropolitan Transit District.

21658

Whenever any roadway has been divided into two or more clearly marked lanes for traffic in one direction, the following rules apply:
(a) A vehicle shall be driven as nearly as practical entirely within a single lane and shall not be moved from the lane until such movement can be made with reasonable safety.
(b) Official signs may be erected directing slow-moving traffic to use a designated lane or allocating specified lanes to traffic moving in the same direction, and drivers of vehicles shall obey the directions of the traffic device.

21703

The driver of a motor vehicle shall not follow another vehicle more closely than is reasonable and prudent, having due regard for the speed of such vehicle and the traffic upon, and the condition of, the roadway.

21750

(a) The driver of a vehicle overtaking another vehicle proceeding in the same direction shall pass to the left at a safe distance without interfering with the safe operation of the overtaken vehicle, subject to the limitations and exceptions set forth in this article.
(b) This section shall become operative on September 16, 2014.

21755

(a) The driver of a vehicle may overtake and pass another vehicle upon the right only under conditions permitting that movement in safety. In no event shall that movement be made by driving off the paved or main-traveled portion of the roadway.

(b) This section does not prohibit the use of a bicycle in a bicycle lane or on a shoulder.

21801

(a) The driver of a vehicle intending to turn to the left or to complete a U-turn upon a highway, or to turn left into public or private property, or an alley, shall yield the right-of-way to all vehicles approaching from the opposite direction which are close enough to constitute a hazard at any time during the turning movement, and shall continue to yield the right-of-way to the approaching vehicles until the left turn or U-turn can be made with reasonable safety.
(b) A driver having yielded as prescribed in subdivision (a), and having given a signal when and as required by this code, may turn left or complete a U-turn, and the drivers of vehicles approaching the intersection or the entrance to the property or alley from the opposite direction shall yield the right-of-way to the turning vehicle.

21802

(a) The driver of any vehicle approaching a stop sign at the entrance to, or within, an intersection shall stop as required by Section 22450. The driver shall then yield the right-of-way to any vehicles which have approached from another highway, or which are approaching so closely as to constitute an immediate hazard, and shall continue to yield the right-of-way to those vehicles until he or she can proceed with reasonable safety.
(b) A driver having yielded as prescribed in subdivision (a) may proceed to enter the intersection, and the drivers of all other approaching vehicles shall yield the right-of-way to the vehicle entering or crossing the intersection.
(c) This section does not apply where stop signs are erected upon all approaches to an intersection.

21950

(a) The driver of a vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at an intersection, except as otherwise provided in this chapter.
(b) This section does not relieve a pedestrian from the duty of using due care for his or her safety. No pedestrian may suddenly leave a curb or other place of safety and walk or run into the path of a vehicle that is so close as to constitute an immediate hazard.

No pedestrian may unnecessarily stop or delay traffic while in a marked or unmarked crosswalk.
(c) The driver of a vehicle approaching a pedestrian within any marked or unmarked crosswalk shall exercise all due care and shall reduce the speed of the vehicle or take any other action relating to the operation of the vehicle as necessary to safeguard the safety of the pedestrian.
(d) Subdivision (b) does not relieve a driver of a vehicle from the duty of exercising due care for the safety of any pedestrian within any marked crosswalk or within any unmarked crosswalk at an intersection.

21954

(a) Every pedestrian upon a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway so near as to constitute an immediate hazard.
(b) The provisions of this section shall not relieve the driver of a vehicle from the duty to exercise due care for the safety of any pedestrian upon a roadway.

21955

Between adjacent intersections controlled by traffic control signal devices or by police officers, pedestrians shall not cross the roadway at any place except in a crosswalk.

22101

(a) The Department of Transportation or local authorities in respect to highways under their respective jurisdictions, may cause official traffic control devices to be placed or erected within or adjacent to intersections to regulate or prohibit turning movements at such intersections.
(b) When turning movements are required at an intersection notice of such requirement shall be given by erection of a sign, unless an additional clearly marked traffic lane is provided for the approach to the turning movement, in which event notice as applicable to such additional traffic lane shall be given by any official traffic control device.
(c) When right- or left-hand turns are prohibited at an intersection notice of such prohibition shall be given by erection of a sign.

(d) When official traffic control devices are placed as required in subdivisions (b) or (c), it shall be unlawful for any driver of a vehicle to disobey the directions of such official traffic control devices.

22106

No person shall start a vehicle stopped, standing, or parked on a highway, nor shall any person back a vehicle on a highway until such movement can be made with reasonable safety.

22107

No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety and then only after the giving of an appropriate signal in the manner provided in this chapter in the event any other vehicle may be affected by the movement.

22350

No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.

22450

(a) The driver of any vehicle approaching a stop sign at the entrance to, or within, an intersection shall stop at a limit line, if marked, otherwise before entering the crosswalk on the near side of the intersection.
If there is no limit line or crosswalk, the driver shall stop at the entrance to the intersecting roadway.
(b) The driver of a vehicle approaching a stop sign at a railroad grade crossing shall stop at a limit line, if marked, otherwise before crossing the first track or entrance to the railroad grade crossing.
(c) Notwithstanding any other provision of law, a local authority may adopt rules and regulations by ordinance or resolution providing for the placement of a stop sign at any

location on a highway under its jurisdiction where the stop sign would enhance traffic safety.

22517

No person shall open the door of a vehicle on the side available to moving traffic unless it is reasonably safe to do so and can be done without interfering with the movement of such traffic, nor shall any person leave a door open on the side of a vehicle available to moving traffic for a period of time longer than necessary to load or unload passengers.