

11-13-19

From: Jim

Subject: Please don't renew red light camera contract w/o professional safety stats!

Venue: As early as Daly City council meeting of Nov. 25

Honorable Mayor and Councilmembers:

On May 8 I sent the City a public records request in an attempt to get copies of the safety stats for the red light camera program. That request contained the following two items.

1. In its 9-14-10 response to Finding # 6 of the 2010 grand jury report on red light cameras, the City wrote, "Since the start of this program the City of Daly City has experienced a 29% drop in traffic collisions citywide." This request is for a copy of the documents showing how that 29% drop was calculated.

2. In its 9-14-10 response to Recommendation # 3 of the 2010 grand jury report on red light cameras, the City wrote, "Annually, the Police Department will provide to the City Council a detailed report on the red light camera enforcement program and the resulting impact on reducing traffic accidents." This request is for a copy of any and all such reports dated 2010 or later, without regard to whether they were annual, of some other frequency, or intermittent, and without regard to whether they were provided or presented to the city council.

City staff emailed me in late May acknowledging receipt of the records request but as of today I've received no further emails (and no documents) even though I've sent a number of follow up emails since May.

The absence of a reply to item 1 suggests that there's probably no solid documentation of the 29% drop claimed as of 2010, which may in any case have been the result of the reduced driving during the 2008 recession (in 2016 Brookings Institute research Winston and Maheshri found that for every one percentage point increase in unemployment during the *Great Recession*, there was a 14 percent reduction in traffic fatalities). And, the absence of a reply to item 2 suggests that there's been no annual "*detailed report[s] on the red light camera enforcement program and the resulting impact on reducing traffic accidents.*" The only periodic report I've been able to find is the rather un-detailed annual report required, beginning with calendar year 2013, by CVC 21455.5(i) - which report City staff and Redflex have opted, in recent years, to leave empty of any useful accident stats. (See 2013 - 2018 copies, attached below.)

Safety is Important

Your current Redflex contract is about to expire. May I suggest that you suspend the cameras for a few months so that a thoroughly independent professional can be retained to do a study to see if there's been an actual improvement in safety? (For those who might worry that during a well publicized suspension there will be mayhem in the streets, I suggest having a look at what happened - nothing bad! - in the City of El Cajon and the City of Poway when they did fully publicized suspensions of their cameras for six-month periods.)

A few months ago Menlo Park and San Mateo chose to shut down their camera programs. They did so after their (separate) studies showed that the cameras were ineffective. (The relevant staff reports are available on the two cities' websites. See the Menlo Park council agenda for April 9, 2019 and the San Mateo council agenda for July 15, 2019.) With those two closures California has 27 camera cities, down from 106.

Money

The CVC 21455.5(i) annual report (attached below) shows that in 2018, 189 of the City's tickets were for right turns. The DCPD writes up its right turn tickets under CVC 21453(a) which carries a fine of \$500 even though they have the option to do as the City of LA did before it closed its camera program; LA cited right turns under CVC 21453(b) which carries a fine of about \$240. In my 2017 email to yourselves, copy below, I provided information about the low camera rent negotiated by another Redflex customer, Elk Grove, and I should have also mentioned the low rents paid by Redflex customers Del Mar (three cameras at \$1578/mo) and Solana Beach (three cameras at \$2364/mo). A lower rent would allow a significantly reduced fine on Daly City's right turn tickets without much effect on the program's overall finances.

Sincerely,

Jim

Attached below:

- Att. 1: My 2017 email to Daly City
- Att. 2: CVC 21455.5(i) annual reports for Daly City
- Att. 3: Candor compilation

ATTACHMENT 1

----- Forwarded Message -----

Subject:A million here, a million there... (red light camera deadline looming)

Date:Mon, 13 Nov 2017 14:19:07 -0800

From:Jim <jim>

Reply-To:jim

To:citycouncil@dalcity.org

11-13-17 2:15 pm

Subject: A million here, a million there.... (red light camera deadline looming)

Honorable Mayor and Councilmembers:

December 13 is the deadline for the City to give Redflex 30 days notice if the City wishes to avoid the first of two one-year automatic renewals of its red light camera contract with Redflex.

Cameras get much much cheaper once the high cost of the initial install has been amortized. Per this table, the target rent for a nine-year-old camera installation is \$2000 per camera per month.

Years in service	Fixed price not to exceed / Designated Intersection Approach per month
0-4.99	\$4696.00
5.0-6.99	\$4196.00
7.0-9.99	\$2000.00
10.0+	\$1500.00

Table from the Mar. 2014 contract between the City of Elk Grove, California and Redflex, for that City's system of five cameras.

Daly City is currently paying \$5520 per camera per month, so if it lets the two automatic renewals occur the City will over pay by \$337,920 during the two years. The City's fine revenue coming from the court is about \$75 per ticket issued, so the City will need to issue an extra 4506 tickets during those two years, to cover the potential overpayment to Redflex.

Even if unnecessarily paying 1/3 of a million Dollars, or having to issue thousands of extra tickets in order to compensate for paying too much rent doesn't bother you much, don't you want to evaluate the program for its effect upon safety before signing up for more years? Among other things, wouldn't you like to know why ticketing has not decreased after years of enforcement but is in fact rising, with ticketing up about 25% in the last two years?

No doubt staff - with assistance from Redflex - will be quick to offer the Industry's standard statistics supporting the use of the cameras. But personally, I identify with what Mark Twain wrote about statistics:

"Figures often beguile me, particularly when I have the arranging of them myself; in which case the remark attributed to Disraeli would often apply with justice and force: 'There are three kinds of lies: lies, damned lies and statistics.' "

When the question is, "Do cameras reduce injuries," the study I trust the most - because it does not rely on statistical analysis - is the one San Francisco first published in 2015 to satisfy the new CVC 21455.5(i) requirement to publish an annual report. A full copy of the 2016 edition of that report is in the attached Candor pdf. It takes about five minutes to read.

Now - before the contract is allowed to auto-renew - the Daly City City Council should be provided with a report about whether the cameras actually improve safety. That report should include details of any engineering changes staff may have made to improve safety. A suggested format for the report would be either that used in the San Francisco study or that used in the San Leandro study, also linked in the attached Candor pdf. Or both formats.

Regards,

Jim

ATTACHMENT 2



MAKING A SAFER WORLD.

To remain in compliance with California Vehicle Code 21455.5 (i) Redflex Traffic System and our contracted Government Agency has produced this report for the Judicial Counsel for the calendar year 2013:

Government Agency:

Daly City Police Department

The number of alleged violations in 2013 captured by the systems they operate:

3,462

The number of citations issued in 2013 by a law enforcement agency based on information collected from the automated traffic enforcement system:

1,963 Citations filed with the Court

For citations identified in paragraphs (2), the number of violations that involved traveling straight through the intersection, turning right, and turning left (if known)

Straight: 1,222

Right: 410

Left: 331

The number and percentage of citations that are dismissed by the court:

68 (3.46%)

The number of traffic collisions at each intersection that occurred prior to, and after the installation of, the automated traffic enforcement system:

Information not available.



MAKING A **SAFER** WORLD.

To remain in compliance with California Vehicle Code 21455.5 (i) Redflex Traffic System and our contracted Government Agency has produced this report for the Judicial Counsel for the calendar year 2014:

Government Agency:

Daly City Police Department

The number of alleged violations in 2014 captured by the systems they operate:

3,396

The number of citations issued in 2014 by a law enforcement agency based on information collected from the automated traffic enforcement system:

2,009 Citations filed with the Court

For citations identified in paragraphs (2), the number of violations that involved traveling straight through the intersection, turning right, and turning left (if known)

Straight:	863
Right:	413
Left:	730

The number and percentage of citations that are dismissed by the court:

41 (1.20%)

The number of traffic collisions at each intersection that occurred prior to, and after the installation of, the automated traffic enforcement system:

Intersections with Automated Enforcement System	Installation	One Year Prior to Installation	2014 Calendar
Hickey BL/Gellert BL	7/7/2009	Not Available	5
John Daly BL/Sheffield DR	7/1/2009	Not Available	3
Junipero Serra BL/Washington St.	6/24/2009	Not Available	6
San Pedro/Junipero Serra	3/10/2008	Not Available	0

(Collision Report Data from Daly City Police Department)



MAKING A **SAFER** WORLD.

To remain in compliance with California Vehicle Code 21455.5 (i) Redflex Traffic System and our contracted Government Agency has produced this report for the Judicial Council for the calendar year 2015:

Government Agency:

Daly City Police Department

The number of alleged violations in 2015 captured by the systems they operate:

4,656

The number of citations issued in 2015 by a law enforcement agency based on information collected from the automated traffic enforcement system:

2,841 Citations filed with the Court

For citations identified in paragraphs (2), the number of violations that involved traveling straight through the intersection, turning right, and turning left (if known)

Straight: 1,257

Right: 446

Left: 1138

The number and percentage of citations that are dismissed by the court:

348 (12.24%)

The number of traffic collisions at each intersection that occurred prior to, and after the installation of, the automated traffic enforcement system:

Not available



MAKING A **SAFER** WORLD.

To remain in compliance with California Vehicle Code 21455.5 (i) Redflex Traffic System and our contracted Government Agency has produced this report for the Judicial Council for the calendar year 2016:

Government Agency:

Daly City Police Department

The number of alleged violations in 2016 captured by the systems they operate:

4,667

The number of citations issued in 2016 by a law enforcement agency based on information collected from the automated traffic enforcement system:

2,777 Citations filed with the Court

For citations identified in paragraphs (2), the number of violations that involved traveling straight through the intersection, turning right, and turning left (if known)

Straight: 1,055

Right: 459

Left: 1,263

The number and percentage of citations that are dismissed by the court:

34 (1.22%)

The number of traffic collisions at each intersection that occurred prior to, and after the installation of, the automated traffic enforcement system:

Intersections with Automated Enforcement System	Installation	One Year Prior to Installation	2016 Calendar
Hickey BL/Gellert BL	7/7/2009	Not Available	6
John Daly BL/Sheffield DR	7/1/2009	Not Available	1
Junipero Serra BL/Washington St.	6/24/2009	Not Available	4
San Pedro/Junipero Serra	3/10/2008	Not Available	4



To remain in compliance with California Vehicle Code 21455.5 (i) Redflex Traffic System and our contracted Government Agency has produced this report for the Judicial Council for the calendar year 2017:

Government Agency:

Daly City Police Department

The number of alleged violations in 2017 captured by the PE equipment they operate:

4049 Total captured

The number of citations issued in 2017 by a law enforcement agency based on information collected from the automated traffic enforcement program:

2,569 Citations filed with the Court

For citations identified in paragraphs (2), the number of violations that involved traveling straight through the intersection, turning right and turning left (if known)

Straight: 1,100

Right: 351

Left: 1,118

The number and percentage of citations that are dismissed by the court:

42 (1.6%)

The number of traffic collisions at each intersection that occurred prior to, and after the installation of, the automated traffic enforcement program:

Intersections with Automated Enforcement System	Installation	One Year Prior to Installation	2017 Calendar
Hickey BL/Gellert BL	7/7/2009	Not Available	Not Available
John Daly BL/Sheffield DR	7/1/2009	Not Available	Not Available
Junipero Serra BL/Washington St.	6/24/2009	Not Available	Not Available
San Pedro/Junipero Serra	3/10/2008	Not Available	Not Available



To remain in compliance with California Vehicle Code 21455.5 (i) Redflex Traffic System and our contracted Government Agency has produced this report for the Judicial Council for the calendar year 2018:

Government Agency:

Daly City Police Department

The number of alleged violations in 2018 captured by the PE equipment they operate:

2240 Total captured

The number of citations issued in 2018 by a law enforcement agency based on information collected from the automated traffic enforcement program:

1,459 Citations filed with the Court

For citations identified in paragraphs (2), the number of violations that involved traveling straight through the intersection, turning right and turning left (if known)

Straight: 662

Right: 189

Left: 608

The number and percentage of citations that are dismissed by the court:

14 (1%)

The number of traffic collisions at each intersection that occurred prior to, and after the installation of, the automated traffic enforcement program:

Intersections with Automated Enforcement System	Installation	One Year Prior to Installation	2018 Calendar
Hickey BL/Gellert BL	7/7/2009	Not Available	Not Available
John Daly BL/Sheffield DR	7/1/2009	Not Available	Not Available
Junipero Serra BL/Washington St.	6/24/2009	Not Available	Not Available
San Pedro/Junipero Serra	3/10/2008	Not Available	Not Available

ATTACHMENT 3

CANDOR FROM OFFICIALS

City of San Francisco (cameras installed in 1997, downsized in Fall 2016): Beginning in September 2016 the City of San Francisco reduced ticketing by 72%; during the twelve-month period September 2016 thru August 2017 they issued a total of just 3265 tickets compared to the average 11,572 tickets they issued in the same twelve-month periods a year and two years before.

San Francisco's cutback was deliberate and planned, per a letter highwayrobbery.net received from City Traffic Engineer Ricardo Olea in May 2016:

"You are correct that engineering changes are the most effective way to reduce red light running crashes. We've had a long-standing record of improving intersection safety through signal upgrade improvements and signal timing changes." "We are in the process of starting a new Red Light Camera contract which will reduce the total number of approaches being enforced in San Francisco, keeping some locations we believe are still needed based on crash and citation history."

How did San Francisco arrive at their decision to downsize? In 2015 the SFMTA staff made a camera-by-camera examination of the effect the nineteen-year-old program had had upon accidents and found that the installation of a red light camera seldom was followed by a drop in accidents. Instead, the drops occurred after engineering improvements like making the yellows longer, adding an all-red interval (both of which are cheap to do), the addition of an arrow for left turns, or a general upgrade to the signal. (In one instance - see page 12 of the report - staff conceded what one of the graphs shows, that the camera may have had no effect whatsoever.)

A full copy of the SFMTA report is attached below.

City of San Leandro, California (cameras installed in 2006, still operating in 2017): In 2016, as part of its application to Caltrans for re-issuance of its annual red light camera encroachment permit, the City commissioned and submitted a study by an independent engineering firm. From the study, pages 6 and 10:

"After reviewing over 13 years of collision data for the two intersections, our findings are inconclusive with regards to an ARLE [red light camera] reducing collisions." "For whatever reason, it appears that the injury plus fatality collision rate at signalized intersections (with or without ARLE) has decreased dramatically over the most recent nine year period (when compared to the previous nine year period). ARLE cannot take credit for this reduction, because the collision rate decreased more at signalized intersections without ARLE."

Source: <http://www.highwayrobbery.net/TrcDocsSanLeanEncrPerm2016engrRepRecd2017jul26.pdf>

City of Stockton, California (cameras installed in 2004, closed in 2015): "Staff determined the program was not cost neutral for the city and found no evidence that it has significantly reduced traffic collisions. In February 2015, we sent Redflex a letter stating we were terminating the contract." Stockton police spokesman Joe Silva in 6-5-15 Stockton Record article. Source: <http://www.recordnet.com/article/20150605/NEWS/150609770>

City of Laguna Woods, California (cameras installed in 2005, closed June 2014): "Staff studied incidents over a 10-year period of time and found that the number of collisions related to signal violations at the two photo enforced intersections fluctuated slightly, but did not change in any significant manner after initiation of the red light photo enforcement program." City Manager Christopher Macon in staff report prepared for 5-28-14 council item. Source: <http://www.highwayrobbery.net/TrcDocsLagunaWoodsContr2014MayStaffRep.pdf>

City of Walnut, California (cameras installed in 2007, removed in 2014): "The statistical review of the RedFlex camera program did not reflect a reduction of traffic accidents, nor could the data support the cameras made the intersections safer." Mayor Tony Cartagena in 5-19-14 San Gabriel Valley Tribune article. Source: <http://www.sgvtribune.com/general-news/20140519/walnut-city-council-votes-to-end-red-light-camera-program>

City of Riverside, California (cameras installed in 2006, closed Sept. 2014): "Upon review CalTrans has determined that the accident rates do not warrant the camera systems at any of the five CalTrans locations and has requested their removal." Riverside Director of Public Works/City Engineer Thomas J. Boyd, in report prepared for Public Safety Committee meeting of 6-18-12, page 2-3. Source: <http://www.highwayrobbery.net/TrcDocsRivers2012JuneStaffRepCloseProg.pdf>

More from Riverside: "It's impossible to attribute causality to one thing. I don't know whether and to what degree the red light cameras have contributed to a reduction in traffic crashes." Chief of Police Sergio Diaz. Source: 7-14-12 Press Enterprise article: <http://www.pe.com/articles/-716731--.html>

More from Riverside: "I have spoken publicly against the program several times in the past, once before the public safety committee and twice before the entire council. Each time, I expressed my dislike of the general concept of the program, the unethical tactics used to collect fees, inconclusive data regarding their effectiveness, and the realization of corporate profits at the expense of our citizens. My position on these matters has not changed." Retired 28-year Riverside fire captain, in letter submitted for the Oct. 2, 2012 city council meeting. Source: <http://www.highwayrobbery.net/TrcDocsRiversideContractOpinionByRetdFireCapt.pdf>

City of Poway, California (cameras installed in 2004, removed in 2013): "On March 5, 2013, the City Council addressed the potential termination of the program and directed staff to turn off the cameras and evaluate the program's safety benefit for a six month period." "During the six month period preceding the March 9, 2013 turn-off date, there was a total of eight [later corrected to seven] at these three intersections. During the six month period after the March 9, 2013 turn-off date, there were five accidents. This represents a decrease in accidents of 37.5% [later corrected to 28.6%]. There were no serious injury accidents during this period." City Manager, in report submitted for 10-15-13 city council meeting. Source:

<http://www.highwayrobbery.net/TrcDocsPowayContr2013octStaffRepAndTwoSupps.pdf>

City of El Cajon, California (cameras installed in 2002, removed in 2013): "On February 26, 2013 the El Cajon City Council voted to suspend the "Agreement" with Redflex Traffic Systems, Inc. for a period of six months." "The data shows that from February 27, 2013 to August 31, 2013, while the cameras were covered, there were 39 reported collisions at red-light photo enforcement intersections as compared to 36 reported collisions during the same time period in 2012." "Based on these comparisons, the overall increase in traffic collisions is statistically insignificant." Chief of Police, in report submitted for 9-24-13 city council meeting. Source:

<http://www.highwayrobbery.net/TrcDocsElCajonContr2013SeptStaffRep.pdf>

City of Emeryville, California (cameras installed in 2004, removed in 2012): "Staff also analyzed the number of accidents for the same seven year period and found that the red light cameras did not significantly impact the number of accidents." "Finance has estimated that elimination of the program would result in a \$200,000 per year savings to the City." Chief of Police Kenneth James, in reports submitted for 5-15-12 city council meeting. Source:

<http://web01.emeryville.org/sirepub/pubmtgframe.aspx?meetid=87&doctype=agenda>

City of Los Angeles (cameras installed in 2000, removed in 2011): "It was completely wrong." "It was strictly designed to bring in revenue and didn't do anything for public safety." Councilmember Dennis Zine, who prior to his twelve years (termed out) on the council served 28 years with the LAPD, 18 years of which was on motors. Source: Los Angeles Daily News, 3-27-12:

<http://www.dailynews.com/general-news/20120328/red-light-scofflaws-will-catch-a-break>

City of San Bernardino, California (cameras installed in 2005, removed in 2012): "It was the consensus of the Council that the City has lost business because of the red light cameras and they're not making the City any safer." Minutes, 1-24-11 city council meeting.

<http://www.highwayrobbery.net/TrcDocsSanBernContr2011JanMins.pdf>

City of El Monte, California (cameras installed in 2003, removed in 2008): "A comparison of traffic collisions at Redflex monitored intersections vs. non-Redflex monitored intersections revealed that there is no statistical difference in the number of traffic collisions because of Redflex monitoring."

Chief of Police Ken Weldon, in memo presented at 10-21-08 council meeting.

<http://www.highwayrobbery.net/TrcDocsElMonteContrTerminateWeldonMemo.pdf>

More from El Monte: "We're spending a lot of staff time on this just to gain \$2000 a month. It doesn't reduce accidents -- that's what our studies and results have come back." City Manager James W. Mussenden. Source: Granicus video of council meeting of 10-21-08, at 1:28:40, available at City's website.

City of Upland, California (cameras installed in 2003, removed in 2009): "The system appears to have little influence on the number of red light related collisions at monitored intersections. At times, rear end collisions have actually increased." Chief Steve Adams, in memo presented at 3-9-09 council meeting. Source: <http://www.highwayrobbery.net/TrcDocsUplandStaffReport2009Mar9.pdf>

City of Whittier, California (cameras installed in 2004, removed in 2010): "Initially, the red-light program did change behaviors because it did lessen the number of red-light violations but over the long term it didn't appear to lessen the number of injury accidents." Assistant City Manager Nancy Mendez. Source: 12-6-10 Whittier Daily News:

<http://www.highwayrobbery.net/TrcDocsWhittierArticleProgTerminated.pdf>

City of Loma Linda, California (cameras installed in 2006, removed in 2010): "I believe these red light cameras are ways for city governments to legally extort money from their citizens." "The month after we lengthened the yellow light by one second, the number of violations that we have seen dropped by 90 percent." Mayor Rhodes Rigsby, M.D.

Source: KABC - TV, 12-3-10,

http://abclocal.go.com/kabc/story?section=news/local/inland_empire&id=7824510

City of Gardena, California (cameras installed in 2005, removed in 2011): "Our research in Gardena has revealed there is no significant traffic safety impact as a result of the use of the red light cameras. At almost every intersection where we have cameras, collisions have remained the same, decreased very slightly, or increased depending on the intersection you examine. When combining the statistics of all the intersections, the overall consensus is that there is not a noticeable safety enhancement to the public." Chief of Police Edward Medrano, in memo presented at 2-9-10 council meeting. Source: <http://www.highwayrobbery.net/TrcDocsGardenaContr2010staffRepFull.pdf>

City of Bell Gardens, California (cameras installed in 2009, removed in 2012): "To date, 95% of the funds collected from verifiable violations have been paid to RedFlex Traffic Systems for operating the cameras. The remaining 5% of funds collected have been utilized to partially offset costs of personnel to manage the system. The red light camera program has contributed to a moderate decrease in the overall number of accidents; however, no change in the overall number of injury accidents. Furthermore, the police department has recognized unanticipated personnel costs to manage the program. Based on this analysis, the red light camera program is not significant enough of a community safety benefit to justify the continuation of the program beyond the existing three (3) year agreement term that expires on March 29, 2012." Staff report presented at 9-26-11 council meeting. Source: <http://www.highwayrobbery.net/TrcDocsBellGdnsContr2011staffRep.pdf>

City of Hayward, California (cameras installed in 2008, removed in 2013): "In response to Council Member Zermeño's question for reasons why cities chose to drop out of the Red Light Camera program... City Manager David commented that another reason was the lack of strong evidence in the industry that red light cameras were effective in reducing collisions." Minutes, 10-11-11 council meeting. Source: <http://www.highwayrobbery.net/TrcDocsHaywardStaffRep2011Oct11mins.pdf>

More from Hayward: "There is no concrete data that supports the fact that red light cameras are supposed to reduce collisions." "That's not been our experience here in Hayward. We've had much better results with a redeployment of our motor officers. I think that having that personal contact with our community members makes a lasting impression. It's an opportunity for us to change behavior when it's wrong versus getting a ticket in the mail 2-4 weeks down the road." Police Chief Diane Urban, during 3-5-13 city council meeting. Source: <http://sanfrancisco.cbslocal.com/2013/03/06/hayward-to-get-rid-of-red-light-cameras/>


City of Hawthorne, California (cameras installed in 2004, still operating as of 2017): "The hope is that driving behavior is corrected, not just through that intersection but through the rest of the time you're driving here." "You need to study accidents overall. Some of the data that you don't have is accidents for their entirety in our city. You know what, you're right, they're not going down. I wish they were." Hawthorne Police Captain Keith Kauffman, during 3-13-12 city council meeting. (In late 2015 Kauffman became Chief of Police in the City of Redondo Beach.) Source: <http://highwayrobbery.net/redlightcamsdocsHawthMain.html#Council2012>

City of Escondido, California (cameras installed in 2004, removed in 2013): "Staff's analysis is, the data on accident rates is inconclusive." "We didn't find any change between photo enforced intersections and citywide. You're just as likely to be injured at a photo enforced intersection as you are citywide. So we didn't find anything to demonstrate that severity had been reduced." "Photo enforcement has the highest cost of all the countermeasures." Escondido Assistant Director of Public Works Julie Procopio. Source: Video of council meeting of 8-21-13, at 1:26:50, available on City's official archive site, at <http://escondido2.12milesout.com/>

Effectiveness of Other Counter Measures

Counter Measure	Crash Reduction Factor *	Cost per Intersection /Year
Left Turn Protected Phasing	27%	\$5,000
Retroreflective Backplates	13%	\$2,000
Countdown Pedestrian Heads	20%	\$4,800
Improve Signal Coordination	27%**	\$2,400
Automated Enforcement (RLPE)	12%	\$89,800

* FHWA study estimates
 ** Right Angle Crashes Only



Slide shown by staff at 8-21-13 Escondido council meeting.

More from Escondido: "Some of the best footage of really drastic collisions comes from red light cameras." "The cameras are there, the collisions still happen." Councilwoman Olga Diaz. Source: Video of council meeting of 8-21-13, at 1:30:00.

City of South Gate, California (cameras installed in 2003, removed in 2013): "The most disappointing thing from staff's perspective is the lack of change in behavior at the intersections." "If you look at the statistics that were provided by RedFlex, you didn't see a dramatic impact in the behavior over the years. In fact, a limited correlation between the implementation of RedFlex and the change in behavior. That's disappointing in the deployment, not just in this city, but everywhere." City Manager Michael Flad at council meeting of 9-10-13. Source audio:

<http://www.highwayrobbery.net/TrcDocsSouthGateContrQuit2013Sep10audioClipCityMgr.mp3>

City of Moreno Valley, California (cameras installed in 2008, removed in 2009, City of Riverside camera on shared border removed in 2012 at Moreno Valley's request): "We took the heat without having any control over it." "I'm happy to see all those red light cameras go. ...The few people that like them just haven't looked at the reality of what it does. It takes away the discretion of a police officer." Moreno Valley Mayor Richard Stewart. Source: Riverside Press Enterprise article 8-6-12

<http://www.pe.com/articles/camera-654226-riverside-city.html>

City of Glendale, California (cameras installed in 2008, removed in 2012): "In short, the nearly 4-year-old red-light camera program became 'cumbersome' and not 'the best use of our resources,' Capt. Carl Povilaitis said." Source: Glendale News-Press article of 3-13-12

<http://www.glendalenewspress.com/news/tn-gnp-0314-glendale-police-shut-down-redlight-camera-program,0,1343078.story>

The San Mateo County (California) Superior Court (beginning in 2005 nine cities in the County installed cameras and four still were operating cameras as of 2017): "Are we doing right by the public?" "It's questionable whether the trade-offs are appropriate." "There's a balance there, and I don't think we have found it." CEO John Fitton, San Mateo Superior Court, on 11-13-09. Source:

<http://www.highwayrobbery.net/TrcDocsSanMateoCountyArticles2009Nov13CourtExecAngry.txt>

More from the San Mateo Superior Court: "I would advise cities who are contemplating installing red light cameras to move cautiously. I know these systems generate revenue for cities, but safety-wise there are questions about whether the red light cameras reduce accidents." CEO John Fitton, on 2-16-10.

Source: KGO-TV, <http://www.abclocal.go.com/kgo/story?section=news/local/peninsula&id=7280823>

From the San Mateo County Grand Jury: "Based on the data provided by the cities, there was no overall trend indicating a noticeable change in accident rates before and after installation of red light cameras." "Recently, the City of San Carlos extended the yellow light time to comply with state standards and found that the number of citations fell dramatically." "As a result the revenue from red light citations could no longer cover the associated costs." Source: 2010 Grand Jury Report <http://www.highwayrobbery.net/TrcDocsSanMateoGrandJuryFinalRep.pdf>

The SFMTA report begins on the next page.



SFMTA
Municipal
Transportation
Agency

Automated Photo Enforcement Annual Report 2015

March 28, 2016

Pursuant to California Vehicle Code section 21455.5, the San Francisco Municipal Transportation Agency is submitting an Automated Photo Enforcement Program Annual Report for 2015. This Annual Report contains the following information:

1. The number of alleged violations captured by the system: **33,049 alleged automated enforcement violations were captured in 2015, as shown in the chart below.**
2. The number of citations issued by a law enforcement agency based on information collected from the automated traffic enforcement system: **11,851 automated enforcement citations were issued in 2015, as shown in the chart below.**
3. For citations identified in item #2, the number of violations that involved traveling straight through the intersection, turning right, and turning left: **Our vendor, Xerox, does not track whether a violation involved traveling straight through the intersection, turning right, or turning left. In San Francisco there are policies in place (such as minimum violation speed) to prevent the system from citing legal right turns on a red light.**
4. The number and percentage of citations that are dismissed by the court: **The Court was unable to provide data for November and December 2015 due to their switch to a new computer system at the end of 2015. The SFMTA will submit a revised annual report if and when the data becomes available. From January to October 2015, 549 citations were dismissed, as shown in the chart below, which represents 5.49% of citations issued from January to October (10,001).**
5. The number of traffic collisions at each intersection that occurred prior to, and after the installation of, the automated traffic enforcement system: **Beginning on page 3 are graphs showing the number of injury collisions before and after installation of red light cameras at each intersection.**

2015	Alleged Violations Captured	Number of Citations Issued	Number of Citations Dismissed by the Court
January	2,686	1,024	73
February	2,425	947	38
March	2,656	1,053	32
April	2,866	1,096	19
May	2,692	894	41
June	3,023	945	47
July	2,958	918	53
August	2,860	905	136
September	2,839	1,050	73
October	3,098	1,169	37
November	2,486	957	data not available
December	2,460	893	data not available
2015 Totals:	33,049	11,851 (10,001 Jan-Oct)	549 Jan-Oct (or 5.49% of citations issued Jan-Oct)

Engineering Changes at Red Light Camera Enforced Intersections

19th Avenue and Sloat Boulevard

Installation Dates: January 1997 (Northbound), February 1997 (Southbound)

Directions Enforced: Northbound and Southbound 19th Avenue

Date of Major Signal Upgrade: April 1999

Date of Yellow Light Changes: April 1998

Other signal modifications of note: April 2000, all-red added after Sloat Boulevard phase, pedestrian signals installed crossing 19th Avenue. August 2003, all-red added after 19th Avenue phase. November 2007, lagging eastbound left turn arrow installed.

Figure 2: 19th Avenue and Sloat Boulevard Injury Broadside Collisions (1995-2015)

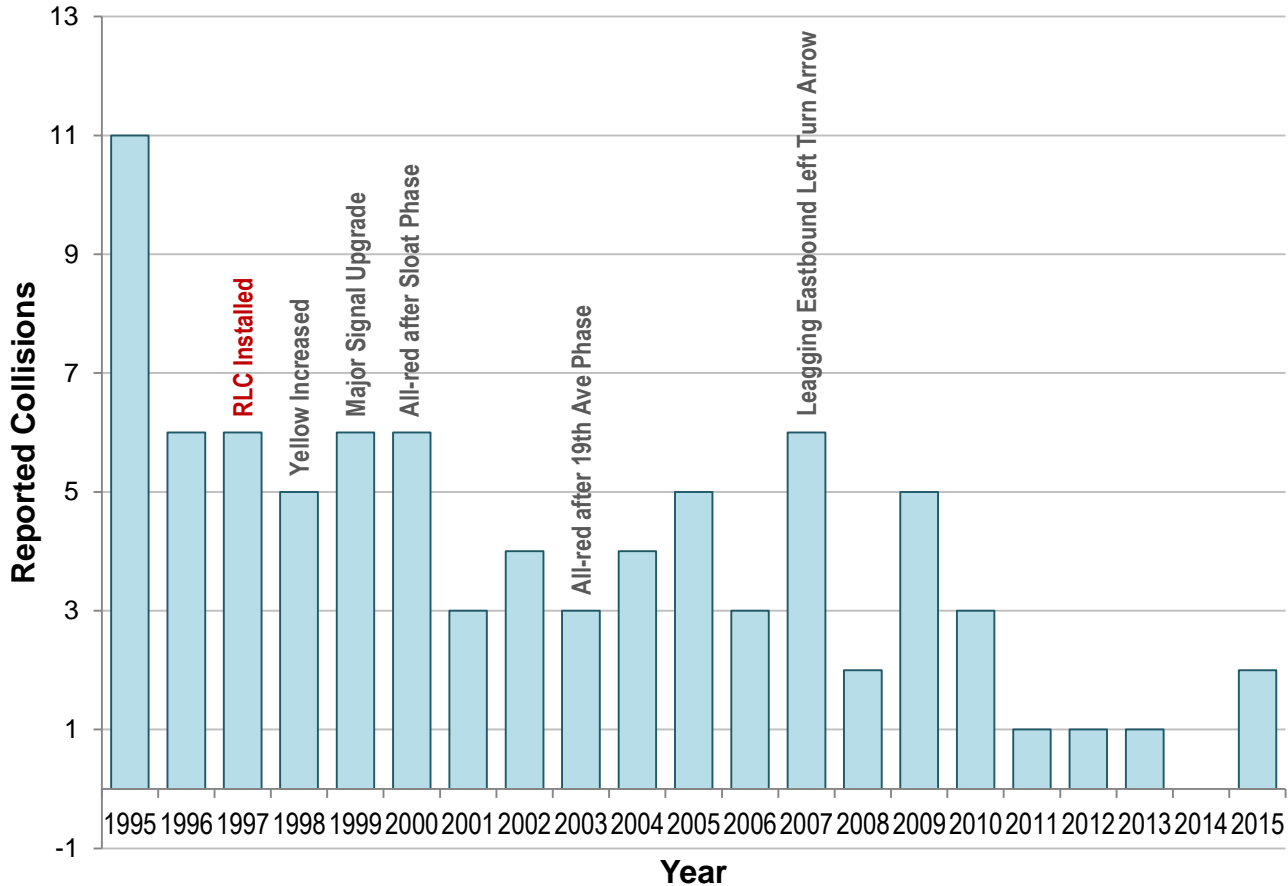


Figure 2: 19th Avenue and Sloat Boulevard Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	11	6	6	5	6	6	3	4	3	4	5	3	6	2	5	3	1	1	1	0	2

1st and Folsom Streets

Installation Dates: March 2000

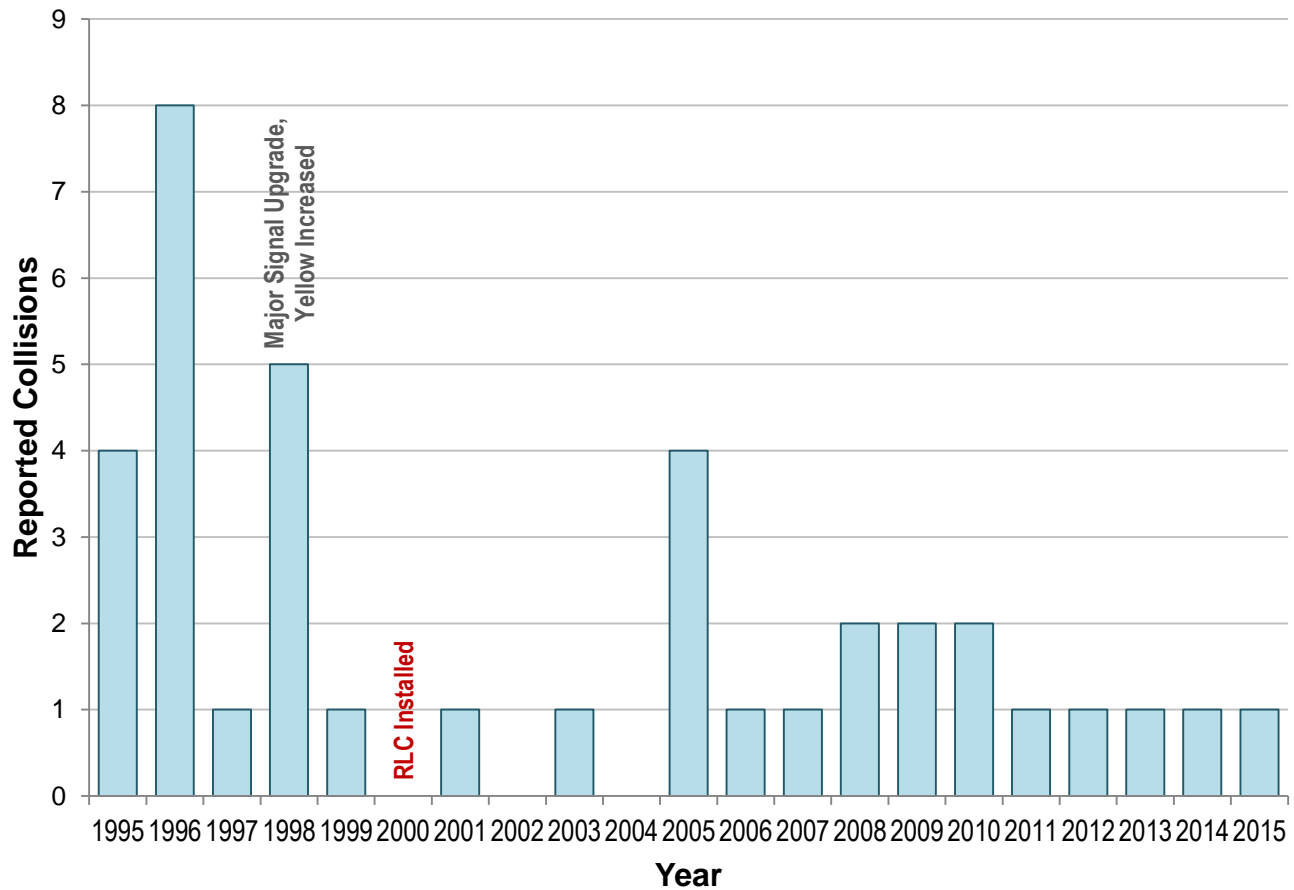
Directions Enforced: Southbound 1st Street

Date of Major Signal Upgrade: October 1998

Date of Yellow Light Changes: October 1998

Other signal modifications of note: Pedestrian signals added August 2006

**Figure 3: 1st and Folsom Streets
Injury Broadside Collisions (1995-2015)**



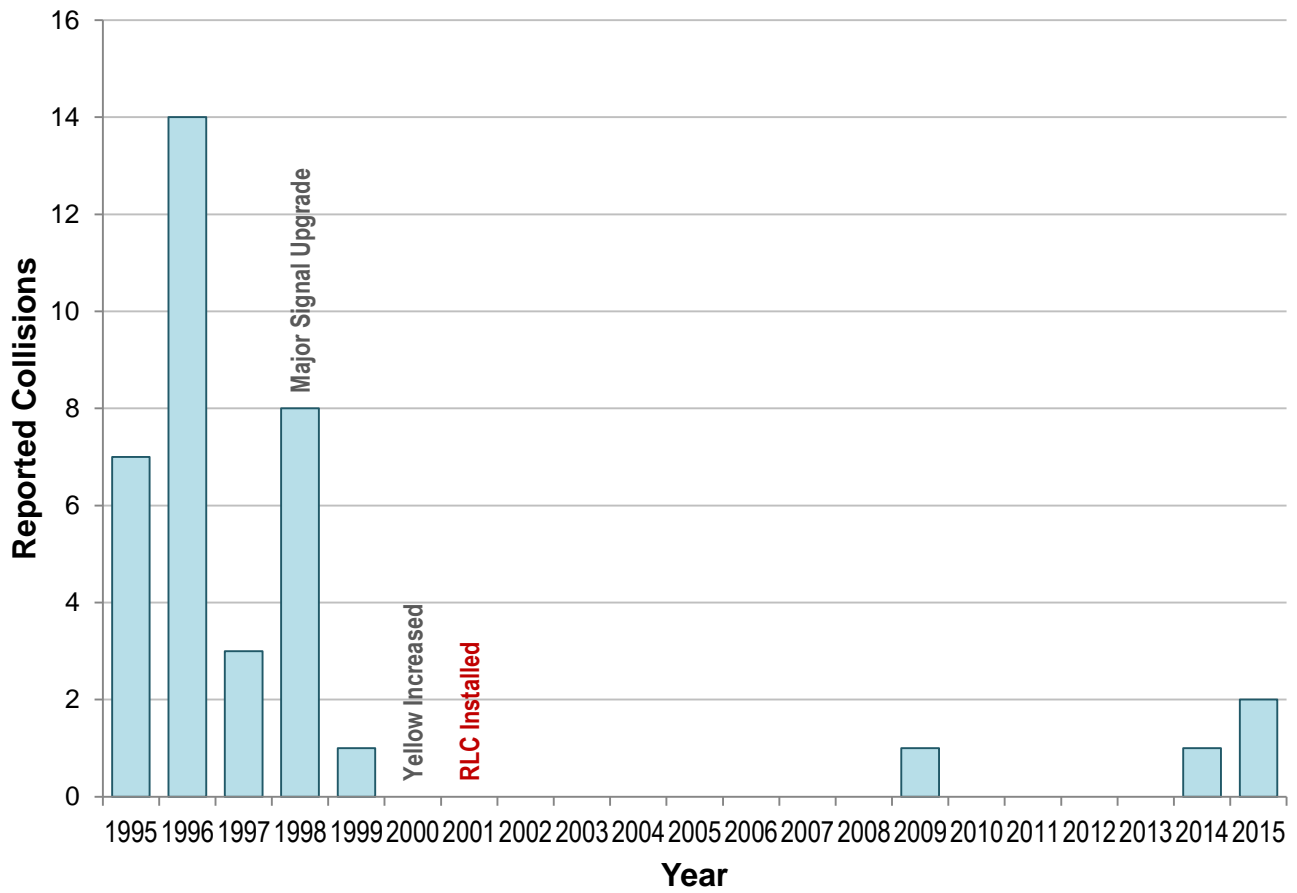
**Figure 3: 1st and Folsom Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	4	8	1	5	1	0	1	0	1	0	4	1	1	2	2	2	1	1	1	1	1

3rd and Harrison Streets

Installation Dates: February 2001
 Directions Enforced: All
 Date of Major Signal Upgrade: July 1998
 Date of Yellow Light Changes: March 2000
 Other signal modifications of note: Pedestrian signals added March 2000

**Figure 4: 3rd and Harrison Streets
 Injury Broadside Collisions (1995-2015)**



**Figure 4: 6th and Bryant Streets
 Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	7	14	3	8	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2

4th and Howard Streets

Installation Dates: June 2004

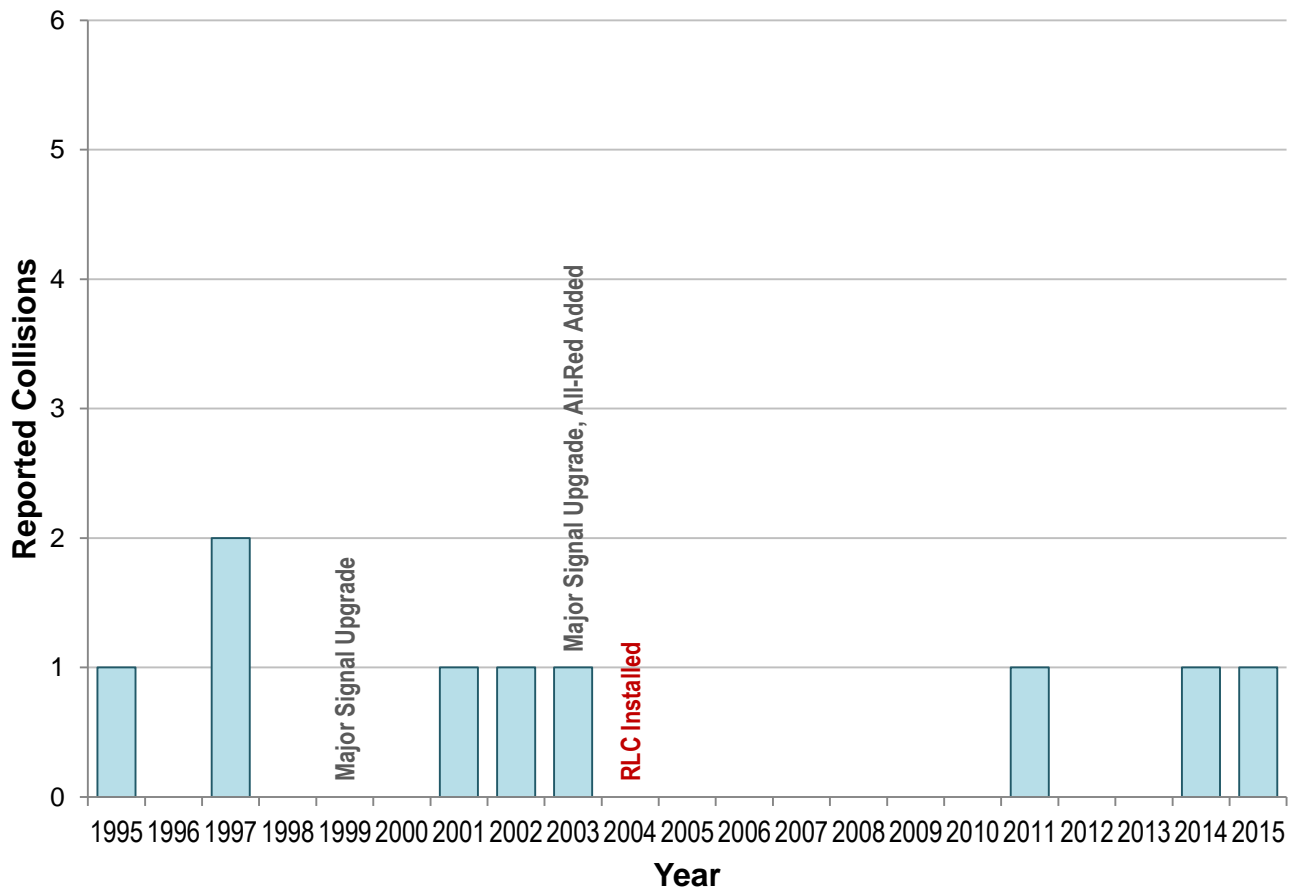
Directions Enforced: Westbound Howard Street

Date of Major Signal Upgrade: March 1999 and February 2003

Date of Yellow Light Changes:

Other signal modifications of note: All-red added February 2003

**Figure 5: 4th and Howard Streets
Injury Brosside Collisions (1995-2015)**



**Figure 5: 4th and Howard Streets
Injury Brosside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1	0	2	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1

5th and Harrison Streets

Installation Dates: February 2001

Directions Enforced: Southbound 5th Street, Westbound Harrison Street

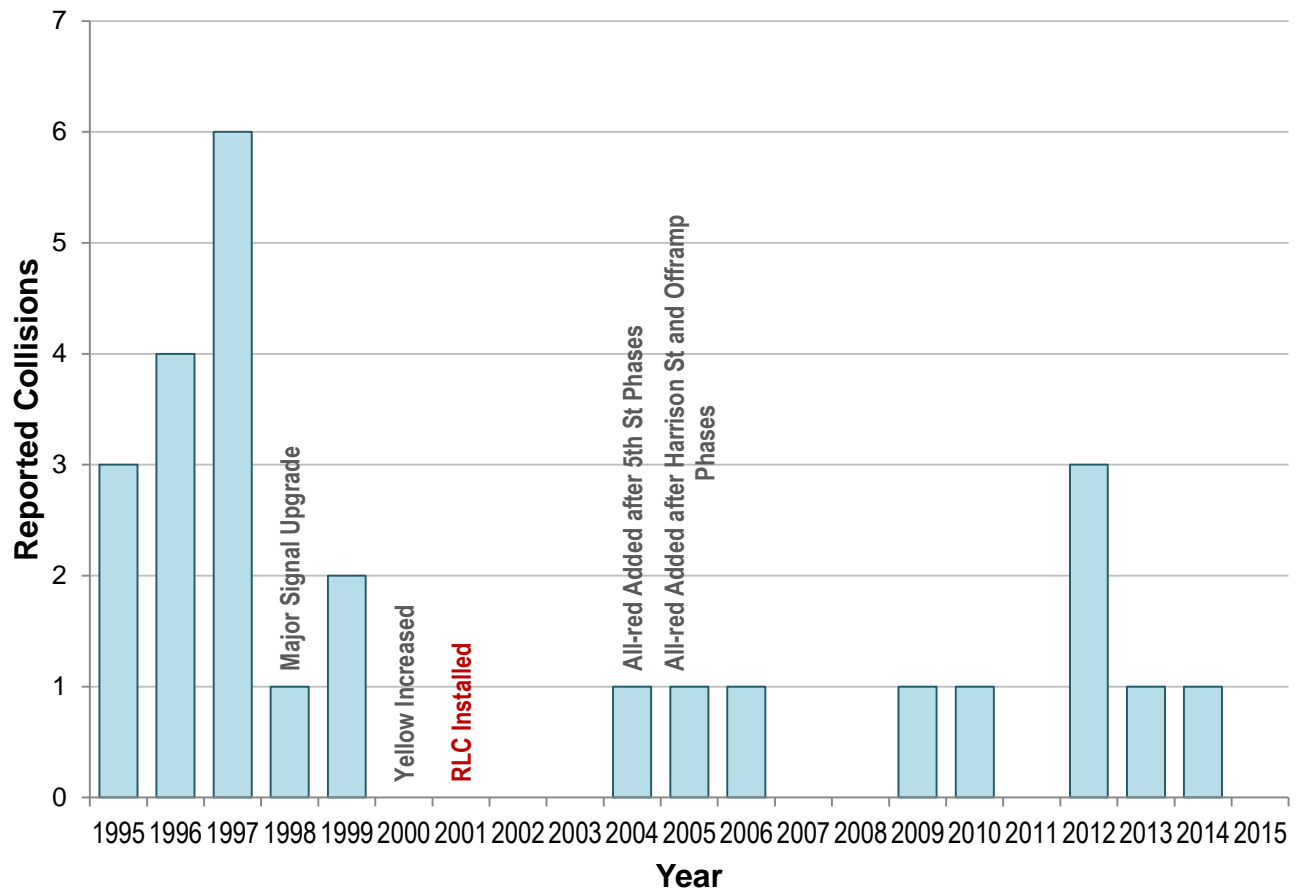
Date of Major Signal Upgrade: July 1998

Date of Yellow Light Changes: July 2000

Other signal modifications of note: September 2004, all-red added after 5th St phases.

November 2005, all-red added after Harrison St and offramp phases.

**Figure 6: 5th and Harrison Streets
Injury Broadside Collisions (1995-2015)**



**Figure 6: 5th and Harrison Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	3	4	6	1	2	0	0	0	0	1	1	1	0	0	1	1	0	3	1	1	0

5th and Howard Streets

Installation Date: November 1996

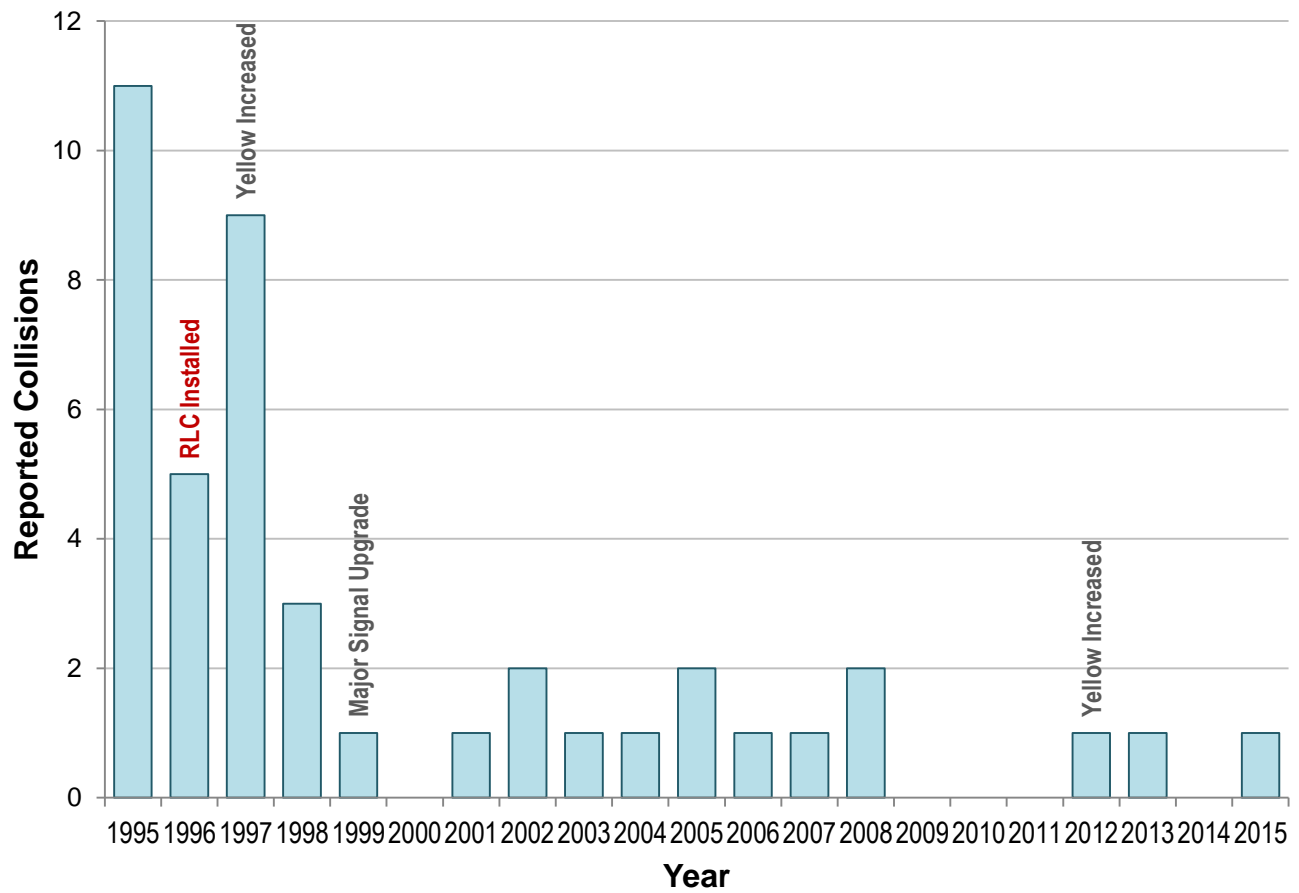
Directions Enforced: Westbound Howard Street

Date of Major Signal Upgrade: March 1999

Date of Yellow Light Changes: December 1997, February 2012

Other signal modifications of note:

**Figure 7: 5th and Howard Streets
Injury Broadside Collisions (1995-2015)**



**Figure 7: 5th and Howard Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	11	5	9	3	1	0	1	2	1	1	2	1	1	2	0	0	0	1	1	0	1

5th and Mission Streets

Installation Dates: October 2000 (Northbound), November 2000 (Southbound and Westbound)

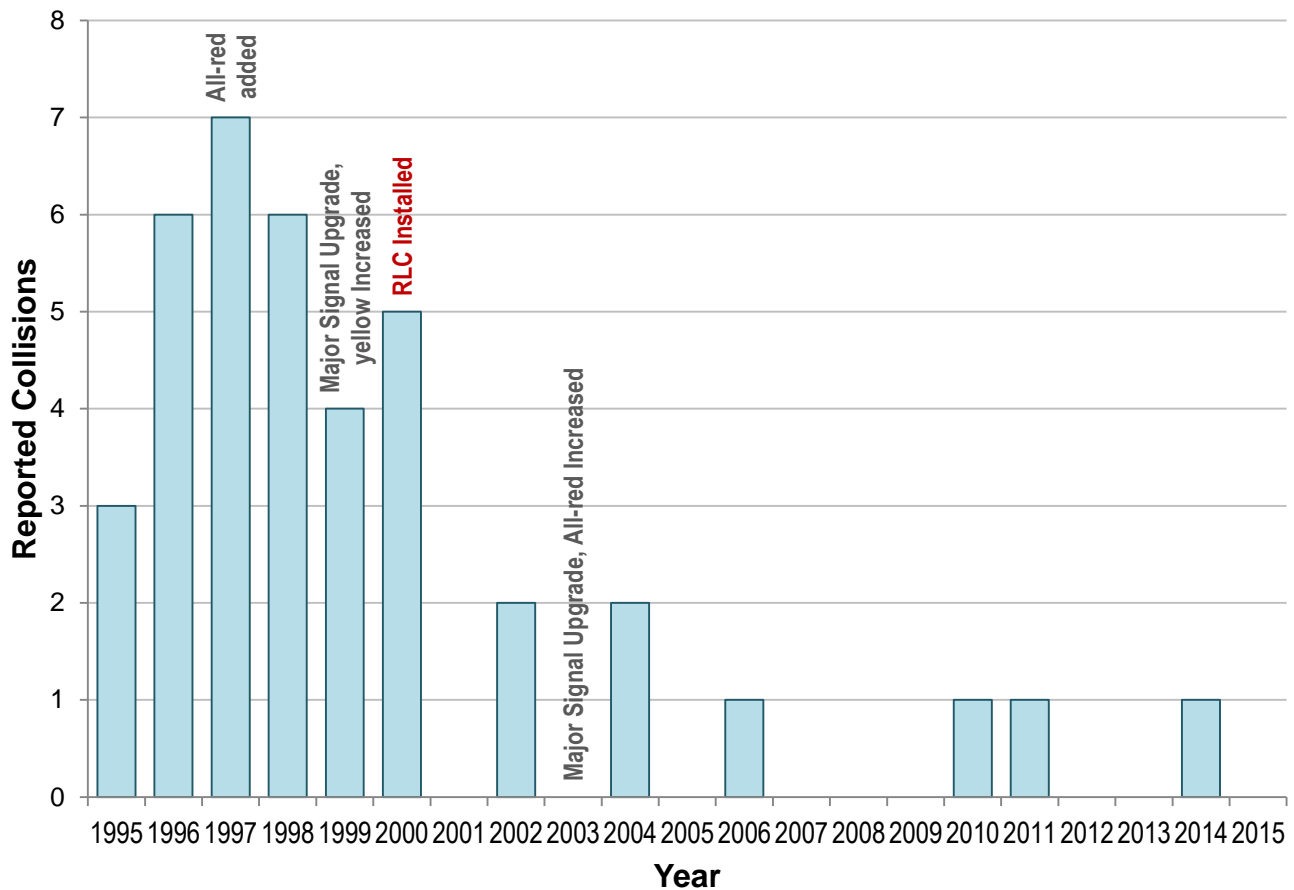
Directions Enforced: Northbound and Southbound 5th Street, Westbound Mission Street

Date of Major Signal Upgrade: April 1999 and October 2003

Date of Yellow Light Changes: April 1999

Other signal modifications of note: All-red added September 1997 and increased October 2003.

**Figure 8: 5th and Mission Streets
Injury Broadside Collisions (1995-2015)**



**Figure 8: 5th and Mission Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	3	6	7	6	4	5	0	2	0	2	0	1	0	0	0	1	1	0	0	1	0

6th and Bryant Streets

Installation Dates: December 1999 (Northbound), February 2000 (Southbound) and April 2000 (Eastbound)

Directions Enforced: All

Date of Major Signal Upgrade: September 1997

Date of Yellow Light Changes: July 2000, eastbound and southbound. May 2004 northbound.

Other signal modifications of note: **Southbound left turn arrows added September 1997**

Figure 9: 6th and Bryant Streets Injury Broadside Collisions (1995-2015)

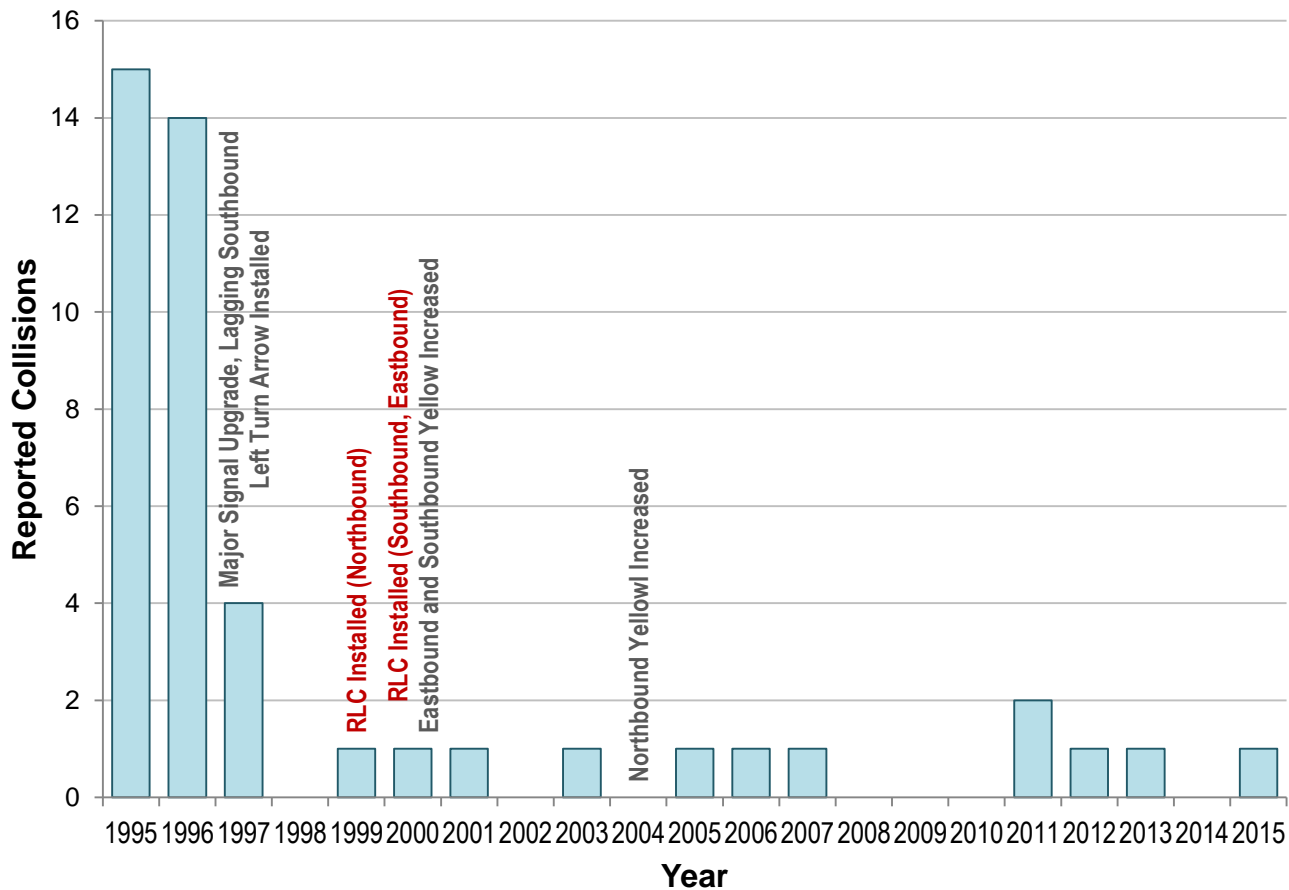


Figure 9: 6th and Bryant Streets Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	15	14	4	0	1	1	1	0	1	0	1	1	1	0	0	0	2	1	1	0	1

7th and Mission Streets

Installation Dates: September 1997 (Northbound), November 1998 (Westbound)

Directions Enforced: Northbound 7th Street, Westbound Mission Street

Date of Major Signal Upgrade: August 2002

Date of Yellow Light Changes: August 1998

Other signal modifications of note:

Figure 10: 7th and Mission Streets Injury Broadside Collisions (1995-2015)

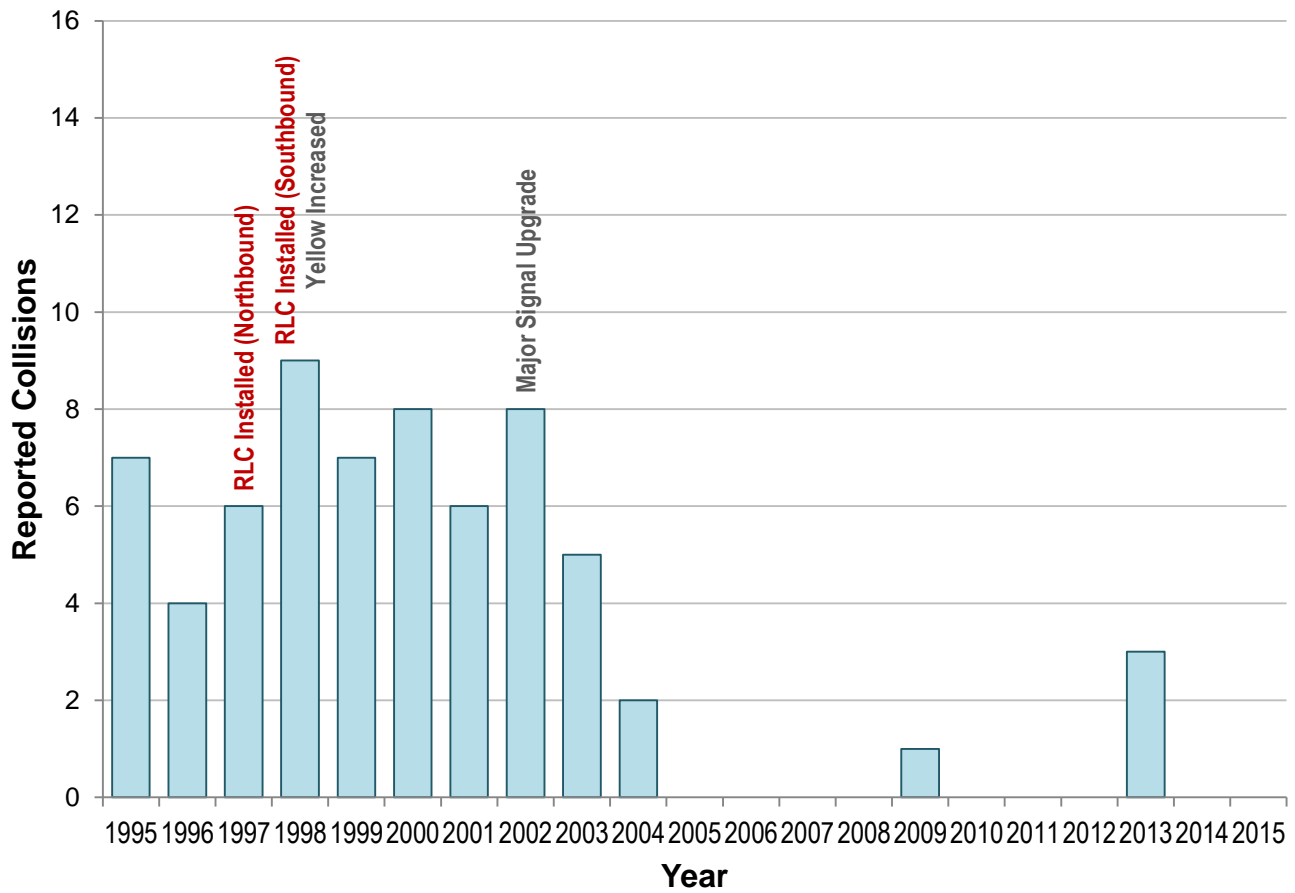


Figure 10: 7th and Mission Streets Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	7	4	6	9	7	8	6	8	5	2	0	0	0	0	1	0	0	0	3	0	0

7th and Mission Streets shows how a red light camera installation can at times leave an intersection's collision trends unchanged. 7th and Mission was one of the first red light cameras to be installed by the City in 1997. The location was selected for its above average collision totals. In 1998, after the red light camera had begun operation, the location reported a higher number of collisions and was one of the highest injury collision locations for the city (Figure 2). Yellow lights were adjusted that year. The location continued to average collision totals close or higher than those present before the red light camera, reporting its second highest annual total in a decade in 2002. In 2003 a major signal upgrade along the downtown portion of Mission Street was completed. This upgrade relocated the location of signal poles, installed overhead (mast arm) signals, and installed pedestrian signal indications. Annual injury collisions since the upgrade dropped significantly, suggesting it was the signal engineering upgrade and not the enforcement mechanism that in this case reduced the intersection's injury collision totals.

8th and Harrison Streets

Installation Dates: January 2001

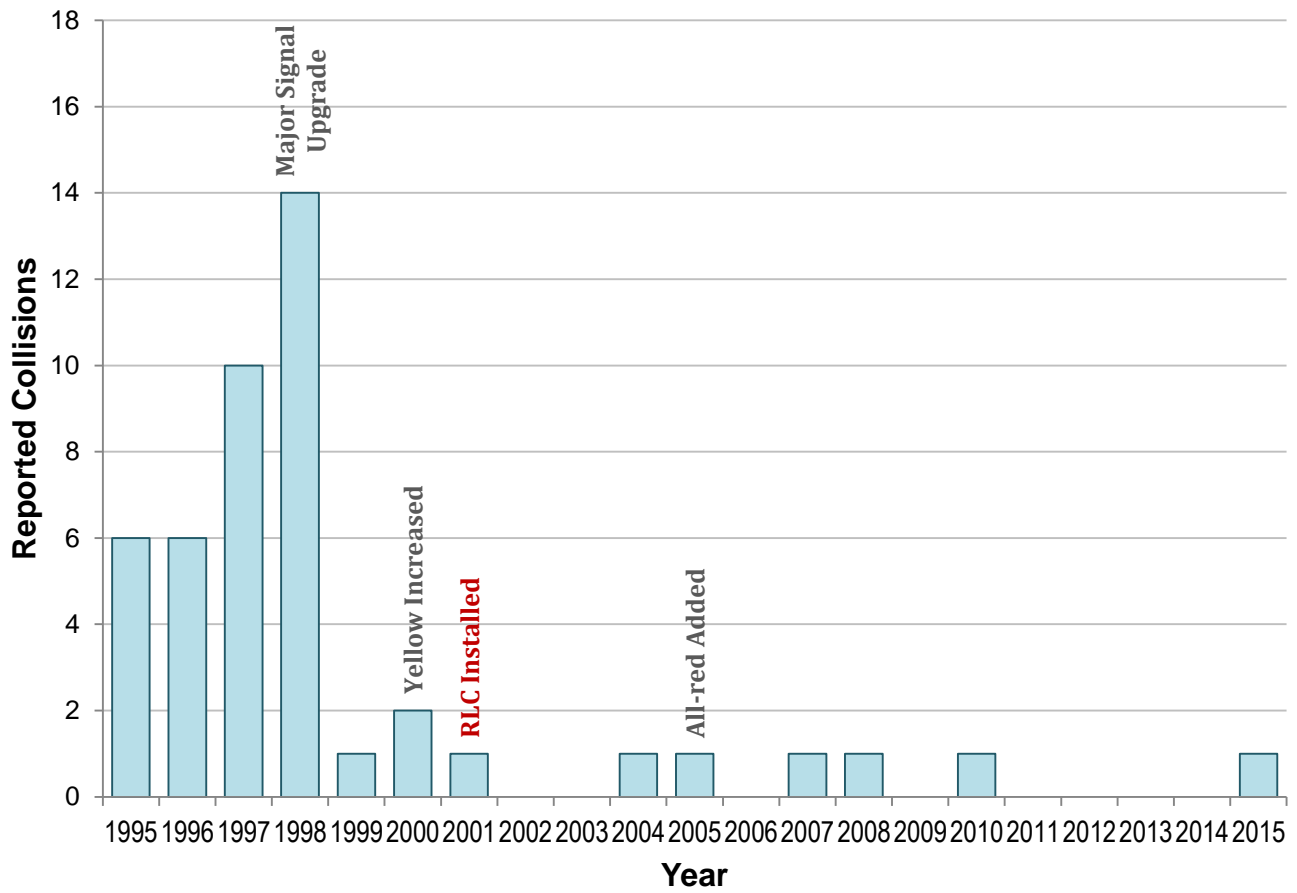
Directions Enforced: All

Date of Major Signal Upgrade: August 1998

Date of Yellow Light Changes: July 2000

Other signal modifications of note: September 2005, all-red added.

**Figure 11: 8th and Harrison Streets
Injury Broadside Collisions (1995-2015)**



**Figure 11: 8th and Harrison Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	6	6	10	14	1	2	1	0	0	1	1	0	1	1	0	1	0	0	0	0	1

9th and Howard Streets

Installation Dates: September 1997 (Northbound), March 2010 (Westbound)

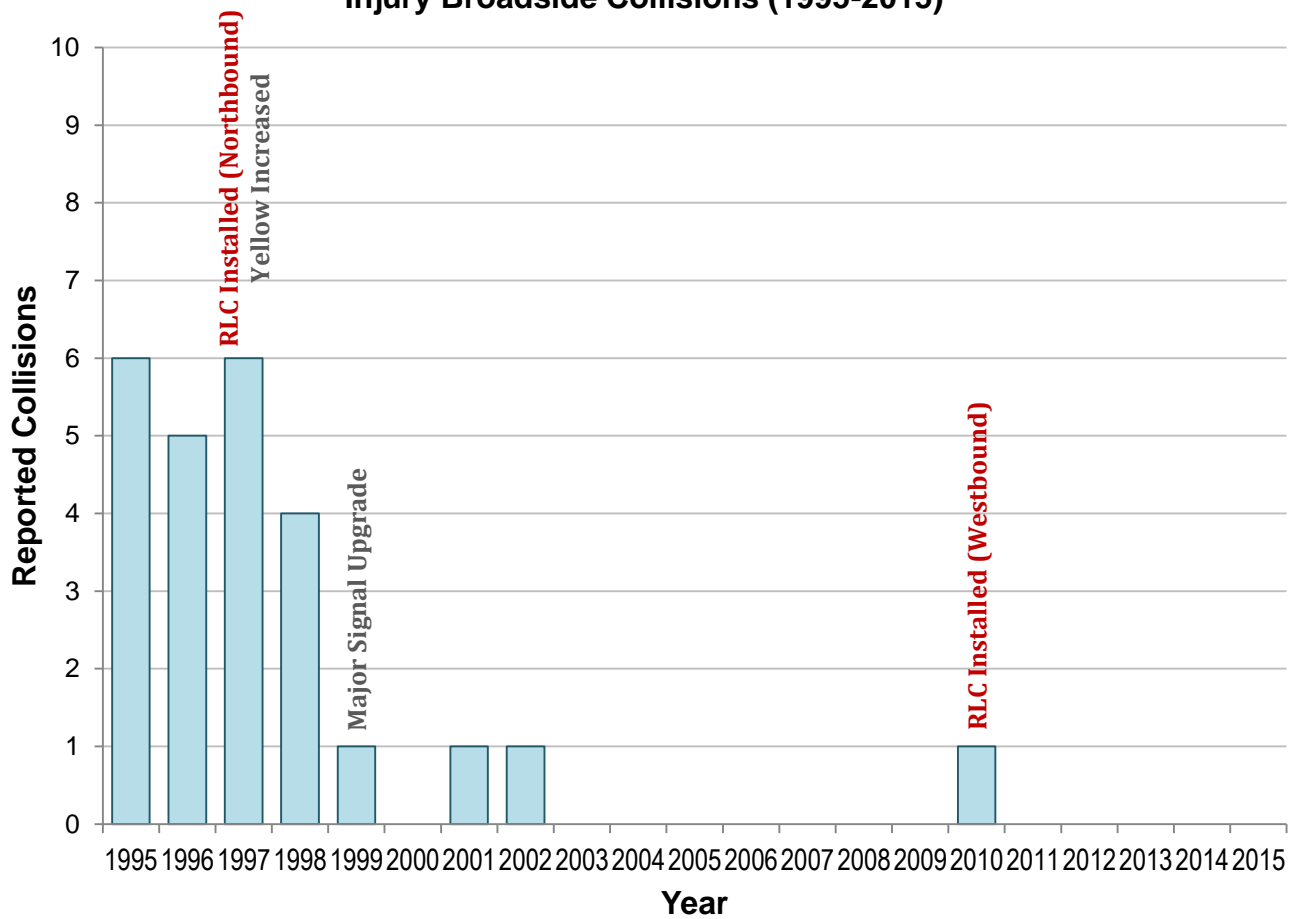
Directions Enforced: Northbound 9th Street, Westbound Howard Street

Date of Major Signal Upgrade: March 1999

Date of Yellow Light Changes: December 1997

Other signal modifications of note: Pedestrian signals installed October 2004

**Figure 12: 9th and Howard Streets
Injury Broadside Collisions (1995-2015)**



**Figure 12: 9th and Howard Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	6	5	6	4	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0

14th Street and South Van Ness Avenue

Installation Dates: June 2000 (Eastbound), February 2001 (Northbound)

Directions Enforced: Northbound South Van Ness Avenue, Eastbound 14th Street

Date of Major Signal Upgrade: Pending (2015)

Date of Yellow Light Changes: August 2000

Other signal modifications of note: July 2001, all South Van Ness Ave northbound heads and one 14th St eastbound head upgraded from 8" to 12". February 2010, all remaining 8" heads upgraded to 12" heads

Figure 13: 14th Street and South Van Ness Avenue Injury Broadside Collisions (1995-2015)

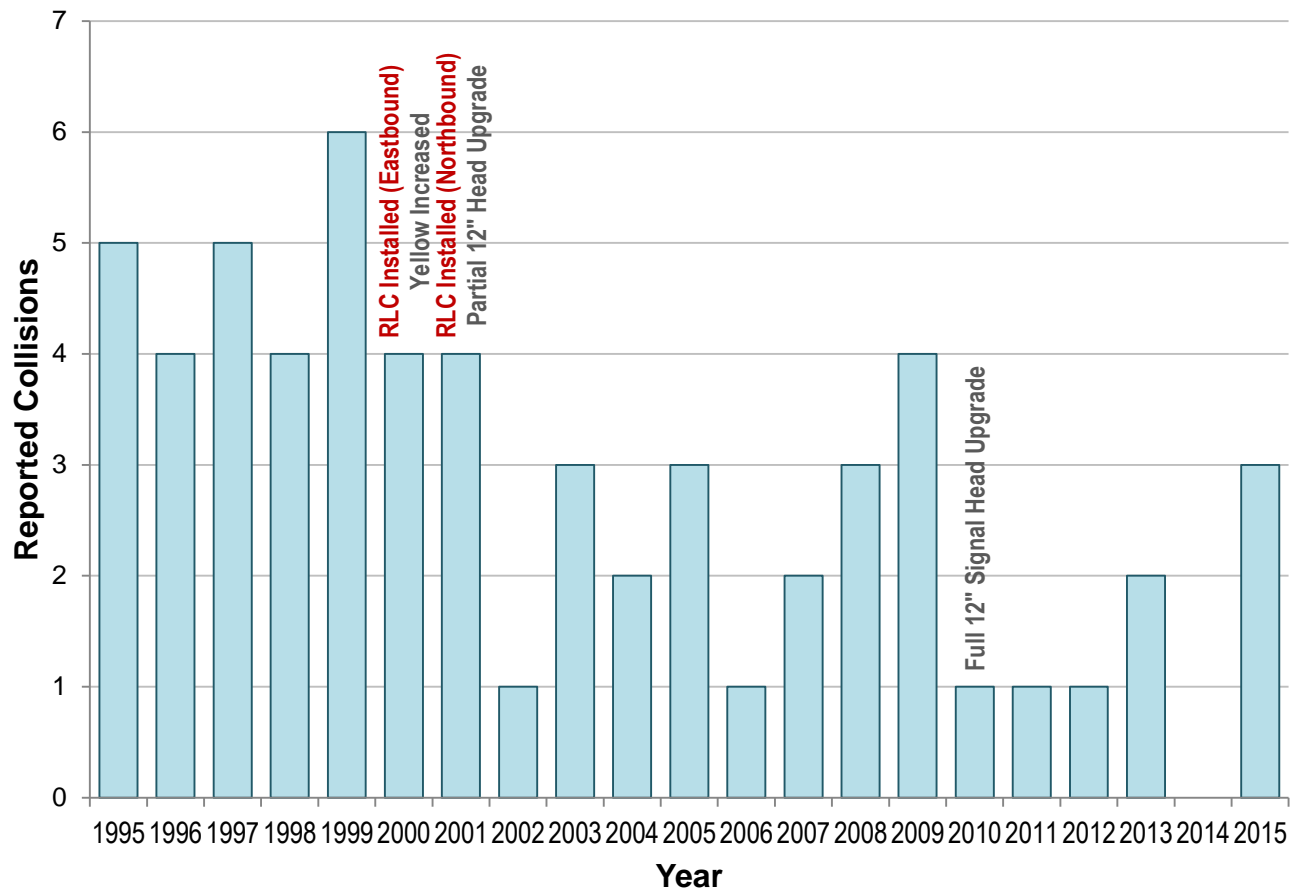


Figure 13: 14th Street and South Van Ness Avenue Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	5	4	5	4	6	4	4	1	3	2	3	1	2	3	4	1	1	1	2	0	3

15th and Mission Streets

Installation Dates: June 2000 (Southbound), August 2000 (Northbound)

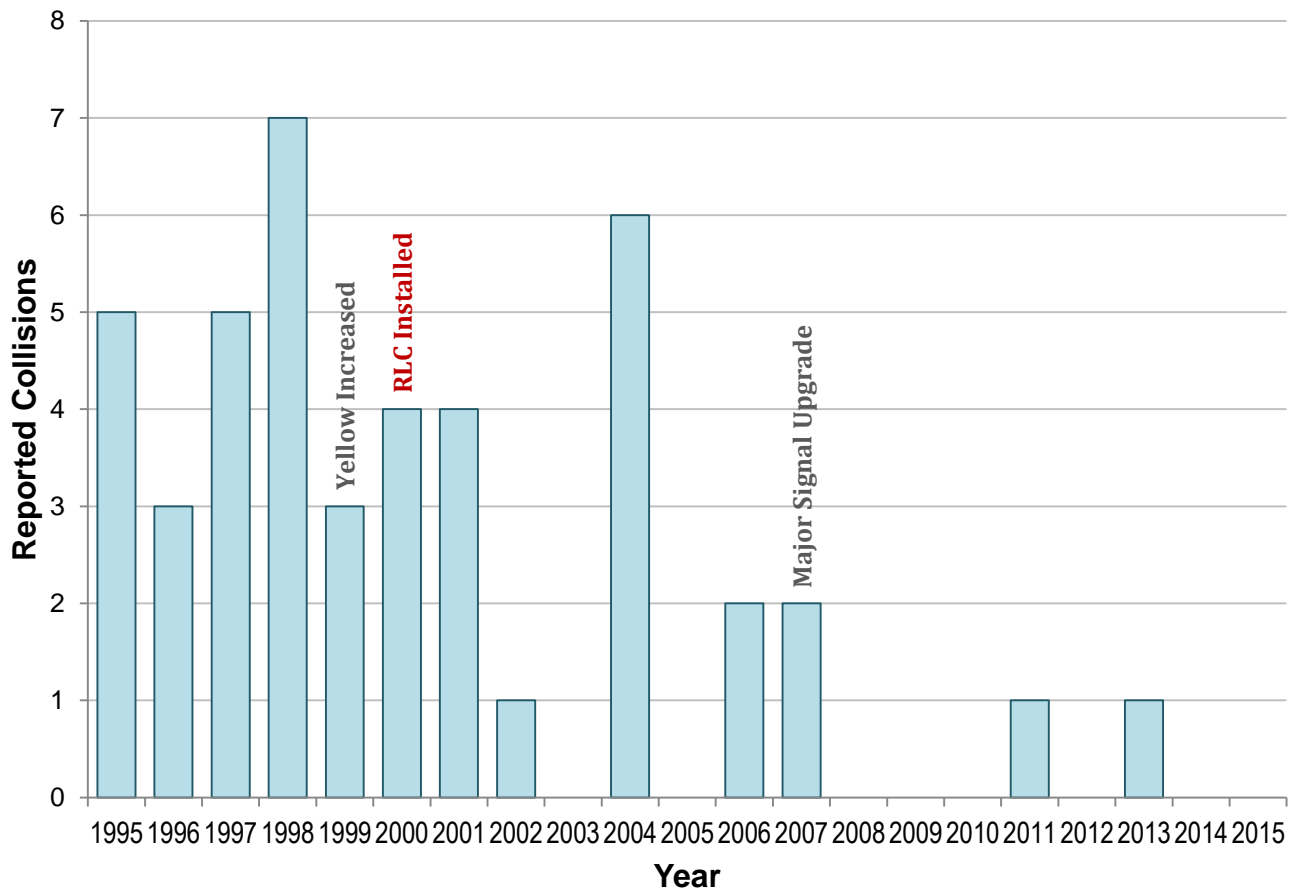
Directions Enforced: Northbound and Southbound Mission Street

Date of Major Signal Upgrade: November 2007

Date of Yellow Light Changes: June 1999

Other signal modifications of note:

**Figure 14: 15th and Mission Streets
Injury Broadside Collisions (1995-2015)**



**Figure 14: 15th and Mission Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	5	3	5	7	3	4	4	1	0	6	0	2	2	0	0	0	1	0	1	0	0

Bush Street and Van Ness Avenue

Installation Dates: March 2001

Directions Enforced: Northbound Van Ness Avenue

Date of Major Signal Upgrade: June 2004

Date of Yellow Light Changes: January 2000

Other signal modifications of note: June 2004, all-red added. July 2004, pedestrian signals crossing Van Ness installed.

Figure 15: Bush Street and Van Ness Avenue Injury Broadside Collisions (1995-2015)

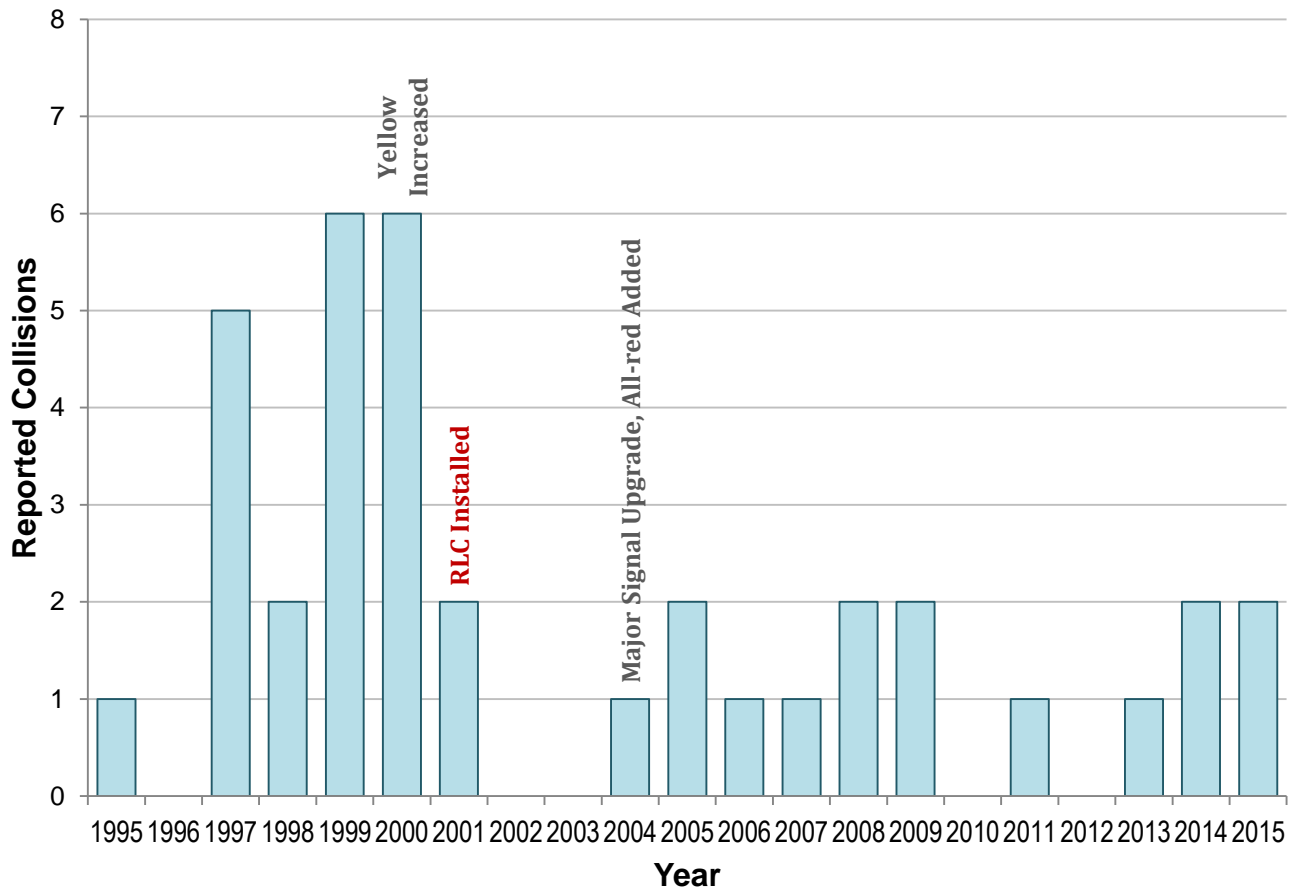


Figure 15: Bush Street and Van Ness Avenue Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1	0	5	2	6	6	2	0	0	1	2	1	1	2	2	0	1	0	1	2	2

Ellis and Larkin Streets

Installation Dates: February 2010

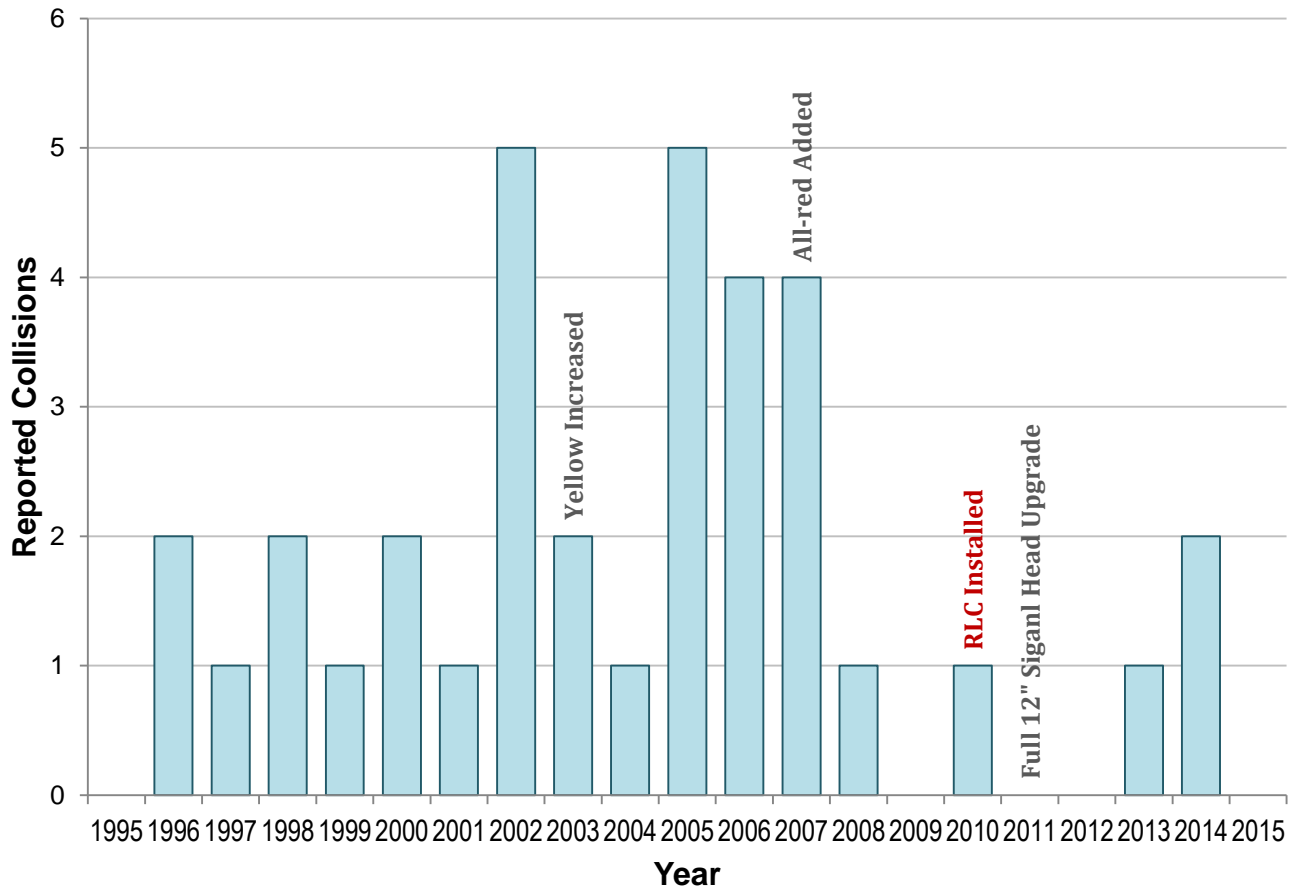
Directions Enforced: Northbound Larkin Street, Westbound Ellis Street

Date of Major Signal Upgrade:

Date of Yellow Light Changes: June 2003

Other signal modifications of note: January 2007, all-red added. June 2011, 12" heads and pedestrian signals installed.

**Figure 16: Ellis and Larkin Streets
Injury Broadside Collisions (1995-2015)**



**Figure 16: Ellis and Larkin Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	0	2	1	2	1	2	1	5	2	1	5	4	4	1	0	1	0	0	1	2	0

Fell Street and Masonic Avenue

Installation Date: January 2012

Directions Enforced: Westbound Fell Street

Date of Major Signal Upgrade: June 2003 and September 2012

Date of Yellow Light Changes: September 2010

Other signal modifications of note: April 2002, all-red added.

Figure 17: Fell Street and Masonic Avenue Injury Broadside Collisions (1995-2015)

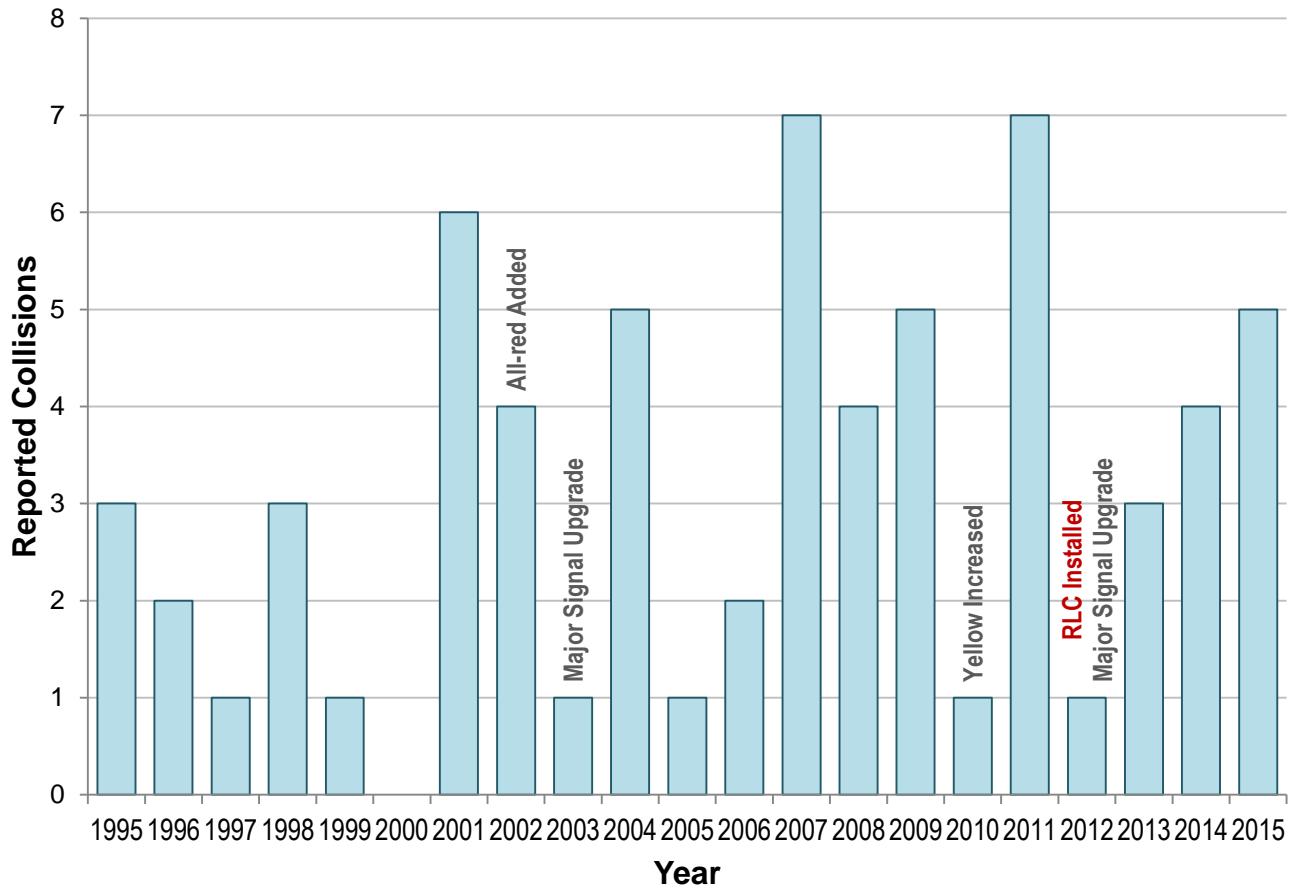


Figure 17: Fell Street and Masonic Avenue Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	3	2	1	3	1	0	6	4	1	5	1	2	7	4	5	1	7	1	3	4	5

Fulton Street and Park Presidio Boulevard

Installation Dates: May 2004 (Northbound), June 2004 (Southbound)
 Directions Enforced: Northbound and Southbound Park Presidio Boulevard
 Date of Major Signal Upgrade: April 2009
 Date of Yellow Light Changes:
 Other signal modifications of note: August 2003, all-red added.

Figure 18: Fulton Street and Park Presidio Boulevard Injury Broadside Collisions (1995-2015)

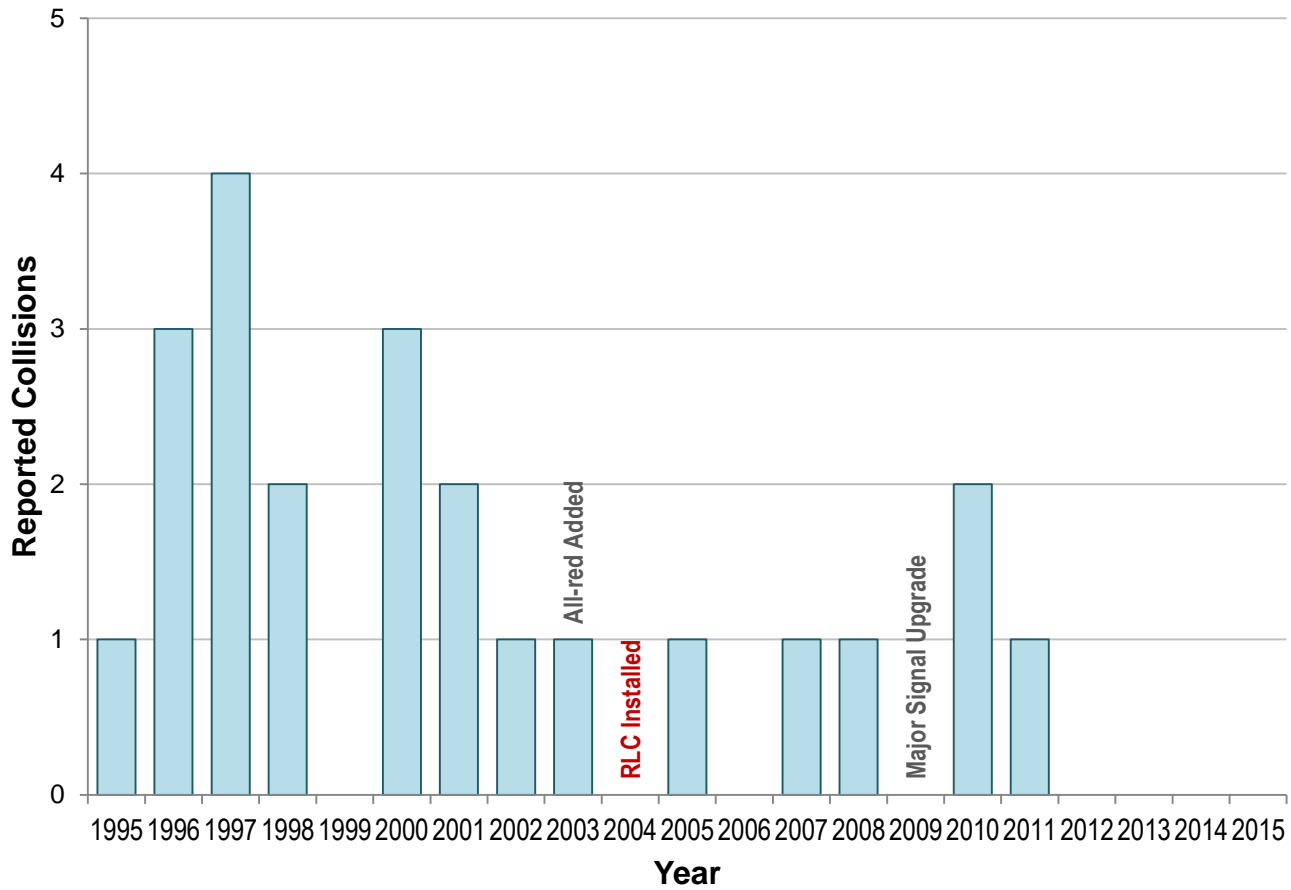


Figure 18: Fulton Street and Park Presidio Boulevard Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1	3	4	2	0	3	2	1	1	0	1	0	1	1	0	2	1	0	0	0	0

Francisco and Richardson Streets

Installation Dates: May 2004 (Westbound), June 2004 (Eastbound)

Directions Enforced: Eastbound and Westbound Richardson Avenue

Date of Major Signal Upgrade: August 2006

Date of Yellow Light Changes:

Other signal modifications of note: April 2003, all-red added after Francisco phase.
August 2006, all-red added after Richardson phase, pedestrian signals installed.

Figure 19: Francisco Street and Richardson Avenue Injury Broadside Collisions (1995-2013)

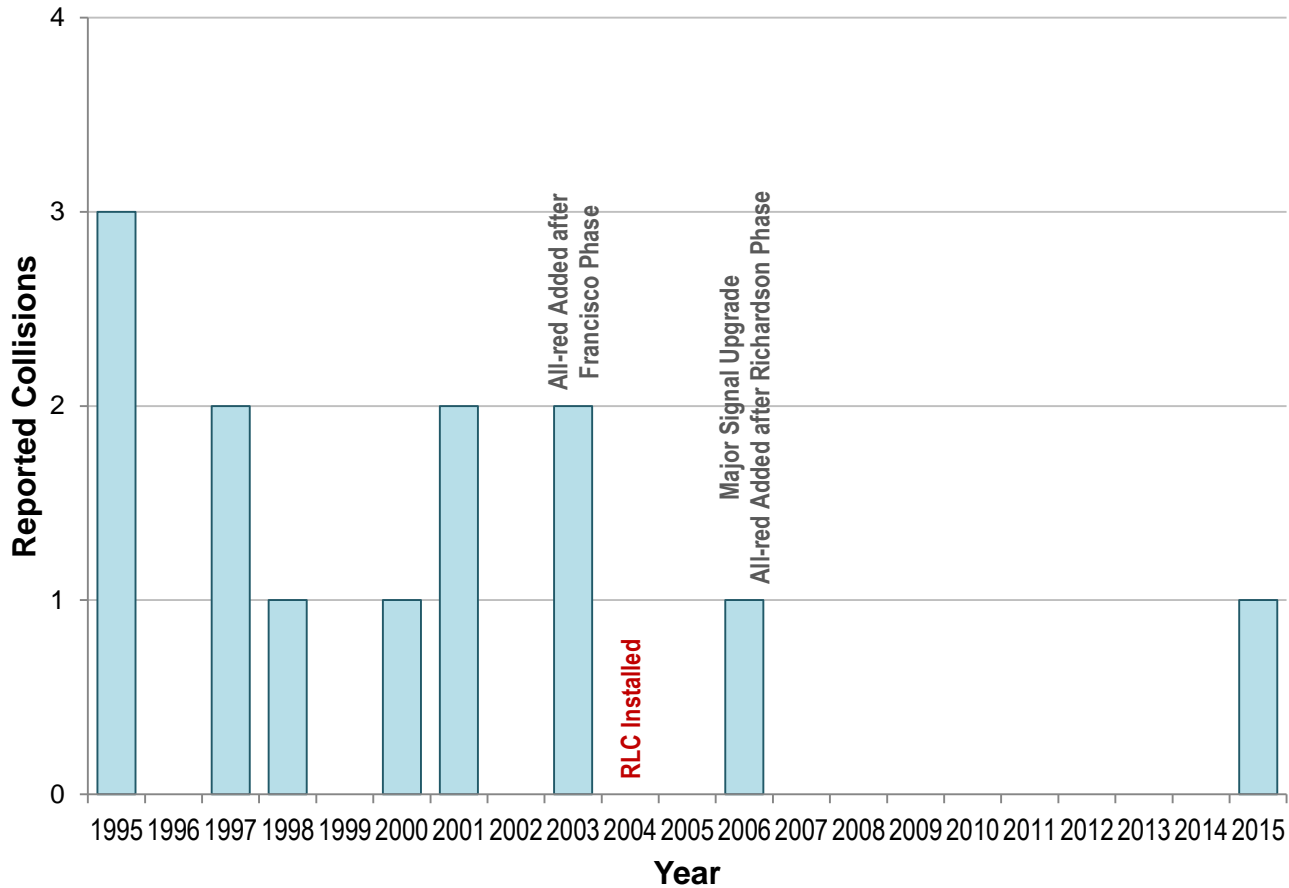


Figure 19: Francisco Street and Richardson Avenue Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	3	0	2	1	0	1	2	0	2	0	0	1	0	0	0	0	0	0	0	0	1

Geary and Park Presidio Boulevards

Installation Dates: May 2004(Southbound), June 2004 (Northbound, Westbound, Eastbound)

Directions Enforced: All

Date of Major Signal Upgrade: December 2009

Date of Yellow Light Changes:

Other signal modifications of note: August 2003, all-red added.

Figure 21: Geary and Park Presidio Boulevards Injury Broadside Collisions (1995-2015)

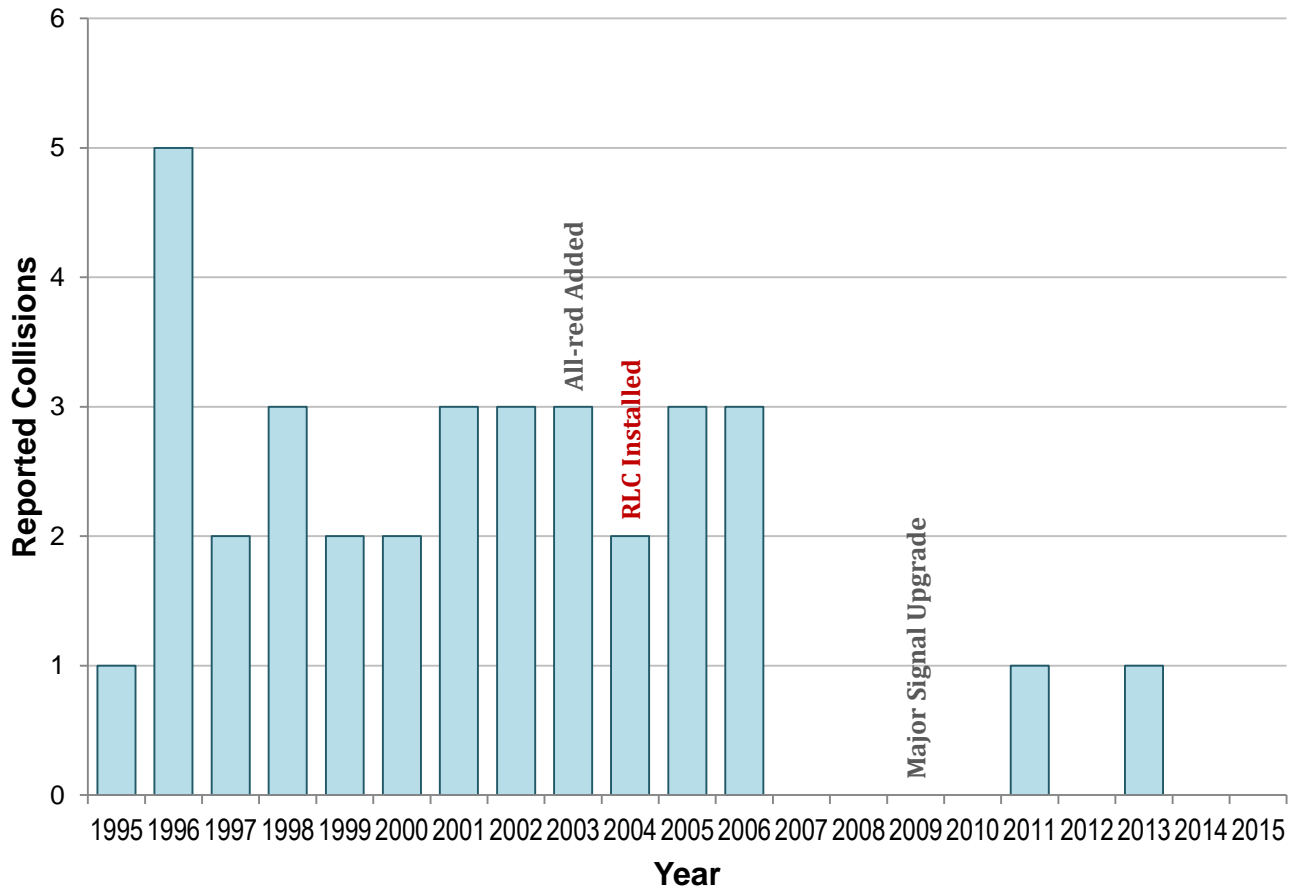


Figure 21: Geary and Park Presidio Boulevards Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1	5	2	3	2	2	3	3	3	2	3	3	0	0	0	0	1	0	1	0	0

Hayes and Polk Streets

Installation Dates: September 2000

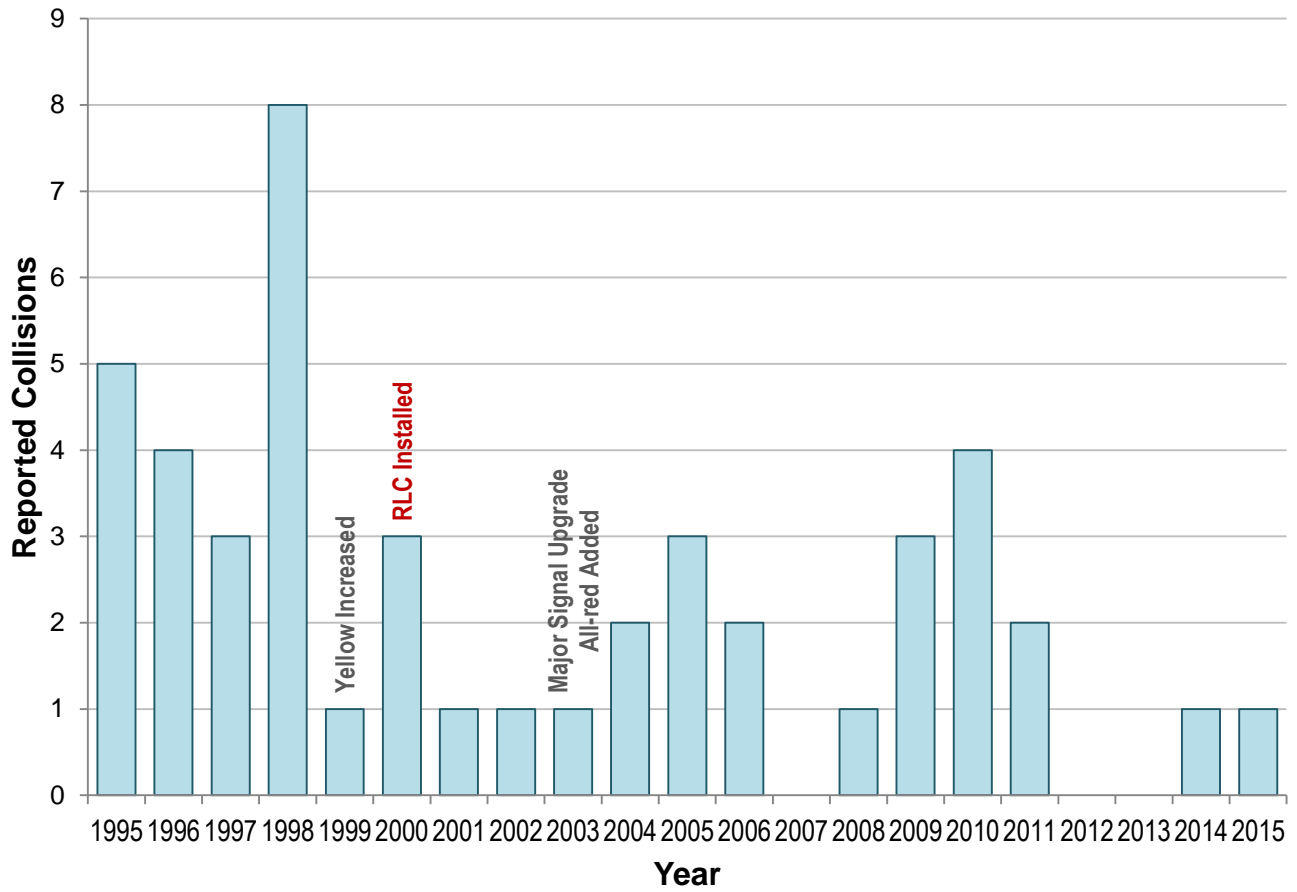
Directions Enforced: All

Date of Major Signal Upgrade: March 2003

Date of Yellow Light Changes: September 1999

Other signal modifications of note: March 2003, all-red added. April 2005, pedestrian signals added.

**Figure 22: Hayes and Polk Streets
Injury Broadside Collisions (1995-2015)**



**Figure 22: Hayes and Polk Streets
Injury Broadside Collisions (1995-2013)**

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	5	4	3	8	1	3	1	1	1	2	3	2	0	1	3	4	2	0	0	1	1

Lake Street and Park Presidio Boulevard

Installation Dates: May 2004 (Northbound), June 2004 (Southbound)

Directions Enforced: Northbound and Southbound Park Presidio Boulevard

Date of Major Signal Upgrade:

Date of Yellow Light Changes: August 2003

Other signal modifications of note: March 2002, Pedestrian signals installed. August 2003, all-red increased. July 2010, all signals upgraded to 12" heads.

Figure 23: Lake Street and Park Presidio Boulevard Injury Broadside Collisions (1995-2015)

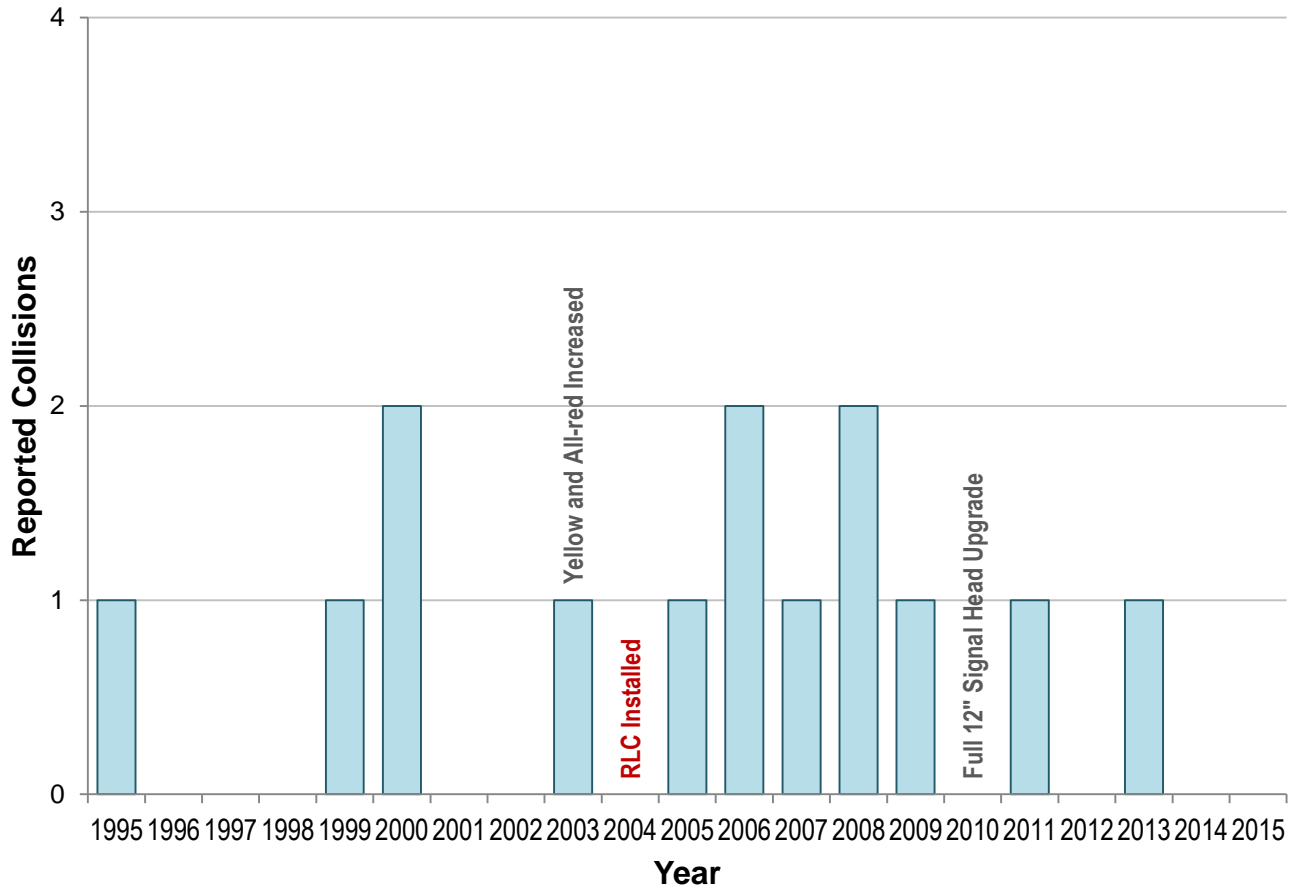


Figure 23: Lake Street and Park Presidio Boulevard Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1	0	0	0	1	2	0	0	1	0	1	2	1	2	1	0	1	0	1	0	0

Marina Boulevard and Lyon Street

Installation Dates: May 2004

Directions Enforced: Eastbound Marina Boulevard

Date of Major Signal Upgrade:

Date of Yellow Light Changes:

Other signal modifications of note: June 2012, all-red added after Lyon and Mason phases, pedestrian signals added crossing Lyon and Mason. Doyle Drive construction and re-alignment in 2012.

Figure 24: Marina Boulevard and Lyon Street Injury Broadside Collisions (1995-2015)

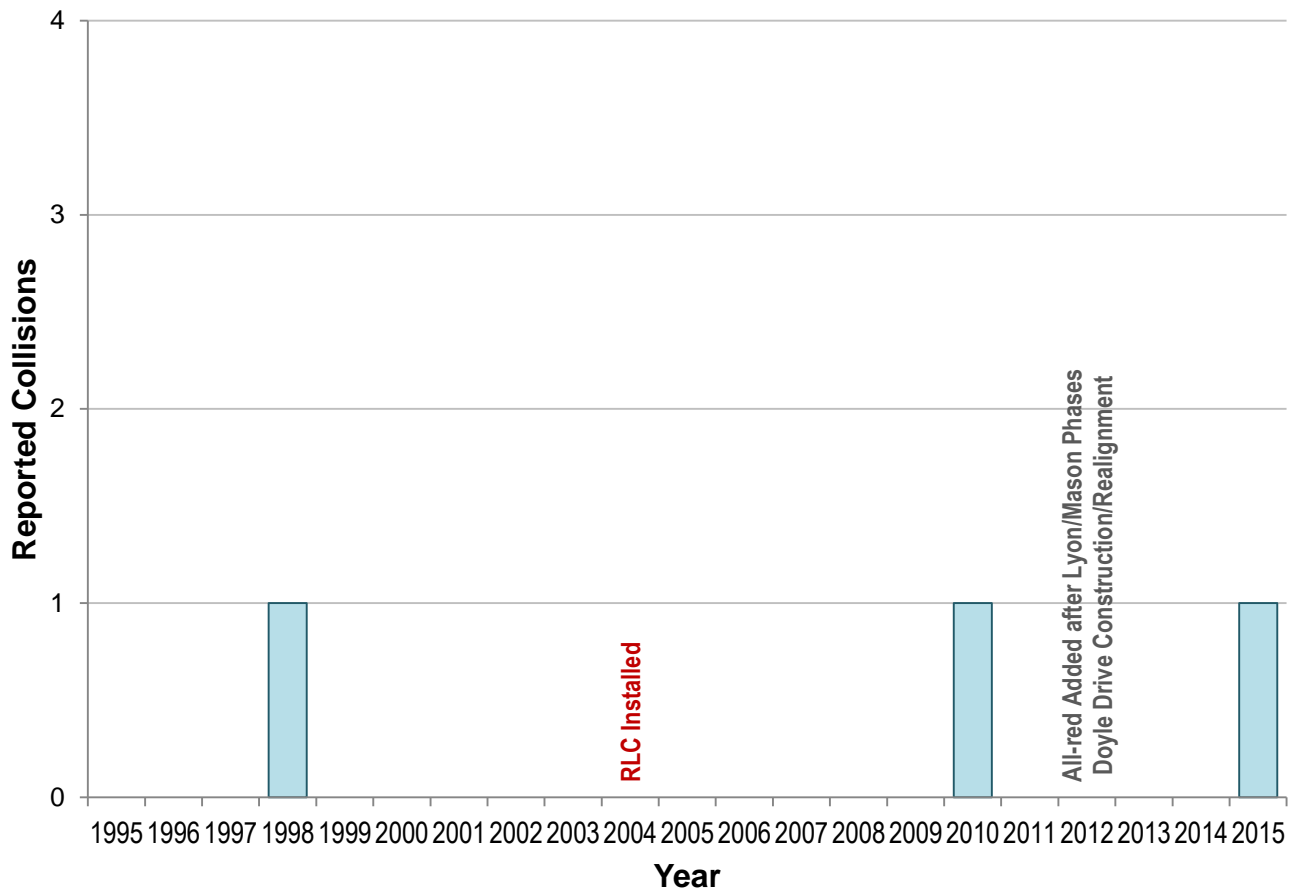


Figure 24: Marina Boulevard and Lyon Street Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1

Oak Street and Octavia Boulevard

Installation Date: December 2009

Directions Enforced: Northbound Octavia Boulevard, Eastbound Oak Street

Date of Major Signal Upgrade: July 2005 (Octavia Boulevard opening)

Date of Yellow Light Changes: September 2010

Other signal modifications of note: December 2001, all-red added, pedestrian signals installed.

Figure 25: Oak Street and Octavia Boulevard Injury Broadside Collisions (1995-2015)

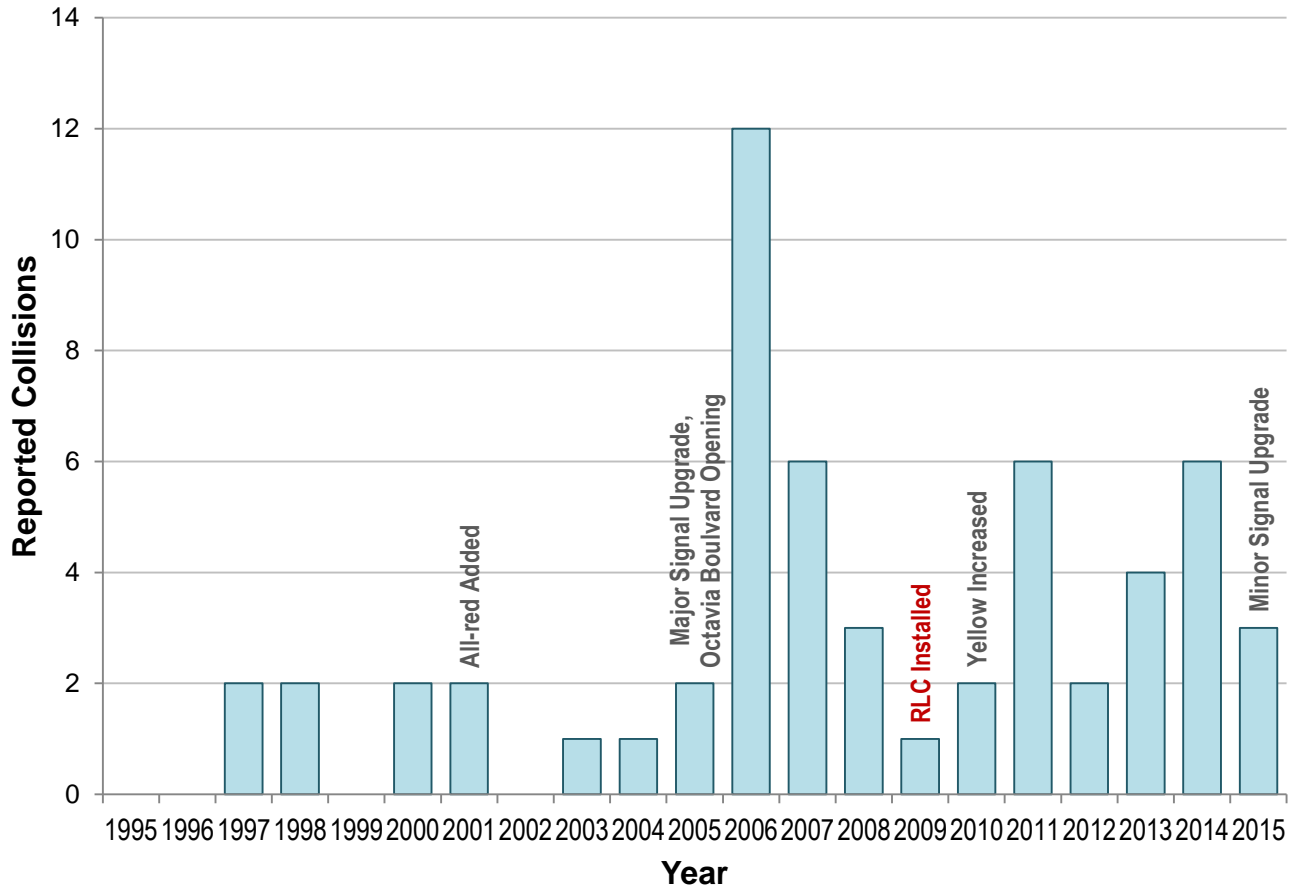


Figure 25: Oak Street and Octavia Boulevard Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	0	0	2	2	0	2	2	0	1	1	2	12	6	3	1	2	6	2	4	6	3

Pine and Polk Streets

Installation Dates: June 2000

Directions Enforced: Westbound Pine Street

Date of Major Signal Upgrade: April 2002

Date of Yellow Light Changes: September 1998, October 2010

Other signal modifications of note: April 2002, all-red added.

Figure 26: Pine and Polk Streets Injury Broadside Collisions (1995-2015)

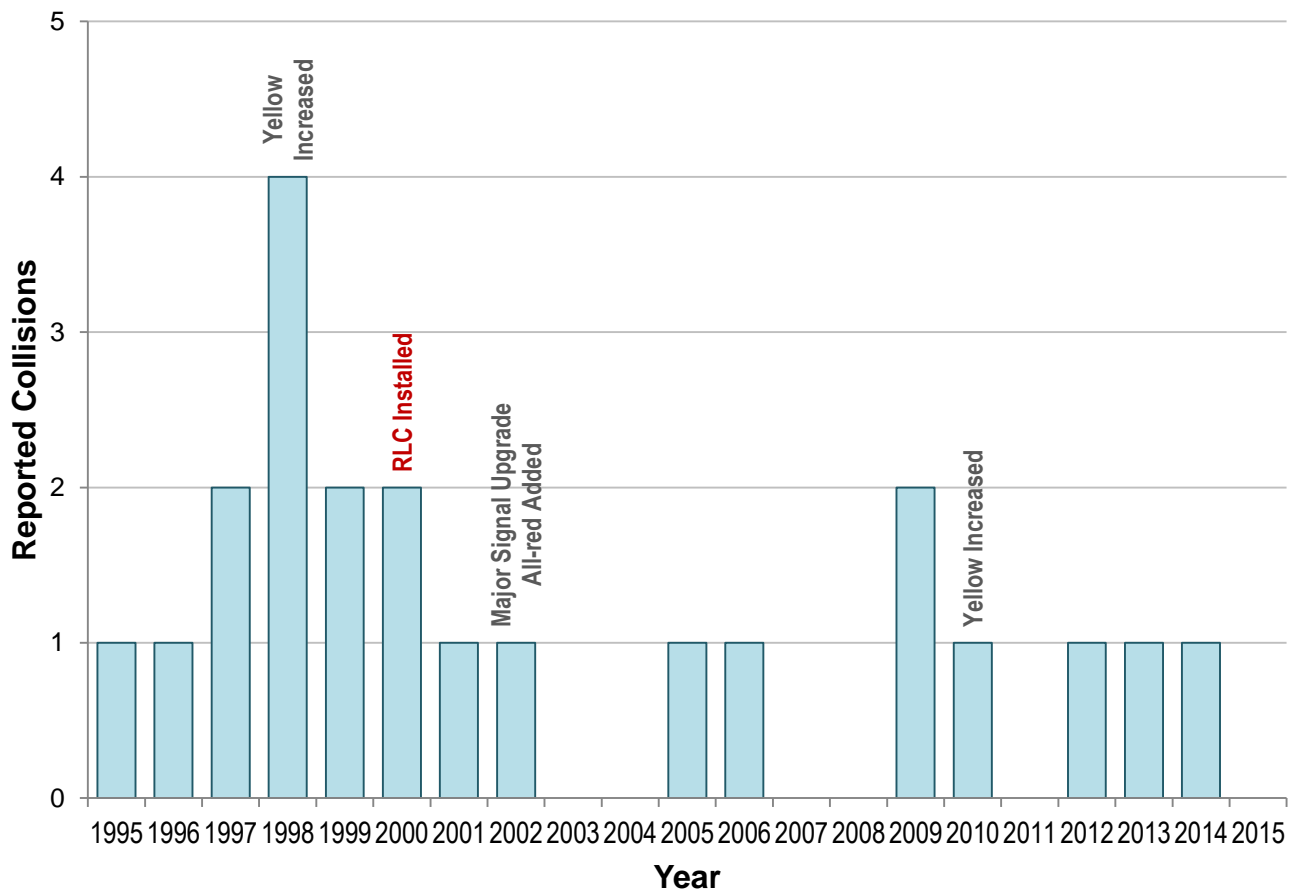


Figure 26: Pine and Polk Streets Injury Broadside Collisions (1995-2013)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	1	1	2	4	2	2	1	1	0	0	1	1	0	0	2	1	0	1	1	1	0