For the City Clerk:

Please distribute this letter, and its attachments, to the members of the City Council, and to the public.

4-8-18

Subject: Red Light Cameras on April 11 Cathedral City Agenda

Honorable Mayor and Councilmembers:

In a 2015 email to you (pasted below) I suggested that it would be wise to have the safety statistics prepared by an

"independent professional with credentials in statistics" who would "tell you which changes are statistically significant,

and which are not." Despite that, the current staff report features a large and prominently placed bar graph (see

attached copy of PowerPoint presentation) suggesting that accidents are on the decline ("-32%" is shown on the graph

which has bars for the 91, 110 and 75 accidents in 2015, 2016 and 2017 respectively), while the current staff report does not

include any mention of the graph from a 2015 staff report (copy attached) showing that accidents were very much lower

- about 15 accidents per year - in the period 2008 - 2014.

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.' So, when the question is, "Do cameras reduce injuries," the

study I trust the most - because it does not rely on complicated statistical analysis - is the one San Francisco published to satisfy

the CVC 21455.5(i) requirement to publish an annual report. The March 2016 edition of that study is part of the "Candor"

attachment to this email. It takes about five minutes to read.

Regards,
lim Lissner
Attachments
cc: Media
Forwarded Message
Subject: Red Light Cams on June 10 Cathedral City Agenda
Date:Mon, 08 Jun 2015 12:23:52 -0700

From:Jim <jim@vivahermosa.com>

Reply-To:jim@vivahermosa.com

**To:**<u>editor@highwayrobbery.net</u>, <u>tmartinez@cathedralcity.gov</u>, <u>sHenry@cathedralcity.gov</u>, <u>GPettis@cathedralcity.gov</u>, <u>JAguilar@cathedralcity.gov</u>, <u>mcarnevale@cathedralcity.gov</u>, <u>skaplan@cathedralcity.gov</u>

For the City Clerk:

Please distribute this letter, and its attachments, to the members of the City Council, and to the public.

6-8-15

Subject: June 10, 2015 Council item - Consideration of Staff's Analysis and Fiscal Impact of Red Light Safety Camera Program

Honorable Mayor and Councilmembers:

The staff report makes no outright recommendation, but the suggestion is "carry on" with no changes, receive and file. I submit that there are serious questions still to be addressed.

A. Safety is paramount. The staff report includes a claim that the cameras have produced a BIG reduction in accidents over the years. I suggest that the Council should be very skeptical about such crash statistics. A staff report presented to the city council in Ventura recently showed one of the reasons why. (Ventura has had red light cameras since 2000.)

Ventura's staff claimed a 75% reduction in accidents - the same percentage claimed in Cathedral City [pg. 5 of staff report and PowerPoint slide, both attached] - in three prominent places in the staff report presented at Ventura's March 30, 2015 council meeting.

- 1. In the summary, on page 2.
- 2. In this table, found on page 4.

Year	Red light collisions	% Change from 2000 CATSS Launch
1998	124	
1999	128	
2000	132	
2001	107	19%
2002	115	13%
2003	100	24%
2004	101	23%
2005	93	30%
2006	92	30%
2007	45	66%
2008	41	69%
2009	40	70%
2010	39	70%
2011	34	74%
2012	38	71%
2013	36	73%
2014	34	75%

Image of Ventura table showing doubling of accident reduction between 2006 and 2007, from 3-30-15 Ventura staff report.

3. In the first PowerPoint slide (part of Ventura staff report).

Fortunately, during the meeting Ventura's mayor noticed the dramatic change between 2006 and 2007, and asked staff about it. This was staff's response (at 3:20:20 in the City's online video):

"The way the police department reports collisions now is vastly different than we did when we started this program. Now we only report - correct me if I'm wrong - now we only report injury or major property damage collisions. That's different. Our total collision numbers are down quite a bit because the reporting is different."

In other words, "garbage in, garbage out." If we adjust Ventura's table for the reporting change the VPD made back in 2006 - 2007, the result is more like 35 - 40%, not the 75% published. And that occurred against a background of a 20% decline in all injury accidents statewide over the last ten years.

How can the Cathedral City Council get better statistics than Ventura did? I recommend that you get the accident stats re-done by an independent professional with credentials in statistics. Among other things, a professional's report will tell you which changes are statistically significant, and which are not.

If the re-done accident figures continue to show that the reduction has flattened out over the last several years - a period during which ticketing has increased (see "B" below), it may be likely that the City is ticketing more and more people each year for technical violations having little relation to safety.

Finally, a claim of a huge reduction in accidents in Cathedral City would be at odds with statements by the authorities in more than a dozen other cities, who have reported little or no reduction. (To review their statements, read the "Candor" attachment.)

B. The most recent data on the number of tickets issued in Cathedral City shows a doubling of ticketing at the beginning of 2014. Shouldn't the ticketing have gone down over time, not up? (Ticketing data is available at highwayrobbery [dot] net.)

The data shows other sudden changes in ticketing. CVC 21455.5(c)(1) and CVC 21455.5(c)(2)(f) require a City to have controls and guidelines for the issuance of tickets, and all other cities have put theirs in writing. In Feb. 2015 highwayrobbery [dot] net sent Cathedral City a Public Records Act request asking for items 1 and 2 below, and got answers indicating that the City has no written procedures.

Request 1: The latest version or revision of the City's and/or sheriff's written controls or guidelines, as required by CVC 21455.5(c)(2)(F).

City's answer: "There is no requirement for "written" controls under this section. The controls are that Sworn Police Officers are the only personnel who can access the system and issue citations based on their training and experience. Those citations approved by the officers are then processed by ATS and sent to the violators in the legally prescribed manner."

Request 2: The latest version or revision of the City's manual, guidelines, business rules, orders, memos or documents describing the action(s) to be taken by a City or sheriff employee or agent whose job it is to review violations and approve or disapprove the issuance of a ticket, when he or she observes a clear gender and/or age mismatch between the red light camera photo of the violating driver and the DMV file photo of the registered owner of the vehicle and is not able to identify the violating driver with a sufficient degree of certainty.

City's answer: "There is nothing written down to address the issue raised above. If there are discrepancies with identifying a driver or a vehicle that is not to the satisfaction of the reviewing police officer, the citation is rejected. Officers are not going to waste their time and reputation with the Court by approving citations that are clearly not conclusive and could be successfully argued in Court."

Perhaps the absence of written procedures is why the City experiences sudden changes in ticketing. Another possible contributor to the sudden changes is the fact that the quantity of right turn tickets is endogenous - controlled by the the police or ATS, who can flash a higher proportion of the innumerable rolling right violators by simply typing in a lower Threshold Speed. (Based upon the number of tickets the monthly reports show in the highest-numbered lanes, I estimate that 70% of Cathedral City's tickets are for rolling right turns. An exact percentage will be available if the City will create and file the 2013 and 2014 annual reports required by CVC 21455.5(i).)

There is a growing cloud over such heavy right turn enforcement. Consider this statement found in a Dec. 26, 2014 Wall Street Journal interview of an industry leader:

"Mr. [James] Saunders [president of RedFlex at that time] suggests jurisdictions refrain from issuing a [rolling right] ticket except when a pedestrian is in the crosswalk." The headline was, "Can the Red-Light Camera Be Saved? - Money-hungry politicians discredit a hopeful safety innovation." (A Jan. 22, 2015

column in the Dallas Morning News confirmed the statement The Journal had attributed to Saunders: "When I asked Redflex spokeswoman Jody Ryan about her boss' comments urging cities to lighten up on rolling reds, she answered, "It only makes sense that Jim is going to say, 'Look, we need people to be thoughtful about how they are implementing these programs and how they are issuing citations.' It wasn't that shocking.")

I submit that <u>if</u> you are told that the number and severity of accidents caused by right turns is high and has not declined - or is growing - despite years of photo enforcement, the City should study its records to determine when during the red phase most of those accidents occur and then install "blank out" signs programmed to light up and prohibit right turns during the high risk period.

C. The staff report revealed that 69% of the tickets are going to visitors. That percentage is important because, in an area with high turnover, doing nothing but installing cameras will never stop the running; there's always new visitors, making minor mistakes at unfamiliar intersections or because they are lost. A visitor won't know that there's a camera up ahead, so the presence of a camera won't, by itself, keep him or her from running the light and endangering the other people - mostly local residents - your constituents - who frequent the same intersection.

If a city genuinely wants to minimize running, and accidents, it will do things like the following, to make the problematic intersection stand out, look more important.

- 1. Put up more visible signal lights (larger diameter, with bigger backboards, with more of them placed on the "near" side of the wider intersections).
- 2. Paint "signal ahead" on the pavement.
- 3. Install lighted overhead street signs for the cross street (also placed on the "near" side), and larger bulbs in the streetlights at the intersection.

An example of the "proactive" approach is the engineering work the City of Santa Clarita did during 2014, which dramatically reduced violations there. Details about the changes in Santa Clarita are available on the Santa Clarita Docs page at highwayrobbery [dot] net and at thenewspaper [dot] com/news/46/4667 [dot] asp.

- D. Please ask staff, or ATS, to report to you the average age of those ticketed, broken down by camera location and type of movement (straight, left, or right). Age is of interest because those intersections or movements where the age of violators is found to be significantly higher probably need to be made more navigable for older drivers. Sometimes it can be as simple as lengthening the yellow light by half a second.
- E. You've probably heard that an ATS competitor is alleged to have spent \$2 million to bribe an official in Chicago; those allegations have been common knowledge for a year. What is not common knowledge, and in my opinion worse than the outright bribery that may have happened in Chicago, is the extent to which California officials, government employees and their associates have immunized themselves and their families from receiving photo enforcement and toll tickets by exploiting the CVC 1808.4 confidential registration address program. As of 2011, 1.5 million private vehicles in California

about 5% of all registrations - had the confidential registrations, and there are two bills in the legislature right now (AB 222 & SB 372) to extend the privilege to even more people. I would like to suggest that you ask staff how many City employees have the confidential registrations, and also ask the staff of the red light camera program to tell you how they have handled the roughly 120 red light camera tickets earned each year in Cathedral City by those enjoying confidential registrations. Suggested questions: How many of those tickets were actually issued; how many of them were paid?

### Conclusion

I hope you come to share my concern about the questions raised above, and that you will schedule a Council hearing about this. And then, if you want to have good input from all sides - which is the way to make an informed decision - please publish the staff report at least two weeks before the hearing date. (If, instead, normal meeting noticing procedures are followed, the staff report will not be made public until the weekend before the Council meeting at which it will be voted upon, leaving the media and general public with little time to report and comment, and the Council with almost no time to read and consider those comments.)

I also want to note that your contract with ATS allows you to cancel on 60 days notice, with no penalty.

Sincerely,

Jim Lissner

Attachments

cc: Media

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; Viva Hermosa !

### **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: <a href="http://www.highwayrobbery.net/TrcDocsSanLeanEncrPerm2016engrRepRecd2017jul26.pdf">http://www.highwayrobbery.net/TrcDocsSanLeanEncrPerm2016engrRepRecd2017jul26.pdf</a>

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: <a href="http://www.recordnet.com/article/20150605/NEWS/150609770">http://www.recordnet.com/article/20150605/NEWS/150609770</a>

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: <a href="http://www.highwayrobbery.net/TrcDocsLagunaWoodsContr2014MayStaffRep.pdf">http://www.highwayrobbery.net/TrcDocsLagunaWoodsContr2014MayStaffRep.pdf</a>

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: <a href="http://www.sgvtribune.com/general-news/20140519/walnut-city-council-votes-to-end-red-light-camera-program">http://www.sgvtribune.com/general-news/20140519/walnut-city-council-votes-to-end-red-light-camera-program</a>

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: <a href="http://www.pe.com/articles/-716731--.html">http://www.pe.com/articles/-716731--.html</a>

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: <a href="http://www.highwayrobbery.net/TrcDocsRiversideContractOpinionByRetdFireCapt.pdf">http://www.highwayrobbery.net/TrcDocsRiversideContractOpinionByRetdFireCapt.pdf</a>

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: <a href="http://www.highwayrobbery.net/TrcDocsUplandStaffReport2009Mar9.pdf">http://www.highwayrobbery.net/TrcDocsUplandStaffReport2009Mar9.pdf</a>

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: <a href="http://www.highwayrobbery.net/TrcDocsGardenaContr2010staffRepFull.pdf">http://www.highwayrobbery.net/TrcDocsGardenaContr2010staffRepFull.pdf</a>

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: <a href="http://www.highwayrobbery.net/TrcDocsBellGdnsContr2011staffRep.pdf">http://www.highwayrobbery.net/TrcDocsBellGdnsContr2011staffRep.pdf</a>

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: <a href="http://www.highwayrobbery.net/TrcDocsHaywardStaffRep2011Oct11mins.pdf">http://www.highwayrobbery.net/TrcDocsHaywardStaffRep2011Oct11mins.pdf</a>

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: <a href="http://highwayrobbery.net/redlightcamsdocsHawthMain.html#Council2012">http://highwayrobbery.net/redlightcamsdocsHawthMain.html#Council2012</a>

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

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

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: <a href="http://www.highwayrobbery.net/TrcDocsSanMateoCountyArticles2009Nov13CourtExecAngry.txt">http://www.highwayrobbery.net/TrcDocsSanMateoCountyArticles2009Nov13CourtExecAngry.txt</a>

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 rec
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.



# 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.

	Alleged Violations	Number of Citations	Number of Citations Dismissed by the
2015	Captured	Issued	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
			549 Jan-Oct (or
		11,851	5.49% of citations
2015 Totals:	33,049	(10,001 Jan-Oct)	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 19<sup>th</sup> Avenue. August 2003, all-red added after 19<sup>th</sup> Avenue phase. November 2007, lagging eastbound left turn arrow installed.

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

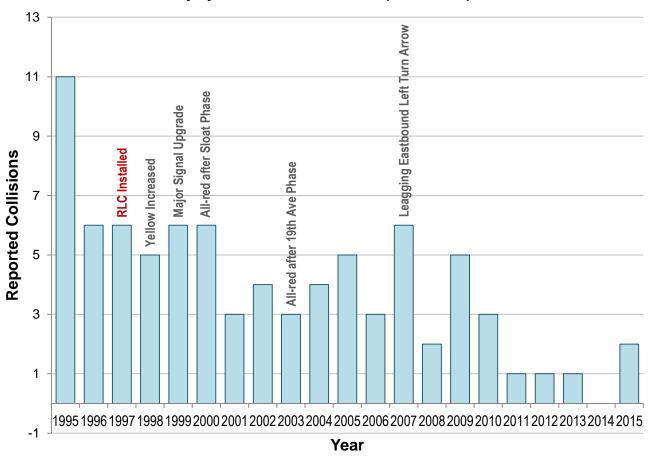


Figure 2: 19th Avenue and Sloat Boulevard Injury Broadside Collisions (1995-2013)

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)

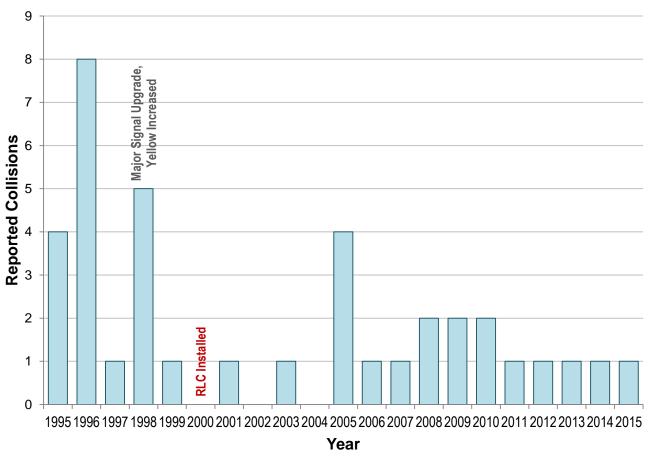


Figure 3: 1st and Folsom Streets

Injury Broadside Collisions (1995-2013)

						-	11) (11)	DIO	aasia	C GO	115101	10 (1	,,,,,	- O - O	,						
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)

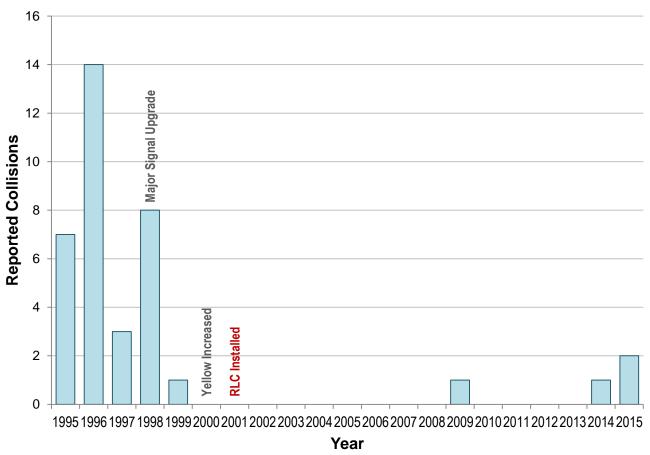


Figure 4: 6<sup>th</sup> and Bryant Streets Injury Broadside Collisions (1995-2013)

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 Broadside Collisions (1995-2015)

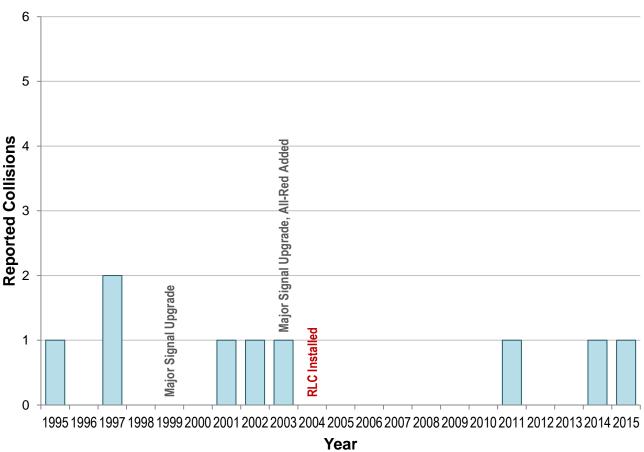


Figure 5: 4<sup>th</sup> and Howard Streets
Injury Broadside Collisions (1995-2013)

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

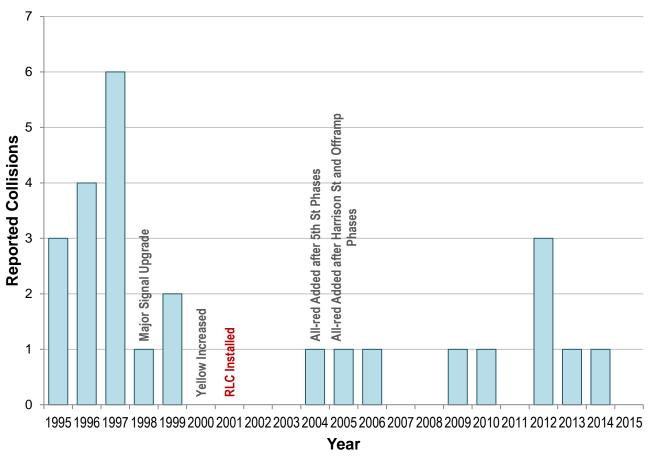


Figure 6: 5<sup>th</sup> and Harrison Streets Injury Broadside Collisions (1995-2013)

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

### 5<sup>th</sup> 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)

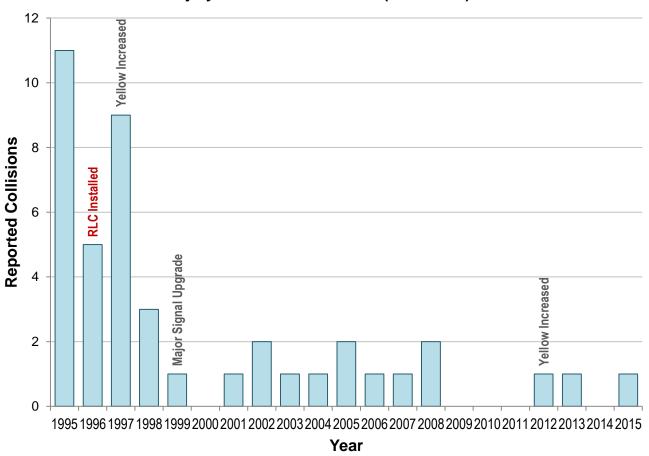


Figure 7: 5<sup>th</sup> and Howard Streets Injury Broadside Collisions (1995-2013)

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 5<sup>th</sup> 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)

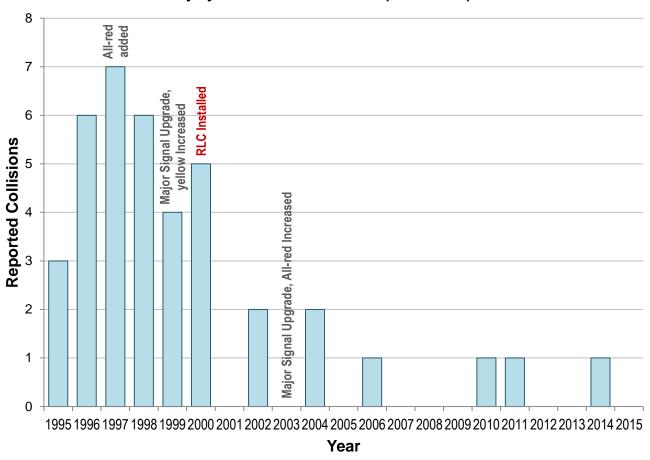


Figure 8: 5<sup>th</sup> and Mission Streets Injury Broadside Collisions (1995-2013)

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

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

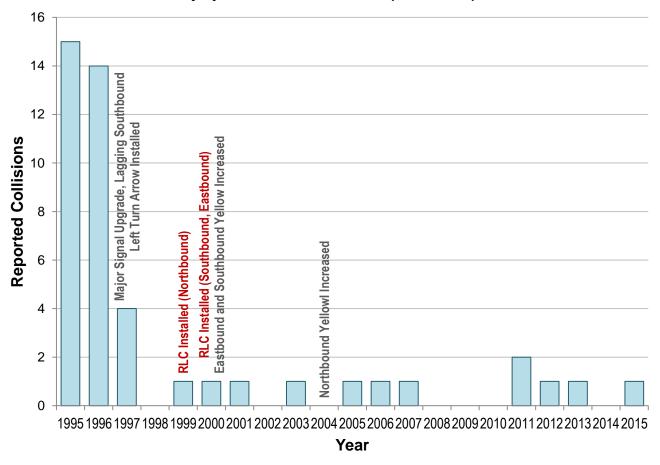


Figure 9: 6th and Bryant Streets Injury Broadside Collisions (1995-2013)

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

0

### 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)

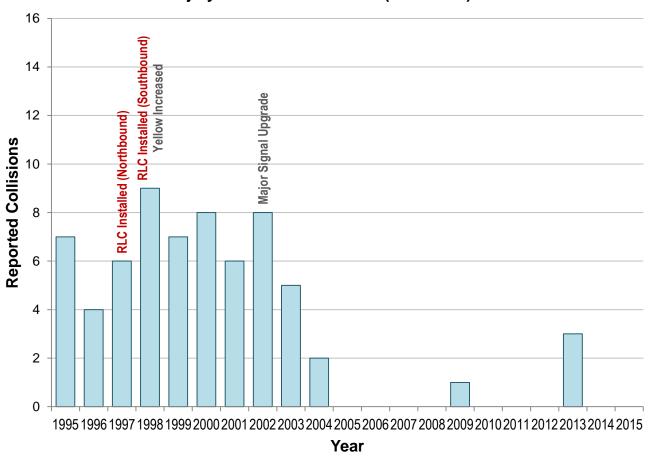


Figure 10: 7<sup>th</sup> and Mission Streets Injury Broadside Collisions (1995-2013)

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)

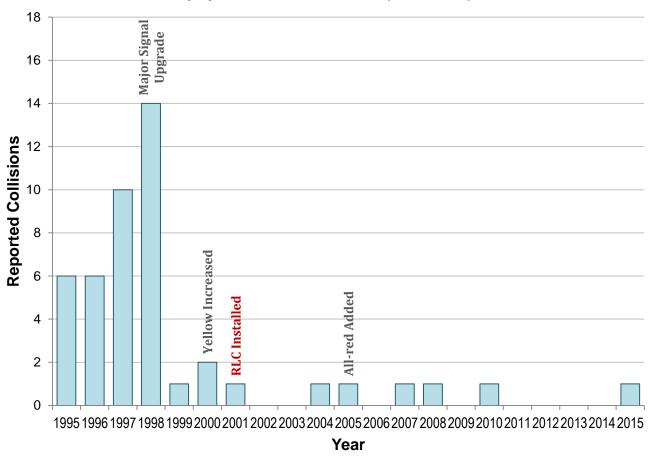


Figure 11: 8<sup>th</sup> and Harrison Streets Injury Broadside Collisions (1995-2013)

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

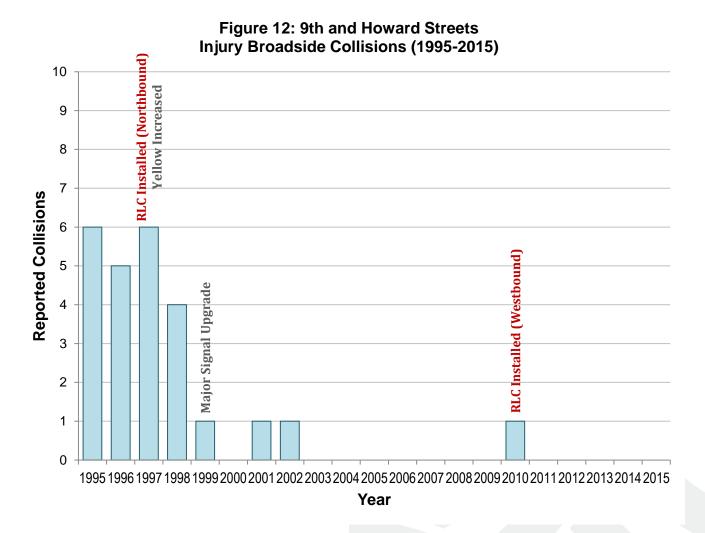


Figure 12: 9<sup>th</sup> and Howard Streets Injury Broadside Collisions (1995-2013)

						_	, ,					(-			,			/			
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 14<sup>th</sup> 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 Aveue Injury Broadside Collisions (1995-2015)

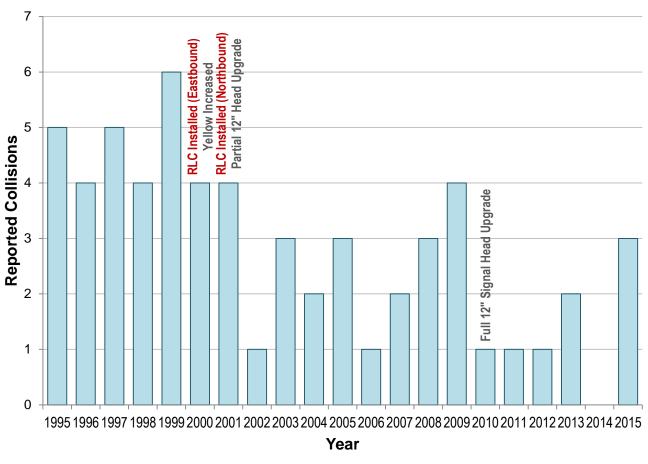


Figure 13: 14<sup>th</sup> Street and South Van Ness Avenue Injury Broadside Collisions (1995-2013)

						_	, ,								,						
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)

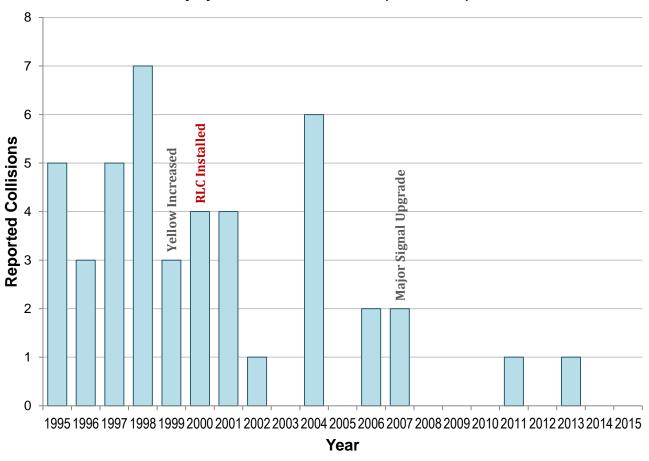


Figure 14: 15<sup>th</sup> and Mission Streets Injury Broadside Collisions (1995-2013)

							) · J	_				- (									
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)

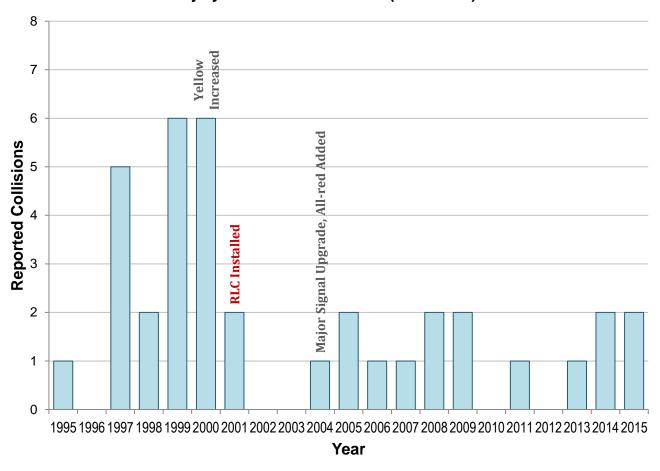


Figure 15: Bush Street and Van Ness Avenue Injury Broadside Collisions (1995-2013)

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)

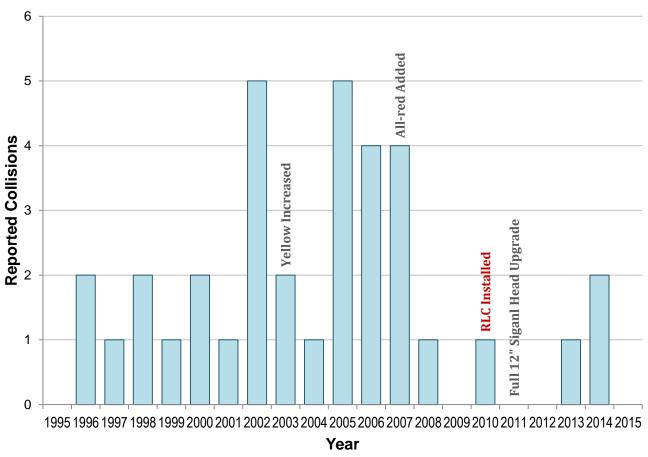


Figure 16: Ellis and Larkin Streets Injury Broadside Collisions (1995-2013)

 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
 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)

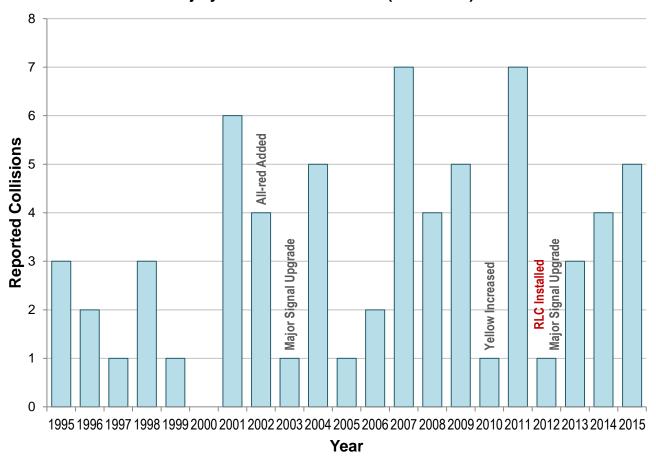


Figure 17: Fell Street and Masonic Avenue Injury Broadside Collisions (1995-2013)

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)

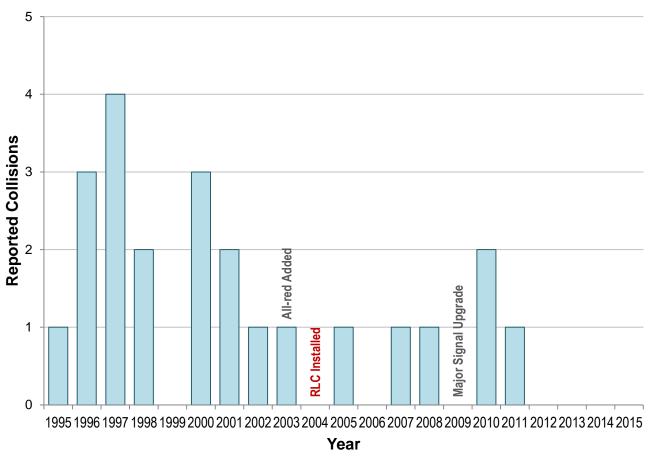


Figure 18: Fulton Street and Park Presidio Boulevard Injury Broadside Collisions (1995-2013)

															ĺ						
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)

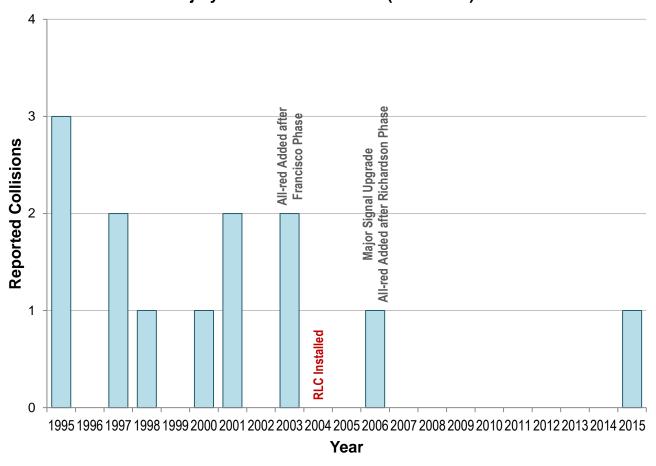


Figure 19: Francisco Street and Richardson Avenue Injury Broadside Collisions (1995-2013)

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)

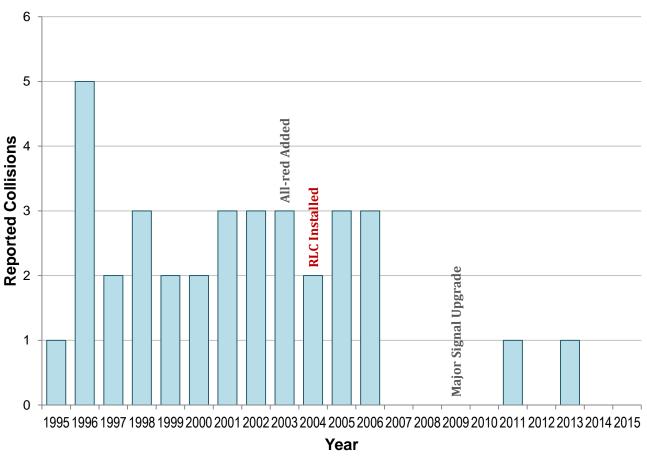


Figure 21: Geary and Park Presidio Boulevards Injury Broadside Collisions (1995-2013)

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)

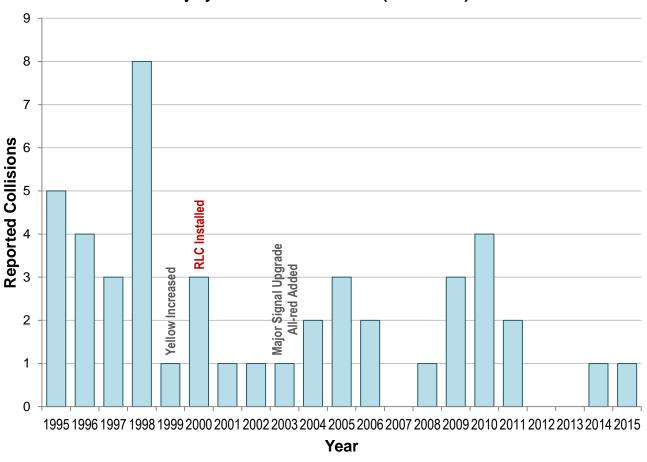


Figure 22: Hayes and Polk Streets Injury Broadside Collisions (1995-2013)

							, ,								,						
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)

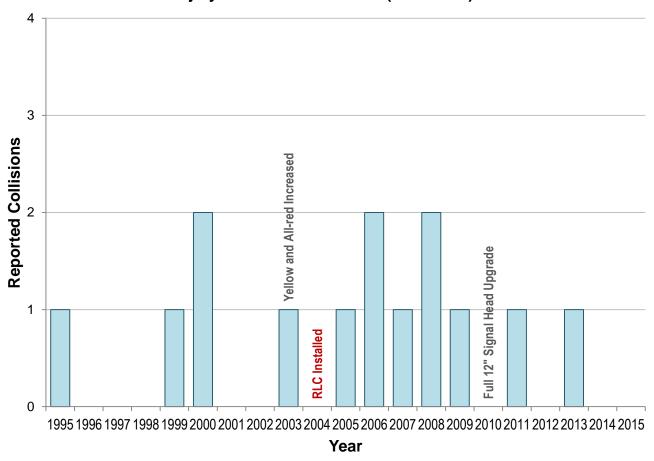


Figure 23: Lake Street and Park Presidio Boulevard Injury Broadside Collisions (1995-2013)

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)

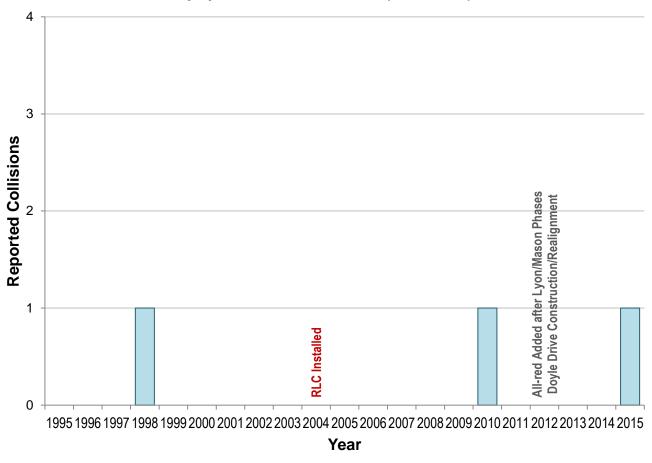


Figure 24: Marina Boulevard and Lyon Street Injury Broadside Collisions (1995-2013)

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)

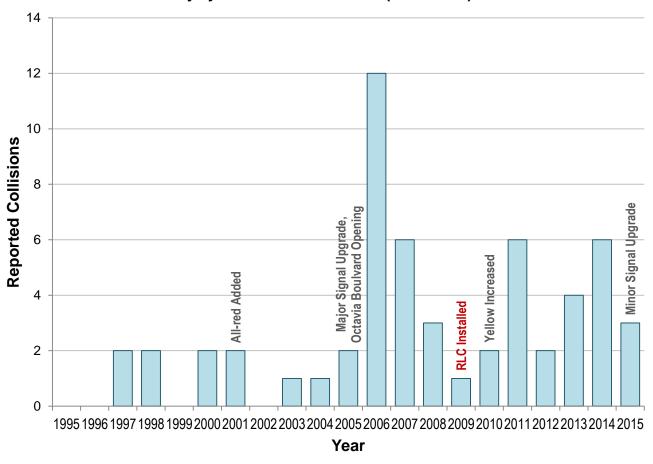


Figure 25: Oak Street and Octavia Boulevard Injury Broadside Collisions (1995-2013)

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)

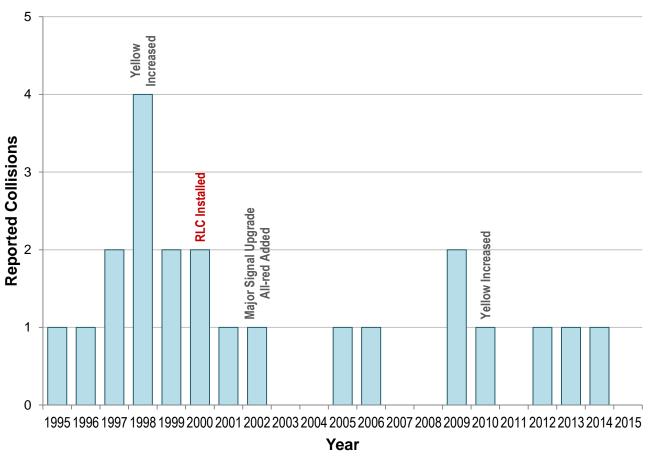


Figure 26: Pine and Polk Streets
Injury Broadside Collisions (1995-2013)

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