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The City of Santa Clarita could vote to end their red light camera program tomorrow evening [March 24, 2015]. At one time, this program was one of the most abusive series of left turn traps in the state and was ticketing over 1000 drivers per month. They had few through violations because they set their yellow times at 5.0 seconds for all their through movements with red light cameras, based upon the posted limits of 45 or 50 mph. Their program was predicated on ticketing drivers in long left turn lanes with dedicated arrows set for a yellow interval of 3.5 seconds. They believed they were giving drivers a break because they set the time a half second longer than the state minimum.

Eventually we were able to convince the city engineer that the City's 3.5 second interval was not based on any rational standard, following which the City did two things - 1) increased the time at some locations by $\frac{1}{2}$ to 1 second to see the effect on violations and 2) hired an independent engineering firm to measure the 85th percentile approach speeds in turning lanes. After discussions with me, the engineering firm agreed to account for the needs of drivers to slow to make the turn. Although I think their 85th measurements are too low, they have still recommended yellow times between 4 and 5 seconds depending on the intersection. Plus, once all yellow times are increased, I estimate that ticketing could go down to less than 100 per month and they could lose as much as \$475,000 per year on the program. Attached is my report to the City Council which includes an analysis of the violation changes due to the yellow time increases.

I am hopeful that there will be enough votes to end the program tomorrow but even if there isn't, ticketing will be at such a low level that few drivers will be impacted. Plus, I will still push for a grace period to account for the difference between what they are assuming the approach speed to be and the speed limit which motorists are legally entitled to drive at. That will eliminate pretty much the rest of the tickets.

We'll find out tomorrow what happens.

This would not have happened without the work of local resident James Farley who stopped them from automatically renewing the contract last year and then worked with me on the science argument to get this all to fall into place. Further kudos go to Brian Ceccarelli of North Carolina (redlightrobber.com) for bringing the issue of turning lanes to my attention and helping me understand the science behind the ITE formula, and Joe Bahen, an engineer working with the National Motorists Association (motorists.org), who help put together a rational protocol for how to determine the proper yellow times in turning lanes.

**Updated Analysis of the Red Light Camera Program
in Santa Clarita, CA**
By Jay Beeber, Executive Director, Safer Streets L.A., Member ITE

Introduction

The following report is an updated discussion of the Red Light Camera (RLC) Program in Santa Clarita, California. The author, Jay Beeber, is the Executive Director of Safer Streets L.A. and served on the subcommittee of the California Traffic Control Devices Committee which recommended changes to State standards and guidance for yellow-light timing. As noted in the staff report on this item, these recommendations have since been incorporated into the latest version of the California MUTCD released in November 2014. Mr. Beeber was also invited by city staff to consult on the two projects initiated by city traffic engineers to 1) evaluate the effect of providing a longer protected left-turn yellow-light time and 2) determine the proper protocol for setting the yellow time in left turn lanes throughout the city.

First and foremost, we wish to thank city staff, and especially Andrew Yi, for their continued courtesy and willingness to engage with us on the issue of yellow light timing in left turn lanes in Santa Clarita. Mr. Yi and all members of the city family deserve high praise for taking steps to attempt to find a rational way of setting the yellow time in left lanes. In our experience, no other municipal engineers have gone to these lengths and we wish to thank them for their efforts.

Results of Yellow Interval Increase Study

As we explained in our initial report last year, the majority of red light running citations in the City of Santa Clarita (89%) were being issued for fraction of a second violations in left turn lanes at intersections where the yellow signal time was not set appropriately for the actual speed of the vehicles approaching the intersection in long double and triple left turn pockets. When the yellow time is set too short for the needs of approaching vehicles, it creates a dilemma zone, a section of roadway where neither the stop or go decision is correct. Without significantly speeding up or excessive and unsafe braking, drivers caught in this situation are forced to run the red light. At that time, we explained that if Santa Clarita were to set the yellow time in left turn lanes more appropriately, the vast majority of left turn violations would be instantly eliminated resulting in an immediate improvement in traffic safety.

Since that time, the city's traffic engineers have lengthened the time of the yellow interval for the protected left turn at 7 of the 10 red light camera locations. Prior to signal changes, the yellow interval for the protected left turn movement was set at 3.5 seconds at all RLC approaches in the city. The yellow interval was increased by 1.0 second at both the eastbound and westbound approaches to the intersection of Valencia Blvd and McBean Parkway. The yellow interval was increased by 0.5 second at five additional approaches. Yellow intervals remained at 3.5 seconds at three RLC intersection approaches.

As we predicted, at the locations where the yellow interval was increased, the rate of red light running immediately decreased dramatically. At the two approaches where the yellow interval was increased by a full second, there was a 71% decrease in red light violations. At the other five approaches where

the yellow interval was increased by $\frac{1}{2}$ second, there was a 58% decrease in red light running violations. As noted in the staff report, the trend has continued to hold with no noticeable increase in red-light running. There was no overall decrease in red light running violations at RLC locations where the yellow interval remained at 3.5 seconds.

As a result of the yellow timing increases which were implemented in the left turn lanes at 7 of the 10 red light camera enforced approaches, red light running violations have virtually disappeared at these locations. For example, at the eastbound approach to Valencia and McBean, the city was issuing approximately 100 tickets each month prior to the most recent changes. **Last month**, with the yellow timing changed from 3.5 seconds to 4.5 seconds, **only 6 tickets were issued**. A full analysis of the violation changes at each intersection approach appears at the end of this report.

Results of Independent Consultant's Review of Yellow Light Timing

As also noted in the staff report, the independent consultant hired by the city has confirmed our contention that the yellow time of 3.5 seconds in most protected left turn lanes is too short for the needs of approaching vehicles and should be adjusted upwards. The consultant's recommendations will result in further increases at some of the test locations where the yellow interval was only increased by $\frac{1}{2}$ second as well as increases at the three RLC intersection approaches where the yellow time is currently set at 3.5 seconds. Consequently, red light running violations will decrease further from their current levels.

Estimate of Future Red Light Running Violations

The city is currently issuing approximately 350 citations per month citywide. Based on our discussions with city staff and the consultant, if the yellow interval is increased per the consultant's recommendation at only the three RLC intersection approaches where the yellow time is currently still set at 3.5 seconds, we estimate that monthly citations will drop to approximately 230 per month. This is less than one valid citation per day per intersection approach. If the yellow time is further increased as recommended by the consultant at the red light camera locations where the prior increase was only $\frac{1}{2}$ second, we estimate that the citation rate would drop to about 130 per month citywide. This is less than one valid citation every other day. Note also that these citations would still likely be for violations of a fraction of a second. This is an extremely low violation rate and would never warrant the installation of red light cameras.

Financial Impact

The staff report estimates that the city will run a deficit of \$210,000 in Fiscal Year 2014-15. Note, however, that this is based on the current citation rate as well as the higher citation rate that existed in the first part of the fiscal year before some yellow light timing was changed and violations decreased. In consideration of our estimates of future citation rates above, we calculate that once all yellow light timing changes are implemented, the city will run a deficit of at least \$375,000 and potentially as much as \$475,000 annually.

Comparison of Costs of Red-Light Photo Enforcement to Traffic Enforcement Motor Officers

With all due respect to city staff, the comparison of the costs of the Red-Light Photo Enforcement Program to traffic enforcement motor officers is not valid. First, you can't compare the cost of a live police officer to an inanimate object. Doing so is not only wrong-headed, it is highly insulting to police officers who put their lives on the line every day. Second, red light cameras perform only one function; police officers on patrol are highly skilled individuals and perform many public safety functions, not only in terms of traffic safety but in terms of other crime reduction and prevention as well. The two are not equal and you can't compare the costs of each in this manner. Third, the city would never assign a police officer to stand watch at an intersection 24 hours a day, 7 days a week, 365 days a year because it simply isn't necessary. This is especially true since the rate of red light running is expected to be reduced to less than one every two days. Comparing the cost of something you would never do to the cost of the red-light camera program is a bogus analogy.

However, even if one were to compare the cost of the red light camera program to the cost of live officers, the RLC program fails by comparison. For the almost \$500,000 per year the city is expected to lose if the red light camera program were to continue, two additional police officers could be hired. Plus, those officers would not only provide a more necessary function for the people of Santa Clarita, they would undoubtedly issue some traffic citations, most likely more than one every two days. The revenue returned from these citations would then help offset the cost of these additional officers.

No matter how you look at it, live police officers patrolling the streets of the city are always better than enforcement cameras.

A Grace Period for Photo Enforced Citations is Necessary

City staff and the independent consultant have done an excellent job estimating the necessary length of the yellow interval needed for the majority of motorists traveling in dedicated turning lanes. However, when using photo enforcement that is capable of capturing violations which occur just a fraction of a second after the light turns red, the protocol which the city intends to use is still not sufficient to ensure that motorists who are otherwise driving in a safe and prudent manner are not trapped by a yellow interval too short for their needs. To calculate the necessary yellow interval, the independent consultant has recommended using an estimate of the motorists approach speed which is less than the legal speed which motorists are entitled to drive at in the left turn pocket. Both the consultant's speed measurements and speeds measured by city staff using automated equipment show that drivers can, and do, approach the intersection in the left turn lanes at or near the posted speed limit. This is perfectly legal and otherwise perfectly safe. There is no special reduced speed limit posted for turning lanes.

If the yellow time is calculated using an approach speed less than what is legally permitted, a dilemma zone trap is created for those drivers approaching at a speed higher than what is estimated, but still within the legal limit. Some portion of these drivers will end up being forced to run the red light by a fraction of a second and will be issued a \$500 ticket, even though they essentially did nothing wrong. Therefore, if the city chooses to continue using red light cameras to enforce left turn movements, the only moral option would be to implement a grace period for citations long enough to account for the difference between the yellow interval calculated using the estimated approach speed and the yellow interval calculated using the legally permitted approach speed (speed limit).

Once the yellow times are increased per the recommendations of the independent consultant, and the above recommended grace period implemented, there will be so few red light camera citations issued that the program will serve no purpose whatsoever.

Redflex Ethical Failings

It is likely well known by the Council that the city's current vendor, Redflex, has been embroiled in a bribery scandal as well as other ethical failings. The former head of US operations has been indicted along with a number of co-conspirators. One co-defendant has already pleaded guilty, and a former deputy has turned state's evidence. Although the focus of the current Federal probe has been on the company's dealings in Chicago, it has also been alleged by one of the defendants cooperating with Federal prosecutors that the corrupt practices have been widespread throughout the country, including California. As reported in the press, "cities continue to drop red light camera and speed camera programs, many seeking to avoid being drawn into [the] scandal". Just today, the president and CEO of Redflex's US operation resigned his position (see news story below). The City of Santa Clarita would do well to extricate itself from any business dealings with this company.

Recommendations

The red light camera program in the City of Santa Clarita has served its purpose. It has been shown that increasing the yellow timing at intersection approaches has reduced the incidence of red light running to levels far below anything that could have been hoped for when the program was implemented. No further benefit can be achieved by maintaining the program. The city should terminate the contract at the earliest date and use the funds previously allotted to the program for additional police officers or other safety measures.

**Analysis of Violation Data in Left Turn Lanes at RLC Intersections
in Santa Clarita After Yellow Interval Changes
by Jay Beeber, Executive Director Safer Streets L.A., ITE**

We reviewed the red light camera violation data supplied by the City of Santa Clarita for the ten red light camera monitored intersection approaches. Prior to signal changes, the yellow interval for the protected left turn movement was set at 3.5 seconds at all RLC approaches in the city. Yellow intervals for the left turn movement were increased at seven of the ten approaches. The yellow interval was increased by 1.0 second at both the eastbound and westbound approaches to the intersection of Valencia Blvd and McBean Parkway. The yellow interval was increased by 0.5 second at five additional approaches. The dates of the signal timing changes varied by intersection. Yellow intervals remained at 3.5 seconds at three RLC intersection approaches.

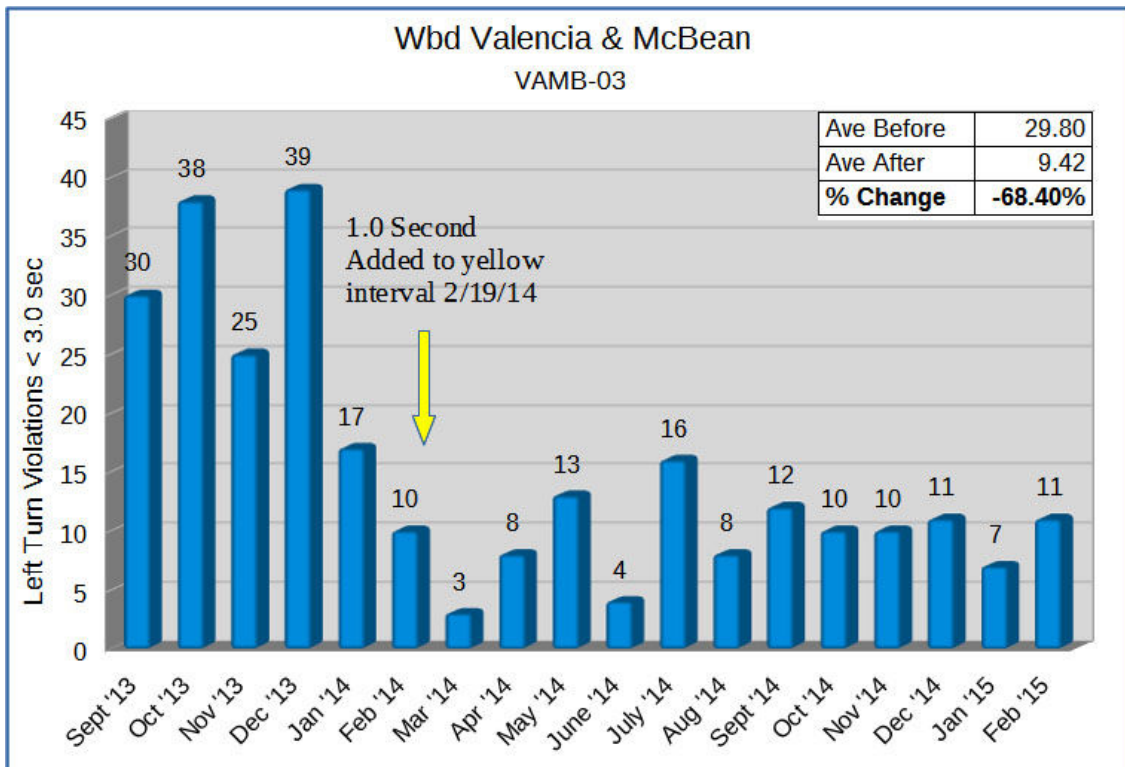
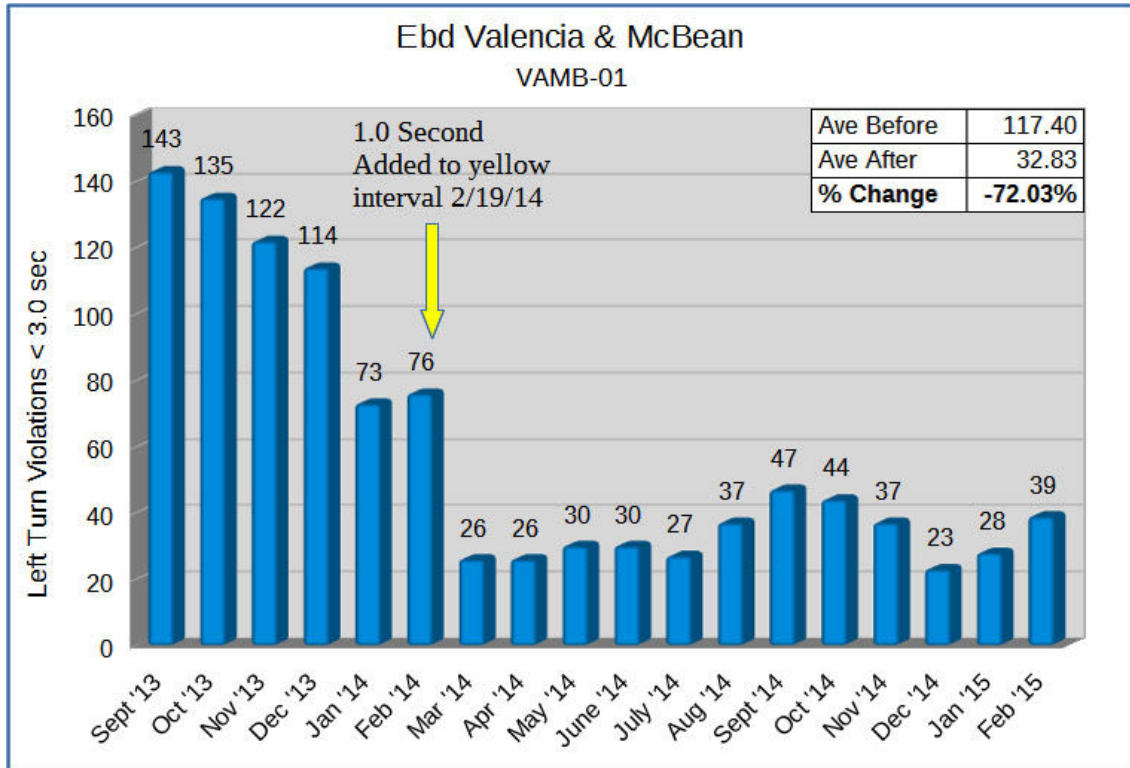
The violation data supplied by the city is broken down by the time-into-red of the violation. Violations occurring within the first 3.0 seconds of the red interval are listed by 0.1 second intervals. All violations over 3.0 seconds are grouped together as one category. The data included all violation events, including those events not deemed to be a citeable offense. Since changes in the yellow interval up to 1.0 second are unlikely to have any effect on violations occurring after 3.0 seconds and many of the late-into-red violations are due to non-citeable offenses such as emergency vehicles, we limited our analysis to violations occurring within 3.0 seconds of the onset of the red interval.

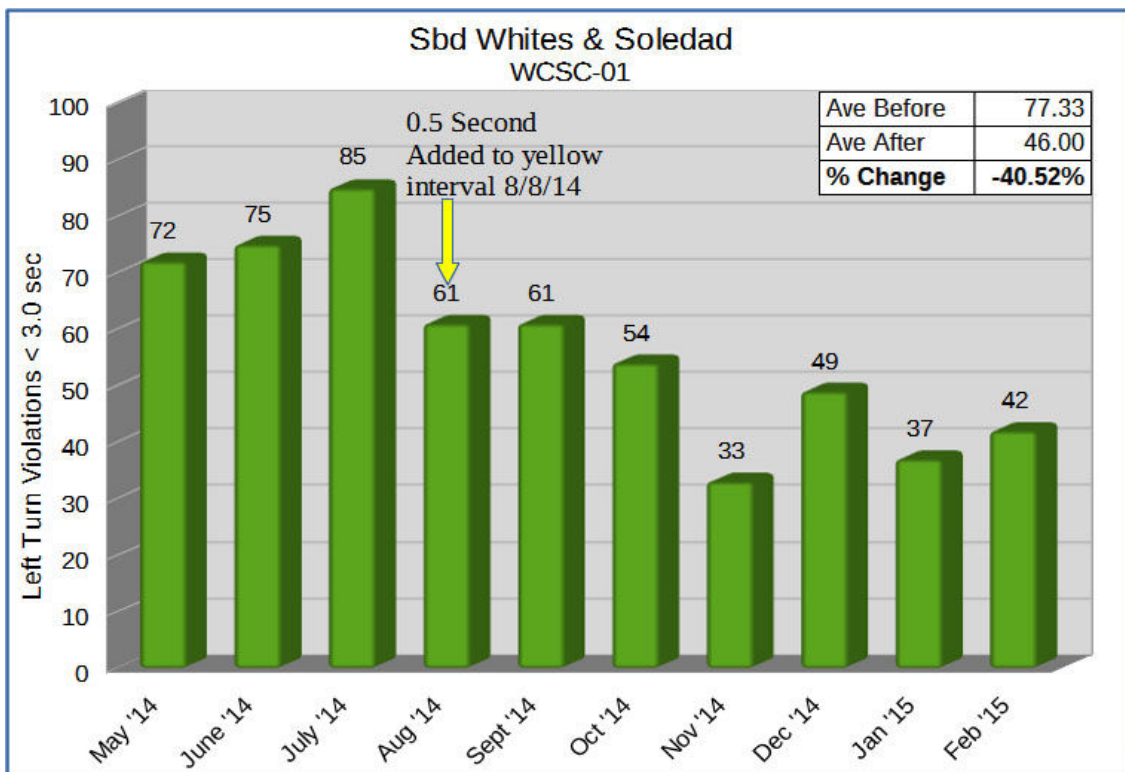
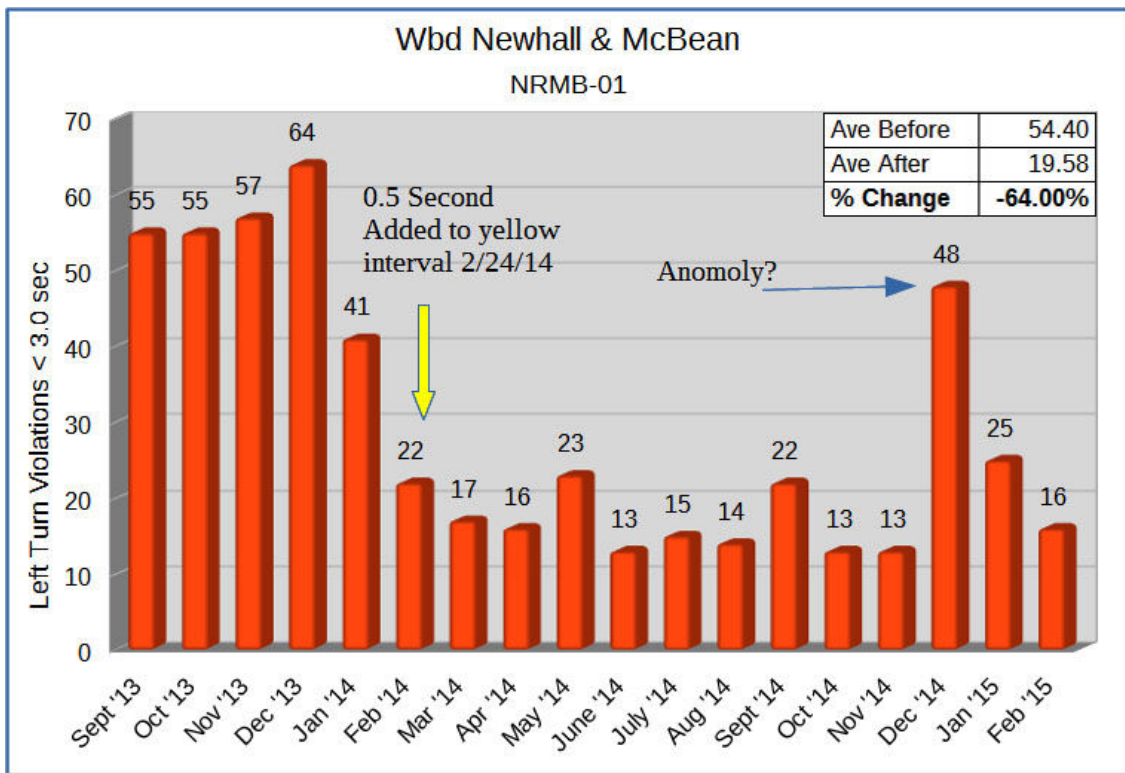
The table below shows the before and after violation numbers and calculated percent change in the average number of monthly violations occurring after the yellow intervals were increased.

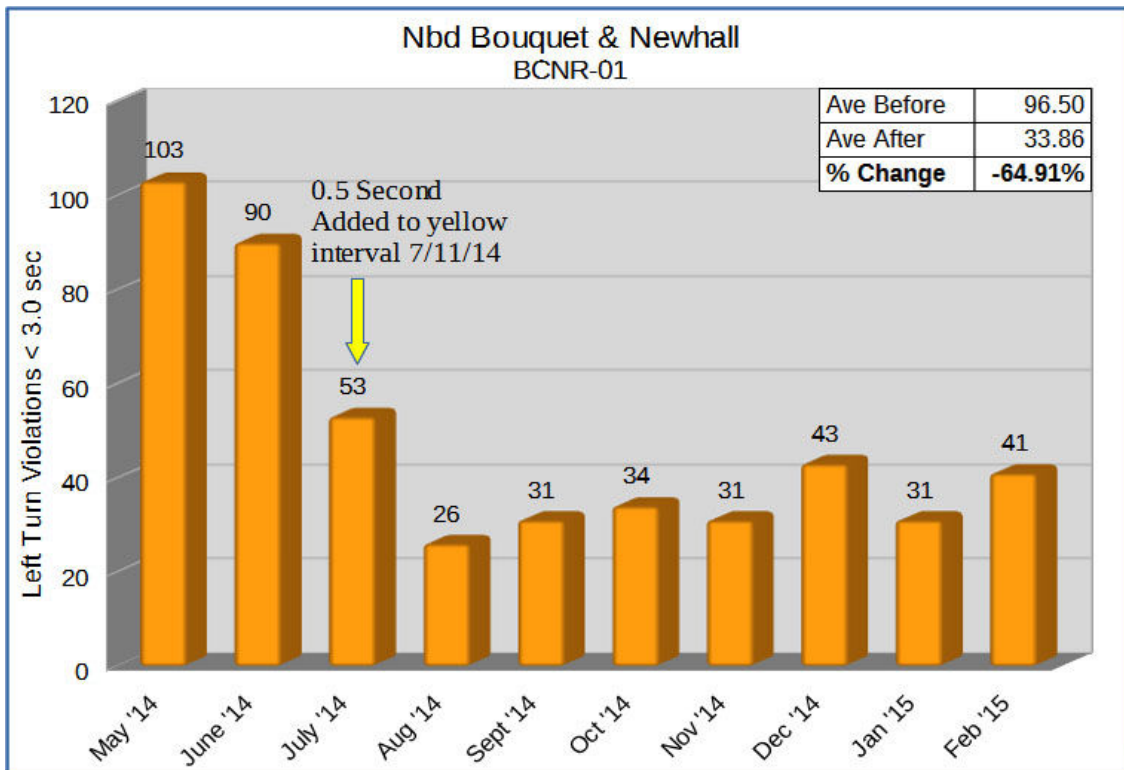
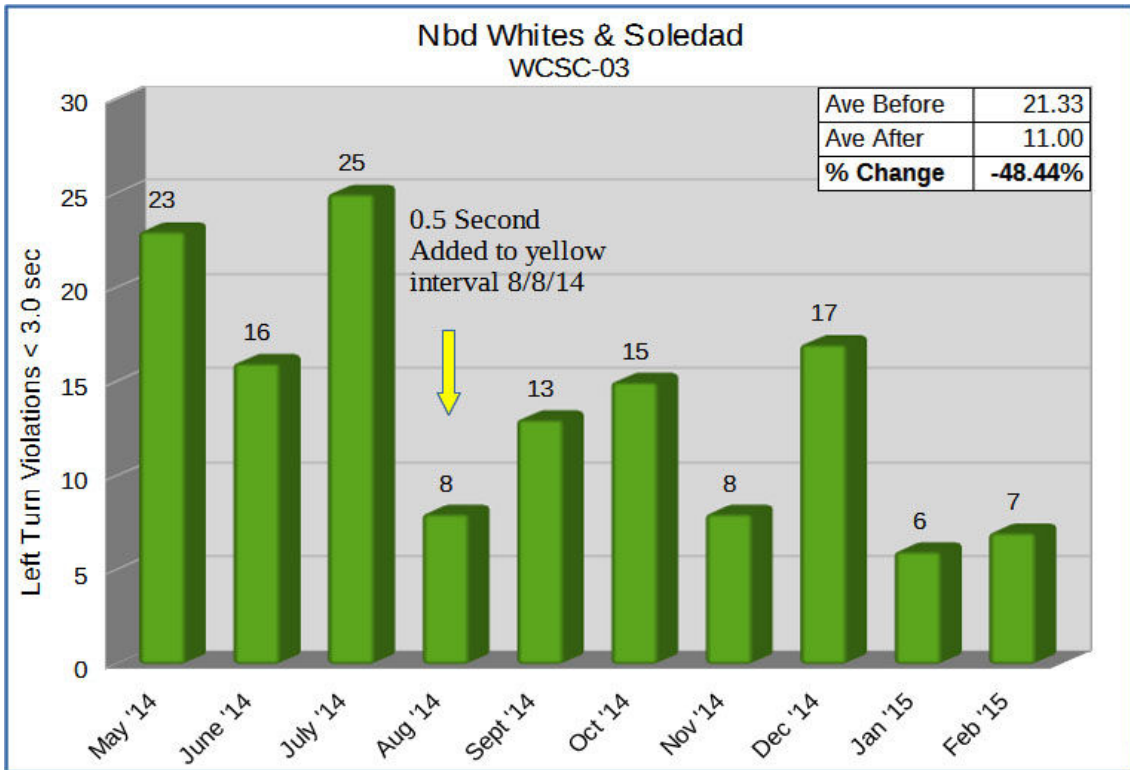
| Santa Clarita RLC Violations Left Lanes < 3.0 sec | | | | | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------|---------|---------|
| Change Date | 02/19/14 | 02/19/14 | 02/24/14 | 08/08/14 | 08/08/14 | 07/11/14 | 07/11/14 | | | |
| Location | VAMB-01 | VAMB-03 | NRMB-01 | WCSC-01 | WCSC-03 | BCNR-01 | NRBC-01* | BCSC-01 | MMMB-01 | OVLV-01 |
| Sept '13 | 143 | 30 | 55 | | | | | | | |
| Oct '13 | 135 | 38 | 55 | | | | | | | |
| Nov '13 | 122 | 25 | 57 | | | | | | | |
| Dec '13 | 114 | 39 | 64 | | | | | | | |
| Jan '14 | 73 | 17 | 41 | | | | | | | |
| Feb '14 | 76 | 10 | 22 | | | | | | | |
| Mar '14 | 26 | 3 | 17 | | | | | | | |
| Apr '14 | 26 | 8 | 16 | | | | | | | |
| May '14 | 30 | 13 | 23 | 72 | 23 | 103 | 93 | 92 | 73 | 16 |
| June '14 | 30 | 4 | 13 | 75 | 16 | 90 | 89 | 85 | 100 | 17 |
| July '14 | 27 | 16 | 15 | 85 | 25 | 53 | 59 | 86 | 67 | 16 |
| Aug '14 | 37 | 8 | 14 | 61 | 8 | 26 | 31 | 105 | 91 | 13 |
| Sept '14 | 47 | 12 | 22 | 61 | 13 | 31 | 24 | 114 | 72 | 24 |
| Oct '14 | 44 | 10 | 13 | 54 | 15 | 34 | 30 | 120 | 82 | 25 |
| Nov '14 | 37 | 10 | 13 | 33 | 8 | 31 | 33 | 91 | 60 | 15 |
| Dec '14 | 23 | 11 | 48 | 49 | 17 | 43 | 41 | 78 | 79 | 24 |
| Jan '15 | 28 | 7 | 25 | 37 | 6 | 31 | 40 | 79 | 68 | 14 |
| Feb '15 | 39 | 11 | 16 | 42 | 7 | 41 | 37 | 78 | 74 | 17 |
| Ave Before | 117.40 | 29.80 | 54.40 | 77.33 | 21.33 | 96.50 | 91.00 | 92.80 | 76.60 | 18.10 |
| Ave After | 32.83 | 9.42 | 19.58 | 46.00 | 11.00 | 33.86 | 33.71 | | | |
| % Change | -72.03% | -68.40% | -64.00% | -40.52% | -48.44% | -64.91% | -62.95% | | | |

Note that as expected, all intersections where the yellow interval was increased saw significant reductions in red light running violations with the greatest reductions occurring at the two approaches where the yellow was increased by a full 1.0 second. No overall reduction in red light running occurred at the intersections where the yellow interval remained at 3.5 seconds.

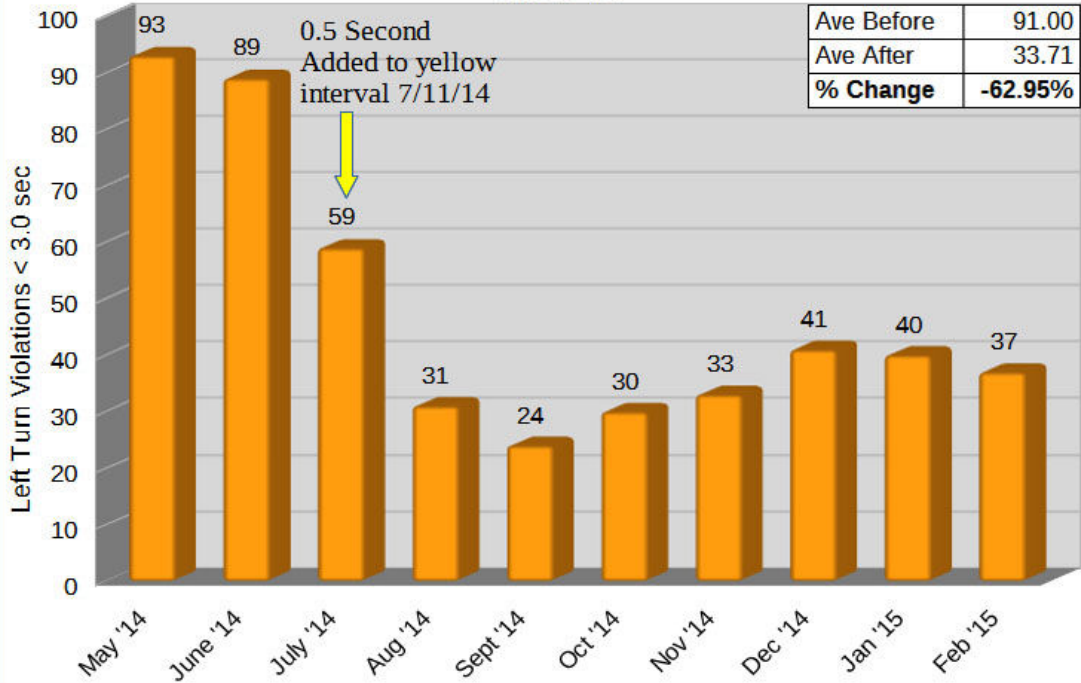
The following charts show the violation changes over time at each intersection approach where the yellow interval was increased. Although violations fluctuate month to month, overall, violations have not rebounded to previous levels.







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NRBC-01



Redflex US Chief Calls It Quits

Head of US operations for Redflex Traffic Systems announces his resignation in the wake of major legal and financial woes.

The man brought in to rescue the US division of Redflex Traffic Systems from a corruption scandal and looming bankruptcy announced his resignation on Monday. James Saunders, who held the title of president and CEO of the American subsidiary of the Australian firm, will leave no later than June 30.

When Saunders joined Redflex in October 2010 as the vice president for account management, the company was sailing high with a stock price of \$2.50 per share. He was elevated to the top US job in July 2013 after the company cleaned out the top management ranks in the wake of a federal bribery and corruption investigation that has the former head of US operations, Karen Finley, facing a long prison sentence in a case. One of Finley's co-defendants has already pleaded guilty, and her former deputy has turned state's evidence.



By the time Saunders took the reins, the stock had plunged to \$1.13 a share and his job was to slow the decline as best he could. Saunders met with customers, reinforced the importance of ethics training and urged every reporter he could talk to believe that the company was different now.

Despite Saunders' effort, cities continued to drop red light camera and speed camera programs, many seeking to avoid being drawn into scandal. Earlier this month, Redflex announced that profit plunged 414 percent in the first half of the fiscal year. Australian investors are scurrying from the stock, which tumbled to 60 cents on Friday, a 47 percent drop under Saunders.

Saunders is walking away from a generous compensation package of \$442,794 per year, just slightly under the near half-million annual payouts that Finley, his predecessor, received. Just four months ago, Redflex Chairman Adam Gray said he had hoped he had seen the last of the turmoil in the executive ranks.

"Over just the past three years, this company has seen seven directors leave the organization, has had three chairmen and is on its third group CEO," Gray said. "Seven directors. Three chairmen. Three CEOs. Over three years."

For his part, Saunders was not worried about the impact of his departure on investor confidence.

"Redflex has been an important part of my life for the last five years," Saunders said in his statement to Australian investors. "I leave Redflex in good hands."