Dear West Hollywood Officials,

It is my understanding that at this evening's City Council Meeting you will be considering whether to renew West Hollywood's red light camera program.

Our goal in forwarding you the following information is to provide you with additional data on the use of photo enforcement in West Hollywood. We hope that this information proves useful in your deliberations as to whether or not to continue the red light camera program.

Introduction

Safer Streets L.A. is dedicated to the adoption of scientifically sound and sensible transportation and traffic laws. We believe that accurate information and critical thinking are crucial to implementing sound public policy. Towards that end, we strive to provide the public and elected representatives with well-researched and verifiable data. Our goal is to promote scientifically based solutions to motorist and pedestrian safety issues. Safer Streets L.A. provides this information on a voluntary basis and is not paid to interact with elected officials.

I am the Executive Director of Safer Streets L.A. and a research fellow with the Reason Foundation concentrating on traffic safety and enforcement. I also serve on the City of Los Angeles' Pedestrian Advisory Committee and have written numerous scientific studies on traffic related safety issues. Most recently, I served on the subcommittee of the California Traffic Control Devices Committee (CTCDC), which recommended changes to State standards and guidance for yellow light timing. These recommendations, which I helped author, have since been incorporated into the latest version of the California Manual on Uniform Traffic Control Devices (CAMUTCD) released in November 2014.

The City Has Achieved Significant Reductions in Red Light Running By Increasing the Yellow Light Interval

At the end of 2013, Safer Streets L.A. conducted an analysis of red light camera citation rates in West Hollywood subsequent to an increase in the duration of the traffic signal yellow interval at photo-enforced intersections. Prior to the increase referenced above, traffic signal yellow intervals in West Hollywood had been set at the absolute minimum time based on the posted speed limit of the roadway. In 2012, the city began implementing a new policy of setting the yellow interval based on the posted speed limit plus an additional 5 mph. This resulted in 0.3 of additional time being added to the yellow interval at intersections where the new timing protocol has been employed. For comparison, the blink of an eye is generally measured to be 0.3 s to 0.4 s duration. At the time of the analysis, the yellow interval had been increased at five of the eight intersections monitored with red light cameras. Timing at three intersections, Santa

Monica/La Brea, Melrose/La Cienega, and Beverly/Robertson had not yet been increased at the time of the study.

By increasing the yellow interval by 0.3 s at intersections within the city of West Hollywood, traffic engineers were able to achieve an overall 61% reduction in red light running at the locations analyzed in this study. **Individual intersection approaches saw reductions in the range of 48% to 70%,** with the greatest percentage reductions occurring at locations with the greatest number of red light violations prior to the yellow time change. These reductions were a direct result of the signal timing changes and were not in any way related to red light camera enforcement as citation rates had been holding steady for many years prior to increasing the yellow interval.

A summary table of the results including a calculation of the overall rate of change in citations at the study locations appears below and the full report is attached to this letter. Our analysis concluded that with additional minor increases in the yellow intervals, West Hollywood could expect to reduce the number of red light running events at intersections throughout the city to no more than 10 and 20 per month.

Change in Citations Issued After 0.3 Sec Increase in Yellow Interval West Hollywood, CA

Location	Average Citations Before Change	Average Citations After Change	% Change
N/B LaBrea At Fountain	180	55	**-69.5%**
S/B LaBrea At Fountain	142	48	**-66.0%**
N/B Fairfax At Fountain	113	51	**-54.7%**
S/B Fairfax At Fountain	37	19	**-47.4%**
N/B Crescent Hts At Fountain	47	23	**-51.3%**
S/B Crescent Hts At Fountain	48	19	**-59.3%**
N/B Fairfax At Santa Monica	44	23	**-47.6%**
Totals	610	239	**-60.9%**

New Signal Timing Implemented in West Hollywood in 2015

While not specifically referenced in the Staff Report, new signal timing protocols required in the new CAMUTCD released in November 2014 required West Hollywood, along with all California cities, to further increase the yellow interval at red light camera locations as of August 1, 2015. West Holly appears to have implemented these changes in early 2015. Our initial review of the citation data provided by the city's red light camera coordinator, Deputy Zenon Porche, shows that there have been further significant decreases in red light running violations as a result of these changes. Even at

intersections where staff recommends continued photo enforcement, as a result of increased yellow interval timing (not RLC enforcement), violations have been reduced to levels as low as can reasonably be expected. The table below shows the citation rates at the eight intersection approaches recommended for continued enforcement.

		Citations	
	Yellow Time	Apr-15	May-15
La Brea at Fountain (northbound)	4.1	37	6
La Brea at Fountain (southbound)	4.1	14	24
Beverly at Robertson (eastbound)	4.2	16	12
Beverly at Robertson (westbound)	4.2	18	22
La Brea at Santa Monica (eastbound)	3.8	36	29
La Brea at Santa Monica (northbound)	4.2	7	5
La Cienega at Melrose (northbound)	4.2	8	8
La Cienega at Melrose (southbound)	4.2	17	9

As can be seen, these intersections are not experiencing a red light running problem and photo enforcement is no longer warranted as continued enforcement is unlikely to further reduce violations. If the city wishes to further reduce the number of violations, the yellow interval can be increased an additional 0.1 – 0.3 seconds. This is especially true at the eastbound approach to Santa Monica & La Brea where the yellow light time is only 3.8 seconds, 0.4 seconds less than the northbound approach. Note that during April and May there were 36 and 29 citations issued on the eastbound approach where the yellow time is 3.8 sec. and only 7 and 5 citations issued on the northbound approach where the yellow time is set at 4.2 sec. As data from subsequent months becomes available, we will update our previous study and present the results to West Hollywood officials.

Considering the fact that red light running is now at historic lows due to engineering improvements rather than red light camera enforcement, city officials may wish to postpone committing the city to a costly contract for services that may not provide any additional benefit.

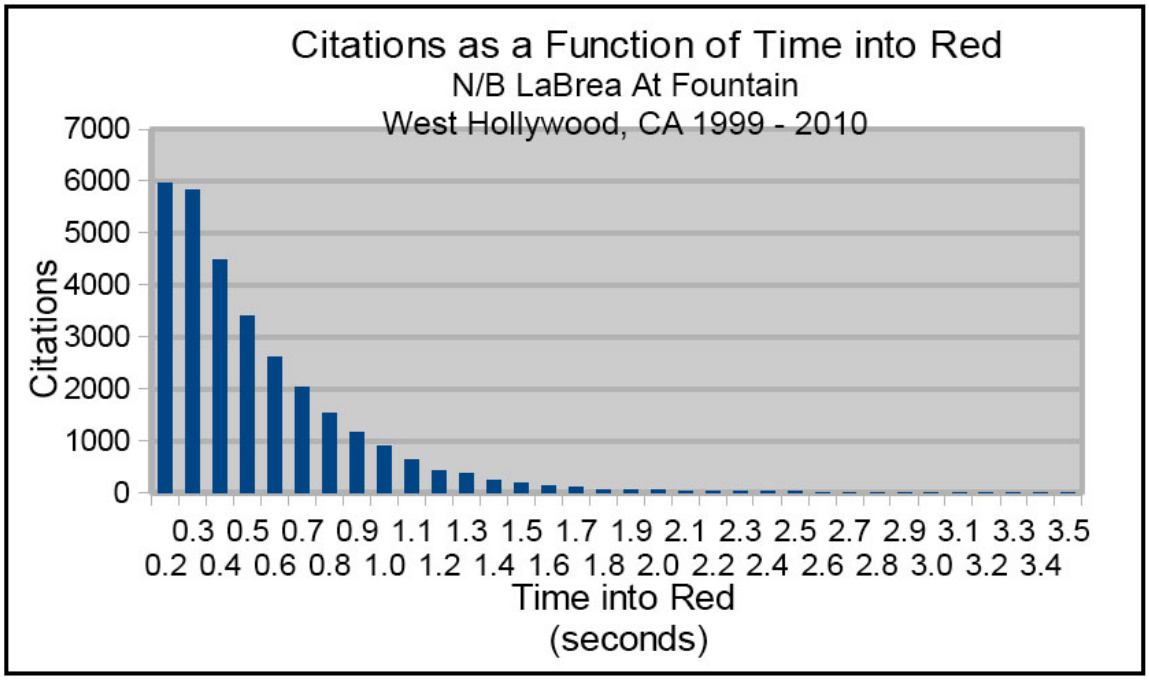
It should be further noted that while the current signal times likely comply with (and in some cases may slightly exceed) the current state requirements, the city is always free to use longer times provided that they are not “excessive”. The current yellow times in West Hollywood are by no means excessive and there is further room for upward adjustment if necessary. Setting yellow times is not an exact science and where violations exceed that which is desirable, further adjustments can be made.

While we are not necessarily advocating further yellow time increases as the number of violations that are occurring are extremely small, given a choice between continued photo enforcement and further minor increases in yellow time, increasing the yellow time (and implementing other engineering countermeasures) would be expected to give a better and more immediate result and prevent the violations from occurring in the first place rather than simply penalizing motorists after the fact.

Finally, we wish to reiterate that the numbers of red light violations that are occurring after the signal timing changes have been implemented are extremely small and it is unrealistic to expect violations to drop to zero as some of these violations are due to distraction, fatigue, impairment, etc. These types of violations cannot be reduced or eliminated by using red light cameras and therefore continued use of photo enforcement cannot be expected to result in an improvement in safety.

Potential for Broadside Collisions

Staff notes that, "Each of the red light citations involved a motorist with the potential for causing a broadside collision". This is not necessarily correct, as there are significant differences in the types of red light running that can occur. As the chart below shows, the vast majority of straight through violations that occur at red light camera enforced intersections in West Hollywood occur within the first few fractions of a second of the light turning red. While these types of violations could theoretically have the potential to cause a collision, they are highly unlikely to cause the more serious broadside collisions, as a conflicting vehicle is unlikely to be within the intersection due to the implementation of an "all-red" interval and start-up delay. Broadside collisions occur when a motorist violates the signal long after the light has turned red. As stated previously, those occur due to driver distraction, fatigue, or impairment, inclement weather, etc. Red light cameras have no effect on these types of violations.



License Plate Reader Technology

While the city may wish to implement license plate reader technology, it is unnecessary to do so in conjunction with red light cameras. Employing license plate reader technology at 8 intersection approaches is unlikely to provide a cost-effective benefit considering the likelihood that the cost of the red light camera program will far exceed the revenue returned from citations. As shown earlier, very few violations are occurring at the intersections recommended for continued red light camera enforcement. Therefore, the combined cost of the program (vendor fee plus cost of Sheriff's staff) will become a burden on the city's budget. Officials should consider alternative license plate reader technology from other vendors and compare costs prior to committing to a long term, pricy contract with a red light camera vendor.

Recommendations

There is no urgency in signing a new contract for photo enforcement services. Council should consider ending the program and evaluating the effect of the already implemented engineering improvements. Council always has the option of signing a contract with the recommended vendor should officials determine that increased enforcement is necessary.

Please feel free to contact me if you have any questions or would like any clarification of the information provided.

Sincerely,

Jay Beeber
Executive Director
Safer Streets L.A.
Jay@saferstreetsla.org
818-205-4790

Case Study:
West Hollywood, CA

The City of West Hollywood, CA implemented a red light photo enforcement program in 1999. Currently, 24 approaches at a total of 8 intersections are monitored by red light cameras. Of those, 16 approaches are monitored on a continuous basis. The enforcement systems at the remaining 8 approaches are activated intermittently. Uninterrupted monthly citation figures, therefore, only exist for the 16 approaches where the enforcement cameras are continuously functional.

Until recently, traffic signal yellow intervals in West Hollywood had been set at the absolute minimum time based on the posted speed limit of the roadway. In 2012, the city began implementing a new policy of setting the yellow interval based on the posted speed limit plus an additional 5 mph. This resulted in 0.3 s to 0.4 s of additional time being added to the yellow interval at intersections where the new timing protocol has been employed. The process of re-timing the signals throughout the city has yet to be completed.

The purpose of this analysis is to determine the effect this increase in the yellow interval has had on the citation rate at photo enforced intersection approaches.

The West Hollywood red light camera program provides an ideal test case for this analysis as the city only cites for straight through violations. As a result, all citation data consists only of vehicles proceeding straight through the intersection. At our request, Los Angeles County Sheriff's Deputy Zenon Porche, who administers the city's red light camera program, generated a report detailing the number of monthly citations issued for each intersection approach in the city from the inception of the program through September 2013. In addition, the city's traffic engineering department provided a listing of the months in which the yellow interval was increased at each intersection monitored by red light camera systems. The change dates, along with the before and after yellow interval times, for each red light camera intersection are listed in the table below.

West Hollywood RLC Intersections Yellow Interval Change Dates		NB/SB			EB/WB		
		Previous	Current	Difference	Previous	Current	Difference
Intersection	Date Changed	Yellow Phase	Yellow Phase	YP	Yellow Phase	Yellow Phase	YP
Fountain Av/Crescent Hts Blvd	Oct-12	**3.6**	**3.9**	**0.3**	3.6	3.9	0.3
Fountain Av/Fairfax Av	Nov-12	**3.6**	**3.9**	**0.3**	3.6	3.9	0.3
Fountain Av/La Brea Av	Oct-12	**3.6**	**3.9**	**0.3**	3.5	3.9	0.4
Santa Monica Blvd/ Fairfax Av	Jun-12	**3.6**	**3.9**	**0.3**	3.5	3.6	0.1
Sunset Bl/La Cienega Bl	Jun-13	3.0	3.6	0.6	**3.6**	**3.9**	**0.3**
Santa Monica Blvd/La Brea	N/A	**3.6**	TBD	TBD	**3.5**	TBD	TBD
Melrose Av/La Cienega Bl	N/A	**3.7**	TBD	TBD	3.7	TBD	TBD
Beverly Bl/Robertson Bl	N/A	3.6	TBD	TBD	**3.7**	TBD	TBD

Of the five intersections where the yellow interval had been increased at the time of this study, one was increased in June 2012, two were increased in October 2012, one was increased in November 2012, and one was increased in June 2013.

Data Analysis and Results

For this study, we compiled the number of citations issued at each photo enforced intersection approach before and after the yellow interval was increased. We eliminated any intersection approach where the enforcement system was not active for all months of the study. Additionally, we eliminated the eastbound and westbound intersection approaches at Sunset Blvd and La Cienega Blvd as the limited after period of three months did not provide sufficient data for a valid analysis. After this data reduction, figures for a total of seven intersection approaches were available for analysis.

For each intersection approach, the average number of monthly citations before and after the signal timing increase was calculated, as was the percent change in the number of citations. The before period for the analysis ran from January 2012 to the month prior to the month in which the signal timing was changed. The after period for the analysis ran from the month after the month in which the signal timing was changed to September 2013, the most recent month for which data was available. The month in which the signal timing was changed was eliminated from the analysis as it contained a mix of before and after data. The results appear in the table below. Months highlighted in yellow represent the months in which the signal timing changes were made.

N/B LaBrea At Fountain Yellow Interval Increase of 0.3 sec in Oct. 2012		**S/B LaBrea At Fountain - Yellow Interval Increase of 0.3 sec in Oct. 2012**		**N/B Fairfax At Fountain - Yellow Interval Increase of 0.3 sec in Nov. 2012**		**S/B Fairfax At Fountain - Yellow Interval Increase of 0.3 sec in Nov. 2012**		**N/B Crescent Hts At Fountain - Yellow Interval Increase of 0.3 sec in Oct. 2012**		**S/B Crescent Hts At Fountain - Yellow Interval Increase of 0.3 sec in Oct. 2012**		**N/B Fairfax At Santa Monica - Yellow Interval Increase of 0.3 sec in June 2012**	
Month	Citations	Month	Citations	Month	Citations	Month	Citations	Month	Citations	Month	Citations	Month	Citations
Jan 2012	217	Jan 2012	109	Jan 2012	108	Jan 2012	33	Jan 2012	46	Jan 2012	51	Jan 2012	43
Feb 2012	148	Feb 2012	135	Feb 2012	89	Feb 2012	27	Feb 2012	35	Feb 2012	50	Feb 2012	45
Mar 2012	160	Mar 2012	134	Mar 2012	93	Mar 2012	35	Mar 2012	49	Mar 2012	59	Mar 2012	48
Apr 2012	165	Apr 2012	129	Apr 2012	101	Apr 2012	34	Apr 2012	47	Apr 2012	53	Apr 2012	40
May 2012	186	May 2012	142	May 2012	120	May 2012	37	May 2012	49	May 2012	42	May 2012	44
Jun 2012	199	Jun 2012	156	Jun 2012	126	Jun 2012	36	Jun 2012	47	Jun 2012	58	Jun 2012	20
Jul 2012	156	Jul 2012	149	Jul 2012	129	Jul 2012	39	Jul 2012	53	Jul 2012	59	Jul 2012	28
Aug 2012	193	Aug 2012	168	Aug 2012	155	Aug 2012	38	Aug 2012	52	Aug 2012	60	Aug 2012	16
Sept 2012	194	Sept 2012	159	Sept 2012	110	Sept 2012	44	Sept 2012	48	Sept 2012	57	Sept 2012	21
Oct 2012	129	Oct 2012	128	Oct 2012	100	Oct 2012	42	Oct 2012	49	Oct 2012	20	Oct 2012	27
Nov 2012	89	Nov 2012	64	Nov 2012	95	Nov 2012	33	Nov 2012	25	Nov 2012	20	Nov 2012	16
Dec 2012	45	Dec 2012	24	Dec 2012	82	Dec 2012	18	Dec 2012	15	Dec 2012	19	Dec 2012	15
Jan 2013	42	Jan 2013	55	Jan 2013	54	Jan 2013	17	Jan 2013	19	Jan 2013	19	Jan 2013	22
Feb 2013	55	Feb 2013	54	Feb 2013	56	Feb 2013	25	Feb 2013	13	Feb 2013	18	Feb 2013	22
Mar 2013	63	Mar 2013	66	Mar 2013	64	Mar 2013	19	Mar 2013	23	Mar 2013	16	Mar 2013	23
Apr 2013	56	Apr 2013	48	Apr 2013	18	Apr 2013	21	Apr 2013	27	Apr 2013	15	Apr 2013	23
May 2013	56	May 2013	41	May 2013	76	May 2013	10	May 2013	19	May 2013	22	May 2013	27
Jun 2013	41	Jun 2013	58	Jun 2013	57	Jun 2013	16	Jun 2013	19	Jun 2013	15	Jun 2013	23
Jul 2013	46	Jul 2013	46	Jul 2013	49	Jul 2013	17	Jul 2013	33	Jul 2013	28	Jul 2013	32
Aug 2013	61	Aug 2013	39	Aug 2013	43	Aug 2013	18	Aug 2013	22	Aug 2013	17	Aug 2013	28
Sept 2013	49	Sept 2013*	38	Sept 2013	13	Sept 2013	17	Sept 2013	29	Sept 2013	24	Sept 2013	23
Average Before Change	180	Average Before Change	142	Average Before Change	113	Average Before Change	37	Average Before Change	47	Average Before Change	54	Average Before Change	44
Average After Change	55	Average After Change	48	Average After Change	51	Average After Change	19	Average After Change	22	Average After Change	19	Average After Change	23
% Change	**-69.5%**	**% Change**	**-66.0%**	**% Change**	**-54.7%**	**% Change**	**-47.4%**	**% Change**	**-53.1%**	**% Change**	**-64.4%**	**% Change**	**-47.6%**

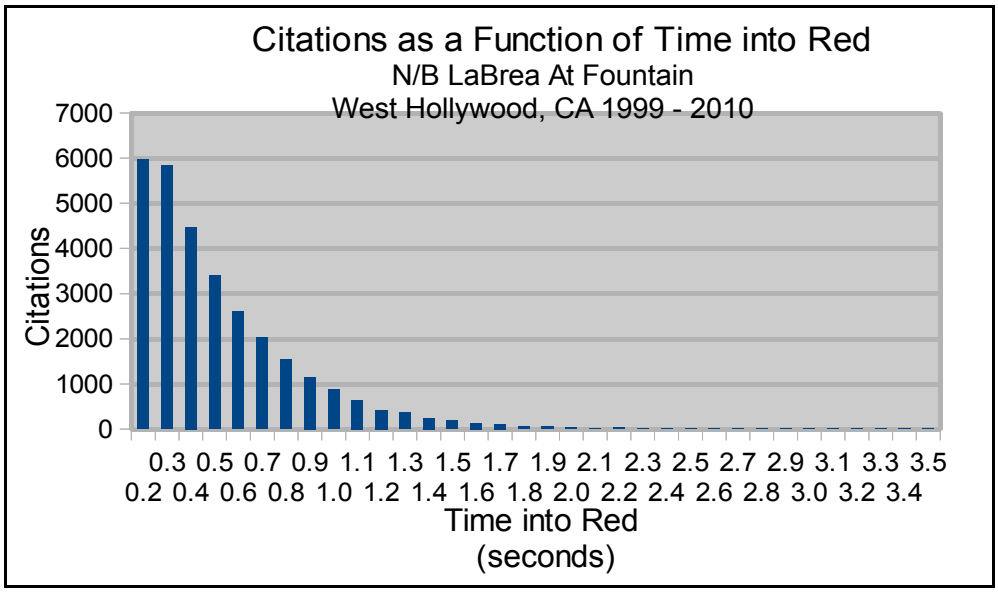
A summary table of the above results including a calculation of the overall rate of change in citations at the seven study locations appears below:

Change in Citations Issued After 0.3 Sec Increase in Yellow Interval West Hollywood, CA			
Location	Average Citations Before Change	Average Citations After Change	**% Change**
N/B LaBrea At Fountain	180	55	**-69.5%**
S/B LaBrea At Fountain	142	48	**-66.0%**
N/B Fairfax At Fountain	113	51	**-54.7%**
S/B Fairfax At Fountain	37	19	**-47.4%**
N/B Crescent Hts At Fountain	47	23	**-51.3%**
S/B Crescent Hts At Fountain	48	19	**-59.3%**
N/B Fairfax At Santa Monica	44	23	**-47.6%**
Totals	610	239	**-60.9%**

Discussion

By increasing the yellow interval by 0.3 s at intersections within the city of West Hollywood, traffic engineers were able to achieve an overall 61% reduction in red light running at the locations analyzed in this study. Individual intersection approaches saw reductions in the range of 48% to 70%, with the greatest percentage reductions occurring at locations with the greatest number of red light violations prior to the yellow time change. This result is to be expected as the number of red light violations at intersections where the yellow interval is set at or near the minimum time based on the posted speed limit is consistently found to be relatively high in the first few fractions of a second after the light turns red and decreases exponentially as the time into red increases.

The chart below illustrates the distribution of citations issued at the photo enforced intersection of LaBrea and Fountain Avenues in West Hollywood from the inception of the program through 2010 as a function of the time into red.



This is the typical distribution of red light running events seen for the straight through movement when the yellow interval is set at or near the minimum time based on the posted speed limit. When the yellow interval is increased, violations occurring during the corresponding time period are eliminated.

Conclusions

The decreased incidents of red light running brought about by the increase of 0.3 seconds in the yellow interval has likely increased safety at intersections where the change has been made. However, additional reductions in red light running incidents along with additional improvements in safety are achievable through additional increases in the yellow interval and possibly other engineering countermeasures. For example, a very modest 0.3 s increase in the yellow interval at the north and southbound approaches to the intersection of La Brea and Fountain Avenues resulted in an average 68% decrease in red light running from an average of 161 issued citations per month to an average of 52 issued citations per month. By increasing the yellow interval an additional 0.4 s to 0.7 s, red light running incidents would be further reduced. Based on experience at intersections in other jurisdictions where the yellow interval has been increased by 0.7 s to 1.0 s beyond the minimum time and which resulted in an overall 80% to 90% reduction in red light running, West Hollywood could expect to reduce the number of red light running events at this intersection, as well as others throughout the city, to no more than 10 and 20 per month by increasing the yellow interval to a similar extent.

Prepared by: Jay Beeber
Executive Director - Safer Streets L.A.
Research Fellow - Reason Foundation