

Analysis of League City red light camera accident data.

Byron Schirmbeck

baytownredlightcamera@yahoo.com

281-728-7220

Recently there have been several claims that the red light camera (RLC) program in League City has been responsible for a reduction in accidents. Since this data is readily available online at http://www.txdot.gov/safety/red_light_reports.htm it is easy to verify or dismiss these claims. According to my analysis it appears accidents of several type are increasing not decreasing. It is important to note that the data comes directly from the LCPD as required by law and I assume that the figures were reported honestly and accurately and are taken at face value. There are two separate reports covering 3 different intersections; a pre-installation report that covers 18 months of crash data from the period before the cameras were installed and a post-installation report that would normally cover 12 months of data after the cameras were installed. Since the RLC program has not been in effect for a full 12 months covered by the reporting period there is only 8 to 9 months of post-installation data available in the report. In order to compare the two reports it is necessary and appropriate to annualize the raw crash numbers. This is the same method that the Texas Transportation Institute used in a previous report from 2008. For the pre-installation data you would take the raw number, divide by the 18 months covered to get to a monthly average and then multiply that number by 12 to get an annualized figure, the formula would be $(n/18)12$ where "n" is the raw figure for the crash data. Since the post-installation report only covers 8, 8.5 and 9 months of data for each of the three locations you would similarly take the raw number divide by 8, 8.5 or 9 depending on which intersection the data came from and then multiply by 12 to get a comparable annualized amount for that figure. This is the only way to make the data comparable for comparison. I also believe that there was some underreporting of right angle accidents for the post-installation data, I will be requesting accident reports and documentation to verify this.

Some of the most alarming increases include not just a 20% increase in total accidents but also a 64.2% increase in red light related accidents, (ones caused by someone running a red light), a 68.4% increase in total rear end accidents and an increase of 415% in red light related rear end accidents. The tables below show the actual numbers reported to TXDOT by LCPD and can easily be crosschecked against the PDFs in the link to TXDOT at the top of the page. I believe this should warrant a thorough re evaluation of the red light camera program as a matter of public safety.

PRE-INSTALLATION DATA

FM 518 @ FM 2094

Accident type	reported total	formula	annualized figure
Total accidents	34	(34/18)12	22.66
Right Angle	12	(12/18)12	7.99
Rear end	19	(19/18)12	12.66
Red Light related	0	(0/18)12	0
Red light related Right Angle	0	(0/18)12	0
Red light related rear end	0	(0/18)12	0
Injury crashes	8	(8/18)12	5.33

FM 518 @ I-45

Accident type	reported total	formula	annualized figure
Total accidents	90	(90/18)12	60.00
Right Angle	48	(48/18)12	31.99
Rear End	40	(40/18)12	26.66
Red Light Related	7	(7/18)12	4.66
Red Light Related Right Angle	7	(7/18)12	4.66
Red Light Related Rear End	0	(0/18)12	0
Injury Crashes	15	(15/18)12	9.99

FM 518 @ HWY 3

Accident type	reported total	formula	annualized figure
Total Accidents	13	(13/18)12	8.66
Right angle	4	(4/18)12	2.66
Rear End	6	(6/18)12	3.99
Red Light Related	1	(1/18)12	.66
Red Light Related Right Angle	0	(0/18)12	0
Red Light Related Rear End	1	(1/18)12	.66
Injury Crashes	5	(5/18)12	3.33

POST-INSTALLATION DATA

FM 518 @ FM 2094 (installed 10-15-09, 8.5 months of data)

Accident type	reported total	formula	annualized figure
Total Accidents	28	$(28/8.5)12$	39.52
Right Angle	0	$(0/8.5)12$	0
Rear End	21	$(21/8.5)12$	29.64
Red Light Related	1	$(1/8.5)12$	1.41
Red Light Related Right Angle	0	$(0/8.5)12$	0
Red Light Related Rear End	1	$(1/8.5)12$	1.41
Injury Crashes	5	$(5/8.5)12$	7.05

FM 518 @ I-45 (installed 9-29-09, 9 months of data)

Total Accidents	38	$(38/9)12$	50.66
Right Angle	0	$(0/9)12$	0
Rear End	19	$(19/9)12$	25.33
Red Light Related	1	$(1/9)12$	1.33
Red Light Related Right Angle	0	$(0/9)12$	0
Red Light Related Rear End	1	$(1/9)12$	1.33
Injury Crashes	7	$(7/9)12$	9.33

FM 518 @ SH 3 (installed 10-29-09, 8 months of data)

Total Accidents	13	$(13/8)12$	19.5
Right Angle	0	$(0/8)12$	0
Rear End	12	$(12/8)12$	18
Red Light Related	4	$(4/8)12$	6
Red Light Related Right Angle	0	$(0/8)12$	0
Red Light Related Rear End	0	$(0/8)12$	0
Injury Crashes	0	$(0/8)12$	0

Comparison of annualized crash data pre and post installation for all locations

Accident Type	Total pre installation	Total post installation	total % change
Total Accidents	91.32	109.68	+ 20.1 %
Right Angle	42.64	0	~
Rear End	43.31	72.97	+ 68.5 %
Red Light Related	5.32	8.74	+ 64.3%
Red Light Related Right Angle	4.66	0	~
Red Light Related Rear End	.66	2.74	+ 415.2 %
Injury Crashes	18.65	16.38	- 12.2 %

Summary;

The fact that there were over 40 annualized pre installation right angle accidents and none reported for the 9 months of post installation would appear to be an anomaly either due to the short time period covered or due to something else such as under reporting, a further analysis of the actual accident reports should shed more light on this question. It is unlikely that red light related accidents and total accidents would increase and right angle accidents would drop to zero even though these accidents are not typically associated with signal controlled accidents they are primarily from vehicles pulling out from surrounding parking lots at the corners of the intersections. The “red light related” category is the most telling when judging a traffic signal safety program. Another explanation is the rather large increase in post installation “other” accidents not classified in any of the typical categories, these may be mis-categorized. According to TXDOT guidelines if an intersection accident occurs where both parties claim they had the green light but no witnesses are available it cannot be classified as a red light related accident. It is also suspicious that “injury accidents” only would decline a negligible 12.2% if right angle accidents were indeed reduced to zero. Considering the cameras have failed to reduce overall accidents and even red light related accidents and rear end accidents increased dramatically the claims that accidents have gone down at camera locations is unsupported by the data reported by LCPD.