

RED MEANS “GO”:
A Survey of Red Light Violations in New York City
and Red Light Camera Usage in Other Major Cities

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Background

New York City was the first city in the U.S. to employ red light cameras to detect and issue summonses to cars running red lights. The program started in 1993 and since then 30 cameras have been installed all over the City. The City Department of Transportation (DOT) is in the process of expanding that number to 50. They expect to have the new cameras installed by June 2001.

In addition, DOT is seeking action from the State Legislature to 1) make the Red Light Camera program permanent – the current law expires in 2005; and 2) expand the number of allowable cameras from 50 to 100. Once installed, the cameras pay for themselves within months. The fine for running a red light is currently \$50. Most importantly, studies conducted at the intersections with a camera show that the incidence of running red lights was reduced by 40%.¹

Methodology

We surveyed 106 red-light controlled intersections between 7AM and 7PM weekdays in all five boroughs during the period May 8th to May 14th.² These intersections were randomly selected from a list of high accident intersections in the City with at least 15 accidents in a 3 year period. Some of the intersections in the sample also happen to have high traffic volumes. Surveyors positioned themselves with a clear view of each intersection and counted the number of vehicles that passed through (“burn”) the intersection after the light changed to the red phase. (This procedure is the same as the methodology programmed into installed red light cameras.)

Results

Based on the survey we can conclude that every workday (7AM – 7PM), at high accident intersections throughout the City, vehicles run through red lights 1.23 million times.³ In other words 28 red light runs occur every second, or 1,712 red light runs every minute of the workday in the City. The results are summarized below:

¹ We could not find any study of whether a reduction in red light runs resulted in a reduction in accidents.

² Since we don't have a list of all 11,000 red-light-controlled intersections we used the list of all intersections with 15 or more accidents as a surrogate. This list, obtained from New York State DOT, totals 8,029 intersections, of which 7,340 are estimated to be red-light controlled intersections. The figure of 11,000 is from New York City DOT.

We randomly chose 116 intersections to survey, 10 of which were removed from the sample because they had stop signs and not red lights. This yielded a final sample of 106 intersections.

³ This is derived from: 14 red-light burns observed per hour x 12 hrs x 7,340 red light controlled intersections. (Also see Footnote 3.)

- Red light burns ranged from zero to 56 vehicles/hr. The highest rates occur in Manhattan, Queens and Brooklyn. All of the boroughs, except Brooklyn, had some intersections where no red light infractions were observed.

Table 1, Intersections With the Worst Red Light Infraction Rates

RANK	WORST INTERSECTIONS	BORO	AVG/HR	TIME OF DAY*
1	E 79TH ST/MADISON AVE	Manhattan	56	PM Rush Hour
2	E 30TH ST/PARK AVE	Manhattan	52	Non Rush Hour
3	I-678 SERVICE RD EASTBOUND/ HILLSIDE AVE	Queens	50	PM Rush Hour
4	RUTLAND RD/UTICA AVE	Brooklyn	42	Non Rush Hour
5	I-495 SERVICE RD WESTBOUND/VAN DAM ST	Queens	42	Non Rush Hour
6	KINGS HWY/REMSEN AVE	Brooklyn	40	Non Rush Hour
7	130TH ST/20TH AVE	Queens	40	PM Rush Hour
8	AVENUE Z/CONEY ISLAND AVE	Brooklyn	38	Non Rush Hour
9	I-495 SERVICE RD WESTBOUND/159 th ST	Queens	38	AM Rush Hour
10	BROADWAY/SPRING ST	Manhattan	36	PM Rush Hour

See attached list of all 106 intersections surveyed.

*Rush hours are Monday through Friday 7am to 10am and 4pm to 7pm. Non rush hours are between 10am and 4pm.

- The average red light burn rate was 14/hr⁴. Rates for the various time periods are shown in table 2 below:

Table 2, Red Light Infraction Rates by Time of Day

Time of Day	AM Rush Hour 7AM – 10AM	Non-Rush Hour 10AM – 4PM	PM Rush Hour 4PM – 7PM
Average red light burn rate/hr	11.7	13.8	18.3

- Taxis accounted for less than 3% of all red light violators, except in Manhattan, where they accounted for 14%. Although all types of vehicles run red lights, the predominant vehicle type was passenger vehicles – cars and SUVs.
- Most red light violators are New Yorkers; very few out-of-state vehicles run red lights. Out-of-state vehicles accounted for no more than 2% of red light violations.
- The red light violation rate varied widely among the boroughs. It is highest in Queens and lowest in Staten Island (see table 3 below):

⁴ The error rate is $\pm 2.5/hr$, with a 95% confidence level. In other words, it is estimated that the overall red-light burn rate in new York City ranges from 11.5/hr to 16.5/hr at high accident intersections. The resulting range of red light burns per work-day is 1.01 million to 1.45 million.

Table 3, Red Light Infraction Rates by Borough

Borough	Queens	Manhattan	Brooklyn	Bronx	Staten Island
Average red light burn rate/hr	17.7	15.9	13.3	7.6	1.0
AM RUSH: 7AM – 10AM	15.5	17.0	10.7	1.3	0.0
NON RUSH: 10AM - 4PM	18.6	13.3	14.5	9.0	N/A
PM RUSH: 4PM – 7PM	37.3	19.1	14.5	10.0	2.0

Survey of Other Large Cities

We also surveyed several large cities that have installed red light cameras. Although New York was the first U.S. City to install red light cameras, in December 1993, it has now lagged behind programs started only 2 or 3 years ago. We compared New York with 4 other large cities based on the number of installed red light cameras and the number of red light controlled intersections.

The results of the comparison show that, relative to the number of red light controlled intersections, New York has far fewer red light cameras than all the other cities with the exception of Los Angeles (see Table 4 below). However, it should be noted that Los Angeles' red light program is only 6 months old. Two calculations are made to project the number of red light cameras that New York would have if it operated at the level of the other cities. One is the number based on the existing installed cameras and the other is based on the number of cameras that are expected to be installed in the next 6 months to 1 year (see Table 5 below).

Table 4, Comparison of New York's Red Light Camera Program With Other Major Cities

	Date Program Started	Red Light Controlled Intersections	Installed Cameras	Cameras per 1,000 Red Lights	Total Planned Cameras	Cameras per 1,000 Red Lights
NYC	Dec 1993	11,000	30	2.7	50*	4.5
DC	Aug 1999	1,300**	39	30.0	40	30.8
LA	Dec 2000	4,400	4	0.9	16	3.6
San Diego	Aug 1998	1,400	19	13.6	32	22.9
Baltimore	Feb 1999	1,300	34	26.2	44	33.8

*20 already approved and to be installed by June. Legislation has been submitted to Albany to increase the total by another 50.

**Estimated

Table 5, New York's Red Light Camera Program Adjusted to Equal Other Cities

	Red Light Controlled Intersections	Total Planned Cameras	Projected NYC Cameras Based on Other City Installed	Projected NYC Cameras Based on Other City Installed Plus Planned
NYC	11,000	50		
DC	1,300**	40	330	338
LA	4,400	16	10	40
San Diego	1,400	32	149	251
Baltimore	1,300	44	288	372

As shown in Table 5 above, if New York City were to match San Diego's planned red light camera installation camera rate, New York would have 251 cameras. If it matched Baltimore's rate, it would have 372 cameras. It should be noted that New York City has over 430 intersections at which at least 60 accidents have occurred over a 3 year period.

Table 6, Surveyed Intersections Ranked By Rate Of Red Light Infractions

#	BORO	INTERSECTIONS	TIME OF DAY	RED LIGHT RUNS/HR
1	Manhattan	E 79TH ST/MADISON AVE	PM Rush	56
2	Manhattan	E 30TH ST/PARK AVE	Non-Rush	52
3	Queens	I-678 SERVICE ROAD/ HILLSIDE AVE	PM Rush	50
4	Queens	I-495 SERVICE ROAD/VAN DAM ST	Non-Rush	42
5	Brooklyn	RUTLAND RD/UTICA AVE	Non-Rush	42
6	Queens	130TH ST/20TH AVE	PM Rush	40
7	Brooklyn	KINGS HWY/REMSEN AVE	Non-Rush	40
8	Queens	I-495 SERVICE ROAD/159TH ST	AM Rush	38
9	Brooklyn	AVENUE Z/CONEY ISLAND AVE	Non-Rush	38
10	Manhattan	BROADWAY/SPRING ST	AM Rush	36
11	Manhattan	E 52ND ST/LEXINGTON AVE	AM Rush	34
12	Brooklyn	FULTON ST/LOGAN ST	PM Rush	30
13	Queens	CLEARVIEW EXPWY/HILLSIDE AVE	Non-Rush	28
14	Queens	154TH ST/NORTHERN BLVD	Non-Rush	28
15	Manhattan	5TH AVE/E 14TH ST	AM Rush	28
16	Manhattan	E 56TH ST/LEXINGTON AVE	AM Rush	28
17	Brooklyn	FOSTER AVE/KINGS HWY	AM Rush	28
18	Brooklyn	AVENUE L/FLATBUSH AVE	PM Rush	28
19	Bronx	BAYCHESTER AVE/NEEDHAM AVE	Non-Rush	28
20	Manhattan	E 40TH ST/PARK AVE	Non-Rush	26
21	Manhattan	5TH AVE/E 36TH ST	Non-Rush	26
22	Manhattan	E 51ST ST/MADISON AVE	PM Rush	26
23	Brooklyn	AVENUE K/KINGS HWY	AM Rush	26
24	Brooklyn	GLENWOOD RD/UTICA AVE	Non-Rush	26
25	Queens	97TH ST/NORTHERN BLVD	AM Rush	22
26	Queens	168TH PL/HILLSIDE AVE	PM Rush	22
27	Manhattan	3RD AVE/E 13TH ST	PM Rush	21
28	Queens	37TH AVE/COLLEGE POINT BLVD	Non-Rush	20
29	Brooklyn	CHURCH AVE/MC DONALD AVE	PM Rush	20
30	Manhattan	2ND AVE/E 77TH ST	AM Rush	18
31	Manhattan	8TH AVE/W 51ST ST	PM Rush	18
32	Brooklyn	29TH ST/3RD AVE	Non-Rush	18
33	Queens	45TH AVE/UTOPIA PKWY	AM Rush	16
34	Queens	46TH AVE/UTOPIA PKWY	AM Rush	16
35	Manhattan	W 75TH ST/WEST END AVE	AM Rush	16
36	Queens	108TH ST/ROOSEVELT AVE	Non-Rush	14
37	Brooklyn	AVENUE D/ROCKAWAY AVE	AM Rush	14
38	Bronx	E 169TH ST/FULTON AVE	Non-Rush	14
39	Manhattan	7TH AVE/BROADWAY (TIMES SQUARE)	Non-Rush	13
40	Queens	31ST ST/ASTORIA BLVD	AM Rush	12
41	Brooklyn	16TH AVE/66TH ST	AM Rush	12
42	Brooklyn	COURT ST/HAMILTON AVE	Non-Rush	12
43	Brooklyn	DEAN ST/ROCKAWAY AVE	PM Rush	12
44	Bronx	E 149TH ST/MORRIS AVE	Non-Rush	12
45	Bronx	NEREID AVE/BAYCHESTER AVE	PM Rush	12
46	Queens	76TH ST/NORTHERN BLVD	AM Rush	11
47	Queens	34TH AVE/STEINWAY ST	Non-Rush	11
48	Manhattan	8TH AVE/W 45TH ST	Non-Rush	11
49	Manhattan	BROADWAY/W 30TH ST	PM Rush	11
50	Queens	84TH ST/ROOSEVELT AVE	Non-Rush	10
51	Brooklyn	ATLANTIC AVE/N CONDUIT AVE	AM Rush	10
52	Brooklyn	ALBANY AVE/CLARKSON AVE	AM Rush	10

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53	Brooklyn	4TH AVE/60TH ST	Non-Rush	10
54	Brooklyn	CONEY ISLAND AVE/CRAWFORD AVE	Non-Rush	10
55	Brooklyn	46TH ST/FORT HAMILTON PKWY	Non-Rush	10
56	Brooklyn	4TH AVE/ATLANTIC AVE	PM Rush	10
57	Manhattan	BROADWAY/E 23RD ST	Non-Rush	9
58	Manhattan	2ND AVE/E 95TH ST	Non-Rush	9
59	Brooklyn	14TH AVE/44TH ST	AM Rush	9
60	Queens	150TH AVE/N CONDUIT AVE	AM Rush	8
61	Queens	43RD ST/BROADWAY	Non-Rush	8
62	Manhattan	AVENUE OF THE AMERICAS/W 50TH ST	Non-Rush	8
63	Brooklyn	71ST ST/NEW UTRECHT AVE	Non-Rush	8
64	Brooklyn	E 13TH ST/KINGS HWY	Non-Rush	8
65	Brooklyn	50TH ST/FORT HAMILTON PKWY	Non-Rush	8
66	Brooklyn	MACON ST/NOSTRAND AVE	PM Rush	8
67	Bronx	E 138TH ST/RIDER AVE	Non-Rush	8
68	Bronx	E 196TH ST/JEROME AVE	Non-Rush	8
69	Bronx	CASTLE HILL AVE/E TREMONT AVE	PM Rush	8
70	Queens	BEACH 102ND ST/ROCKAWAY FWY	Non-Rush	6
71	Manhattan	2ND AVE/E 1ST ST	AM Rush	6
72	Manhattan	7TH AVE/GROVE ST	Non-Rush	6
73	Brooklyn	ATLANTIC AVE/NEVINS ST	Non-Rush	6
74	Brooklyn	RALPH AVE ST/MARKS AVE	PM Rush	6
75	Bronx	E GUN HILL RD/PAULDING AVE	Non-Rush	6
76	Bronx	ELLIOT PL/JEROME AVE	Non-Rush	6
77	Manhattan	BROADWAY/ W 141ST ST	Non-Rush	5
78	Manhattan	1ST AVE/E 6TH ST	AM Rush	4
79	Manhattan	E 110TH ST/PARK AVE	Non-Rush	4
80	Manhattan	5TH AVE/CENTRAL PK N	Non-Rush	4
81	Bronx	E 232rd ST/PAULDING AVE	AM Rush	4
82	Bronx	VALENTINE AVE/E 198TH ST	Non-Rush	4
83	Bronx	BROADWAY/W 233RD ST	Non-Rush	4
84	Queens	BEACH 116TH ST/ROCKAWAY BEACH	AM Rush	3
85	Brooklyn	37TH ST/5TH AVE	AM Rush	3
86	Brooklyn	EASTERN PKWY/BUSHWICK AVE	Non-Rush	3
87	Brooklyn	EASTERN PKWY/FULTON ST	Non-Rush	3
88	S. Island	BRADLEY AVE/PURDY AVE	PM Rush	2
89	Queens	108TH ST/67TH AVE	AM Rush	2
90	Manhattan	AMSTERDAM AVE/W 91ST ST	PM Rush	2
91	Brooklyn	GLENWOOD RD/KINGS HWY	AM Rush	2
92	Brooklyn	CHURCH AVE/E 40TH ST	AM Rush	2
93	Brooklyn	17TH AVE/65TH ST	AM Rush	2
94	Brooklyn	4TH AVE/7TH ST	Non-Rush	2
95	Brooklyn	26TH ST/4TH AVE	Non-Rush	2
96	Brooklyn	BEDFORD AVE/GREENE AVE	PM Rush	2
97	S. Island	TRAVIS AVE/VICTORY BLVD	AM Rush	0
98	Queens	68th AVE/QUEENS BLVD	AM Rush	0
99	Queens	45TH AVE/FRANCIS LEWIS BLVD	AM Rush	0
100	Manhattan	HESTER ST/MOTT ST	AM Rush	0
101	Manhattan	HESTER ST/MULBERRY ST	AM Rush	0
102	Manhattan	3RD AVE/E 26TH ST	Non-Rush	0
103	Manhattan	HUDSON ST/W 12TH ST	PM Rush	0
104	Bronx	BRONXWOOD AVE/E 232ND ST	AM Rush	0
105	Bronx	BOSTON RD/EASTCHESTER RD	AM Rush	0
106	Bronx	BROADWAY/W 260TH ST	Non-Rush	0

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