A Red Light Running (RLR) Photo Enforcement System was installed at the intersection of IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay) on July 11, 2008 (southbound/westbound), after finding limited success with other attempted measures to promote safer driving and improve compliance with traffic laws. As a condition of use, both Illinois law and the Illinois Department of Transportation require periodic statistical analyses/evaluations be conducted.

Specifically, the Illinois Compiled Statutes, 625 ILCS 5/11-208.6 Automated Traffic Law Enforcement System states:

(k-7) A municipality or county operating an automated traffic law enforcement system shall conduct a statistical analysis to assess the safety impact of each automated traffic law enforcement system at an intersection following installation of the system. The statistical analysis shall be based upon the best available crash traffic and other date and shall cover a period of time before and after installation of the system sufficient to provide a statistically valid comparison of safety impact. The statistical analysis shall be consistent with professional judgment and acceptable industry practice. The statistical analysis also shall be consistent with the data required for valid comparisons of before and after conditions and shall be conducted within a reasonable period following the installation of the automated traffic law enforcement system. The statistical analysis required by this subsection (k-7) shall be made available to the public and shall be published on the website of the municipality or county. If the statistical analysis for the 36-month period following installation of the system indicates that there has been an increase in the rate of accidents at the approach to the intersection monitored by the system, the municipality or county shall undertake additional studies to determine the cause and severity of the accidents, and may take any action that it determines is necessary or appropriate to reduce the number or severity of the accidents at that intersection.

The Illinois Department of Transportation Safety Engineering Policy Memorandum, Safety 2-13, Automated Traffic Law Enforcement Systems: Red Light Running (RLR) Camera Enforcement Systems and Automated Railroad Grade Crossing (RGC) Enforcement Systems states:

Follow Up Evaluation
An Evaluation Report shall be prepared by the Permit Applicant one year after the installation and shall be prepared every three years thereafter. The Evaluation Report shall include the following:

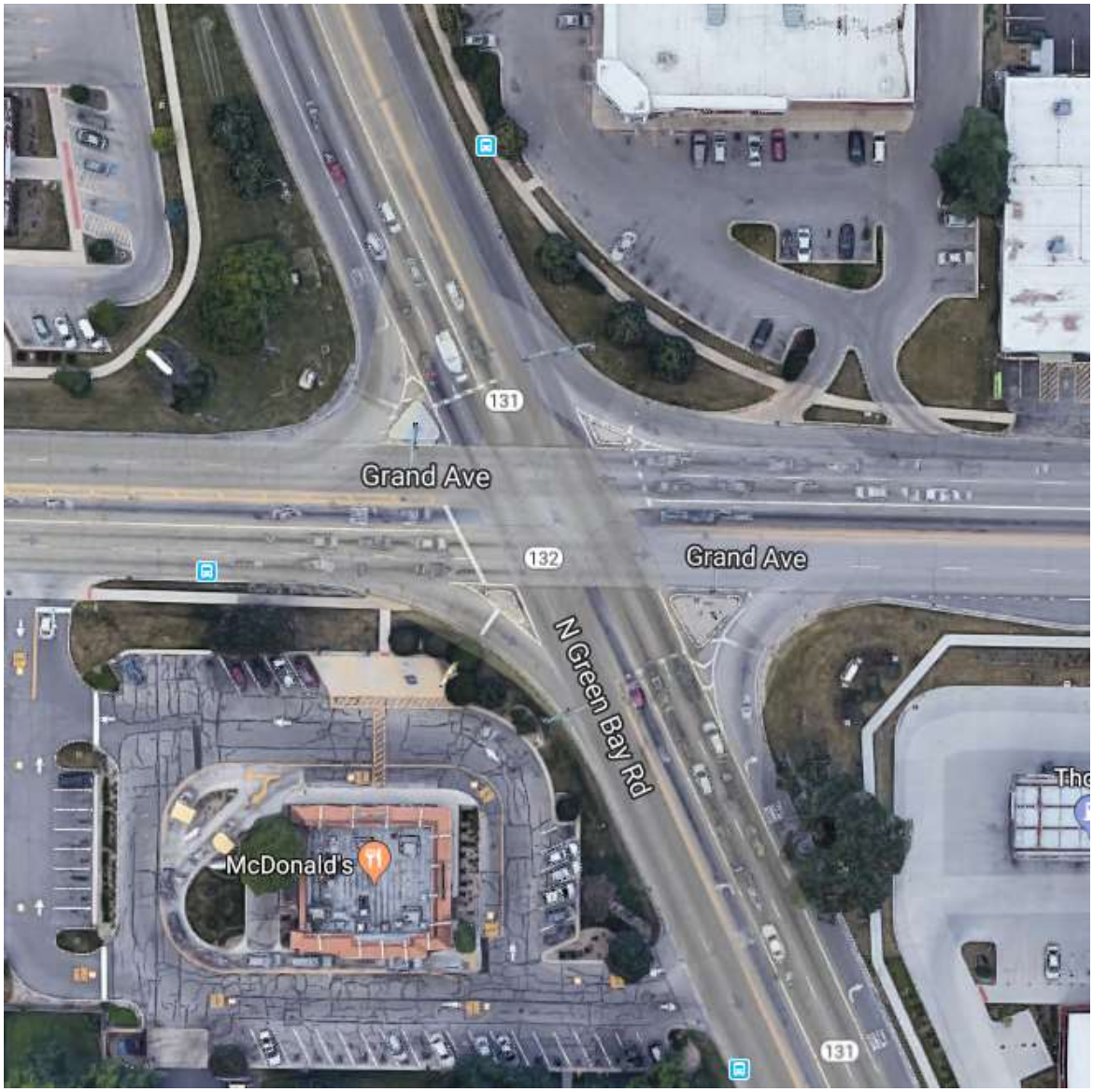
- *Intersection location(s);*
- *Date of implementation;*
- *RLR Camera System manufacturer and contractor name;*
- *Crash data specific to RLR location(s) for the three (3) year period prior to and for the period post RLR Camera installation;*
- *An analysis of the crash data, including a summary of any increase in crash types;*
- *Signal timing and other settings before and after RLR Camera installation;*
- *Traffic volumes before and after RLR Camera System installation; and,*
- *Summary of adjudication experience and results.*

The following statistical analysis and evaluation was performed through 2018.

Calendar year 2019 was not included, as the Illinois Department of Transportation (IDOT) has not yet completed collecting all data. The statistical analysis will be updated annually, as IDOT collected data becomes available for release.

IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay)
Waukegan, IL

- RLR Photo Enforcement System monitors violations occurring on the southbound and westbound approaches of the intersection
- RLR Photo Enforcement System installed: July 11, 2008 (southbound/westbound)
- Traffic signal timing strictly adheres to the guidelines for timing of clearances established by the Illinois Department of Transportation (IDOT), in accordance with the MUTCD standards. Neither the Vendor nor the City has access to or influence over the establishment of signal timings. Both entities understand that tampering with these timings would be a safety violation with significant consequences.



IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay), Northbound Approach

IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay), Southbound Approach

IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay), Eastbound Approach

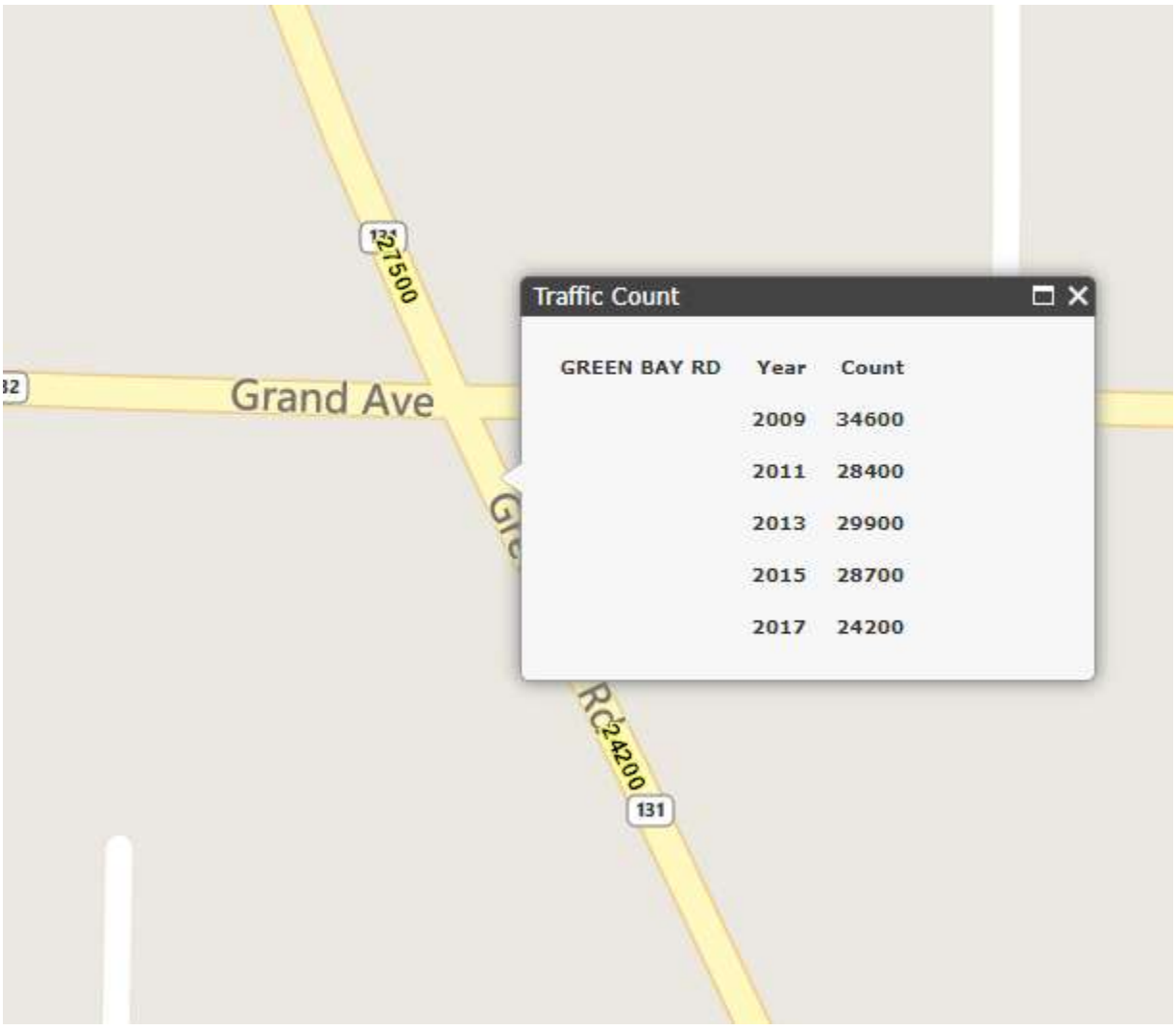
IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay), Westbound Approach

Average Daily Traffic

Data was obtained from the Illinois Department of Transportation's website www.gettingaroundillinois.com.

IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay) (Northbound)

- 34,600 (2009)
- 28,400 (2011)
- 29,900 (2013)
- 28,700 (2015)
- 24,200 (2017)

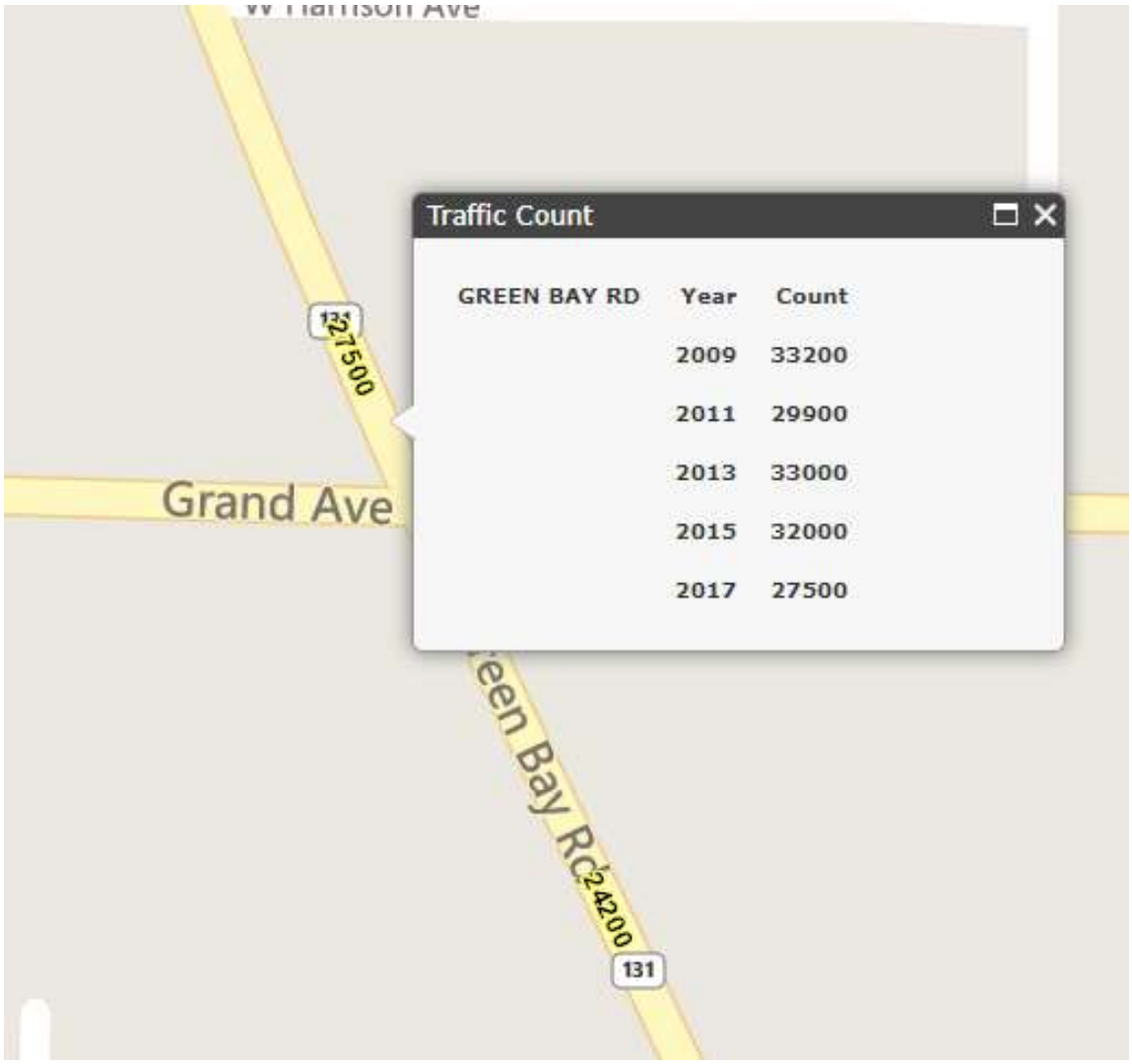


Average Daily Traffic (continued)

Data was obtained from the Illinois Department of Transportation's website www.gettingaroundillinois.com.

IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay) (Southbound)

- 33,200 (2009)
- 29,900 (2011)
- 33,000 (2013)
- 32,000 (2015)
- 27,500 (2017)

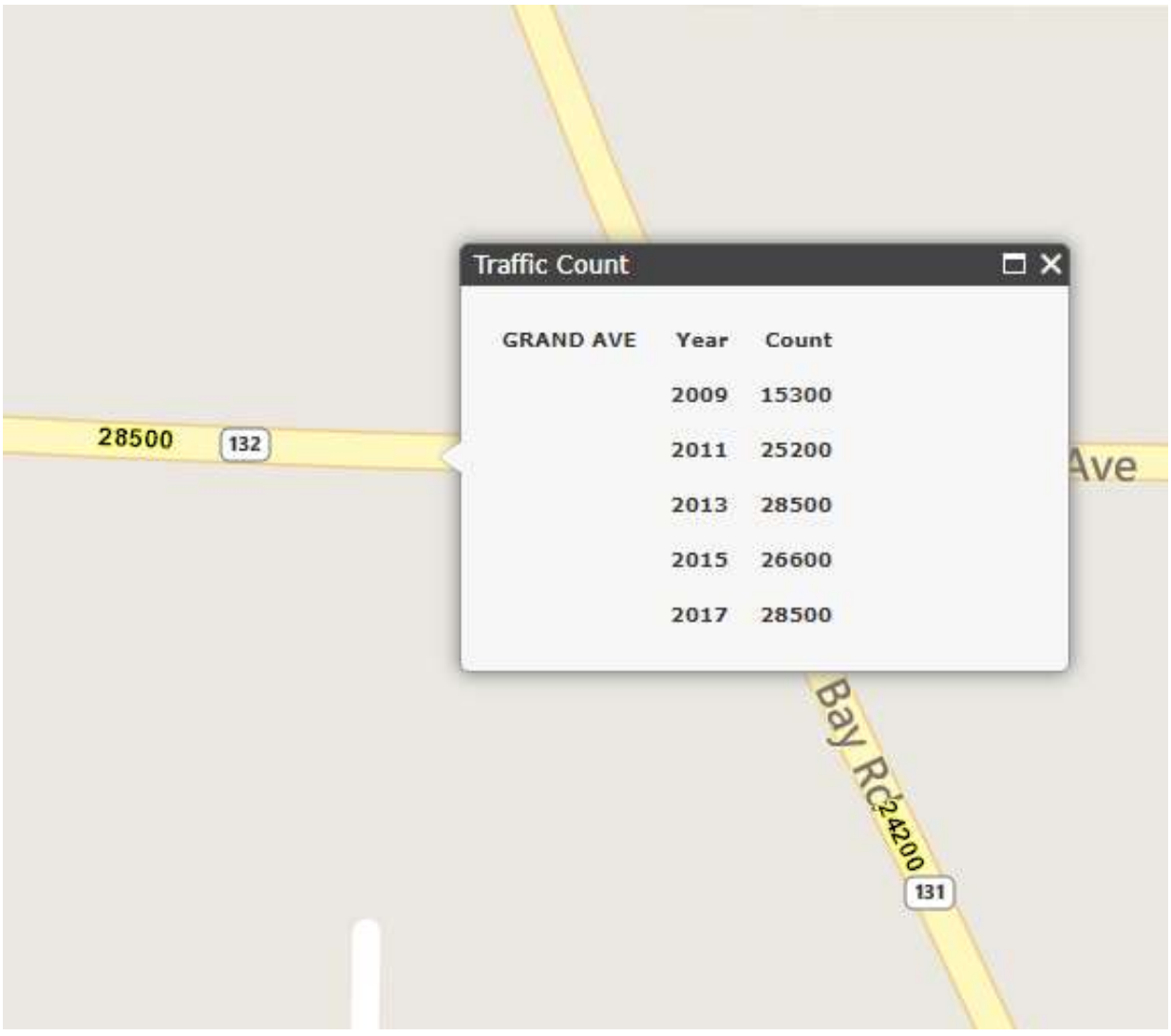


Average Daily Traffic (continued)

Data was obtained from the Illinois Department of Transportation's website www.gettingaroundillinois.com.

IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay) (Eastbound)

- 15,300 (2009)
- 25,200 (2011)
- 28,500 (2013)
- 26,600 (2015)
- 28,500 (2017)

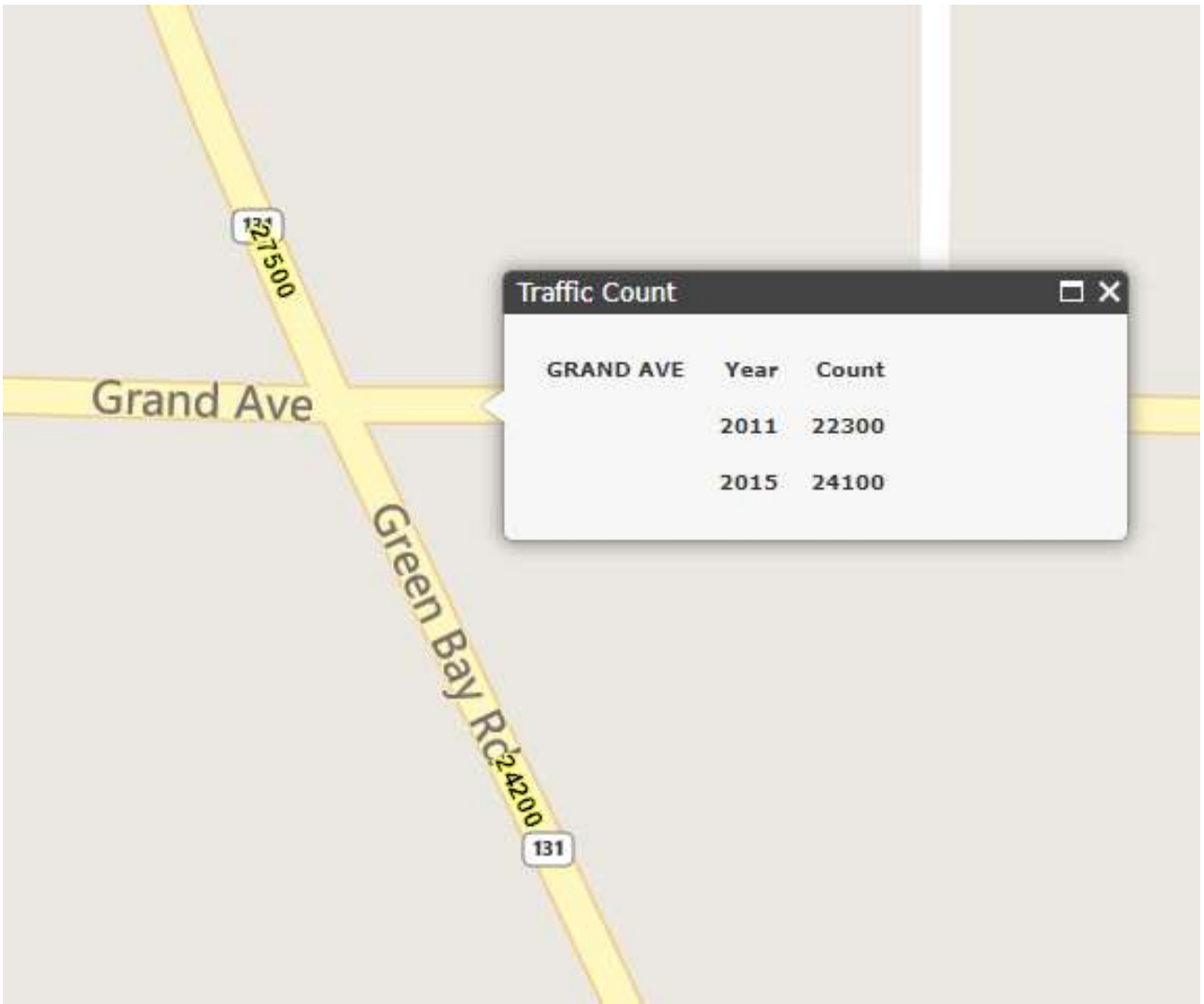


Average Daily Traffic (continued)

Data was obtained from the Illinois Department of Transportation's website www.gettingaroundillinois.com.

IL Rte. 132 (Grand) at IL Rte. 131 (Green Bay) (Westbound)

- 22,300 (2011)
- 24,100 (2015)



Adjudication Experience

RLR camera violations are contested and adjudicated through an administrative hearing conducted each month. Adjudication data for the City's Automated Enforcement Program is shown below in Table 1. Data compiled is not intersection specific, rather totals for the program as a whole.

CITY OF WAUKEGAN ADJUDICATION FOR AUTOMATED PHOTO ENFORCEMENT PROGRAM*		
YEAR /TOTALS	**LIABLE**	**NOT LIABLE**
2008	849	329
2009	880	360
2010	566	217
2011	314	82
2012	507	106
2013	421	77
2014	363	45
2015	910	100
2016	913	100
2017	500	47
2018	476	100
2019	797	210
2020**	80	15
YEAR TO DATE TOTAL:	**7,576**	**1,788**

**Adjudication totals include contested violations for entire program (all RLR cameras).*
***2020 totals through April 2020.*

Table 1

The high-quality video footage and photographic evidence produced by the enforcement system is a contributing factor in a majority of the contested RLR violations being upheld by the Hearing Officer. The police officers assigned to review and approve/reject potential violations are vigilant in applying the same officer discretion and criteria they would if issuing an in-person citation, resulting in only highly prosecutable violations being mailed out.

Crash History and Analysis

- Table 2 includes crash data obtained from the Illinois Department of Transportation, detailing angle, turning, rear-end, and other type crashes occurring at the intersection pre/post RLR Photo Enforcement System installation.

ALL INTERSECTION APPROACHES

	Crashes								
	Rear-End (% of Total)		Angle (% of Total)		Turning (% of Total)		Other (% of Total)		Total
2005	15	39.5%	4	10.5%	15	39.5%	4	10.5%	38
2006	18	40.0%	0	0.0%	19	42.2%	8	17.8%	45
2007	23	50.0%	1	2.2%	17	37.0%	5	10.8%	46
Total:	56	43.4%	5	3.9%	51	39.5%	17	13.2%	129
2005-2007 Average	18.7		1.7		17.0		5.7		43.0
RLR Camera Installation: July 11, 2008									
2008	17	47.2%	2	5.6%	14	38.9%	3	8.3%	36
2009	5	27.8%	1	5.6%	11	61.1%	1	5.6%	18
2010	11	50.0%	1	4.5%	9	40.9%	1	4.5%	22
2011	15	62.5%	0	0.0%	8	33.3%	1	4.2%	24
2012	9	37.5%	3	12.5%	10	41.7%	2	8.3%	24
2013	14	63.6%	0	0.0%	8	36.4%	0	0.0%	22
2014	11	50.0%	2	9.1%	9	40.9%	0	0.0%	22
2015	10	40.0%	2	8.0%	11	44.0%	2	8.0%	25
2016	9	30.0%	2	6.7%	16	53.3%	3	10.0%	30
2017	13	39.4%	3	9.1%	11	33.3%	6	18.2%	33
2018	9	30.0%	4	13.3%	15	50.0%	2	6.7%	30
Total:	106	42.4%	18	7.2%	108	43.2%	18	7.2%	250
2009-2018 Average	10.6		1.8		10.8		1.8		25.0

- Other indicates the following: Pedestrian, Pedal Cyclist, Fixed Object, Sideswipe, Head-On and Unknown

Table 2

DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation, based upon information derived from multiple sources. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law enforcement agency to locate crashes. Therefore, location data may vary in prior years, since the data prior to 2015 was physically located by bureau personnel. Given the subjective nature of the reporting process, the modifications in the incident locating protocols and the changes to the crash reporting thresholds effective 2009, the City of Waukegan acknowledges the potential for discrepancies in the final conclusions drawn.

Crash History and Analysis (continued)

- Table 3 includes crash data obtained from the Illinois Department of Transportation, detailing angle, turning, rear-end, and other-type crashes occurring at the intersection on the southbound and westbound approaches only, pre/post RLR Photo Enforcement System installation.

SOUTHBOUND/WESTBOUND APPROACHES ONLY
(PHOTO ENFORCED APPROACHES)

	Crashes								
	Rear-End (% of Total)		Angle (% of Total)		Turning (% of Total)		Other (% of Total)		Total
2005	9	40.9%	0	0.0%	12	54.5%	1	4.5%	22
2006	6	21.4%	0	0.0%	17	60.7%	5	17.8%	28
2007	9	40.9%	1	4.5%	11	50.0%	1	4.5%	22
Total:	24	33.3%	1	1.4%	40	55.5%	7	9.7%	72
2005-2007 Average	8.0		0.3		13.3		2.3		24.0
RLR Camera Installation: July 11, 2008									
2008	9	40.9%	2	9.1%	9	40.9%	2	9.1%	22
2009	0	0.0%	1	8.3%	10	83.3%	1	8.3%	12
2010	3	25.0%	1	8.3%	8	66.7%	0	0.0%	12
2011	7	50.0%	0	0.0%	7	50.0%	0	0.0%	14
2012	4	23.5%	3	17.6%	9	52.9%	1	5.9%	17
2013	8	53.3%	0	0.0%	7	46.7%	0	0.0%	15
2014	4	30.8%	1	7.7%	8	61.5%	0	0.0%	13
2015	5	29.4%	1	5.9%	10	58.8%	1	5.9%	17
2016	9	33.3%	2	7.4%	15	55.5%	1	3.7%	27
2017	8	33.3%	2	8.3%	10	41.7%	4	16.7%	24
2018	4	22.2%	2	11.1%	12	66.7%	0	0.0%	18
Total:	52	30.8%	13	7.7%	96	56.8%	8	4.7%	169
2009-2018 Average	5.2		1.3		9.6		0.8		16.9

- Other indicates the following: Pedestrian, Pedal Cyclist, Fixed Object, Sideswipe, Head-On and Unknown

Table 3

DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation, based upon information derived from multiple sources. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law enforcement agency to locate crashes. Therefore, location data may vary in prior years, since the data prior to 2015 was physically located by bureau personnel. Given the subjective nature of the reporting process, the modifications in the incident locating protocols and the changes to the crash reporting thresholds effective 2009, the City of Waukegan acknowledges the potential for discrepancies in the final conclusions drawn.

Comparison of annual averages shows the total number of crashes decreasing by 41.9% at the intersection for all approaches and by 29.6% on the southbound/westbound (photo enforced) approaches post-camera installation.

The US Department of Transportation Project Development and Design Manual states that turning, angle or head-on crashes have a number of probable crash causes, to include:

- Large volumes of left /right turns
- Large total intersection volume
- Excessive speed on approaches
- Inadequate traffic control devices
- Poor visibility of signals

While red light cameras cannot truly decrease the volume of cars entering the intersection, speed and proximity of vehicles entering an intersection or the amount of turning traffic volume, red light cameras and red-light camera photo enforcement warning signs have the ability to reduce traffic crashes and improve compliance with traffic control devices.

Analysis of all available data indicates the City's RLR Photo Enforcement Program has made a significant impact on traffic safety at this location and continued enforcement will be beneficial in the years to come.