



Overview

The City of Aurora is submitting its first Follow-Up Evaluation Report for the intersection of Eola Road and Ogden Avenue. Additional reports from this point on, as required by IDOT, will be submitted every 3 years hereafter.

The Red Light Running Camera System was installed and on January 8th, 2011 by Redflex Traffic Systems (Manufacturer) and City Lights, Ltd. (Contractor), after finding limited success with other attempted measures to promote safer driving.

The enforcement site is both the eastbound and westbound approach to the intersection of Eola Road and Ogden Avenue. The intersection is located approximately 4.5 miles south of Interstate 88, also referred to as the East-West Tollway, and approximately 11.0 miles west of Interstate 355, also referred to as the Veterans Memorial Tollway.

Prior actions taken to promote safety included the installation of left arrow traffic control signals and random enforcement operations by the Aurora Police Department. The City installed photo enforcement at the site due to poor driving behavior, which includes crash volumes and observed red light running.

Pictures of the intersection are shown in **Exhibits 1 – 4**, and an aerial photo courtesy of Google Maps is shown in **Exhibit 5**:

- Northbound, **Exhibit 1**
- Southbound, **Exhibit 2**
- Eastbound, **Exhibit 3**
- Westbound, **Exhibit 4**

The area surrounding the intersection is populated with both private and public lands as follows:

- Wendy's Restaurant on the northeast quadrant
- Waubonsie Valley High School on the northwest quadrant
- BP Gas Station/McDonald's Restaurant on the southwest quadrant
- Gregory R. Fischer Middle School on the southeast quadrant



Eola Road Northbound Approach at Ogden Avenue



Exhibit 1

Eola Road Southbound Approach at Ogden Avenue



Exhibit 2



Ogden Avenue Eastbound Approach at Eola Road

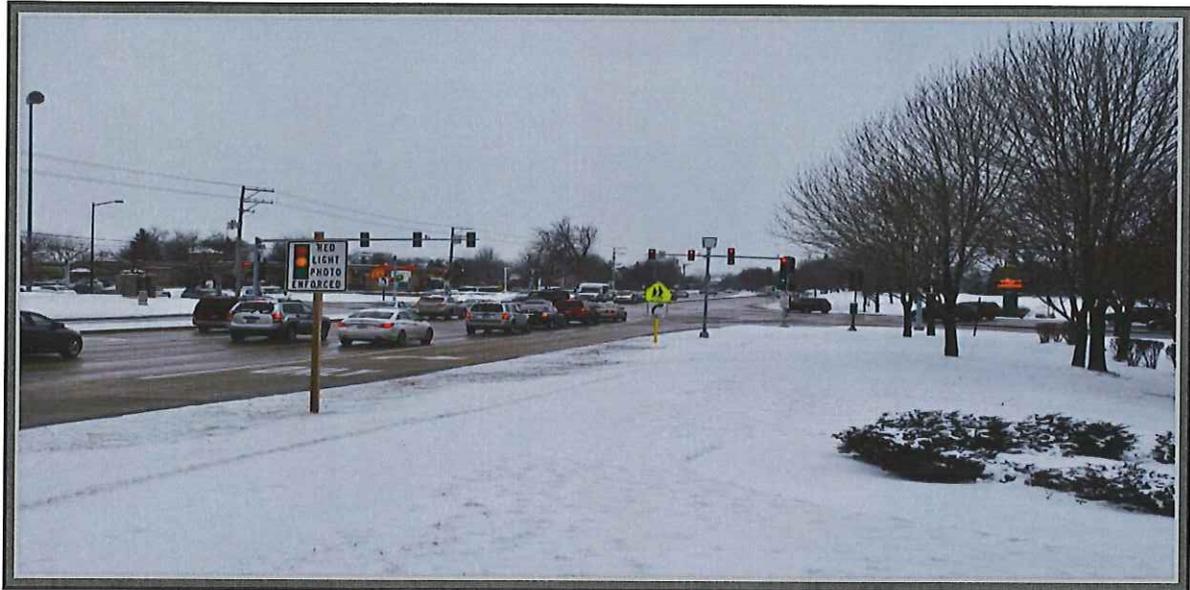


Exhibit 3

Ogden Avenue Westbound Approach at Eola Road

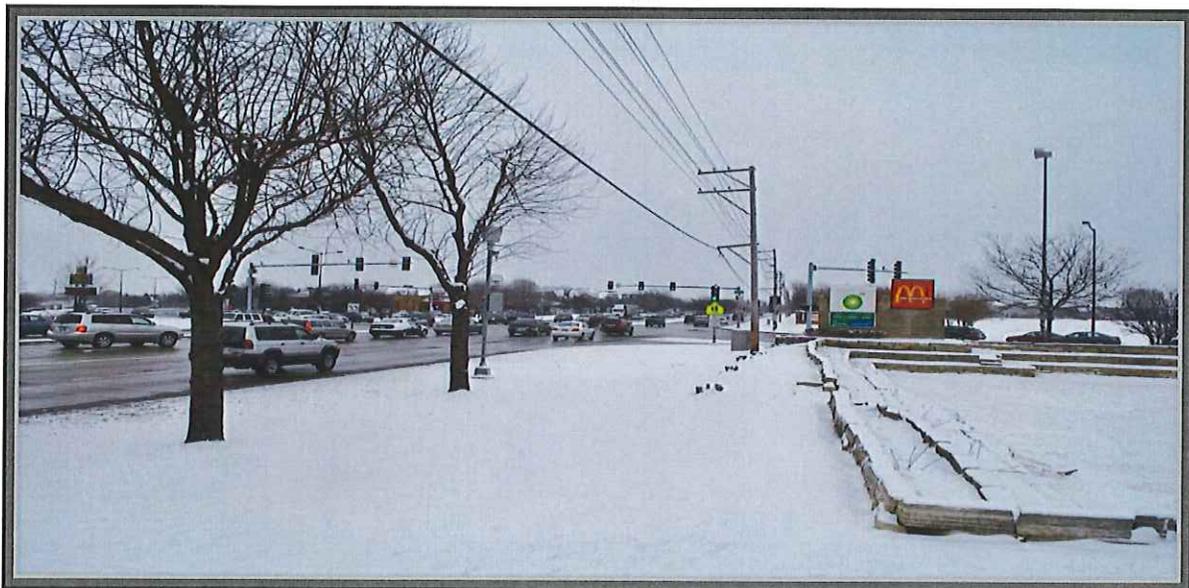


Exhibit 4



Eola Road/Ogden Avenue Intersection



Exhibit 5

Red Light Running (RLR) Camera Enforcement Systems

In accordance with Public Act 94-0795 the City has entered into a contract with a vendor, Redflex Traffic Systems. The technology deployed by Redflex Traffic Systems will allow us to differentiate between red light violations and false triggers. False triggers include vehicles stopping slightly beyond the stop bar (screeching stop), funeral processions, emergency vehicles, drivers yielding to emergency vehicles and drivers making a legal turn after coming to a complete stop. The evidence package from each incident is to include 3 still digital images and a 12 second video. The digital images will clearly show the signal heads (active phase) and the vehicle behind the stop bar at the point the driver triggered the enforcement system. Furthermore the attached video, 6 seconds prior and 6 seconds after the triggering of the RLR system, provides definitive proof of the sequence. Thus allowing personnel involved with the review process to distinguish red light violations from screeching stops and vehicles making a legal turn.



EOLA ROAD AND OGDEN AVENUE WESTBOUND & EASTBOUND APPROACH

Crash Analysis and History

Crash data including turning, angle, head-on, rear-end and total crashes for the camera system prior to and following being installed is shown in **Table 1**. Crash data, including 3 years prior to RLR camera installation, has been attached to the report detailing driving behavior at the intersection.

City of Aurora Crash Data, 2008– 2011 Eola Road and Ogden Avenue				
Year	Crashes			
	Turning, Angle or Head On (% of Total)	Rear End (% of Total)	All Other (% of Total)	Total
Prior to Installation of Red Light Running Cameras				
2008	9 (16.1%)	43 (76.8%)	4 (7.1%)	56
2009	1 (2.9%)	32 (88.8%)	3 (8.3%)	36
2010	3 (7.6%)	32 (82.1%)	4 (10.3%)	39
Total	13 (10.6%)	107 (81.7%)	11(8.4%)	131
2008-2010 Average	4.3	35.6	3.6	43.6
Following Installation of Red Light Running Camera System				
Jan – Dec 2011	4 (12.9%)	25 (80.6%)	6 (19.4%)	31

Table 1

As shown in **Table 1**, the total number of turning, angle and head-on crashes increased slightly in the 12 months after the Red Light Running Camera System was installed, compared to the year prior to installation. The total number of rear end crashes has decreased over the same period. Overall, the total number of crashes decreased over this 12 month period when compared with 2010 crash totals.



The U.S. Department of Transportation Project Development and Design Manual states that turning, angle or head-on crashes have a number of probable crash causes. Probable causes of these types of crashes include the following:

- 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, nor the amount of turning traffic, traffic volumes are considered during the initial Justification Report analysis. The remaining crash causes can be addressed by the implementation of red light cameras. First, signage stating that the intersection is red light photo enforced is placed before the signalized intersection in an effort to decrease excessive speeding and increase awareness while traveling on the enforced approach. Finally, 12" LED signals are installed at every intersection to increase visibility of the traffic signal.



Intersection Operations

- There were no signal timing changes after the RLR camera system was installed.
- At the time of construction, traffic signal heads were 12" Light-emitting diode (LED) signal heads, therefore new signal heads were not installed as part of the construction process.

Eola Road and Ogden Avenue serve as principal arterial streets for traffic traveling to and passing through the City. The Average Daily Traffic (ADT) volumes for northbound Eola Road, eastbound Ogden Avenue, as well as the entire intersection, both before and after the RLR camera system was installed are shown in **Table 2**.

City of Aurora Average Daily Traffic Volumes Eola Road and Ogden Avenue			
Year	Average Daily Traffic (ADT)		
	Northbound	Eastbound	Entire Intersection
2010	n/a	n/a	69,000
2012	33,000	35,000	68,000
ADT Difference Following RLR Camera Installation	n/a	n/a	-1%

Table 2

- Average Daily Traffic for the intersection is approximately 68,000 vpd. Average Daily Traffic information was obtained from www.gettingaroundillinois.com.



- Adjudication, the process of hearing and settling a judicial procedure, data for the intersection of Eola Road and Ogden Avenue for 2011 and 2012 is shown in **Table 3**.

City of Aurora Adjudication Experience Eola Road and Ogden Avenue		
Month	Found Guilty	Not Found Guilty
January 2011	0	0
February	0	0
March	13	0
April	19	2
May	20	2
June	15	1
July	17	0
August	10	0
September	11	0
October	11	0
November	14	0
December	8	0
January 2012	9	0
February	9	0
Program Totals	156	5

Table 3

- **Table 3** shows that the majority of adjudications, 97%, were found guilty. From the adjudication process, the results show that the camera equipment and those persons reviewing and issuing violations are only mailing out highly accurate violations.



February 1st, 2013

Recommendations

Redflex Traffic Systems and the City of Aurora are both satisfied with the functionality of the camera equipment, the accuracy of violations, and the decrease in the total number of crashes.

Based on the typical causes of crashes (as stated previously), large turning volumes are typically addressed with geometric changes which may include extending turn-lane storage lengths to allow for longer queues thereby decreasing the amount of thru lane blockage, and the possible addition of an additional turn lane (dual left- or right-turn lanes).

Crashes are most likely caused by large intersection volumes leading to a decreased level of service at the intersection, increased delay, and increased motorist frustration which may lead to a driver taking unnecessary and aggressive risks.

Additional monitoring by the City of Aurora and increased speed enforcement of vehicles along busy corridors can decrease corridor and intersection speeds throughout the City.

The last 2 crash causes, inadequate traffic control devices and poor visibility of signals, should not be a factor in crashes due to high visibility traffic signal heads and extensive signing at the intersection.