***Village of Olympia Fields***
***Red Light Running Camera System Follow-up Evaluation Report for the Year 2016***
***Intersection of Lincoln Highway (US 30) at Western Avenue (Eastbound Approach in Olympia Fields)***

## Overview

The Village of Olympia Fields (here in after referred to as the "Village") is submitting the follow-up interim RLRC Safety Report for the eastbound approach of the intersection of Lincoln Highway (US 30) at Western Avenue. Additional reports, as required by Illinois Department of Transportation (IDOT), will be submitted every 3 years.

The Red Light Running Camera System was installed, on the eastbound approach, on January 30, 2013 by Redflex Traffic Systems after the Olympia Fields Police Department found limited success with other attempted measures to promote safer driving. Those measures included daily, random enforcement actions taken by Olympia Fields Police Officers. The Village installed Red Light Photo Enforcement System on the eastbound approach to this intersection due to ongoing poor driving behavior and due to the accident history at this location. Roadway construction by IDOT caused camera downtime from 04/05/2014 to 07/09/2015.

The existing system by Redflex is currently enforcing the eastbound direction in Olympia Fields while westbound direction is enforced by Chicago Heights. This intersection is located approximately three and three quarters miles east of Interstate 57 and two miles west of Halsted Street.

Updated pictures of the intersection are shown in **Exhibits 1-4**, and the aerial photo provided by Google Maps is shown in **Exhibit 5**.

- **Exhibit 1** is Westbound Lincoln Highway (US 30)
- **Exhibit 2** is Eastbound Lincoln Highway (US 30)
- **Exhibit 3** is Southbound Western Avenue
- **Exhibit 4** is Northbound Western Avenue

The area adjacent to the intersection is occupied by shopping centers, services, restaurants, as well as bank. The land use in the vicinity of the intersection is summarized by quadrants:

1. Northwest – Car wash, shopping center, service
2. Northeast – Shopping center, restaurants, service
3. Southwest – Bank, shopping center, restaurants
4. Southeast – Drug store, service, restaurants

Parks are located within one mile, north and south, of the intersection. The Metra Station is two and a half miles away, to the west, with parking lots on the north and south sides. There are sidewalks on the north and south sides along Lincoln Highway.

**Lincoln Highway Westbound approach at Western Avenue - Exhibit 1**

**Lincoln Highway Eastbound approach at Western Avenue - Exhibit 2**

**Western Avenue Southbound approach at Lincoln Highway - Exhibit 3**

**Western Avenue Northbound approach at Lincoln Highway - Exhibit 4**

**Lincoln Highway (US 30) at Western Avenue - Exhibit 5**

## Red Light Running (RLR) Camera Enforcement Systems

In accordance with Public Act 94-0795 the Village has entered into a contract with a vendor, Redflex Traffic Systems. The technology installed by Redflex Traffic Systems allowed us to differentiate between actual red light violations and false triggers. False triggers include vehicles stopping after the white stop line, funeral processions, emergency vehicles, drivers yielding to emergency vehicles, drivers making legal turns on red after coming to a complete stop and drivers being directed through the intersection by an authorized person directing traffic. The package from Redflex includes three still images of the violator's vehicle and a 12 second video of the violation. The digital images will clearly show the traffic signal heads and the vehicle behind the stop line at the point the driver triggered the enforcement system. Furthermore the attached video will provide definitive proof of the traffic signal sequence with 6 seconds of video both before and after the violation. This will allow reviewing officers a detailed account of the violation and assist them to determine actual violations from false triggers.

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## Lincoln Highway (US 30) at Western Avenue Crash Analysis and History

Lincoln Highway state road connecting several different villages. Orchard is a local collector serving the nearby neighborhoods. Crash data, including 3 years prior to the Red Light Running camera system installation, has been attached to the report detailing driving behavior at the intersection.

Crash data for the intersection prior to and following the installation of the camera systems are shown in the below table. Please see attached Safety Report, at the end of this report.

| | Village of Olympia Fields Crash Data 2010-2012 vs 2016 | | | | | |
|---|---|---|---|---|---|---|
| Lincoln Highway (US 30) at Western Avenue | | | | | | |
| | Type of Crash | | | | | |
| Year | Turning | Sideswipe | Head On | Rear End | Other | **Total** |
| 2010 | 9 | 1 | 0 | 8 | 2 | 20 |
| 2011 | 12 | 1 | 0 | 13 | 1 | 27 |
| 2012 | 11 | 1 | 0 | 8 | 1 | 21 |
| 2016 | 12 | 2 | 0 | 14 | 1 | 29 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Total | 44 | 5 | 0 | 43 | 5 | 97 |

RLR Camera disabled 04/05/2014 – 07/09/2015

**Table 1 – Crash Data Before and After Camera Installation**

The U.S. Department of Transportation Project Development and Design Manual state that turning, and angled crashes have a number of probable crash causes. Probable causes of these types of crashes include the following:

- Large volumes of traffic turning left/right
- Large total volume at the intersection
- Excessive speed at 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 with 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 inch LED signals are installed at every photo enforced intersection to help increase visibility of the traffic signal.

## Intersection Operations

There were no signal timing changes after the Red Light Running Camera System was installed. Prior to the construction, traffic signal heads were not 12 inch Light Emitting Diodes (LED) signal heads. As part of the construction process the LED signal heads were installed. The 2009 Average Daily Traffic (ADT) on Lincoln Highway, on west side of the intersection was approximately 37,500 Vehicles per Day (VPD) prior to the installation of the camera system. After the installation of the RLR camera system, the 2015 ADT was 31,200 VPD and 2017 ADT was 34,700 VPD, along Lincoln Highway. The ADT along Western Avenue is about 15,300 VPD. The ADT information was obtained from www.getting aroundillinois.com.

## Recommendations

Redflex Traffic Systems and the Village of Olympia Fields are both satisfied with the functionality of the camera equipment and the accuracy of the violations being issued. Since the inception of the camera installation, the data from Table 1 shows that total number of crashes at the intersection in the year 2016 are 29 compared to an average of 23 crashes per year for the years 2010 thru 2012, prior to the installation of the RLR system on the eastbound approach in January of 2013. The system was deactivated from 04/05/2014 thru 07/09/2015. Within the last two to three years, more retail and shopping stores seem to have been added in the close proximity of this intersection. These developments, as anticipated, have generated a little more traffic volume which is added on the existing traffic volumes on Lincoln Highway as well as Western Avenue. The crash data for the years 2014 and 2015 are not included due to the camera being disabled during roadway construction work.

Based on the typical causes of crashes, 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 possibly also decreasing the chance off a rear end accident caused by drivers not expecting the through lanes to come to a stop while waiting to make a turn.

Crashes are most likely caused by a large influx of volume leading to a decreased level of service at the intersection thus increasing delay and increasing the motorist's frustration which may lead to a driver taking an unnecessary and aggressive risk to clear the intersection against the red signal.

Additional monitoring by the Village of Olympia Fields and an increase in speed enforcement along busy corridors can decrease corridor and intersection speeds throughout the Village.

The last two crash causes, inadequate traffic control devices and poor visibility of signals, do not seem to be a factor in crashes due to the high visibility of the LED signal heads installed and the additional signage prior to and at the intersection.