



OFFICE OF INSPECTOR GENERAL
City of Chicago



REPORT OF THE INSPECTOR GENERAL'S OFFICE:

RED-LIGHT CAMERA INSTALLATION AUDIT

MAY 2013

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To the Mayor, Members of the City Council, City Clerk, City Treasurer, and residents of the City of Chicago:

The City of Chicago Office of Inspector General (IGO) has completed an audit of the City's Red-Light Camera (RLC) program.

We sought to determine if RLC installations were made and managed based on the Chicago Department of Transportation's (CDOT) stated primary criterion of reducing angle crashes to increase safety. We designed the audit to answer nine questions posed by six members of the City Council seeking to hold a hearing on the RLC program.

Our audit's findings can be summarized in two simple points.

First, CDOT was unable to substantiate its claims that the City chose to install red-light cameras at intersections with the highest angle crash rates in order to increase safety. Neither do we know, from the information provided by CDOT, why cameras in locations with no recent angle crashes have not been relocated, nor what the City's rationale is for the continued operation of any individual camera at any individual location.

Second, our audit uncovered little evidence that the overarching program strategy, guidelines, or appropriate metrics are being used to ensure the RLC program is being executed to the best benefit of the City or the general public. Specifically, we found a lack of basic recordkeeping and an alarming lack of analysis for an ongoing program that costs tens of millions of dollars a year and generates tens of millions more in revenue.

The majority of these camera location decisions were made five or more years ago, when virtually none of CDOT's current leadership was involved with the program. However, cameras installed years ago are still in operation today and have been throughout the two-year tenure of CDOT's current leadership. Yet the Department cannot produce documentation demonstrating how each camera location was chosen, or why cameras in locations with no recent angle crashes have not been relocated pursuant to CDOT's relocation criteria. If the intent of the RLC program is to increase safety and reduce the number of dangerous angle crashes, it is troubling that CDOT cannot produce documentation or an analysis demonstrating how each camera location was chosen, including all of those currently in operation, was chosen.

We found no evidence of this program being managed in a manner designed specifically to maximize revenue. For example, there was no evidence that ticket revenue influenced camera relocation decisions. However, we also found that the City generally lacked basic unit cost information needed to make informed operational decisions, such as whether to repair or replace equipment, or buy or lease cameras. For example, we were surprised to find that the City was spending \$13,800 in annual maintenance for cameras purchased at \$24,500 each – in other words, annual maintenance expenditure equal 56 percent of the purchase price. Given such discoveries, we question whether the City or contract personnel have undertaken any meaningful effort to limit unnecessary costs.

The City cannot effectively manage its programs unless it measures its programs.

The City is currently rebidding the contract to manage this program. However, it appears to be doing this with a profoundly troubling paucity of historical data and analysis to inform a decision that purports primarily to be in the service of traffic safety.

Going forward, the City must establish and follow clear criteria for its decisions on where to locate and maintain red-light cameras. It should also retain verifiable documentation of the data and process employed for each location decision, including the continuation of the operation of a camera in a specific location. Absent that, the IGO cannot reasonably regard the red-light camera program as being operated in the optimally efficient and effective service of traffic safety as generally claimed.

CDOT's response is included in the audit. CDOT stated that it intends to review the RLC installation and removal criteria and determine what, if any modifications should be made going forward. Additionally, it has pledged to work with the winning RLC vendor to review current camera locations and ensure that the criteria have been met and appropriately documented at intersections where cameras are now located. We concur with these stated intentions and look forward to the results of the analyses.

I hope this audit is of use to the City Council in its oversight efforts and to CDOT officials in their efforts to manage this \$70 million program. We thank CDOT staff and leadership for their engagement of and attention to this matter, and we look forward to completing a follow-up audit in the future.

Respectfully,



Joseph M. Ferguson
Inspector General
City of Chicago

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I. EXECUTIVE SUMMARY

The Inspector General's Office (IGO) performed an audit of the City of Chicago's Red-Light Camera (RLC) program. The purpose of the audit was to determine if red-light camera installations were made based on the Chicago Department of Transportation's (CDOT) stated primary criterion of reducing angle crashes to increase safety. In addition, the audit was designed to answer nine questions posed to the IGO by members of the City Council in February 2013:

1. Has the City installed, and is the City installing, red-light cameras in locations with the highest number of angle crashes?
2. Has the City used, and is the City using accurate data in determining the location for red-light cameras?
3. CDOT has established the Red-Light Prioritization Model to calculate annual Total Crash Rate and Angle Crash Rate at each intersection. How often is this Model reviewed, and who is responsible for verifying its accuracy?
4. How often does the City reassess if red-light cameras should be relocated?
5. Is CDOT following its own prioritization steps for red-light camera relocations?
6. Are field evaluations for potential red-light camera installations being done in accordance with the appropriate traffic engineering standards?
7. Which City departments, consultants, and/or employees of Redflex are involved in the decision to install or relocate red-light cameras, and how?
8. What data does the City collect regarding the amount of revenue generated by each red-light camera, and what influence does that revenue data have on the decision to maintain or relocate cameras?
9. What is the total cost of the camera system, including installation and annual maintenance?

The limited information provided by CDOT to the IGO did not provide a sufficient basis to show or substantiate that RLC installation decisions were based on the primary criterion of reducing vehicle angle crash rates. Therefore, the IGO could not verify that the City followed its own stated criteria for selecting RLC locations.

The majority of RLC location decisions were made five or more years ago and almost none of the current CDOT leadership was involved with the program at that time. However, the City is currently preparing to select a new vendor to maintain and operate its red-light cameras, and is negotiating with a vendor to operate a new program to enforce vehicle speed laws using similar automated technology.

In order to promote the integrity and transparency of these programs going forward, the IGO recommends that the City establish and follow clear criteria for its decisions on where to locate automated traffic law enforcement systems and retain verifiable documentation of the process for each location decision.

II. BACKGROUND

In February 2013, the Inspector General's Office initiated an audit of the City of Chicago Red-Light Camera (RLC) installations based on a risk analysis of City programs and departments completed in 2012. In addition, members the City Council contacted the IGO and requested an independent analysis of the City's RLC program, asking following specific questions:

1. Has the City installed, and is the City installing, red-light cameras in locations with the highest number of angle crashes?
2. Has the City used, and is the City using, accurate data in determining the location for red-light cameras?
3. CDOT has established the Red-Light Prioritization Model to calculate annual Total Crash Rate and Angle Crash Rate at each intersection.¹ How often is this Model reviewed and who is responsible for verifying its accuracy?
4. How often does the City reassess if red-light cameras should be relocated?
5. Is CDOT following its own prioritization steps for red-light camera relocations?
6. Are field evaluations for potential red-light camera installations being done in accordance with appropriate traffic engineering standards?
7. Which City departments, consultants, and/or employees of Redflex are involved in the decision to install or relocate red-light cameras, and how?²
8. What data does the City collect regarding the amount of revenue generated by each red-light camera and what influence does that revenue data have on the decision to maintain or relocate cameras?
9. What is the total cost of the cameras including installation and annual maintenance?

A. Municipal Code and Program Responsibility

On July 9, 2003 the Chicago City Council passed Municipal Code Chapter 9-102 authorizing the use of RLCs for automated enforcement of the City's red-light traffic laws. The purpose of the original ordinance was stated as follows:

9-102-010 Purpose — Establishment of Automated Red Light Camera Program.

(a) The purpose of this chapter is to provide for the establishment of an automated red light violation enforcement system which shall be administered by the Department of Transportation and the Department of Revenue and enforced through a system of administrative adjudication within the Department of Administrative Hearings.

(b) The system shall utilize a traffic control signal monitoring device which records, through photographic means, the vehicle and the vehicle registration plate of a vehicle operated in violation of Section 9-8-020(c) and Section 9-16-030(c). The photographic record shall also display the time, date and location of the violation.

¹ See "Chicago Red-Light Enforcement Program Intersection Prioritization Steps for New Installations," page 2, at http://www.cityofchicago.org/content/dam/city/depts/cdot/RLC_New_and_Relocation_Prioritization.pdf, accessed April 22, 2013.

² Redflex is the vendor responsible for installation and maintenance of the red-light cameras (see response to question 7 later in this report).

(c) A program shall be established which utilizes an automatic red light enforcement system at various vehicle traffic intersections identified by the Department of Transportation with the advice of the Police Department. The intersections chosen for the program shall be located throughout the city.

(d) The Department of Transportation, the Police Department and the Department of Revenue shall adopt rules and regulations as may be necessary for the proper enforcement and administration of this Chapter.³

CDOT was responsible for the RLC program when it began in 2003. In January 2006, City Council amended the ordinance to transfer responsibility for program management to the Office of Emergency Management and Communications (OEMC). Responsibility for program management was returned to CDOT by ordinance in January 2010.

B. Purchase and Maintenance Costs

There are currently 190 intersections with 384 installed cameras. One hundred eighty-six intersections have two cameras, and four intersections have three cameras. The current list of intersections with RLCs is available on CDOT's website at www.chicagotraffictracker.com.

Since 2003, the RLC camera installations and operation have been performed under three different contracts with Redflex. There were various contract amendments that changed camera purchase price, operational support, and maintenance costs of the RLC program.

The City purchased 384 cameras from 2003 through 2010 for approximately \$19,100,000.⁴ The cameras were purchased at three different prices: \$85,000 each from 2003-2006; \$100,000 each in 2007; and \$24,500 each from 2008-2010.

The City also pays the vendor for operational support and maintenance services.⁵ The following table shows those monthly costs per camera under the various contracts. When contract 3320 expired, operational support and maintenance for cameras purchased under that contract and its modification were covered under contract 18031. Operational support and maintenance costs for the cameras purchased under contract 16396 were covered under contract 16396.

Effective Date	Contract #	Maintenance & Operation Monthly Cost Per Camera
10/22/2003	Contract #3220	\$3,250
10/1/2006	Contract #3220 Modification #3	\$5,000
2/1/2008	Contract #16396	\$3,900
2/1/2008	Contract #18031	\$4,395

³ City of Chicago, Journal of the Proceedings of the City Council, July 9, 2003, page 4349,

http://docs.chicityclerk.com/journal/2003/july09/july09_part3_03optimize.pdf, accessed April 22, 2013.

⁴ We state this as an approximation because the camera purchase documentation provided by CDOT, which CDOT said it obtained from Redflex, included some discrepancies in the purchase dates of four cameras that the IGO could not resolve.

⁵ Operational support includes services such as image verification and internet access to violation information. Maintenance services include repairing and troubleshooting software and hardware, and cleaning and weather-treating cameras.

Currently 136 cameras are covered under contract 18031 and 248 cameras are covered under contract 16396.

C. Revenues

The City of Chicago Office of Budget and Management provided the following information on RLC tickets issued and revenue received for the 190 City of Chicago intersections with installed camera systems in the year 2012:

Tickets Issued	Value of Tickets Issued	Revenue Received ⁶
612,278	\$61,227,800	\$71,943,053

The number of tickets issued per intersection during 2012 at the 190 RLC intersections ranged from a low of 328 to a high of 19,805 (see Appendix).

D. Site Selection

CDOT's website states that "red-light camera enforcement is designed to increase safety on Chicago streets" and that CDOT selects camera locations based on crash data.⁷ Specifically, it states that the rate of angle crashes at an intersection is the primary consideration for site selection because "angle crashes are most likely to result in serious injury or fatalities" and the "safety goal of the red-light program remains focused on reducing the most dangerous crashes."

On April 29, 2008 the IT & Planning and Traffic Engineering sections of CDOT issued a memo to the RLC Project Manager at OEMC outlining a methodology for calculating the angle crash rate that would be used to rank intersections for potential RLC installations. This memo became the basis for CDOT's May 14, 2010 "Chicago Red-Light Enforcement Program Intersection Prioritization Steps for New Installations," posted on CDOT's website.⁸

E. Relocations

CDOT's "Chicago Red-Light Program Intersection Prioritization Steps for Relocations" states that:

CDOT's continuing program to evaluate existing red-light camera intersections is based on crash data for a minimum two years prior to install (the pre-install period) and on crash and violation data for a minimum two years after install (the post-install period). Intersections where red-light cameras have been in place for less than two years should not be considered for relocation.⁹

⁶ Revenue Received includes ticket collections from prior years, fines and collection costs.

⁷ See http://www.cityofchicago.org/city/en/depts/cdot/supp_info/red-light_cameraenforcement.html, accessed April 22, 2013.

⁸ Available at http://www.cityofchicago.org/content/dam/city/depts/cdot/RLC_New_and_Relocation_Prioritization.pdf, accessed April 22, 2013.

⁹ Available at http://www.cityofchicago.org/content/dam/city/depts/cdot/RLC_New_and_Relocation_Prioritization.pdf, page 2, accessed April 22, 2013.

The “Prioritization Steps for Relocations” describes reduction in angle crash rate as the primary criterion and reduction in number of violations as the secondary criterion for relocation decisions.

CDOT has relocated only ten cameras from five intersections since the inception of the RLC program in November 2003. The following table shows the original camera installations and their subsequent relocation:

Initial Installation Date	Initial Intersection	Number of Cameras Moved	Relocation Intersection	Relocation Date
2/1/2006	Kedzie & Fullerton	2	Laramie & Madison	5/11/2011
2/28/2006	State & Roosevelt	2	Kostner & Division	11/30/2010
3/7/2007	Ontario & Kingsbury	1	Belmont & Kedzie ¹⁰	11/24/2010
		1	California & Diversey	11/24/2010
10/31/2007	Western & Irving Park	2	Central & Addison	11/15/2010
1/27/2008	Ashland & Roosevelt	2	Kedzie & 26th	11/2/2010

Note: There were no relocations prior to November 2, 2010 and no relocations after May 11, 2011.

¹⁰ Belmont & Kedzie and Diversey & California were existing camera locations. The relocation added a third camera to these intersections.

III. OBJECTIVES, SCOPE, AND METHODOLOGY

A. Objectives

The objectives of the audit were to:

- Determine if red-light camera installations were based on the primary criterion of reducing angle crashes to increase safety; and
- Answer the questions requested by the Chicago City Council Members in their letter of February 21, 2013 to the IGO (see Background section of this report).

B. Scope

The scope of our inquiry was limited to answering the objectives stated above by reviewing information and documentation related to RLC installations from the initiation of the program in 2003 to the present.

C. Methodology

Planned audit steps included:

- Interviewing CDOT management to determine what policies and procedures were in effect at the time of camera installations and relocations, and what documentation exists to show application of those procedures.
- Requesting, analyzing, and verifying the accuracy of the following documentation:¹¹
 - Crash data for the two years prior to and two years after RLC installation for each currently active camera location;
 - 2012 crash data for all 190 intersections with active cameras in 2012;
 - Records demonstrating the use of the Installation and Relocation Prioritization Steps Model for camera installation or relocation;
 - Records demonstrating that camera installations were completed in accordance with appropriate traffic engineering standards, including associated installation documentation supporting the methodology;
 - Costs for each camera installation broken down by equipment purchased, maintenance, operating, repair and installation costs; and
 - Revenue and violation data for each installed camera.

CDOT was unable to produce all of the requested documentation. Therefore, the IGO was unable to verify or analyze some of the items listed above.

D. Standards

We conducted this audit in accordance with generally accepted Government Auditing Standards (GAS) issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the

¹¹ We were unable to determine the reliability of the data due to limitations such as lack of access to underlying source data, age of requested data, and discrepancies among datasets provided by CDOT. However, CDOT claims that this data was used by management to assist in identifying potential intersections for RLCs. While the conclusion of this report is not solely based on this data, the use of this data could lead to inaccurate conclusions.

evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

E. Authority and Role

The authority to perform this audit is established in the City of Chicago Municipal Code § 2-56-030 which states that the Inspector General's Office has the power and duty to review the programs of City government in order to identify any inefficiencies, waste, and potential for misconduct, and to promote economy, efficiency, effectiveness, and integrity in the administration of City programs and operations.

The role of the IGO is to review City operations and make recommendations for improvement. City management is responsible for establishing and maintaining processes to ensure that City programs operate economically, efficiently, effectively, and with integrity.

IV. CITY COUNCIL QUESTIONS AND ANSWERS

The specific questions asked by members of the City Council overlapped significantly with the IGO's objective of determining whether red-light camera installations were based on the primary criterion of reducing angle crashes to improve safety. Therefore, we present our findings below as answers to the City Council's questions.

1) Has the City installed, and is the City installing, red-light cameras in locations with the highest number of angle crashes?

CDOT data and documentation provided an insufficient basis to determine whether CDOT selected RLC locations based on the highest angle crash rate.

CDOT management stated that no one currently at CDOT was involved in the RLC program prior to 2007. Management could not provide documentation to demonstrate that camera installations from 2003 through December 2007 were based on the highest angle crash rate, and could only speculate as to the methodology used for camera installations during that period.

In 2007 the current Deputy Director for the CDOT Division of Project Development participated in developing a list (dated October 10, 2007) of the Top 205 Angle Crash Rate intersections for proposed camera installations in 2008. However, CDOT stated that the Deputy Director was not involved in the location selection process itself but only in the development of the Top 205 Angle Crash Rate list.

The IGO compared the Top 205 Angle Crash Rate list to the cameras installed after January 2008 and found inconsistencies that lead us to question whether the list was used as the basis for CDOT's RLC installation decisions. These inconsistencies consisted of the following:

- The City installed cameras at 130 intersections after January 2008. Fifty-five of these intersections, or 42 percent, were not on the Top 205 Angle Crash Rate list created in 2007.
- Of the 73 intersections on the Top 205 list at which cameras were subsequently installed, the installations did not appear to have occurred in order by highest angle crash rate, even taking into consideration notations on the list regarding barriers to constructability or proximity to other cameras.
- CDOT stated that the Top 205 list originated from a list of the 3,000 signalized intersections with the highest number of angle crashes.¹² However, several intersections on the Top 205 list had notations stating that no camera could be installed because the intersection had stop signs, not traffic signals.
- CDOT was unable to provide the purported underlying list of 3,000 signalized intersections with the highest number of angle crashes.

¹² A signalized intersection is an intersection with traffic signals (not stop signs or other traffic control devices).

2) Has the City used, and is the City using accurate data in determining the location for red-light cameras?

CDOT data and documentation was insufficient to verify the accuracy of information CDOT states was used to determine RLC installation locations.

The IGO requested crash data for two years prior to and two years after the installation date for all active RLCs. We also requested 2012 crash data for all active RLCs. CDOT was unable to provide the requested crash data. Therefore, the IGO was unable to determine the accuracy of data used to compute the angle crash rates on the various top crash rate schedules CDOT sent to the IGO.

3) CDOT has established the Red Light Prioritization Model to calculate annual Total Crash Rate and Angle Crash Rate at each intersection. How often is the Model reviewed, and who is responsible for verifying its accuracy?

CDOT data and documentation was insufficient to determine or substantiate that camera locations were selected based on the Red Light Prioritization Model.

CDOT provided the IGO with a memo from the current Deputy Director or CDOT's Division of Project Development dated April 29, 2008 and addressed to the RLC Project Manager. The memo established the angle crash rate as the primary criterion for RLC installations. Current CDOT personnel speculated to the IGO that RLC installations prior to that memo were based on highest angle crash rates. However, no current CDOT employee had any first-hand knowledge to substantiate this nor did they provide any documentation supporting that speculation (see Question 1 above).

In addition to the Top 205 Angle Crash Rate list dated October 10, 2007, CDOT provided the IGO with Top Angle Crash Rate lists for the years 2003, 2004, and 2005 which were the only years they could locate. These additional reports, however, were undated therefore we could not determine their creation date. CDOT could not show, nor were we otherwise able to determine if or how these lists were actually used in determining installations. Even if one assumes that these lists were used to select the 67 intersections where RLCs were installed prior to January 1, 2008, 22 of those intersections, or 33 percent, are not on the lists.

CDOT stated that it is responsible for verifying the accuracy of the data used to compute the angle crash rates for signalized intersections which may become candidates for RLC installation. CDOT reported that it obtains crash data from the Chicago Crash Database, maintained by the Chicago Police Department, and traffic volumes from the Chicago Average Daily Traffic database, maintained by CDOT, to create intersection annual Total Crash Rates and Angle Crash Rates.

CDOT stated that the Chicago Average Daily Traffic database was last updated in 2006. CDOT was unable to provide the Crash Database data that it represented as having been used to determine the various Top Angle Crash Rate reports dating back to 2003.

4) How often does the City reassess if RLCs should be relocated?

CDOT stated that it used the “Intersection Prioritization Steps for Relocations,” created in May 2010, to evaluate RLCs for possible relocation, but was unable to produce data that might substantiate this claim. Although the “Intersection Prioritization Steps for Relocations” document refers to “CDOT’s continuing program to evaluate existing red-light camera intersections,” CDOT provided no evidence that an assessment was completed prior to or since May 2010. CDOT has relocated a total of ten cameras from five intersections: four intersections in November of 2010 and one in May 2011.

5) Is CDOT following its own prioritization steps for RLC relocations?

CDOT was unable to produce evidence that it continually evaluates cameras for relocation, as stated in its “Intersection Prioritization Steps for Relocations.”

CDOT’s “Intersection Prioritization Steps for Relocations” states that “red-light intersections where the angle crash rate is zero based on the current year crash data are possible relocations.” CDOT explained that it selected this “zero angle crash rate” requirement because it seemed appropriate and met the budgetary constraints of available funds for camera relocations. CDOT did not provide to the IGO the amount of funding available for camera relocations.

Although CDOT has established a zero angle crash rate as a primary consideration for RLC relocation, the IGO identified seven intersections that had zero angle crashes in 2010 but at which CDOT still has RLCs in operation. We could not conduct a review for other years because CDOT did not produce the requested crash data. CDOT stated that the five intersections from which it relocated cameras all had zero angle crashes in 2009, but did not produce underlying documents or data to substantiate this or the number of angle crashes at other intersections that year.

6) Are field evaluations for potential red-light camera installations being done in accordance with the appropriate traffic engineering standards?

The IGO could not determine if field evaluations for potential RLC installations were done in accordance with appropriate traffic engineering standards to ensure that signal timing is set properly.

Step 9 in CDOT’s “Intersection Prioritization Steps for New Installations” states that:

Critical data including speed limit on all approaches are collected during the field evaluation for all intersections identified for red-light installation so that appropriate traffic engineering standards are applied to the signal timing and operations to ensure public safety.

The IGO requested the traffic engineering standards used by CDOT and any documentation to show that RLC installations and signal timing were completed in accordance with the

standards. CDOT did provide the IGO with the standards but did not provide any documentation supporting that signal timing is set to the required minimum standards or regularly monitored for adherence to those standards. CDOT's web site states that "no signal timings were changed before or after the implementation of red-light cameras."¹³

7) Which City departments, consultants, and/or employees of Redflex are involved in the decision to install or relocate RLCs, and how?

CDOT management reported that Redflex¹⁴ provided the City's RLC program Project Manager with a site survey report indicating whether cameras could or could not be installed in locations proposed by the City based on limitations such as physical barriers at the site.

The IGO requested the documentation provided by Redflex to the City's Project Manager. CDOT responded that it could locate only some engineering drawings that would not be of much help in evaluating the selection. Other than the site survey provided by Redflex, CDOT management said they were not aware of any involvement by other City departments, consultants or other individuals in the decision process of where to install cameras.

The IGO asked CDOT about the decision-making process for RLC installation specifically at the intersection of Kingsbury and Ontario in 2007. The Chicago Tribune reported on November 22, 2009 that then-Alderman Burt Natarus claimed responsibility for having RLCs installed there despite a lack of crashes at the intersection.¹⁵ The article quoted City officials as stating that "Natarus had no influence on the decision to install the cameras there." CDOT has not responded to the IGO's inquiry about the decision to place RLCs at this intersection. Both cameras installed at Kingsbury and Ontario were relocated to other intersections in November 2010.¹⁶

8) What data does the City collect regarding the amount of revenue generated by each red-light camera, and what influence does that revenue data have on the decision to maintain or relocate cameras?

CDOT has relocated cameras from only five intersections since the inception of the RLC program and the IGO did not find evidence that the amount of ticket revenue influenced those camera relocation decisions.

CDOT's "Intersection Prioritization Steps for Relocations" states that a reduction in the number of violations recorded by a red-light camera after two years of operation is used as secondary criterion for evaluating camera relocations. While the number of violations does not precisely correspond to the amount of revenue collected, reduced violations generally lead to reduced revenue. CDOT did not produce documentation to show that violation data was

¹³ See http://www.cityofchicago.org/city/en/depts/cdot/supp_info/red-light_cameraenforcement.html, accessed April 22, 2013.

¹⁴ Redflex is the vendor responsible for installation and maintenance of the red-light cameras.

¹⁵ Erica Slife and Bob Sector, "Burton Natarus has red-light camera on his corner," *Chicago Tribune*, November 22, 2009, http://articles.chicagotribune.com/2009-11-22/news/0911210176_1_red-light-camera-place-cameras-intersection, accessed April 22, 2013.

¹⁶ See Background section of this report for information about relocation intersections.

used to select intersections for relocation. CDOT stated that revenue data is not used in the decision process for maintaining or relocating RLCs. However, CDOT noted that camera relocation decisions can be affected by budgetary constraints since there is a cost associated with relocating RLCs.

The IGO requested total revenue collected by RLC for all available years. CDOT stated that it did not have revenue information for RLCs but that such information is kept by the Office of Budget and Management. The IGO then requested RLC revenue data from OBM, which provided total revenue collected by intersection for 2011 and 2012. OBM also provided the total dollar value of tickets issued (not necessarily collected) by intersection in 2012 (see Background section of this report).

9) What is the total cost of the cameras, including installation and annual maintenance?

The City paid Redflex a total of \$106,271,823 through March 8, 2013, but CDOT did not have documentation breaking out purchase, maintenance, repair, and other costs by RLC location. CDOT maintains no records of the purchase, maintenance, operation, repair, and additional costs for each individual camera.¹⁷ Therefore, the IGO was not able to determine (nor could CDOT otherwise explain) how much of the \$106,271,823 paid to Redflex was associated with each of these cost categories. Without this information, CDOT could not answer basic cost questions such as:

- What did the equipment cost?
- How much was spent on repairs at each installation?
- Should CDOT have replaced the equipment or repaired it?
- Is the RLC program cost effective?

CDOT did provide documentation obtained from Redflex showing the contract from which each camera was purchased. However, the data was incomplete and could not be used to calculate the exact amount of equipment purchased. We were able to determine, from the information provided and our own independent review of invoices, that purchase of the 384 cameras cost approximately \$19.1 million.¹⁸ CDOT also provided documentation that the City is currently paying the vendor \$1,564,920 monthly for maintenance and operational support. This includes \$967,200 for 248 cameras (\$1,150 for maintenance and \$2,750 for operational support per camera), and \$597,720 for 136 cameras (\$1,645 for maintenance and \$2,750 for operational support per camera). For the cameras purchased at \$24,500 each under the most recent Redflex contract, the annual maintenance cost is \$13,800, or 56 percent of the purchase price.

¹⁷ We also asked the Department of Finance for this information. The Department stated that it did not have the information because such information would be maintained by CDOT as the user department.

¹⁸ We state this as an approximation because the camera purchase documentation provided by CDOT, which CDOT said it obtained from Redflex, included some discrepancies in the purchase dates of four cameras that the IGO could not resolve.

A fundamental management function is the ability to identify various program costs. Without knowing how much is being spent in various categories, management does not have the necessary information to make informed operational decisions such as:

- Should we repair or replace equipment?
- How much should we budget for repairs or new equipment?
- Should maintenance agreements on equipment continue at 56 percent of the original purchase price?

V. CONCLUSION AND RECOMMENDATION

CDOT was unable to provide the IGO with sufficient documentation to show that RLC installation decisions were based on the primary criterion of reducing vehicle angle crash rates. Therefore, the IGO could not verify that the City followed its own stated criteria for selecting RLC locations.

We recognize that the majority of these camera location decisions were made five or more years ago and almost none of the current CDOT leadership was involved with the program at that time. However, cameras installed years ago are still in operation today, and the Department cannot produce documentation demonstrating how each camera location was chosen or why cameras in locations with no recent angle crashes have not been relocated pursuant to CDOT's relocation criteria.

The City is currently preparing to select a new vendor to maintain and operate its red-light cameras, and is negotiating with a vendor to operate a new program to enforce vehicle speed laws using similar automated technology. The integrity of these programs will depend in large part on the transparency of the City's decision-making criteria and its demonstrated adherence to them.

The IGO recommends that going forward, the City establish and follow clear criteria for its decisions on where to locate automated traffic law enforcement systems and retain verifiable documentation of the data and process employed for each location decision, including the continuation of the operation of a camera in a specific location.

VI. MANAGEMENT RESPONSE

**Chicago Department of Transportation's
Management Response to the IGO Red-Light Installation Audit-5/8/13**

The IGO recently conducted an audit of the City of Chicago's Red Light Camera (RLC) program primarily focused on whether RLC installation decisions were based on the program's main goal of reducing angle crashes to increase public safety. The Chicago Department of Transportation (CDOT) is firmly committed to the purpose and effective management of the RLC program, and fully cooperated with the IGO in their completion of the RLC audit. As the IGO correctly points out in their report however, the vast majority of the RLC location decisions were made five or more years ago during the previous administration. Almost none of the current CDOT leadership was involved with the program at the time. Additionally, since its inception in 2003, the RLC program was managed first by CDOT and then by the Office of Emergency Management and Communications (OEMC) and finally again by CDOT. Because of these various factors, CDOT was not able to provide all of the historic RLC installation information requested by the IGO in some instances.

In meetings with the IGO Audit staff on 2/27/13 and 4/2/13, CDOT staff committed to provide all data and information available to the department regarding the RLC program. It was noted, however, that some historic information and/or data might not be available due to the transition of the RLC program from CDOT to OEMC, and then back to CDOT, as well as the departure of nearly all management staff involved in installation determinations. There have been no new red light cameras installed during the entirety of Mayor Emanuel's administration, and no camera installed prior to that since November 2010. From CDOT's perspective, the most important aspect of the RLC program is that it is designed to increase safety on City streets. Recent analyses of Chicago's red-light enforcement program found that dangerous angle crashes were reduced by an average of nearly 30% when a high angle crash rate intersection was equipped with red-light cameras.

As the IGO mentions, CDOT is currently preparing to select a new vendor to operate and maintain its RLC program, as well as negotiating with a vendor to operate a new automated program to enforce vehicular speeding violations near parks and schools. New CDOT leadership under the direction of Mayor Emanuel is committed to promoting the integrity and transparency of the RLC and the Safety Zone programs going forward. As part of this commitment, CDOT will review the RLC installation and removal criteria and determine what, if any modifications should be made going forward. Additionally, CDOT will work with the new vendor to review current camera locations and ensure that the criteria has been met and appropriately documented at intersections where cameras are now located.

CDOT will respond to the nine questions posed in the IG's audit report below. First, however, two points are critical in evaluating the statistical analysis described in the RLC priority model:

- 1) Traffic in general, and traffic crashes in particular, are the product of a complex interaction of many factors. These include the underlying structure of the City; the design, condition, and operation of the transportation infrastructure; weather and

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environmental conditions; the actual and perceived enforcement of traffic laws; and-- most importantly in the case of traffic crashes-- the capabilities and behaviors of the driver and others. Analysis of these factors must therefore be statistical with the probability of a crash occurring subject to the variability inherent in the interaction of all of these, and other, factors.

Put simply, traffic in general, and traffic crashes in particular, are not deterministic but are highly variable. Thus all analysis of traffic crashes reflects a specific combination of these factors, which may or may not be duplicated in an audit. CDOT's RLC prioritization model recognizes and accommodates for this fact of traffic crash analysis by allowing for and using engineering judgment guided by the statistics.

2) Traffic and safety engineering analysis is also constrained by the data available. The data can be very subjective, and is also changing over time as additional information becomes available. CDOT uses the most complete and recent crash and traffic data available at the time the analysis is done.

The fundamental crash data used in the RLC analysis (and in all crash analysis) are the crash databases assembled and maintained by the Illinois Department of Transportation (IDOT) and CDOT. The source data in both the IDOT and CDOT crash databases is the SR1050 crash reporting form. The SR1050 form contains about 150 different fields of information, and is the official crash reporting form provided by, and required by, the IDOT Division of Traffic Safety. The fields of SR1050 form are filled by Chicago Police Department Officers either in the field based on the statements of those involved in the crash and the observations and judgment of the Officer at the scene, or in the CPD District Office based on the statements of those involved in the crash and the judgment of the Officer taking the statements.

Crashes involving personal injury and/or property damage over \$1,500 for IDOT or over \$500 for CDOT are recorded on the SR1050 form. Of particular use in the RLC analysis is the location of the crash which is subsequently geocoded in the database process, whether the crash is related to an intersection based on the judgment of the Officer, and the type of crash (angle crashes for example). Given the level of precision inherent in the crash location as reported on the form, CDOT considers all crashes within 250 feet of an intersection to be intersection related.

Traffic count data used in the RLC prioritization process is taken from the 2006 citywide Average Traffic Data (ADT) database which includes 24 hour traffic counts by direction from 1,200 locations throughout the city. The RLC prioritization model uses traffic counts passing through the intersection being analyzed which requires that the traffic estimate be interpolated from the nearest available le traffic counts locations in some cases.

Given the complexity of, and the inherently dynamic nature of the traffic crash phenomenon, it is critical that the professional judgment and experience of traffic engineers with training and skills in transportation system management and operations be

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considered along with the simple statistical results in determining what, how, and where the various traffic safety tools (including automated enforcement of red-light laws) can and should be deployed. CDOT is committed to the competent use of the available crash and traffic data and statistics combined with the judgment and experience of professional traffic engineers and managers in the oversight, management, and operation of the Chicago red-light camera program to make our streets safer for all users.

With respect to the nine questions:

- 1. Has the City installed, and is the City installing, red-light cameras in locations with the highest number of angle crashes?*

CDOT provided several tables summarizing the total and intersection crash statistics used as the initial step in the RLC prioritization analysis including analysis done in April 2008 based on 2007 crash data through 10/10/07, June 2009 analysis based on crash data from 8/2007 to 8/2008, September 2011 analysis based on 2010 crash data, and September 2012 based on 2011 crash data. In most cases crash data for a particular year becomes available in the final databases in May or June of the following year. Thus, for example, the 2012 analysis used the 2011 crash database.

The tables provided to the IGO include the total crashes, angle crashes, and angle crash rates for the top total crash intersections evaluated following the RLC prioritization model. This is precisely the data referenced in the RLC priority model. CDOT does not understand the IGO contention, therefore, that NO DATA showing the priority model steps were followed. If the IGO is looking for the original crash database, this database contains the SR1050 form data for over 100,000 crashes that occur in Chicago each year and can be accessed through the IDOT safety data mart at <http://www.dot.il.gov/trafficsafety/datamart.html>.

In each case, the RLC priority model steps were followed. First, there is an assessment completed of the intersections with the highest number of total crashes, then an estimate of the angle crash rates at these intersections is completed, and the analyzed intersections are put in rank order by angle crash rate. Finally, an engineering analysis of the constructability of the intersection for installation of a RLC is completed. CDOT provided additional data on the constructability assessment of the high angle crash intersections to the IG. RLCs are installed at intersection with very high (if not the highest) angle crashes based on the statistical analysis and engineering factors.

- 2. Has the City used, and is the City using, accurate data in determining the location for red- light cameras?*

CDOT used the best and most accurate crash and traffic data available as described above under general notes in each case for each analysis year. The RLC prioritization analysis for 2011 is in '2011_Redlight_Priority List.xls'. As explained, the analysis conducted in 2011 used the 2010 crash data, as this was the most recent crash data

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available at the time of the analysis. The RLC prioritization analysis for 2012 is in 'RedlightPriorityList2012-2011-relocate-data.xls'. As explained, the analysis conducted in 2012 used the 2011 crash data, as this was the most recent crash data available at the time of the analysis.

3. *CDOT has established the Red-Light Prioritization Model to calculate annual Total Crash Rate and Angle Crash Rate at each intersection.¹ How often is this Model reviewed and who is responsible for verifying its accuracy?*

CDOT runs the RLC prioritization model as new, final crash data becomes available. Generally this means the model is run at least every two years. The timing of the model run also considers the resources available to install additional cameras or to relocate existing cameras. No new red-light cameras have been installed in 2011, 2012, or 2013 which reduced the need for, and frequency of RLC prioritization model runs. However, additional analysis is conducted periodically to assess the performance of the red-light cameras. This involves comparing crash data at RLC intersections for the two-year period before the red-light camera was installed with the crash data at RLC intersections for the two-year period after the red-light camera was installed. The most recent before/after analysis found that the most severe type of crashes (i.e. angle crashes) were reduced by 29% at red-light camera intersections and confirms the RLC program has achieved a significant safety benefit.

4. *How often does the City reassess if red-light cameras should be relocated?*

CDOT reviews the RLC effectiveness every year to year and a half. To date red-light cameras at five intersections have been relocated based on the reduction in angle crashes at the intersection to zero angle crashes. Potential intersections to relocate the red-light cameras follow the RLC prioritization model.

Red-light camera relocations were based on 2009 crash data, not 2010, in 'RLC-2010-11 remove-relocation-ver9.xls'. Red-light camera relocations were based on 2009 crash data which showed there were five intersections with existing red-light cameras with zero angle crashes in 2009. The red-light cameras were relocated to new intersections based on the 2009 angle crash rates at these intersections.

5. *Is CDOT following its own prioritization steps for red-light camera relocations?*

CDOT follows the RLC prioritization process as described in the documents provided to the IGO. As noted, CDOT's RLC prioritization model recognizes and accommodates the complex nature of traffic crash analysis by allowing for and using engineering judgment guided by the statistics.

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6. *Are field evaluations for potential red-light camera installations being done in accordance with appropriate traffic engineering standards?*

Following the statistical analysis outlined in the RLC prioritization process, a field assessment of engineering factors is conducted to determine the constructability and sequencing of red-light camera installation at the specific intersection and for specific approaches. The field assessment is based on appropriate engineering standards and considers factors such as the sight liners at the intersection, the availability of power, the condition of the pavement, the location of other traffic control devices including nearby red-light cameras, the speed limit, and surrounding land uses. Signal timings are set in accordance with CDOT, Manual of Uniform Traffic Control Devices (MUTCD), and Institute of Transportation Engineers (ITE) standards and accepted, recommended engineering practice. In all cases the yellow timing phase is 3 seconds for speed limits of 30mph and 4 seconds for speed limits of 35mph to meet the accepted standards.

7. *Which City departments, consultants, and/or employees of Redflex are involved in the decision to install or relocate red-light cameras, and how?²*

Over time the City departments involved in the decision to install a red-light camera has moved from CDOT to OEMC, and back to CDOT in 2010. CDOT traffic engineering consultants may or may not be involved. More typically, CDOT technical staff reviews and recommends and CDOT management makes the final decision based on the statistical and engineering analysis. The red-light camera contractor performs the field assessment which is reviewed by CDOT technical staff. With respect to the IG's inquiries about the cameras installed at Kingsbury and Ontario in 2007, CDOT has no knowledge that any other process other than the prioritization model was used in the selection of the intersection.

8. *What data does the City collect regarding the amount of revenue generated by each red-light camera and what influence does that revenue data have on the decision to maintain or relocate cameras?*

Revenue data from the red-light camera program is collected by the Department of Finance (formerly the Department of Revenue). CDOT does not collect revenue data regarding the red-light camera program either for individual intersections or for the program as a whole. CDOT's role is to manage and oversee the red-light camera program to insure that accepted traffic engineering principles are followed and that the traffic safety objectives of the program are met.

9. *What is the total cost of the cameras including installation and annual maintenance?*

IGO's total cost estimate of \$106,271,823 through March 2013 and the other figures referenced in question #9 are correct.

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CDOT was specifically asked to provide records that show the amount paid by intersection broken out by maintenance, operational, repair, and additional installation costs from the beginning of the camera installation for each individual camera. Due to the movement of program management back and forth between City departments dating back to 2003, lack of staff with historic knowledge, and time constraints, CDOT was unable to respond to question 9 in its entirety. CDOT requested an extension from the IGO in order to provide further information, but was denied.

The IGO Audit reports CDOT could not answer basic cost questions; such as should CDOT have replaced or repaired equipment? And is the RLC cost effective? CDOT was not able to answer detailed cost questions prior to 2010 for the reasons mentioned previously. CDOT's current business practice includes a multi-level management review of all repairs, and a CDOT document checklist that needs to be completed before any repair is paid for by the City. Is the RLC program cost effective?

In 2012 the City paid \$19.2 million to operate the RLC program under contracts 16396 and 18031; \$18.7 million in operations and maintenance and \$497,000 in repairs for the 384 RLC systems, and total revenue collected was \$71.9 million in 2012. In 2011 the City paid 19.2 million to operate the RLC program under contracts 16396 and 18031; \$18.7 million in operations and maintenance and \$449,000 in repairs for the 384 RLC systems, and total revenue was \$70.2 million in 2011. The IGO Audit report states that revenues for the RLC Program were provided by the Office of Budget and Management. The revenue data was compiled by the Department of Finance and was forwarded to the IGO by the Office of Budget and Management.

The report states a fundamental management function is the ability to identify various program costs, including should we repair or replace equipment? How much should we budget for repairs or new equipment? And, should maintenance agreements on equipment continue at 56% of the original purchase price? Each red-light camera repair is evaluated on a case by case basis. Most repairs to existing red-light cameras are due to street degradation or knockdowns of red-light camera equipment by motorists. The budget for repairs in 2012 was \$500,000 and the budget for repairs in 2013 is \$600,000. The current maintenance agreement was signed in 2008 and the City is in the process to select a new vendor to maintain and operate it red-light camera program.

CDOT leadership remains committed to the effective and transparent management of the Red Light Camera Program now, and going forward. CDOT thanks the IGO for their work on the Red Light Camera Installation Audit.

VII. APPENDIX: TICKETS ISSUED PER CAMERA LOCATION IN 2012

Tickets Issued per Camera Location in 2012			
#	INTERSECTION	# of Tickets Issued	Value of Tickets Issued
1	31ST AND CALIFORNIA	328	\$32,800
2	PULASKI AND ARCHER	387	\$38,700
3	IRVING PARK AND NARRAGANSETT	605	\$60,500
4	4700 WESTERN	636	\$63,600
5	AUSTIN AND ADDISON	678	\$67,800
6	PULASKI AND LAWRENCE	702	\$70,200
7	79TH AND KEDZIE	719	\$71,900
8	AUSTIN AND BELMONT	720	\$72,000
9	MONTROSE AND WESTERN	744	\$74,400
10	PULASKI AND BELMONT	745	\$74,500
11	FOSTER AND NAGLE	752	\$75,200
12	CLARK AND FULLERTON	763	\$76,300
13	55TH AND WESTERN	776	\$77,600
14	MADISON AND WESTERN	806	\$80,600
15	KEDZIE AND 63RD	884	\$88,400
16	PULASKI AND 71ST	959	\$95,900
17	CENTRAL AND ADDISON	973	\$97,300
18	CENTRAL AND BELMONT	1,057	\$105,700
19	ELSTON AND FOSTER	1,059	\$105,900
20	COTTAGE GROVE AND 79TH	1,070	\$107,000
21	WESTERN AND TOUHY	1,079	\$107,900
22	WESTERN AND CHICAGO	1,086	\$108,600
23	JEFFERY AND 95TH	1,106	\$110,600
24	HALSTED AND 95TH	1,116	\$111,600
25	ROOSEVELT AND KOSTNER	1,129	\$112,900
26	PULASKI AND 63RD	1,136	\$113,600
27	CICERO AND PETERSON	1,149	\$114,900
28	SHERIDAN AND FOSTER	1,150	\$115,000
29	PULASKI AND MONTROSE	1,152	\$115,200
30	RIDGE AND CLARK	1,178	\$117,800
31	ELSTON AND LAWRENCE	1,196	\$119,600
32	79TH AND HALSTED	1,199	\$119,900
33	KEDZIE AND 26TH	1,212	\$121,200
34	JEFFERY AND 79TH	1,234	\$123,400
35	KIMBALL AND DIVERSEY	1,235	\$123,500
36	STONEY ISLAND AND 79TH	1,240	\$124,000
37	ASHLAND AND 47TH	1,329	\$132,900
38	TOUHY AND OSCEOLA	1,353	\$135,300
39	PULASKI AND NORTH	1,359	\$135,900
40	WESTERN AND 79TH	1,374	\$137,400
41	35TH AND WESTERN	1,384	\$138,400
42	DIVERSEY AND AUSTIN	1,392	\$139,200
43	LASALLE AND KINZIE	1,404	\$140,400
44	55TH AND KEDZIE	1,408	\$140,800

Tickets Issued per Camera Location in 2012			
#	INTERSECTION	# of Tickets Issued	Value of Tickets Issued
45	CENTRAL AND FULLERTON	1,412	\$141,200
46	CALIFORNIA AND DEVON	1,414	\$141,400
47	119TH AND HALSTED	1,416	\$141,600
48	LINCOLN AND MCCORMICK/KIMBALL	1,418	\$141,800
49	CENTRAL AND DIVERSEY	1,472	\$147,200
50	ASHLAND AND 63RD	1,481	\$148,100
51	FOSTER AND BROADWAY	1,492	\$149,200
52	CICERO AND BELMONT	1,498	\$149,800
53	COTTAGE GROVE AND 71ST	1,501	\$150,100
54	CICERO AND FULLERTON	1,538	\$153,800
55	LARAMIE AND FULLERTON	1,543	\$154,300
56	PULASKI AND DIVISION	1,564	\$156,400
57	WESTERN AND ARMITAGE	1,588	\$158,800
58	KEDZIE AND 47TH	1,612	\$161,200
59	PULASKI AND DIVERSEY	1,626	\$162,600
60	PULASKI AND FULLERTON	1,642	\$164,200
61	ASHLAND AND MADISON	1,653	\$165,300
62	DAMEN AND 63RD	1,665	\$166,500
63	CALIFORNIA AND 35TH	1,669	\$166,900
64	WESTERN AND 63RD	1,679	\$167,900
65	HARLEM AND NORTHWEST HWY	1,683	\$168,300
66	KEDZIE AND 31ST	1,718	\$171,800
67	KEDZIE AND ARMITAGE	1,745	\$174,500
68	CERMAK AND PULASKI	1,752	\$175,200
69	CALIFORNIA AND PETERSON	1,791	\$179,100
70	HOMAN/KIMBALL AND NORTH	1,815	\$181,500
71	MILWAUKEE AND MONTROSE	1,834	\$183,400
72	HALSTED AND FULLERTON	1,850	\$185,000
73	CENTRAL AND IRVING PARK	1,878	\$187,800
74	HALSTED AND BELMONT	1,898	\$189,800
75	WESTERN AND DEVON	1,910	\$191,000
76	CICERO AND 47TH	1,972	\$197,200
77	CICERO AND CHICAGO	1,981	\$198,100
78	ASHLAND AND IRVING PARK	1,997	\$199,700
79	71ST AND ASHLAND	2,005	\$200,500
80	ASHLAND AND 95TH	2,032	\$203,200
81	HALSTED AND DIVISION	2,050	\$205,000
82	PULASKI AND 79TH	2,057	\$205,700
83	55TH and PULASKI	2,078	\$207,800
84	KEDZIE AND 71ST	2,108	\$210,800
85	87TH AND VINCENNES	2,194	\$219,400
86	ELSTON AND IRVING PARK	2,211	\$221,100
87	CICERO AND HARRISON	2,226	\$222,600
88	ASHLAND AND LAWRENCE	2,236	\$223,600

Tickets Issued per Camera Location in 2012			
#	INTERSECTION	# of Tickets Issued	Value of Tickets Issued
89	CICERO AND ARMITAGE	2,239	\$223,900
90	HALSTED AND NORTH	2,268	\$226,800
91	ELSTON AND ADDISON	2,293	\$229,300
92	NORTH AND CALIFORNIA	2,341	\$234,100
93	PULASKI AND CHICAGO	2,343	\$234,300
94	DAMEN AND DIVERSEY	2,372	\$237,200
95	79TH AND RACINE	2,397	\$239,700
96	PULASKI AND ARMITAGE	2,414	\$241,400
97	FULLERTON AND NARRAGANSETT	2,426	\$242,600
98	MADISON AND CENTRAL	2,430	\$243,000
99	ASHLAND AND ARCHER	2,441	\$244,100
100	HAMLIN AND LAKE	2,447	\$244,700
101	WESTERN AND 51ST	2,496	\$249,600
102	HALSTED AND 63RD	2,536	\$253,600
103	WESTERN AND 71ST	2,543	\$254,300
104	PETERSON AND WESTERN	2,550	\$255,000
105	ADDISON AND HARLEM	2,588	\$258,800
106	DIVERSEY AND WESTERN	2,592	\$259,200
107	LAWRENCE AND WESTERN	2,599	\$259,900
108	CLARK AND IRVING PARK	2,627	\$262,700
109	DAMEN AND FULLERTON	2,638	\$263,800
110	CENTRAL AND CHICAGO	2,670	\$267,000
111	KOSTNER AND DIVISION	2,713	\$271,300
112	LAWRENCE AND CICERO	2,784	\$278,400
113	CICERO AND ADDISON	2,800	\$280,000
114	ARCHER/NARRAGANSETT AND 55TH	2,865	\$286,500
115	KOSTNER AND NORTH	2,890	\$289,000
116	AUSTIN AND IRVING PARK	3,002	\$300,200
117	111TH AND HALSTED	3,075	\$307,500
118	CICERO AND DIVERSEY	3,075	\$307,500
119	CALIFORNIA AND 47TH	3,174	\$317,400
120	PULASKI AND FOSTER	3,266	\$326,600
121	63RD AND STATE	3,268	\$326,800
122	MILWAUKEE AND DEVON	3,310	\$331,000
123	BLUE ISLAND AND DAMEN	3,321	\$332,100
124	HALSTED AND 103RD	3,326	\$332,600
125	DIVISION AND DAMEN	3,415	\$341,500
126	115TH AND HALSTED	3,453	\$345,300
127	IRVING PARK AND KILPATRICK	3,500	\$350,000
128	VINCENNES AND 111TH	3,503	\$350,300
129	ASHLAND AND 87TH	3,517	\$351,700
130	CALIFORNIA AND DIVERSEY	3,526	\$352,600
131	HARLEM AND BELMONT	3,607	\$360,700
132	ASHLAND AND DIVISION	3,632	\$363,200

Tickets Issued per Camera Location in 2012			
#	INTERSECTION	# of Tickets Issued	Value of Tickets Issued
133	COTTAGE GROVE AND 95TH	3,646	\$364,600
134	31ST ST AND MARTIN LUTHER KING DRIVE	3,686	\$368,600
135	CICERO AND NORTH	3,687	\$368,700
136	SACRAMENTO AND CHICAGO	3,696	\$369,600
137	STONY ISLAND/CORNELL AND 67TH	3,745	\$374,500
138	SACRAMENTO AND LAKE	3,812	\$381,200
139	CORNELL DRIVE AND 57TH	3,830	\$383,000
140	HOLLYWOOD AND SHERIDAN	3,833	\$383,300
141	ROOSEVELT AND PULASKI	3,914	\$391,400
142	BELMONT AND KEDZIE	3,955	\$395,500
143	CENTRAL AND LAKE	3,990	\$399,000
144	OGDEN AND KOSTNER	4,106	\$410,600
145	WESTERN AND FOSTER	4,112	\$411,200
146	HALSTED AND 83RD	4,116	\$411,600
147	IRVING PARK AND LARAMIE	4,186	\$418,600
148	WESTERN AND NORTH	4,193	\$419,300
149	HAMLIN AND MADISON	4,265	\$426,500
150	HALSTED AND MADISON	4,293	\$429,300
151	69TH AND WENTWORTH	4,325	\$432,500
152	WESTERN AND ADDISON	4,393	\$439,300
153	DEVON AND KEDZIE	4,407	\$440,700
154	WESTERN AND FULLERTON	4,572	\$457,200
155	GARFIELD AND ASHLAND	4,658	\$465,800
156	PULASKI AND IRVING PARK	4,717	\$471,700
157	WESTERN AND MARQUETTE	4,792	\$479,200
158	WESTERN AND CERMAK	4,966	\$496,600
159	CICERO AND WASHINGTON	4,987	\$498,700
160	IRVING PARK AND CALIFORNIA	5,004	\$500,400
161	GRAND AND OAK PARK	5,238	\$523,800
162	NORTH AND WELLS	5,290	\$529,000
163	CANAL AND ROOSEVELT	5,348	\$534,800
164	WESTERN AND PRATT	5,356	\$535,600
165	83RD AND STONY ISLAND	5,448	\$544,800
166	CHICAGO AND CLARK	5,472	\$547,200
167	CORTLAND AND ASHLAND	5,549	\$554,900
168	HIGGINS AND HARLEM	5,735	\$573,500
169	99TH AND HALSTED	5,823	\$582,300
170	PERSHING AND WESTERN	5,897	\$589,700
171	IRVING PARK AND KEDZIE	6,000	\$600,000
172	ROOSEVELT AND HALSTED	6,016	\$601,600
173	ASHLAND AND FULLERTON	6,031	\$603,100
174	ASHLAND AND DIVERSEY	6,111	\$611,100
175	COLUMBUS AND ILLINOIS	6,415	\$641,500
176	75TH AND STATE	6,594	\$659,400

Tickets Issued per Camera Location in 2012			
#	INTERSECTION	# of Tickets Issued	Value of Tickets Issued
177	BROADWAY/SHERIDAN AND DEVON	7,144	\$714,400
178	WENTWORTH AND GARFIELD	7,307	\$730,700
179	ARCHER AND CICERO	7,712	\$771,200
180	STONEY ISLAND AND 76TH	7,752	\$775,200
181	CERMAK AND CLARK	7,923	\$792,300
182	PULASKI AND PETERSON	8,612	\$861,200
183	STATE AND 79TH	8,769	\$876,900
184	STONEY ISLAND AND 89TH	9,644	\$964,400
185	LARAMIE AND MADISON	11,224	\$1,122,400
186	95TH AND STONEY ISLAND	11,449	\$1,144,900
187	VAN BUREN AND WESTERN	15,090	\$1,509,000
188	LAFAYETTE AND 87TH	15,226	\$1,522,600
189	LAKE SHORE DR AND BELMONT	16,273	\$1,627,300
190	CICERO AND I55	19,805	\$1,980,500
	Grand Total	612,278	\$61,227,800

CITY OF CHICAGO OFFICE OF THE INSPECTOR GENERAL

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MISSION

The Chicago Inspector General's Office (IGO) is an independent, nonpartisan oversight agency whose mission is to promote economy, efficiency, and integrity in the administration of programs and operations of City government. The IGO achieves this mission through:

- Administrative and Criminal Investigations
- Audits of City programs and operations
- Reviews of City programs, operations and policies

From these activities, the IGO issues reports of findings, and disciplinary and policy recommendations to assure that City officials, employees and vendors are held accountable for the provision of efficient, cost-effective government operations and further to prevent, detect, identify, expose and eliminate waste, inefficiency, misconduct, fraud, corruption, and abuse of public authority and resources.

AUTHORITY

The authority to produce reports and recommendations on ways to improve City operations is established in the City of Chicago Municipal Code § 2-56-030(c), which confers upon the Inspector General the following power and duty:

To promote economy, efficiency, effectiveness and integrity in the administration of the programs and operations of the city government by reviewing programs, identifying any inefficiencies, waste and potential for misconduct therein, and recommending to the mayor and the city council policies and methods for the elimination of inefficiencies and waste, and the prevention of misconduct.