



Philadelphia Parking Authority

3101 Market Street Philadelphia, PA 19104-2895 (215) 683-9600

September 17, 2007

The Honorable Richard A. Geist Minority Chairman, Transportation Committee House of Representatives Room 144, Main Capitol Building Harrisburg, PA 17120

Dear Representative Geist:

This report is submitted pursuant to the provisions of 75 Pa.C.S.A. §3116, for the Red Light Camera Enforcement Program administered by the Philadelphia Parking Authority for the period April 1, 2006 to March 31, 2007.

There were a total of 5,218 warning violations and 36,932 actual violations issued in the period April 1, 2006 through March 31, 2007. Attached you will find the following specific information related to the program:

- 1. A summary of the total violations issued by month for each active intersection. Please note that for those intersections beginning operation during the year, the number of violations issued in the first month will vary depending on the day of the month operation began.
- 2. A summary of revenue and expenses for the program for the fiscal year. On September 5, 2007, the Philadelphia Parking Authority reported to the Pennsylvania Department of Transportation (Rina Cutler, Deputy Secretary of Transportation for Administration), that the net revenue from the program was \$678,307 for FY 2007. There was also \$234,060 retained from FY 2006 for new intersection start-up costs producing a total of \$912,376 in net revenue since the inception of the program. Finally, the Authority requested and PennDOT approved, that the Authority hold \$160,000 for start-up costs for four additional intersections scheduled to be installed this fiscal year. The net amount transmitted to the PennDOT Motor License Fund was \$752,367.
- 3. A report compiled by Thomas J. Nestel, III, who under contract with the Authority, conducted an analysis of the impact of Red Light Camera Enforcement on safety at the intersections at which they operate.

4. As of March 31, 2007, there was \$1,316,246 in unpaid violations. We have instituted additional collection efforts in the last year to improve payments. Those efforts include, boot eligibility for three or more unpaid parking and or red light tickets, law firm collections for difficult to collect amounts and on-going delinquent ticket notices.

During Fiscal Year 2007, there were five intersections operating. Subsequently, five additional intersections were installed on Roosevelt Boulevard at Mascher Street, Levick Street, Rhawn Street, Welsh Road and Southampton Road. Those intersections began issuing warnings on June 6, 2007. Actual violations began on August 6, 2007.

We are pleased to work with the Pennsylvania Department of Transportation in conducting this Pilot Program. More importantly, we believe that the program has demonstrated its effectiveness in improving both vehicular and pedestrian safety.

If you have any questions or concerns regarding this report, please do not hesitate to contact me at 215-683-9724 or <u>vfenerty@philapark.org.</u>

Sincerely,

Venanet g. Ferner & N.

Vincent J. Fenerty, Jr. Executive Director





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3101 Market Street Philadelphia, PA 19104-2895 (215) 683-9600

September 17, 2007

The Honorable Joseph F. Markosek Chair, Transportation Committee House of Representatives Room 314, Irvis Office Building Harrisburg, PA 17120

Dear Chairman Markosek:

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Veneret & Fener & N

Vincent J. Fenerty, Jr. Executive Director





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September 17, 2007

The Honorable J. Barry Stout Minority Chair, Transportation Committee Senate of Pennsylvania Senate Box 203046 Harrisburg, PA 17120

Dear Senator Stout:

This report is submitted pursuant to the provisions of 75 Pa.C.S.A. §3116, for the Red Light Camera Enforcement Program administered by the Philadelphia Parking Authority for the period April 1, 2006 to March 31, 2007.

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Veneret & Fener & N

Vincent J. Fenerty, Jr. Executive Director





Philadelphia Parking Authority

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September 17, 2007

The Honorable Roger A. Madigan Chair, Transportation Committee Senate of Pennsylvania Room 286, Capitol Building Harrisburg, PA 17120

Dear Chairman Madigan:

This report is submitted pursuant to the provisions of 75 Pa.C.S.A. §3116, for the Red Light Camera Enforcement Program administered by the Philadelphia Parking Authority for the period April 1, 2006 to March 31, 2007.

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Vincent J. Fenerty, Jr. Executive Director

Philadelphia Parking Authority Red Light Photo Enforcement Program

Fiscal Year 2007 Financial Reconciliation

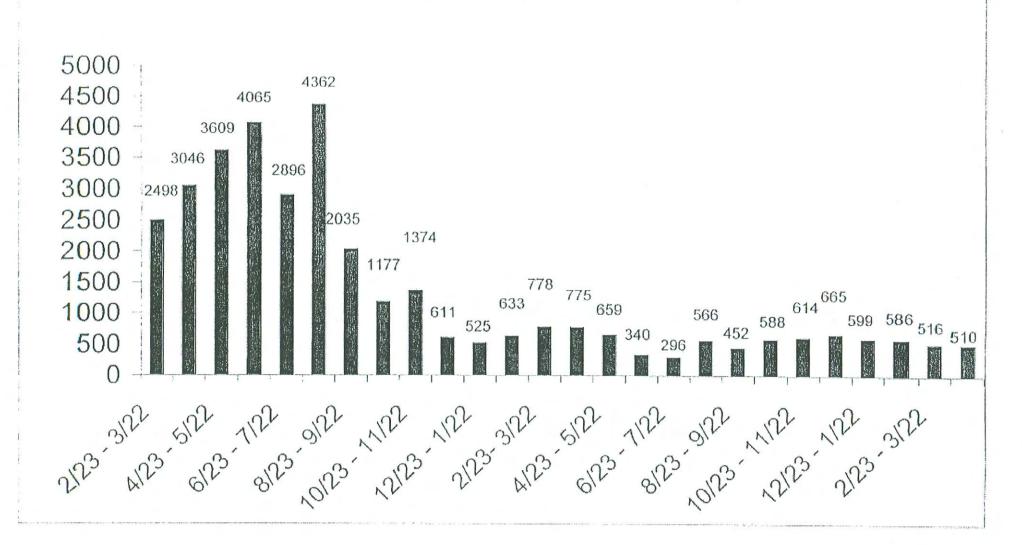
	Revenue	
Violation Revenue	\$2,591,279	
Interest	\$ 50,004	
Total Revenue	\$ 2,641,283	

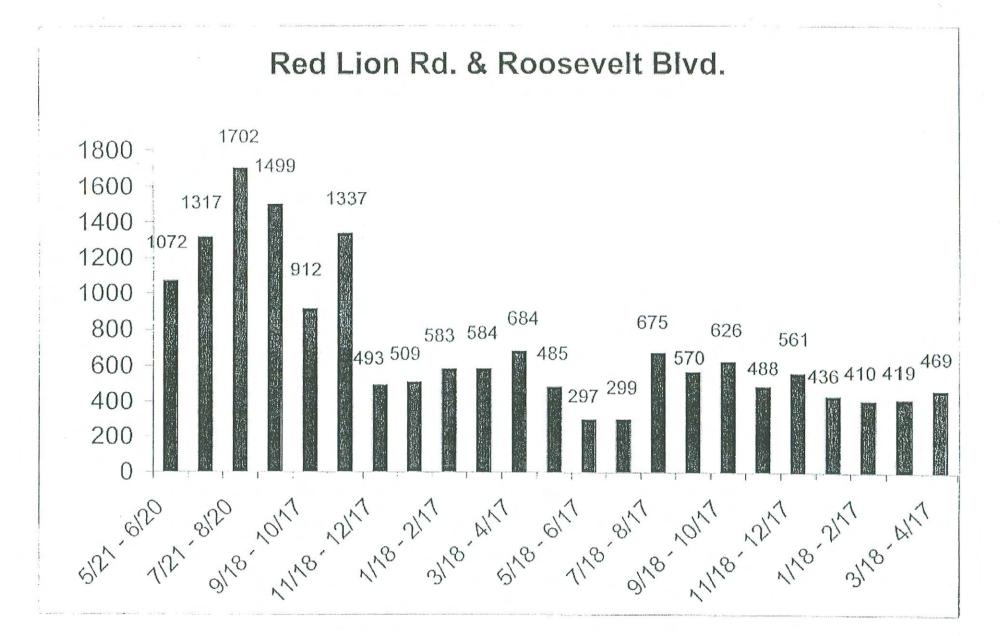
	F		
	Expenses		
Equipment	\$1,157,668	Paid to Mulvhiill/ATS, the contractor who installs	
		and maintains the cameras, film, data and	
		provides technical support.	
Philadelphia Police Department	\$ 17,018	Reviews and approves/rejects violation	
		photographs.	
Philadelphia Department of Finance	\$ 33,878	The Office of Administrative Review is the office	
		responsible for first level hearings on contested	
		violations.	
Personnel Costs	\$ 241,731	Includes current staff salaries and fringe benefits	
	. ,	as well as approximately one year staff support	
		prior to implementation.	
PPA Support	\$ 289,507	The allocated expense for PPA support services	
	+,	such as human resources, purchasing, IT,	
		management, security etc.	
Other Expenses	\$ 223,174	Miscellaneous expenses such as office supplies,	
	¢,	uniforms, auto expense, insurance etc.	
Total Expenses	\$ 1,962,976	<u> </u>	
	ψ1,302,970	<u> </u>	
Net Income FY 2007	\$ 678,307		
	$\psi 010,001$		

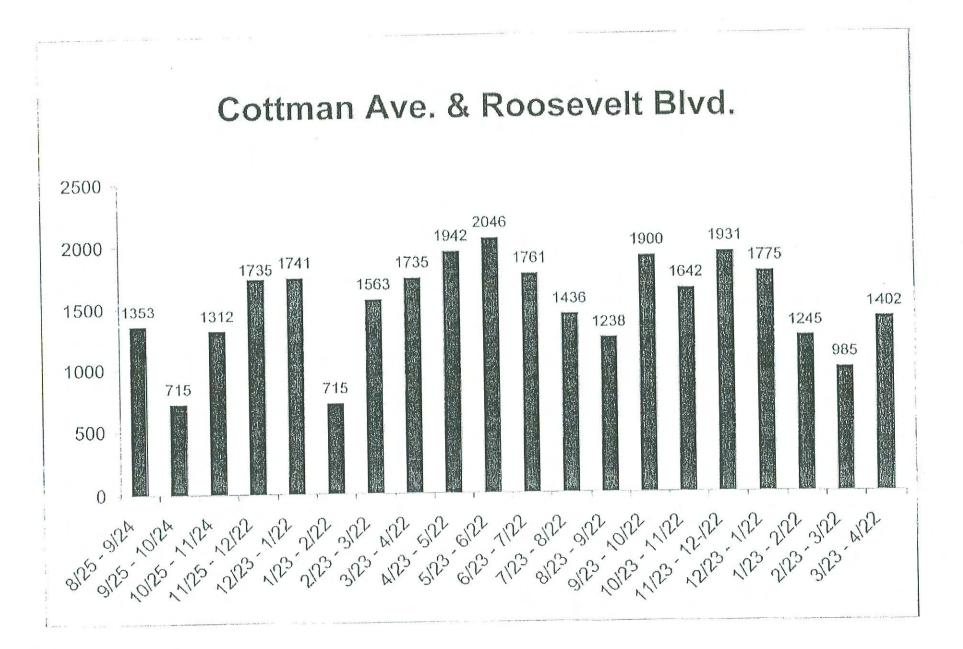
Net Income FY 2007	\$ 678,307
Net Income FY 2006 Retained ¹	\$ 234,060
Total Net Income	\$ 912,367
Retained for FY 2008 Start-up Costs	\$ 160,000
Payment to PennDOT Motor License Fund	\$ 752,367

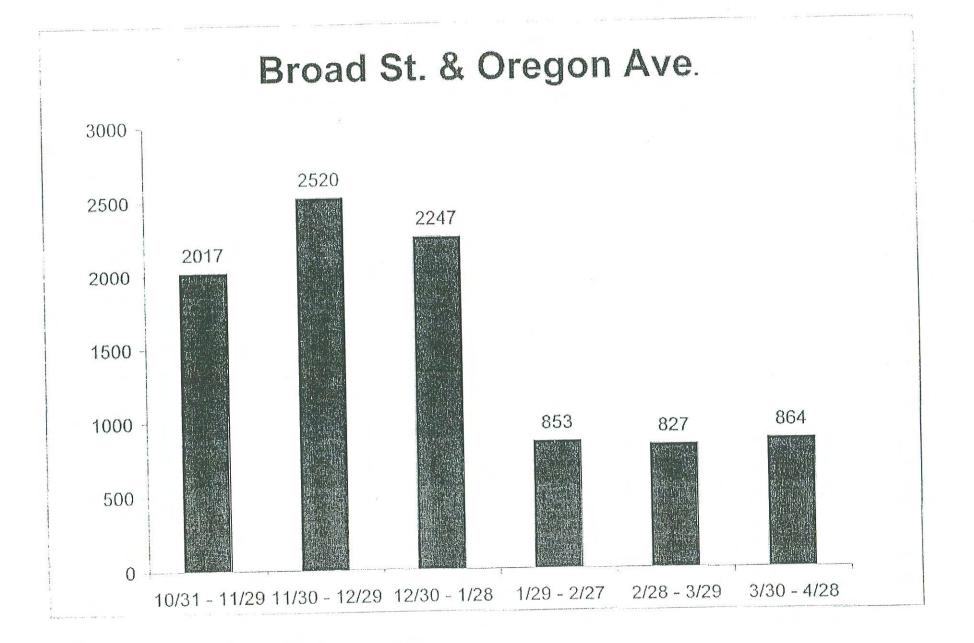
¹ FY 2006 Net Income reflects an adjustment of \$104,343 which were start-up costs applied twice. This error was discovered during the annual audit after the FY 2006 report was filed.

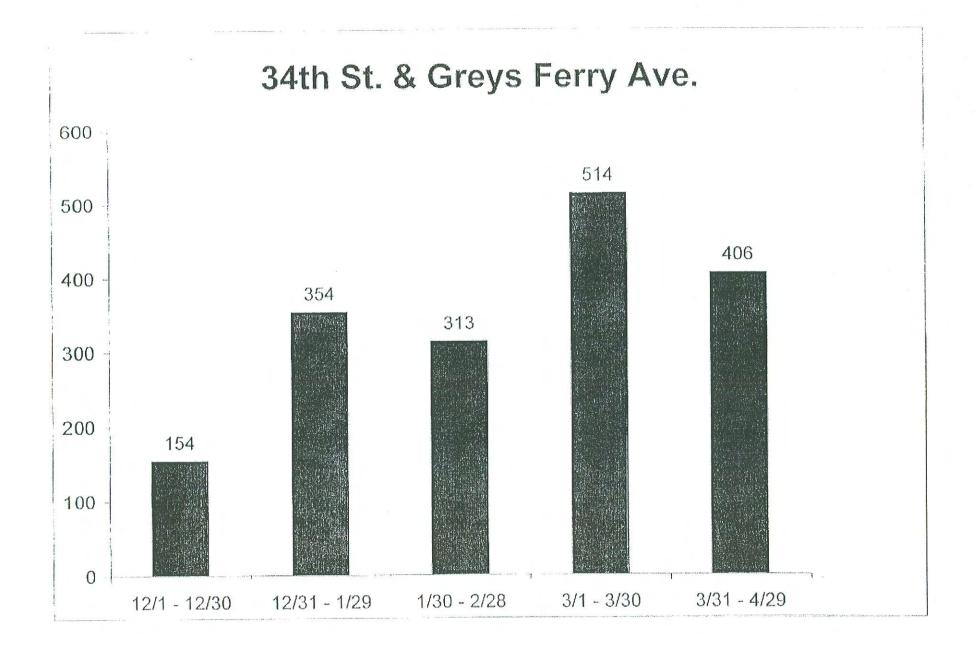
Grant Ave. & Roosevelt Blvd.



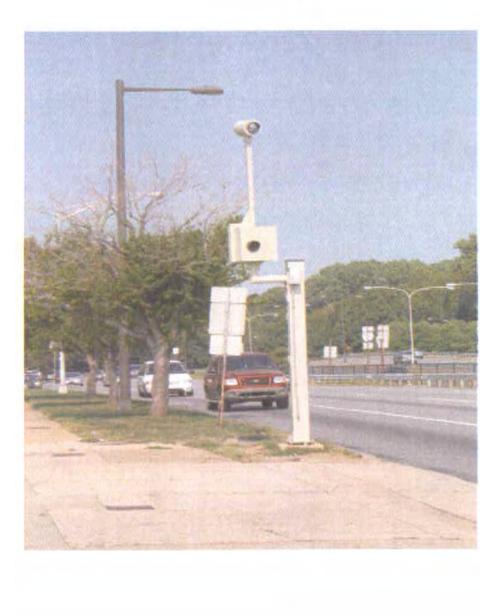








Philadelphia Parking Authority Red Light Photo Enforcement Analysis September 17, 2007





In October 2006, the Philadelphia Parking Authority contracted Nestel Consulting (Philadelphia, PA) to conduct an analysis of vehicle crashes occurring at Cottman Avenue and Roosevelt Boulevard. The goal of this analysis was to evaluate whether red light photo enforcement affects the level of safety at that intersection. In late July 2007, the Philadelphia Police Department delivered to the Philadelphia Parking Authority the data discovery request necessary to complete this analysis. The analysis was completed and submitted in draft format within six weeks from the date that the consultant received the requested data. This product is the property of the Philadelphia Parking Authority.

Thomas J. Nestel, III is a 4th generation Philadelphia police officer who presently serves as a Staff Inspector commanding the department's intelligence functions. He has carned a Bachelor of Science (magna cum laude) in Criminal Justice from Chestnut Hill College, a Master of Science (magna cum laude) in Public Safety from Saint Joseph's University, a Master of Arts in National Security Studies from the United States Naval Postgraduate School, a Master of Science in Criminology from the University of Pennsylvania, and is pursuing a Doctoral degree in Criminology at the University of Pennsylvania.

September 17, 2007

Thomas J. Nestel, III

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Executive Summary

On 25 August 2005, Red Light Photo Enforcement (RLPE) was installed at Cottman Avenue and Roosevelt Boulevard. In order to study the system's effectiveness at making the intersection safer, a private researcher conducted a comparison study using data from Cottman Avenue and Roosevelt Boulevard and a control intersection without the technology. By comparing the data from the two intersections, assertions can be made regarding whether RLPE influences risk of collision and injury at Cottman Avenue and Roosevelt Boulevard. The following information was gleaned from this evaluation:

- When crashes increased at the two intersections, the percentage increase at Cottman Avenue and Roosevelt Boulevard was less than the percentage increase at Tyson Avenue and Roosevelt Boulevard
- When crashes decreased at the two intersections, the percentage decrease at Cottman Avenue and Roosevelt Boulevard was greater than the percentage decrease at Tyson Avenue and Roosevelt Boulevard
- When crashes resulting in injury decreased at Cottman Avenue and Roosevelt Boulevard, crashes resulting in injury dramatically increased at Tyson Avenue and Roosevelt Boulevard
- When crashes resulting in towing increased at the two intersections, the
 percentage increase at Coltman Avenue and Roosevelt Boulevard was less than
 the percentage increase at Tyson Avenue and Roosevelt Boulevard
- When crashes resulting in towing increased during RLPE's Year One at the two
 intersections, the percentage increase at Cottman Avenue and Roosevelt
 Boulevard was nearly half of the percentage increase at Tyson Avenue and
 Roosevelt Boulevard
- When the percentage of crashes resulting in towing during RLPE's Year Two
 decreased from 9% to 2.3% at Cottman Avenue and Roosevelt Boulevard, crashes
 resulting in towing at Tyson Avenue and Roosevelt Boulevard increased from
 4.4% to 7.9%

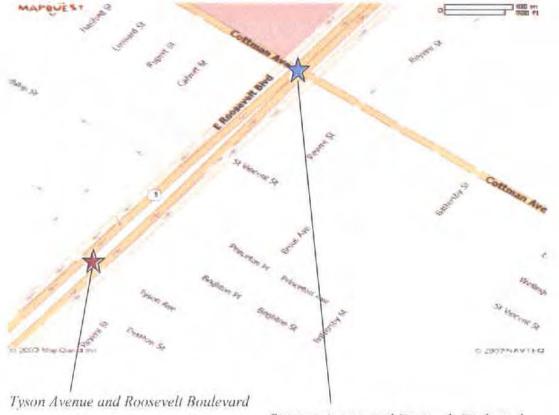
i

- When crashes categorized as broadside incidents decreased at Cottman Avenue and Roosevelt Boulevard, crashes categorized as broadside incidents dramatically increased at Tyson Avenue and Roosevelt Boulevard
- By Year Two of RLPE, crashes categorized as rear end incidents at Cottman Avenue and Roosevelt Boulevard were lower than during the pre-RLPE period.
- The difference between Year One and Year Two of the RLPE program at Cottman Avenue and Roosevelt Boulevard netted a reduction of nine-hundred three (903) red light violations

Introduction

On 25 August 2005, the City of Philadelphia activated red light photo enforcement at the intersection of Cottman Avenue and Roosevelt Boulevard. Red light violators received warnings during the grace period that terminated on 22 December 2005. After that date, \$100 tickets were issued to the registered owners of vehicles disregarding traffic signals captured by the automated red light photo enforcement.

The Philadelphia Parking Authority contracted an independent researcher to gauge the program's effectiveness in reducing crashes, injuries and property damage.



Map of Analysis Area

Cottman Avenue and Roosevelt Boulevard

Review Parameters

In order to accurately evaluate the effectiveness of red light photo enforcement, an analysis was conducted during which crash data from a technology equipped intersection (target) was compared to a non-technology equipped intersection (control). Cottman Avenue and Roosevelt Boulevard served as the target intersection, and for the purposes of this report it will be known as Cottman. Tyson Avenue and Roosevelt Boulevard serves as the control intersection, and for the purposes of this report it will be known as Cottman. Tyson Avenue and Roosevelt Boulevard serves as the control intersection, and for the purposes of this report it will be known as Tyson. The distance between the two intersections is less than ½ mile. No engineering or environmental changes have been made to the area that would independently affect the probability of crashes occurring at either intersection.

Cottman Avenue and Roosevelt Boulevard	=	Cottman	
Tyson Avenue and Roosevelt Boulevard		Tyson	

Description of Comparisons

The following comparisons were conducted:

- Pre-photo enforcement period (25 August 2004 to 24 August 2005) crashes at Cottman compared to post-photo enforcement period (25 August 2005 to 24 August 2007) crashes at Cottman
- Pre-photo enforcement period (25 August 2004 to 24 August 2005) crashes at Tyson compared to post-photo enforcement period (25 August 2005 to 24 August 2007) crashes at Tyson
- Percentage increase/decrease in crashes at Cottman compared to Tyson

Identifying Crashes at Cottman

The Philadelphia Police Department's incident reporting system provided the data identifying the total number of crashes. When a citizen contacts 9-1-1 to report a vehicle crash, a police unit is dispatched to the location. Upon the arrival of the police officer, the incident is either coded as "Founded" or "Unfounded." A founded designation indicates that the crash did occur and that the involved parties request a police report. An unfounded designation indicates that the involved parties have either left the location without speaking to the police officer or that they do not wish to have a police report prepared.

Ideally, reports documenting crashes at Cottman would note "Cottman Avenue and Roosevelt Boulevard" in the *location of occurrence* block. Unfortunately, the system of reporting and entering data by the Philadelphia Police Department could also include the following designations for Cottman :

- 2700 Cottman Avenue
- 2701 Cottman Avenue
- 2800 Cottman Avenue
- 2801 Cottman Avenue

- 7200 Roosevelt Boulevard
- 7201 Roosevelt Boulevard
- 7300 Roosevelt Boulevard
- 7301 Roosevelt Boulevard



Reports identifying the place of occurrence for the crash as being "Cottman Avenue and Roosevelt Boulevard" accounts for eighty-eight (88) of the one hundred seventy-two (172) crashes that actually occurred at Cottman between 25 August 2004 and 24 August 2007. Every crash designated as having occurred at the above noted locations was reviewed to determine if the crash was related to Cottman. If the crash was found to have occurred at the intersection or due to traffic control measures at the intersection, it was included in this study.

Identifying Crashes at Tyson

Ideally, reports documenting crashes at Tyson would note "Tyson Avenue and Roosevelt Boulevard" in the *location of occurrence* block. Unfortunately, the system of reporting and entering data by the Philadelphia Police Department could also include the following designations for Tyson:

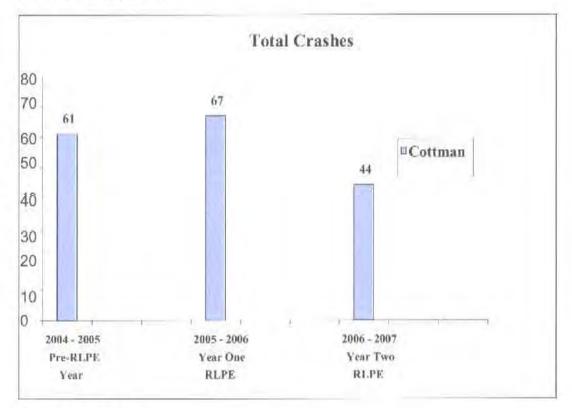
- 2200 Tyson Avenue
- 2201 Tyson Avenue
- 2800 Tyson Avenue
- 2801 Tyson Avenue

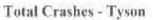
- 6900 Roosevelt Boulevard
- 6901 Roosevelt Boulevard
- 7000 Roosevelt Boulevard
- 7001 Roosevelt Boulevard

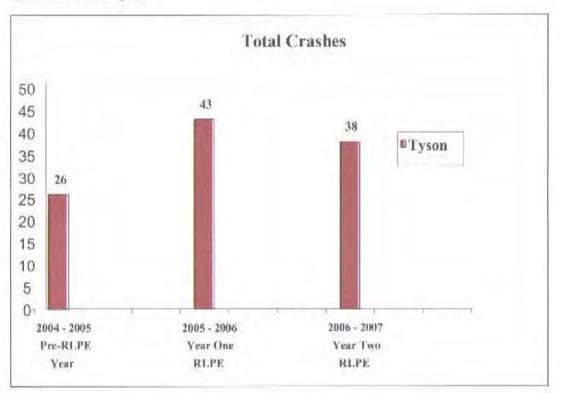


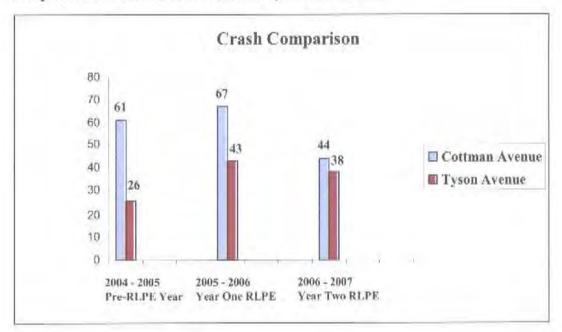
Reports identifying the place of occurrence for the crash as being "Tyson Avenue and Roosevelt Boulevard" accounts for twenty-eight (28) of the one hundred seven (107) crashes that actually occurred at Tyson between 25 August 2004 to 24 August 2007. Every crash designated as having occurred at the above noted locations was reviewed to determine if the crash was related to Tyson. If the crash was found to have occurred at the intersection or due to traffic control measures at the intersection, it was included in this study.

Total Crashes - Cottman







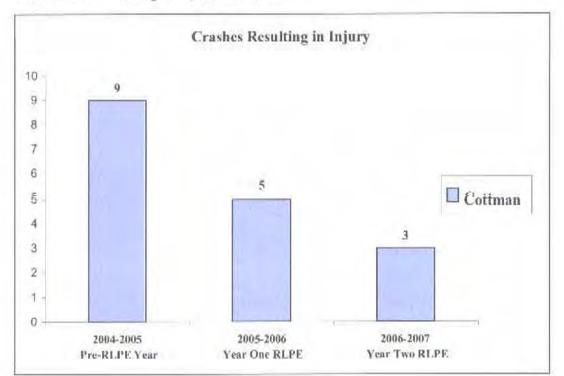


Comparison of Cottman crash totals to Tyson crash totals

Evaluation of crash comparison

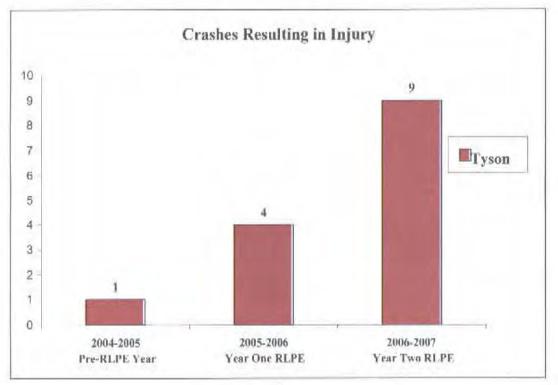
In order to properly evaluate the effectiveness of RLPE, the intersection monitored by the technology must be compared to a non-equipped intersection that lies in close geographic proximity to the treated intersection. In the included graphs, the rise and fall of crash totals demonstrates that the technology equipped intersection succeeded in netting a dramatic decrease in crashes after the implementation of RLPE.

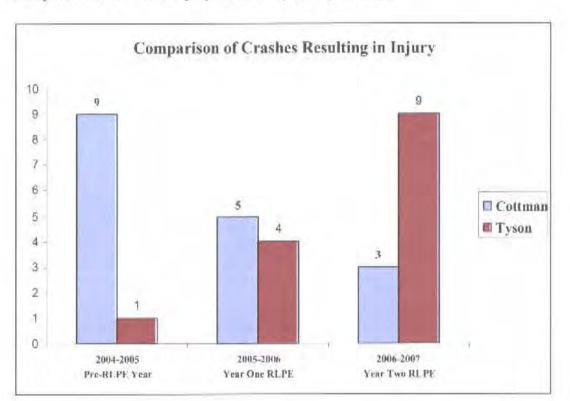
Both intersections suffered from an increase in crashes during the first year of RLPE. However, Cottman had a significantly smaller spike of +9% or six (6) additional crashes. Tyson posted +39% or seventeen (17) additional crashes. At the completion of the second year of RLPE, Cottman exhibited -34% or twenty-three (23) fewer crashes. Although Tyson also had a decrease in crashes, it was a smaller total of -12% or five (5) crashes. Comparing the year long period prior to the implementation of RLPE, Cottman benefited 28% fewer crashes while Tyson had a 32% increase.



Total crashes resulting in injury - Cottman

Total crashes resulting in injury - Tyson

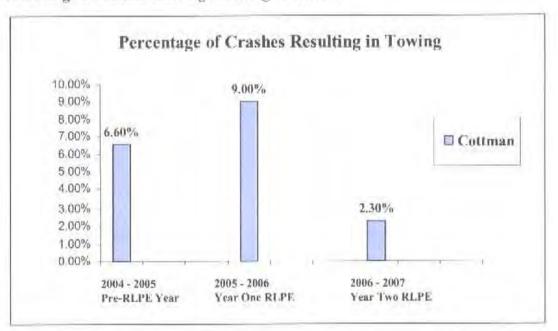




Comparison of Cottman injury totals to Tyson injury totals

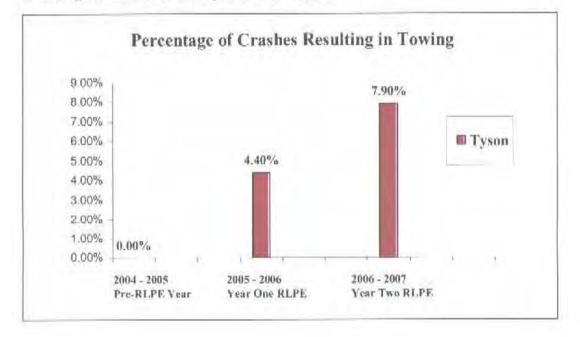
Evaluation of injury comparison

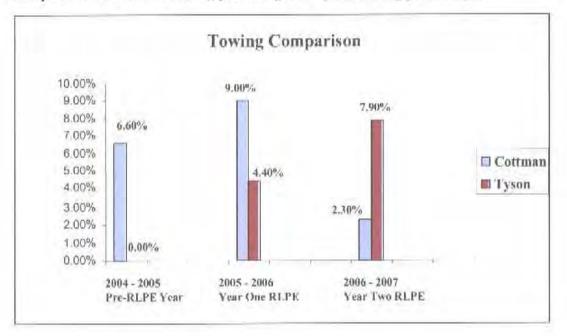
Injuries documented by the investigating police officer range from a mere complaint of pain to death. The involved person's statement determines whether the officer designates the report as a crash with resulting injuries. With the exception of a crash-related fatality, no scale exists that differentiates the severity of injury. During the three-year period examined for this review, one fatality occurred at Cottman, and that incident occurred prior to the introduction of RLPE. The injury comparison exhibited a directly converse effect. While injuries at Cottman decreased by 66%, injuries at Tyson multiplied by nine times from the pre-RLPE period.



Percentage of crashes resulting in towing - Cottman

Percentage of crashes resulting in towing - Tyson



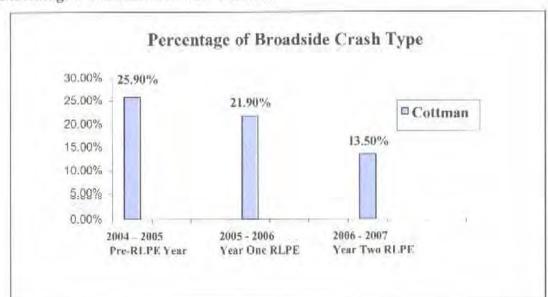


Comparison of Cottman towing percentages to Tyson towing percentages

Evaluation of towing comparison

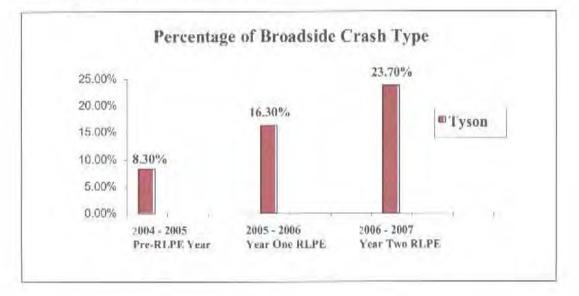
Unlike injury reporting during a crash investigation, the towing designation is not left up to the involved persons. The investigating officer determines whether the crashed vehicle can be driven from the scene. If the damage to the vehicle interferes with the driver's ability to operate normally and requires towing, then the crash receives a special designation. Vehicles that sustain minor damage, but whose operators request towing for reasons other than inoperability, are not classified as crashes requiring towing.

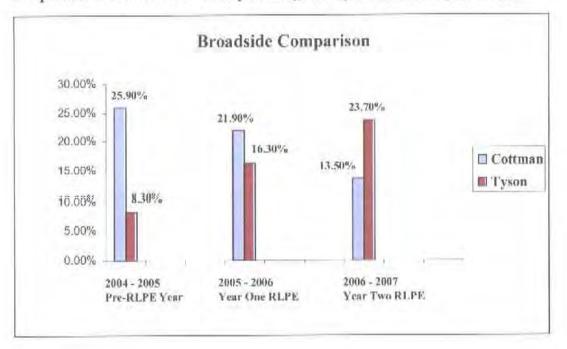
During the year leading up to the introduction of RLPE, Cottman had a dramatically higher percentage than Tyson of crashes that resulted in towing. By the end of Year Two for RLPE, Cottman posted an overwhelmingly smaller percentage than Tyson of crashes resulting in towing. Additionally, Tyson suffered from a continuing increase in towing incidents while Cottman reduced crashes requiring towing to 2.3%.



Percentage of broadside crashes - Cottman

Percentage of broadside crashes - Tyson



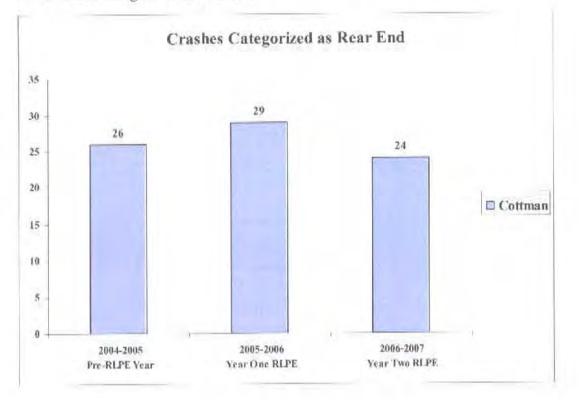


Comparison of Cottman broadside percentages to Tyson broadside percentages

Evaluation of broadside crashes

For this review, broadside crashes were those incidents in which the point of contact was front end of vehicle #1 to the side of vehicle #2. The broadside type of crash provides the clearest indication of adherence to an intersection's traffic signal. In the year leading up to RLPE, nearly 26% of crashes at Cottman were broadside crashes, while Tyson had a total of less than 9%. As RLPE was introduced, the number of broadside crashes at Cottman continuously declined while Tyson had a steady increase. By the end of RLPE's second year, Tyson had peaked at nearly 24% of the intersection's crashes being designated as broadside type incidents.

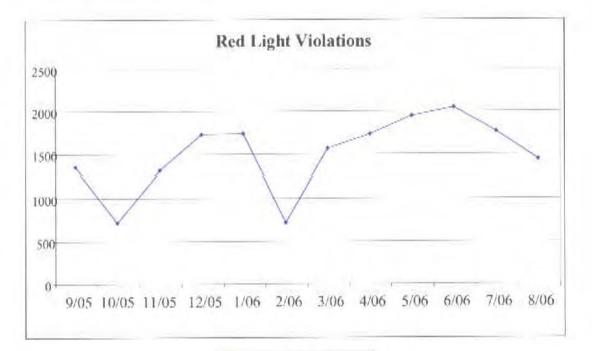
Total crashes categorized as rear-end



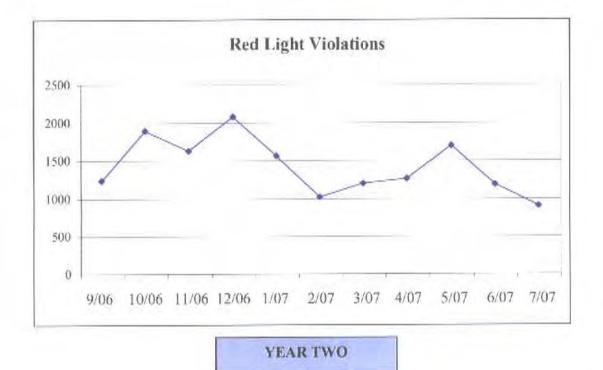
Evaluation of rear end crashes

Rear end crashes are considered to be a common side effect of RLPE. The intersection of Cottman Avenue and Roosevelt Boulevard posted an unusual finding. A review of crashes categorized as rear end shows that by the end of RLPE's Year Two, the number of rear end crashes was less than during the Prc-RLPE Year. Continued observation of this phenomenon should occur in order to determine if Year Two was merely an anomaly.

Red Light Violation Timeline



YEAR ONE



15

Evaluation of red light violations

The differences are subtle when comparing the graphs for Year One and Year Two. The peaks and valleys of Year One and Year Two are nearly reflective. The slopes of the lines in Year Two are slightly less than the slope of the lines in Year One. At this particular point in time, Year Two seems to be accumulating fewer violations than Year One at a rate of approximately 500 fewer per month. Year Two had nine-hundred three (903) fewer violations than issued at Cottman in Year One.

Conclusion

If the goal of technology-enhanced intersections is to reduce crashes, injuries, property damage and red light violations, it would seem that Cottman Avenue and Roosevelt Boulevard serves as a success story. It is recommended that further monitoring and evaluation of this intersection occur to determine if the improvements can be sustained.