Electronic Red Light Safety Program

"After" Analyses Summary

Carolann Wicks, Secretary
Delaware Department of Transportation
February 28, 2007

DelDOT

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February 28, 2007

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Dear Joint Legislative Committee on Capital Improvement:

In accordance with Article 113 of House Bill 535 of the 143rd General Assembly of the State of Delaware, the Department of Transportation hereby submits its evaluation of the effectiveness of the Electronic Red Light Safety Program (ERLSP).

Program factors and implications will be highlighted in the attached executive summary; then followed by greater detail in the actual body of the report.

Questions regarding this information or the overall program should be addressed to Michael Svaby, ERLSP Program Manager, 900 Public Safety Boulevard, Dover DE 19901, #302-760-2304.

Sincerely,

Carolann Wicks

Carolann Wicks
Secretary

cc: Stephen Kingsberry, Executive Director
Robert Taylor, Chief Engineer
Don Weber, Chief Traffic Engineer
Mike Svaby, Program Manager

DelDOT

After Analysis Summary
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House Bill 535 of the 143rd General Assembly

Section 113: Executive Summary

In accordance with Section 92 of the Fiscal Year 2003 Bond Bill (HB 535), the Delaware Department of Transportation advertised its requirement for a professional services agreement to support a Statewide Electronic Red Light Safety Program (ERLSP). At the time, the City of Wilmington had already begun its program at 10 intersections. In addition to identifying the participating jurisdictions and the number of intersections authorized for each, Section 92 required DelDOT to secure permission for installation of the video red light safety equipment from the State Senator and the State Representative in whose district the intersection was located.

To meet this requirement, DelDOT advertised for a vendor who could design a video safety system as well as support administration of issuing tickets. By April of 2003, DelDOT had selected Nestor Traffic Systems - from East Providence, Rhode Island - as the professional services vendor to support the ERLSP.

In Section 113 of House Bill 535 of the 143rd General Assembly of the State of Delaware, DelDOT requested a temporary extension of the legal authority necessary to continue the program through the end of Fiscal Year 2007. While the report assigned in this legal document has a legislated due date of February 28, 2007, securing the short-term extension of legal authority allows the General Assembly approximately 60 days to review this analysis of effectiveness and determine if ongoing legal authority will be granted to DelDOT. ***DelDOT believes that the ERLSP program is effective at the goal of reducing angle accidents due to red light violations***.

The study commissioned by Section 113 found that 16 of 20 intersections equipped with video red light safety infrastructure under this program's legal authority experienced a decrease in total crashes. Thirteen of 20 intersections equipped with video red light safety equipment experienced reductions in crashes caused by red light violations. Fourteen of 20 intersections equipped with video red light safety equipment experienced reductions in angle crashes due to red light violations. And finally, 14 of 20 intersections equipped with video red light safety equipment experienced reductions in rear-end crashes.

21 Del. Code §4101 (d) (6) provides due process for video red light offenders to contest or challenge the civil charge of violating a red light. The statute indicates that if a violator wishes to challenge the charge, "…a civil hearing shall be held by the Justice of the Peace Court or such other entity as designated by the Department of Safety and Homeland Security or applicable county or city". The ERLSP originated just under 155,000 violations from April 2004 through December 2006. During this time frame, 467 violators (0.3%)requested a court venue in Justice of the Peace Court and 120 (26%) pled responsible prior to their appointed trial date/time. Of the remaining 347 trial requests, 311 were upheld or found responsible, reflecting an overall conviction rate of 90%. 21 Del. Code § 4101 (d) (9) provides for the registered owner identified in a violation to divert responsibility to someone else who was operating his or her vehicle. During the time frame indicated above, registered owners implicated by this safety program signed and had notarized affidavits 1,084 times (0.6%), thereby attempting to defer responsibility for the originally alleged violations.

Many of the enforced intersections lie on intrastate travel corridors. On an ongoing basis, 30% (approximately 46,500 out of 154,900 violations through December 31, 2006) of all violations captured by the ERLSP are violators with out of State vehicle registration. To date, just fewer than 20,000 of these violations are delinquent, representing an accounts payable of approximately $450,000. Currently, there is no means by which to recover these delinquent fines.

Conversely, in State violators represent the majority of the violation population. Approximately 70% (approximately 108,400 out of 154,900 violations through December 31, 2006) of all violations captured by the ERLSP involve Delaware-registered vehicles. To date, approximately 28,000 of these violations are delinquent, representing an accounts payable of approximately $980,000. The ERLSP utilizes vehicle registration denial to help recover these delinquent fines. Because delinquent violators are unable to re-register - with the Division of Motor Vehicles - the vehicle in which the violation was committed, the majority of this money will be captured.

From March 2004 through December 2006, total operating expenses of the ERLSP were $4,835,292. This includes what was paid to the professional services vendor, Nestor Traffic Systems and the salary and other

employer costs paid to the Delaware State Police for 2 authorized full time equivalents that serve as civilian red light safety technicians. A year-by-year detailed breakdown of these costs is available in the full Bond Bill report. Nestor's price for maintaining the cameras and the administrative citation infrastructure is $4,390 per month per approach in addition to $13.50 for each citation approved by law safety. The fixed per-month fee provides DelDOT with a leased and maintained 3-camera digital video system and violation collection infrastructure at each of 31 enforced approaches. The per-citation fee covers the costs of administration involved in reviewing recorded events, preparing citations, associating registered ownership information and printing and mailing citation documents.

For the period April 2004 through December 2006, the program has collected $7,916,242 in fines.

The authorizing language split the ERLSP into 5 separate safety jurisdictions. The intersections in the unincorporated jurisdictions have earned $861,571 in net fine revenue (10 intersections, began operation in January 2005). The six enforced intersections in the City of Dover have earned $1,487,056 (began in April of 2004) in net fine revenue. The single enforced intersection in the City of Seaford has earned $185,239 (began operation in July 2004) in net fine revenue. The 2 enforced intersections in the City of Newark have earned $376,381 (began operation in April 2005) in net fine revenue, and the single enforced intersection in Elsmere has earned $103,170 (began operation in February 2005) in net fine revenue. All fine revenue paid to the municipal jurisdictions is net of expenses for operations paid at the intersection in the jurisdiction. Under terms of an operating agreement DelDOT has with each municipality, use of 60% of all net dividends paid is restricted to public or highway safety improvement and use of the remaining 40% is discretionary. Compliance with this restriction *program-to-date* has been confirmed by a compliance audit conducted by the DelDOT Audit staff beginning on October 2006 and ending on December 31, 2006. A copy of this document is included in the Bond Bill report. This same operating agreement includes a provision to allow for audit of dividend use, financial traceability and reporting on how funds were utilized.

As part of Section 113 requirements, a survey was conducted of the red light safety programs of twelve other jurisdictions, including the vendors and types of technology used to support safety. Data collected includes how long each program has been in existence, the number of enforced intersections under each program, the vendor used, what type of prediction and camera systems are in use, whether the program is tied to registered owner or vehicle operator and whether or not affidavits are used to divert responsibility for the red light violation. The results of this survey are found in the unabridged version of the Bond Bill Committee report required by section 113 of the FY 2007 Bond Bill (attached).

As a gauge to program effectiveness, the ERLSP Program Manager distributed program surveys to the city management and law enforcement organizations in each of the jurisdictions, and those at DelDOT who played a role in the program such as the Traffic Section, those who support litigation efforts, and those that answer calls from violators. The surveys included five questions designed to have respondents rate the vendor and their technology in addition to one section for free form comments. Surveys returned are included in the unabridged version of the study required by Section 113 of the FY 07 Bond Bill. Comments were generally positive with some specific areas identified for improvement on camera sharpness at intersection-specific locations. This issue can be addressed by the vendor with a new digital technology upgrade that secures sharper images, pending continuation of the program.

Section 92 of the Fiscal Year 2003 Bond Bill (HB 535 of the 139th General Assembly), gave legal authority for 5 jurisdictions to have a limited number of enforced intersections within each's geographic limits: 10 in unincorporated areas, 6 in Dover, 2 in Newark, 1 in Seaford and 1 in Elsmere. Warrants developed to recognize intersections most suited for red light safety equipment were applied when selecting candidate locations. These warrants were designed to recognize intersections in the State's inventory that had the most predominant problems with angle crashes due to red light violations. Based on crash information that is updated each year, trends indicate which intersections are tied to the most angle crashes.

Based on the positive results of the ERLSP reflected by the scientific analysis that follows this executive summary, DelDOT recommends the following:

- Future locations be sought and identified using these same warrants, under a statewide blanket legal authority, without restriction as to the number of locations allowable in each jurisdiction;
- Discussions begin with the States of New Jersey, Maryland and Pennsylvania for reciprocity mechanisms, to enable registration denial leading to full collection of outstanding fines**;**
- Full and ongoing legal authority be granted to the Department of Transportation in administering this program and that the sunset provision currently in place under the authority of section 92 of the FY 2003 Bond Bill be lifted;
- *An update on program progress be provided to the FY 08 Bond Bill Committee, no later than February 28, 2008, using the same parameters as the FY 07 Bond Bill Epilogue*
- *That DelDOT make efforts to reduce the operating cost of the program that may be driven by economies of scale*
- *That DelDOT lead the ERLSP partners in developing a model/profile of intersections where video red light safety technology has been proven successful in reducing angle crashes*

Program Initiation and Crash Analysis

Monitored Intersection Selection - Crash data used to identify intersections best-suited for video red light enforcement spanned calendar years 1999 through 2003 – *a five-year period.* Crash data was tabulated for each of the five jurisdictions as indicated by section 92 of the FY 2003 Bond Bill epilogue – Unincorporated, Dover, Seaford, Newark or Elsmere. Intersections were first ranked (highest to lowest) according to the number of red light-related angle accidents by at-fault approach. The vendor then determined the actual violation frequency using a temporary camera setup. The results were reviewed and compared to each intersection's red light-related angle crash history and a determination was made as to which approaches/intersections should be monitored based on the following:

- Correlation between crashes and violations
- High frequency of violations (Equal to or greater than the 85th percentile of violations on all approaches monitored indicated an aggressive driving problem)
- Complementary Movement - For approaches where the left-turn movement and the through movement share a stop line, both movements were monitored.

Additional safety-related factors were considered, such as:

- History of standard red light citations issued by DSP/jurisdiction police
- Location-specific complaints of red light running from private citizens or public officials
- Severity of red light-related angle crashes in five-year study period

The following is the complete list of intersections that were selected for monitoring:

Table 1: ERLSP Intersections

Intersection	Jurisdiction	Installation Date
SR 2/Kirkwood Hwy at Dupont Rd	Elsmere	2/1/05
Elkton Rd at SR 4/Christina Pkwy	Newark	3/31/05
SR 896/College Ave at SR 4/Christina Pkwy		3/31/05
US 13 at Webbs Ln	Dover	4/15/04
US 13 at SR 8/Division St		5/26/05
US 13 at Roosevelt Ave		2/1/05
US 13 at Kings Hwy/White Oak Rd		5/27/05
US 13 at Loockerman St		6/2/05
Governor's Ave at North St		5/27/05
US 13 at Tharp Rd	Seaford	5/24/05 and 7/2/04
US 202/Concord Pike at SR 92/Naamans Rd	Unincorporated - New Castle County	1/28/05
US 40 at Scotland Dr		4/27/05
SR 4 at Marrows Rd		3/3/05
SR 2/Kirkwood Hwy at SR 7/Limestone Rd		5/27/05
SR 2/Kirkwood Hwy at SR 41/Newport Gap Pike		5/27/05
US 40 at SR 72/Wrangle Hill Rd		4/29/05
US 13 at Roosevelt Ave		5/25/05
US 40 at SR 896		6/8/05
US 13 at Redden Rd	Unincorporated – Sussex County	4/27/05 and 6/30/05
US 113 at SR 20/Hardscrabble Rd		5/17/05

Although monitoring of the first intersection equipped with red light enforcement equipment (US Route 13 and Webbs Lane – Dover) is approaching its third year in April 2007, due to the time-consuming nature of violation analyses, crash data analyses, and enforcement equipment design and installation, the remaining intersections were installed in succession during the period June 2004 through July 2005. As such, their three-year legal authorizations are not concurrent.

Crash Evaluations - There are three standards for evaluating crash history that are used in this report:

1. ***Initial*** – The total number of crashes occurring during the program implementation and site selection process (1999-2003).
2. ***Before*** – Crashes occurring exactly 3 years (36 months) prior to camera installation. (Note: Part of this time frame may overlap with the "initial" period).
3. ***After*** – Crashes occurring during the period 3 months *after enforcement equipment installation through June 30, 2006*. This closing date was not chosen but represents the last available crash data at the time the report was begun. (Note: The first three months of this period were *not included* in the "after" analyses to allow drivers to be acclimated to the presence of red light enforcement equipment)

Crash Types and Definitions

Total Crashes include the following crash types: head-on, angle, rear-end, sideswipe, and other, which includes run-off-the-road and pedestrian/bicyclist crashes. The ERLSP before/after analysis only considers angle and rear-end crashes from this group, because these are the crash types most directly influenced by red light cameras. Therefore, the crashes in Figures 3 and 4 do not add up to those in Figure 1. As Figure 1 shows, total intersection crashes decreased, or improved, at 16 of the 20 intersections.

Angle Crashes include right angle collisions, which the ERLSP aims to reduce, as well as left-turn collisions, which can include a vehicle turning left on a 'permissive' signal indication, that is, a green ball or flashing red arrow, being struck by or striking an opposing through vehicle or side-street vehicle. Specifically, the ERLSP aims to reduce angle crashes caused by a motorist who proceeds through a red light. Therefore, Figure 2 is a subset of the angle-crashes. As Figure 3 indicates, 14 intersections saw a reduction in angle crashes.

Red Light Running Crashes, as mentioned above, are one subset of angle crashes where the police officer dispatched cited at least one driver as "disregard traffic signal" on the accident report form. As Figure 2 indicates, red light running crashes decreased at 14 intersections following the installation of monitoring equipment.

Rear-End Crashes occur when the rear vehicle fails to stop and strikes the front vehicle. Many opponents to red light running programs argue that red light running systems can lead to an increase in rear-end crashes because more motorists stop abruptly on yellow than without red light running equipment in place. As Figure 4 shows, at 13 intersections with red light running equipment, rear-end crashes decreased as well.

While Figures 1 –4 provide a snapshot of crash results at all of the intersections by crash type, Figures 5-24 show crash results by intersection.

- **FY 2007 Bond Bill Epilogue Section 113, 2a: Effectiveness In Meeting The Objective of Reducing Angle Crashes Due To Red Light Running**

The ERLSP's effectiveness was assessed by determining the change in "before" and "after" crashes- total crashes, red light running crashes, angle crashes, and rear end crashes- at each of the intersections. Data and graphics included in the appendices of this report reflect the details of the following summary conclusions (see Figures 1-24 for a graph of each intersection's success and the graphs of the statements below):

- **Total Crashes** - 16 of 20 of equipment-installed intersections (80%) had fewer crashes in the "after" period than they did in either the "initial" and/or the "before" period;

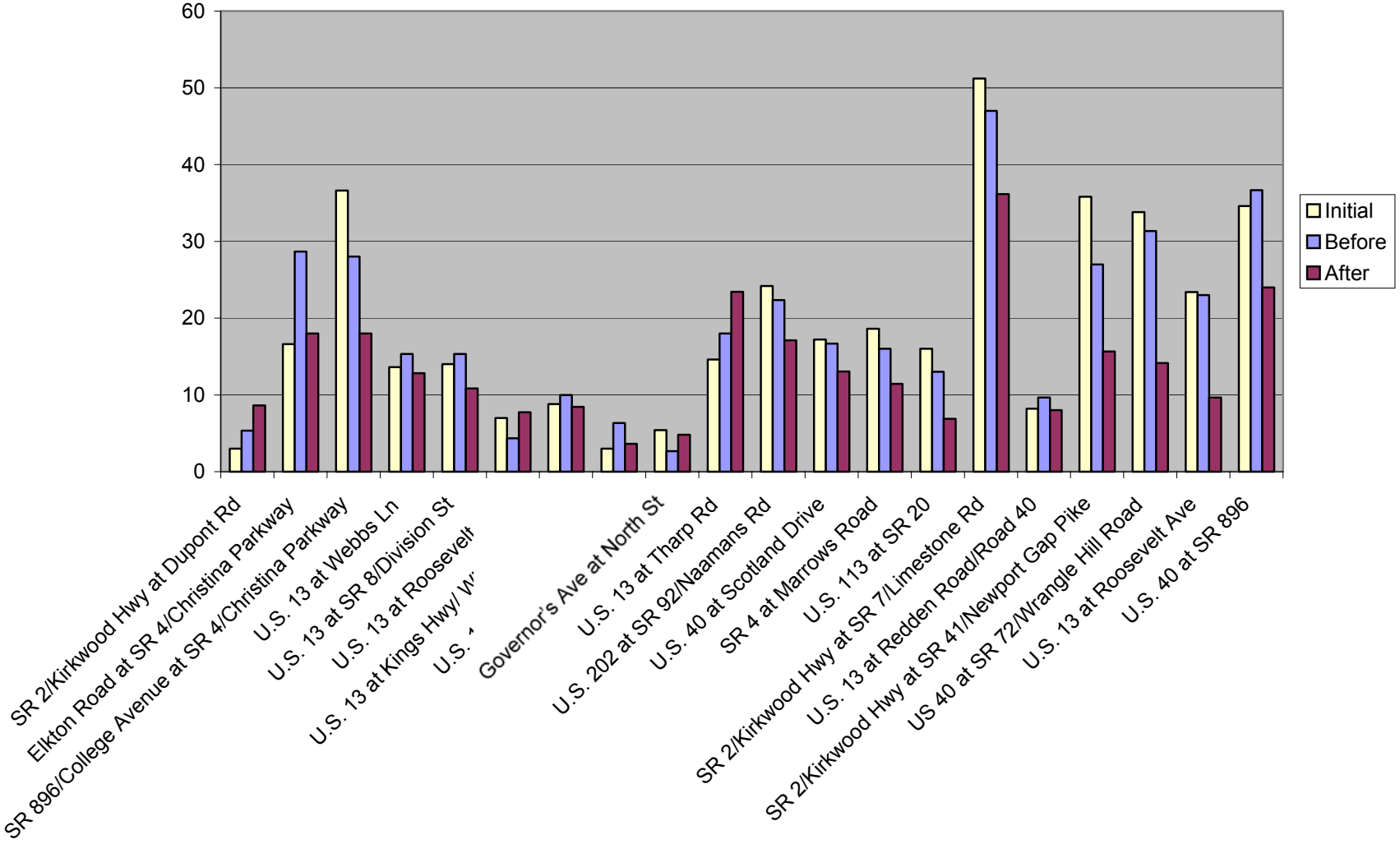
- **Red Light Running Crashes** - 13 of 20 equipment-installed intersections (65%) had fewer crashes in the "after" period than they did in either the "initial" and/or the "before" period;

- **Angle Crashes** -14 of 20 equipment-installed intersections (70%) had fewer crashes in the "after" period than they did in either the "initial" and/or the "before" period;

- **Rear End Crashes**- 14 of 20 intersections had fewer crashes in the "after" period than they did in either the "initial" and/or the "before" period.

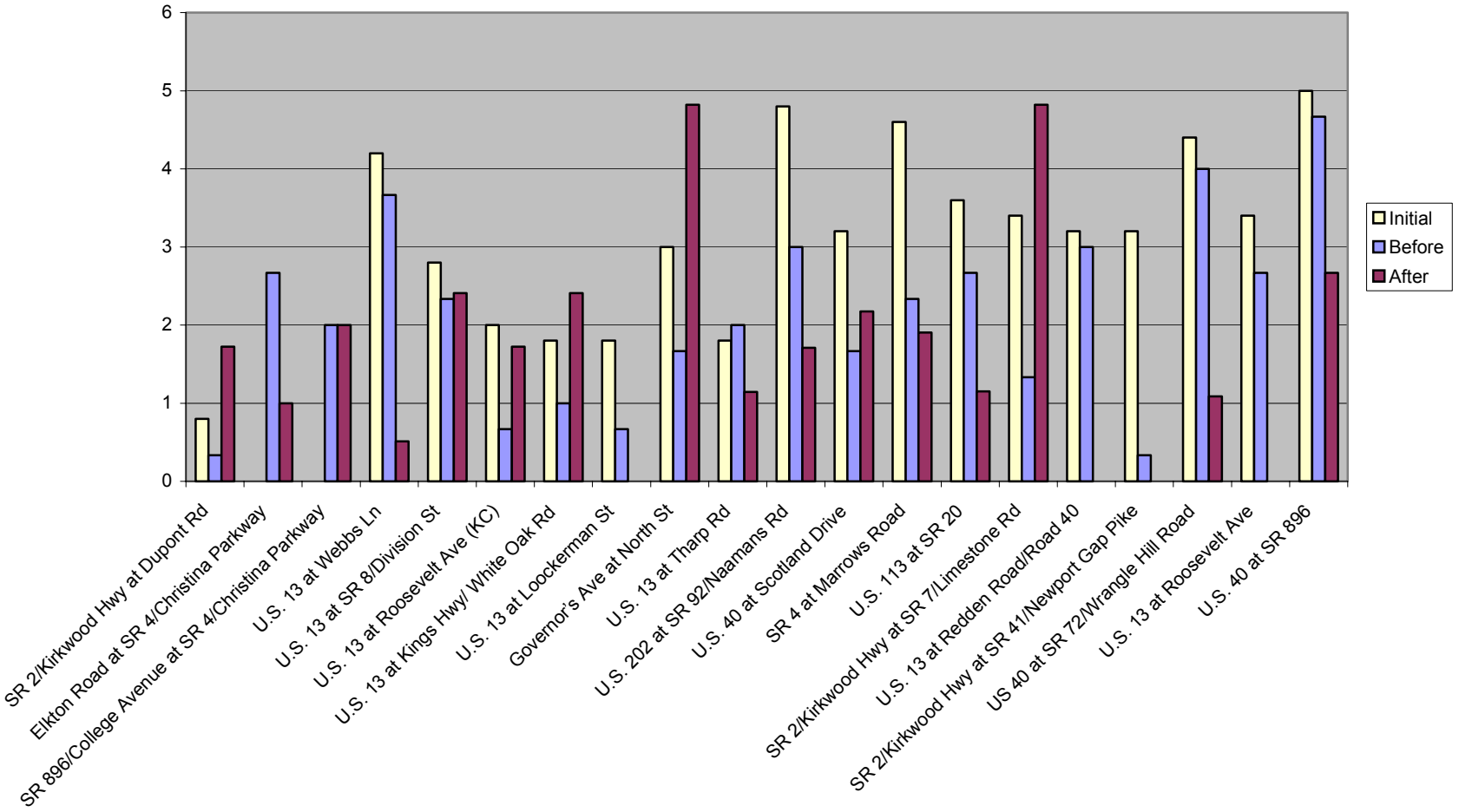
  In the first four graphs that follow, the before/after accident experience at the monitored intersections is illustrated for these four crash categories. Following that, the crash experience and percent change in violations is shown for each intersection.

Figure 1: Total Intersection Crashes per Year



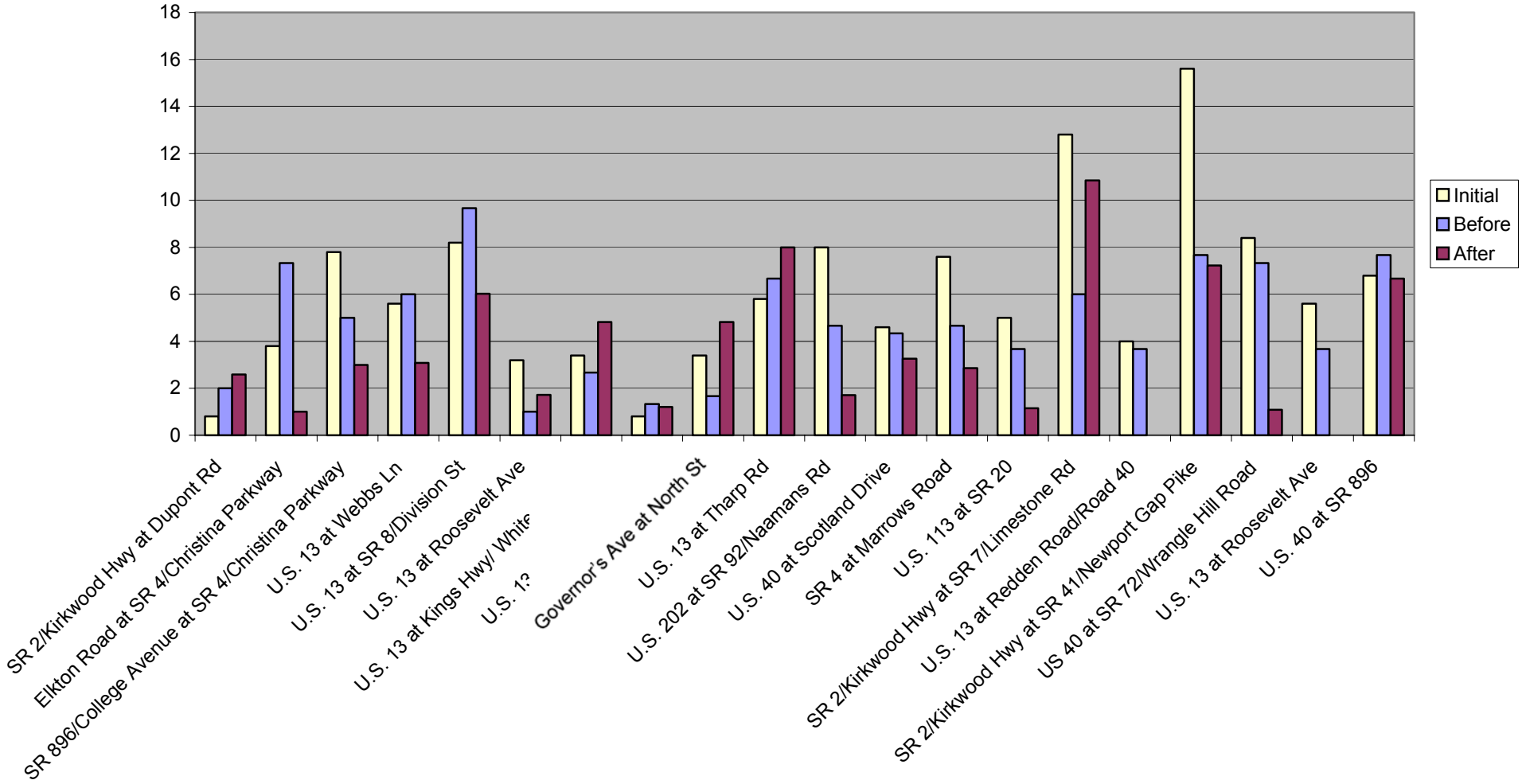
[1]Bars that appear to be missing indicate that no crashes occurred during that time period

Figure 2: Crashes Due to Red Light Running



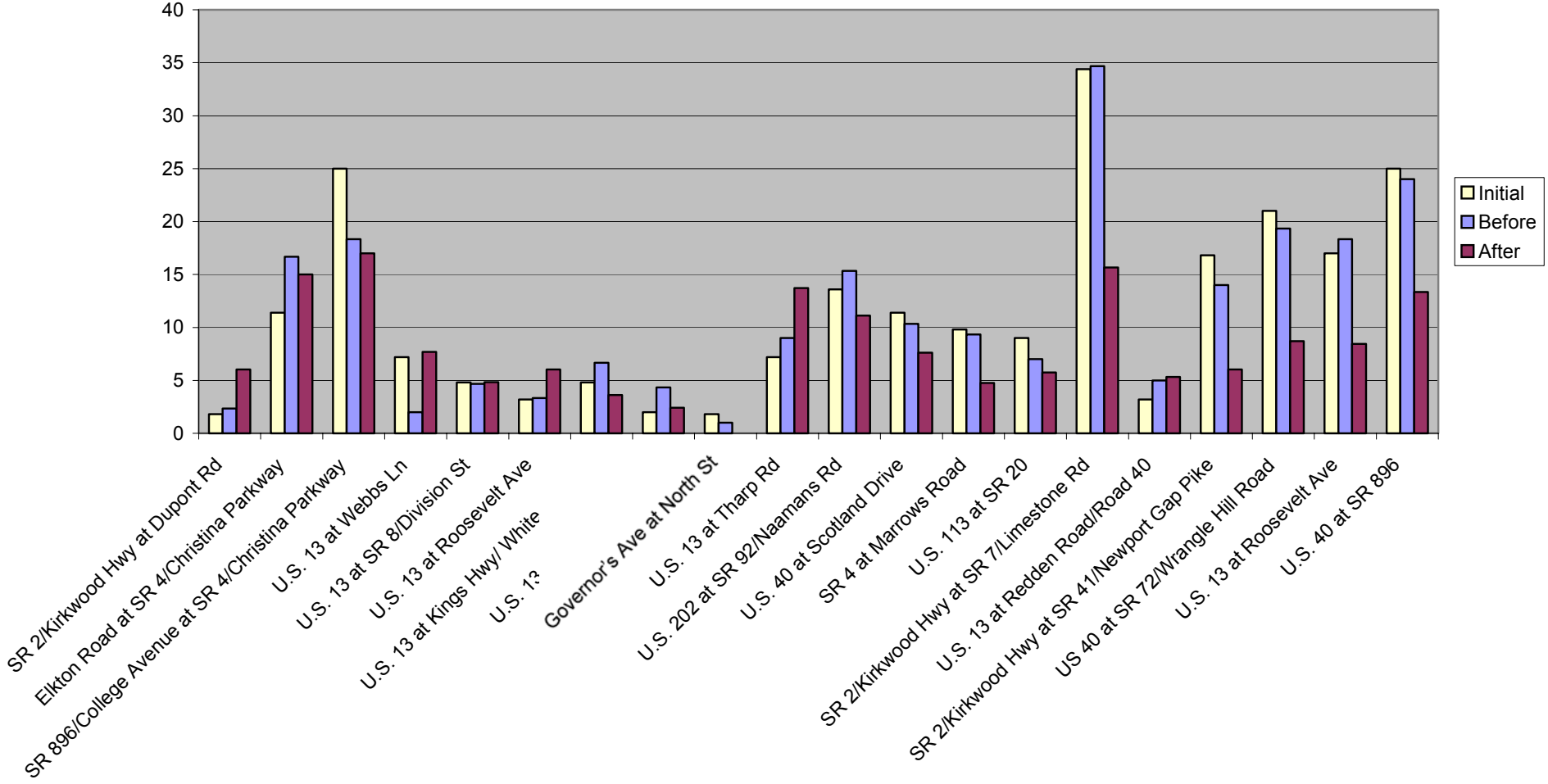
[1]Bars that appear to be missing indicate that no crashes occurred during that time period, except for the "initial" period at Elkton Road and SR 4/Christina Parkway and SR 896 and SR 4/Christina Parkway where crash data was not used during the initial selection.

Figure 3: Angle Crashes Per Year



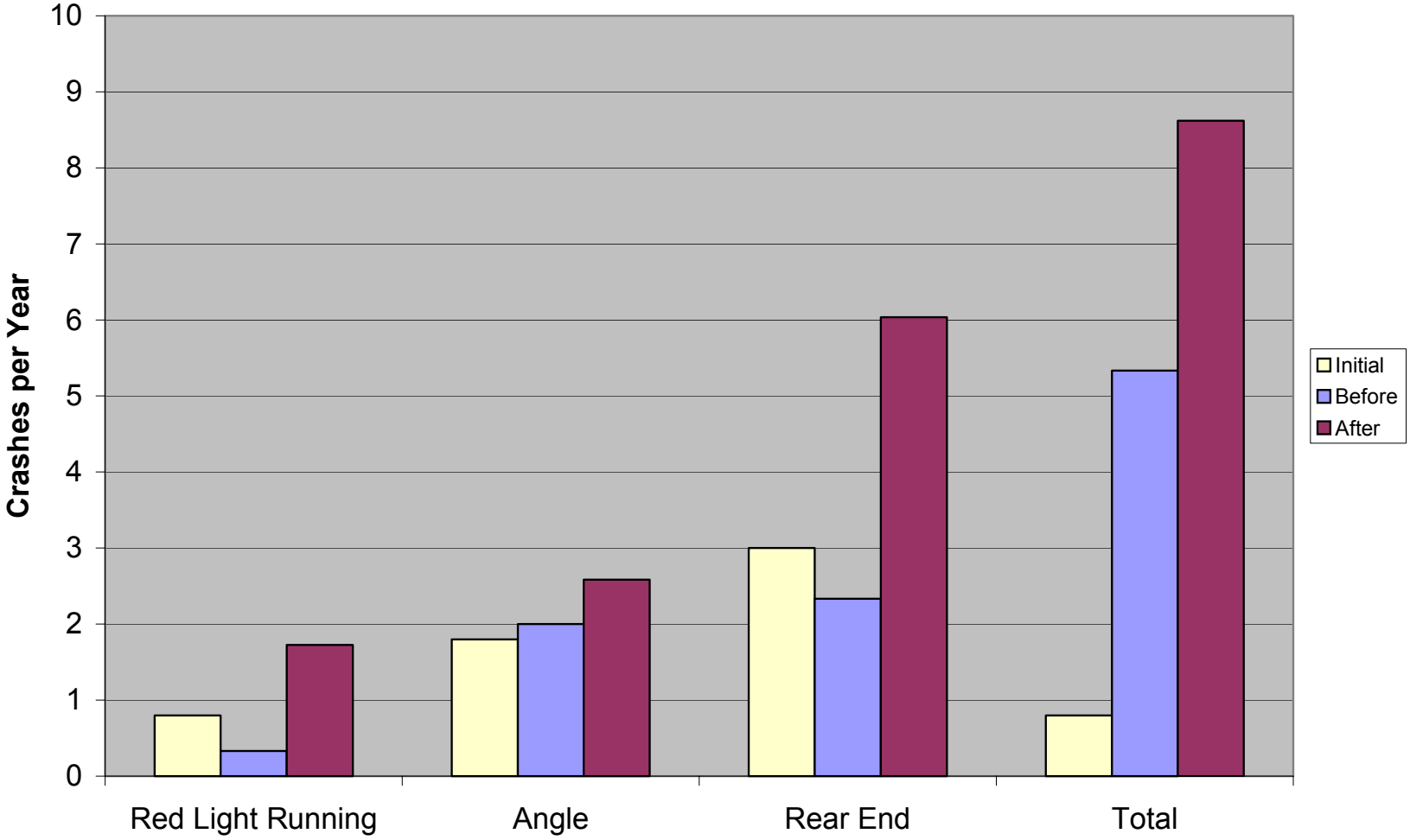
[1]Bars that appear to be missing indicate that no crashes occurred during that time period

Figure 4: Rear End Crashes Per Year



[1]Bars that appear to be missing indicate that no crashes occurred during that time period

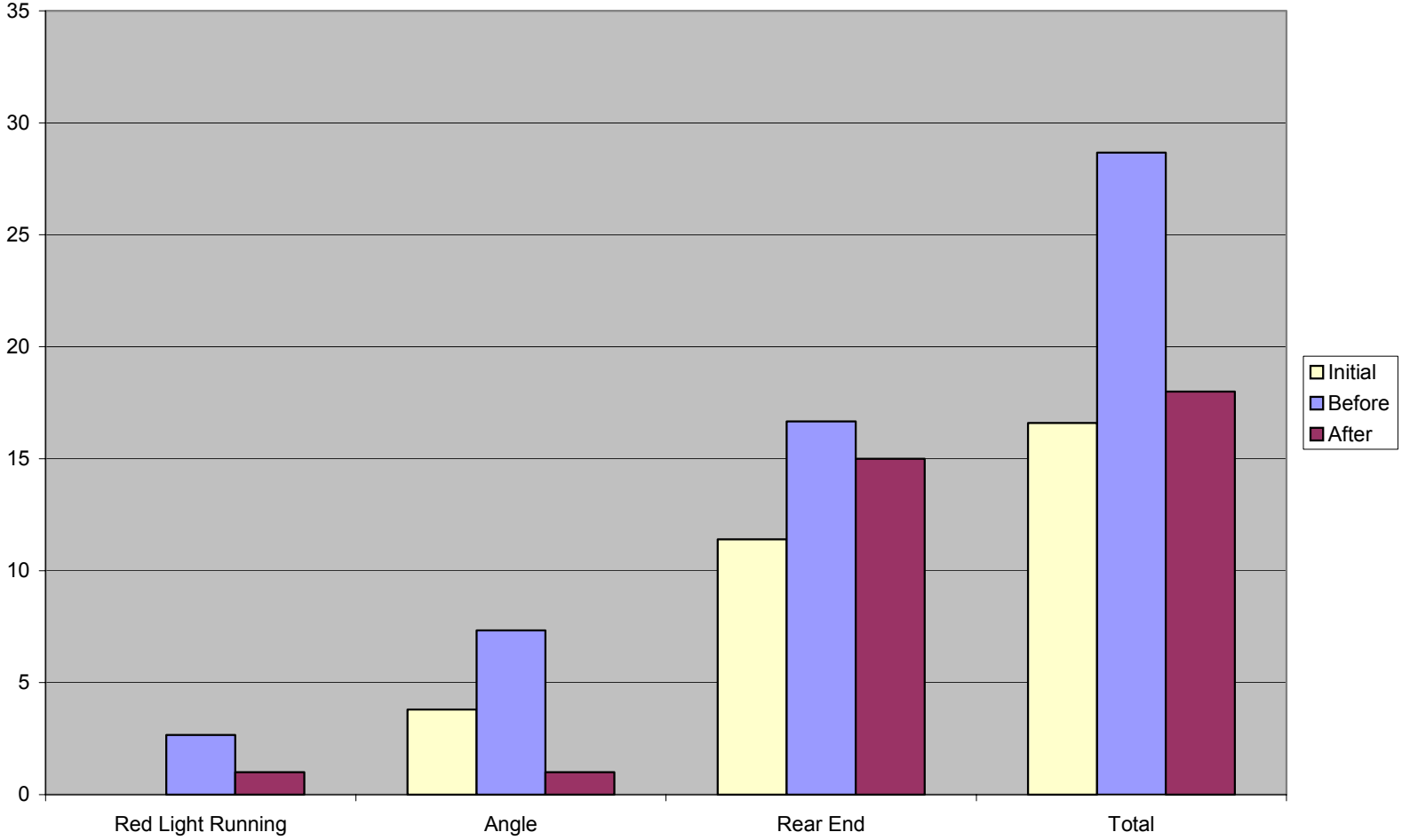
Figure 5: Crashes at SR 2/Kirkwood Highway at Dupont Road



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
EB	1,915	1,630	-15%

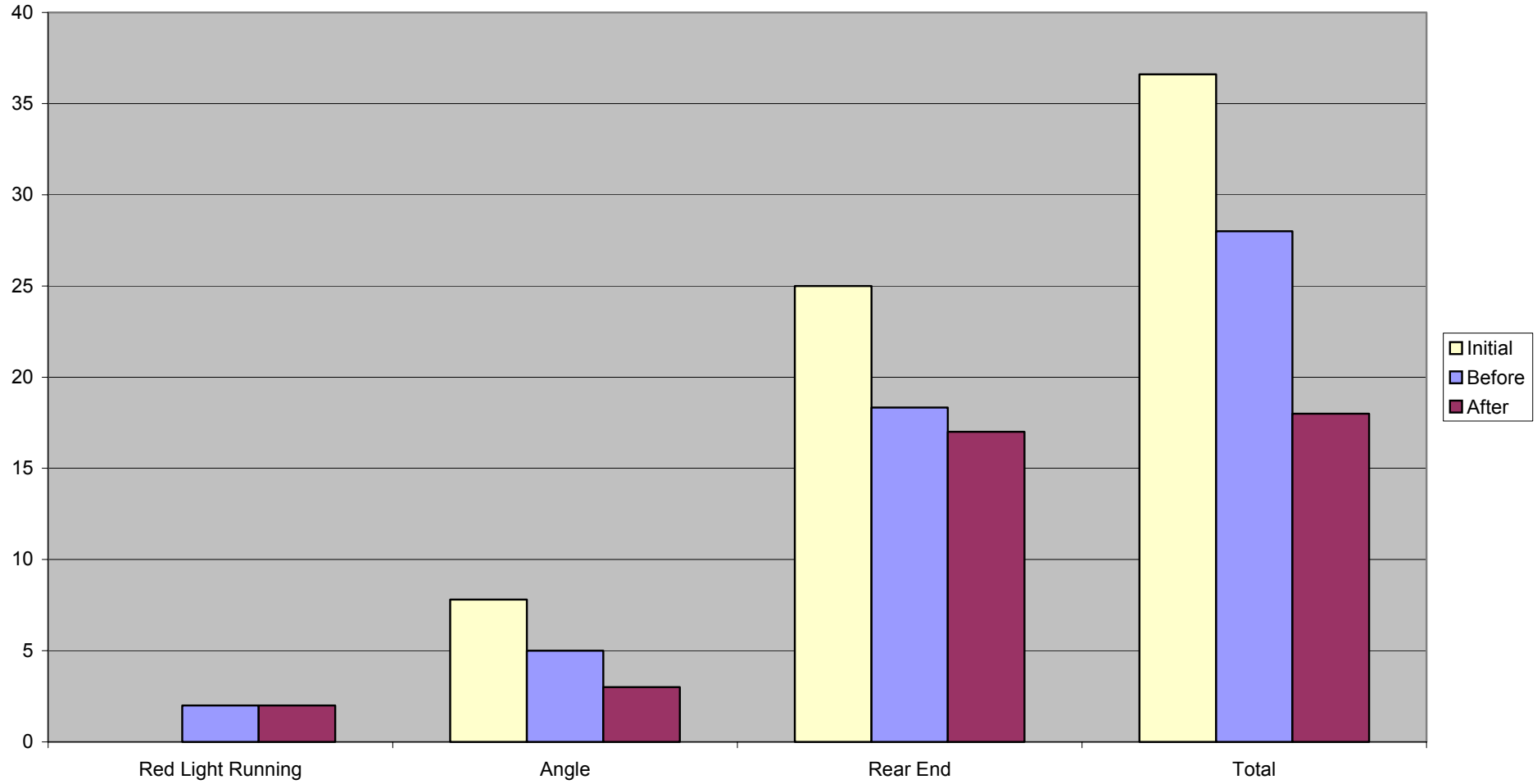
Figure 6: Crashes at Elkton Road at SR 4/Christiana Parkway



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
SB	3,797	2,585	-32%

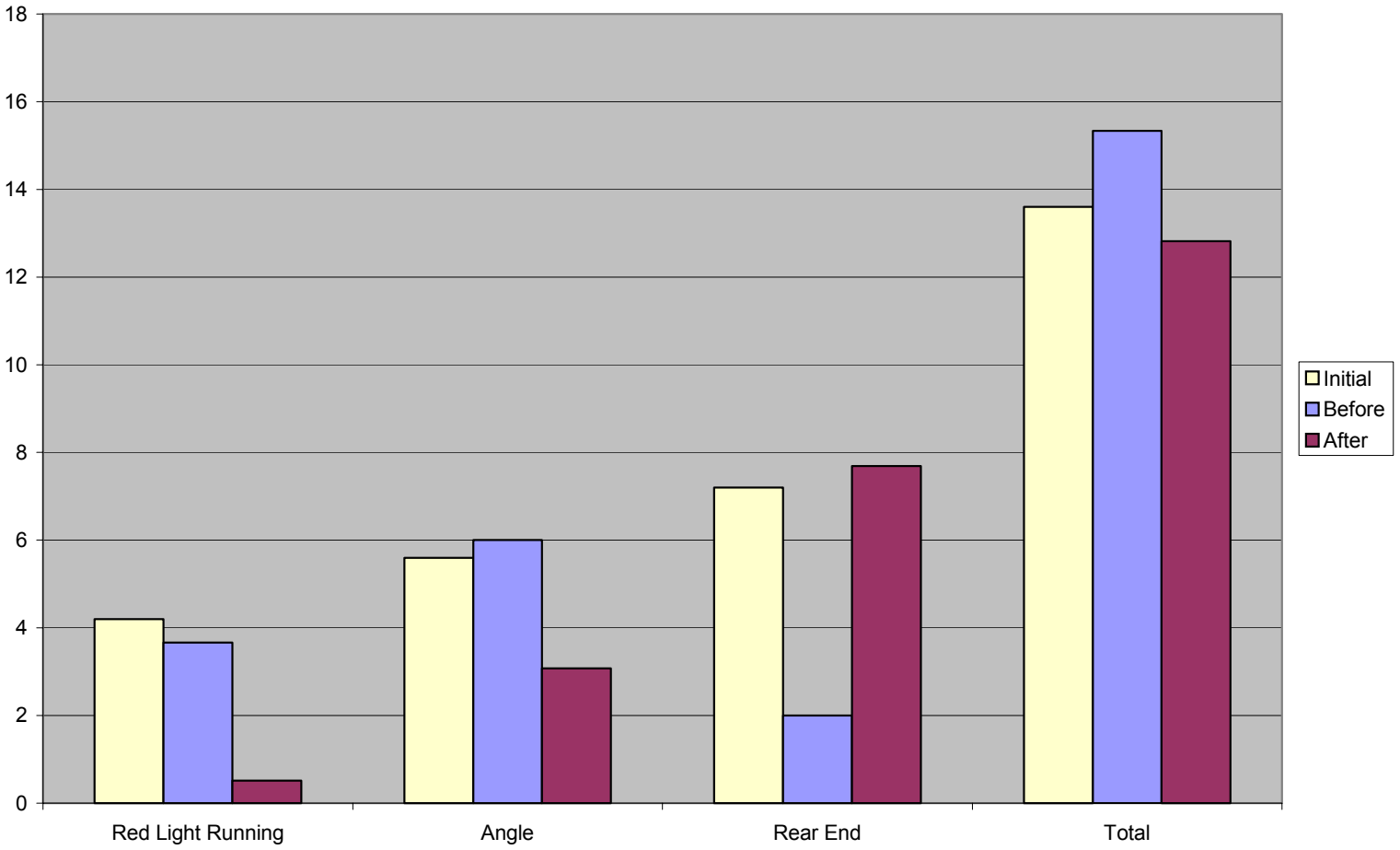
Figure 7: Crashes at SR 896/College Avenue at SR 4/Christiana



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	4,887	4,114	-16%

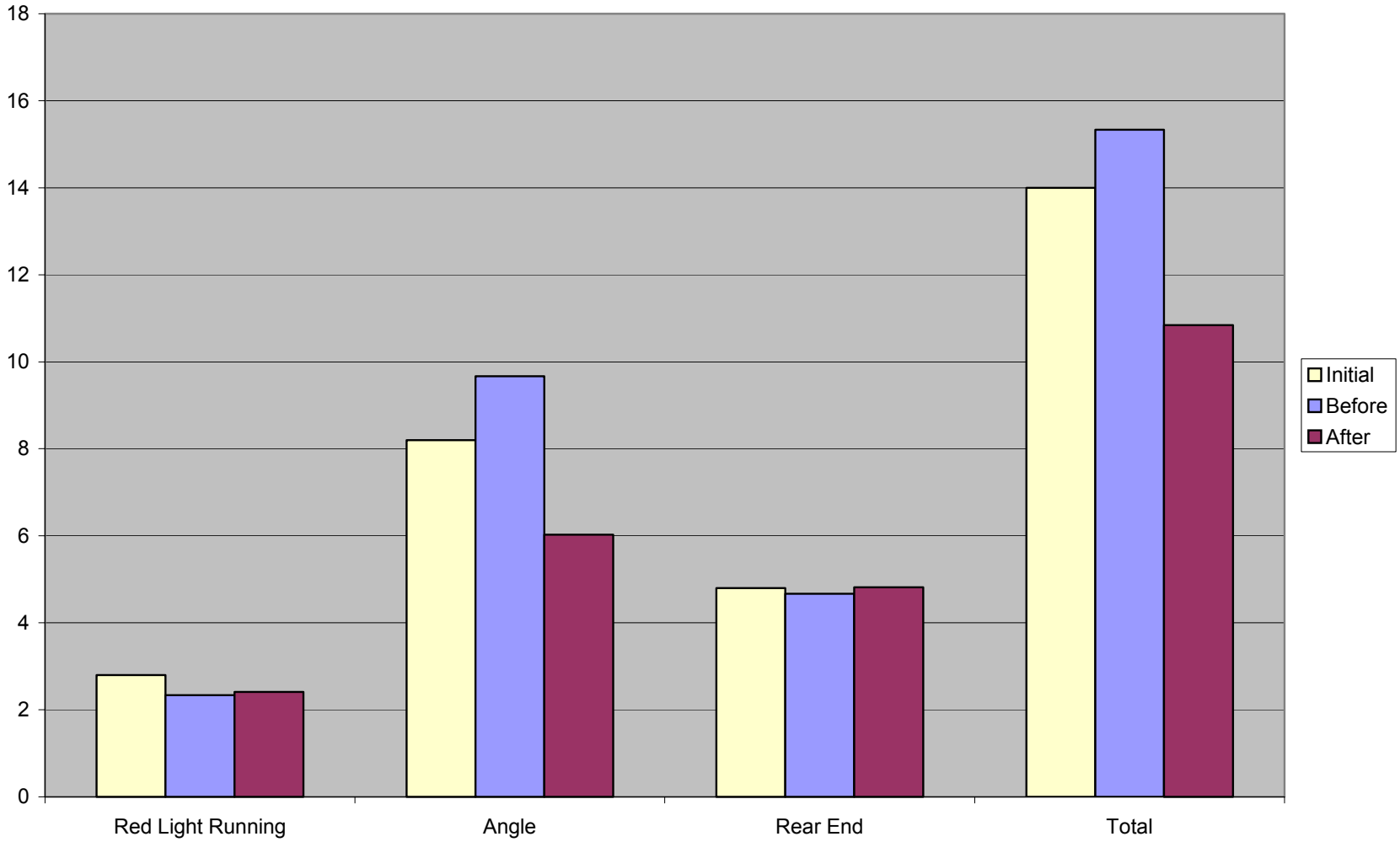
Figure 8: Crashes at U.S. 13 at Webbs Lane



VIOLATIONS PER YEAR

Approach	2004	2005	Percent Change	2006	Percent Change
NB	7,635	3,696	-52%	2,077	-44%
SB	3,077	3,182	3%	2,723	-14%

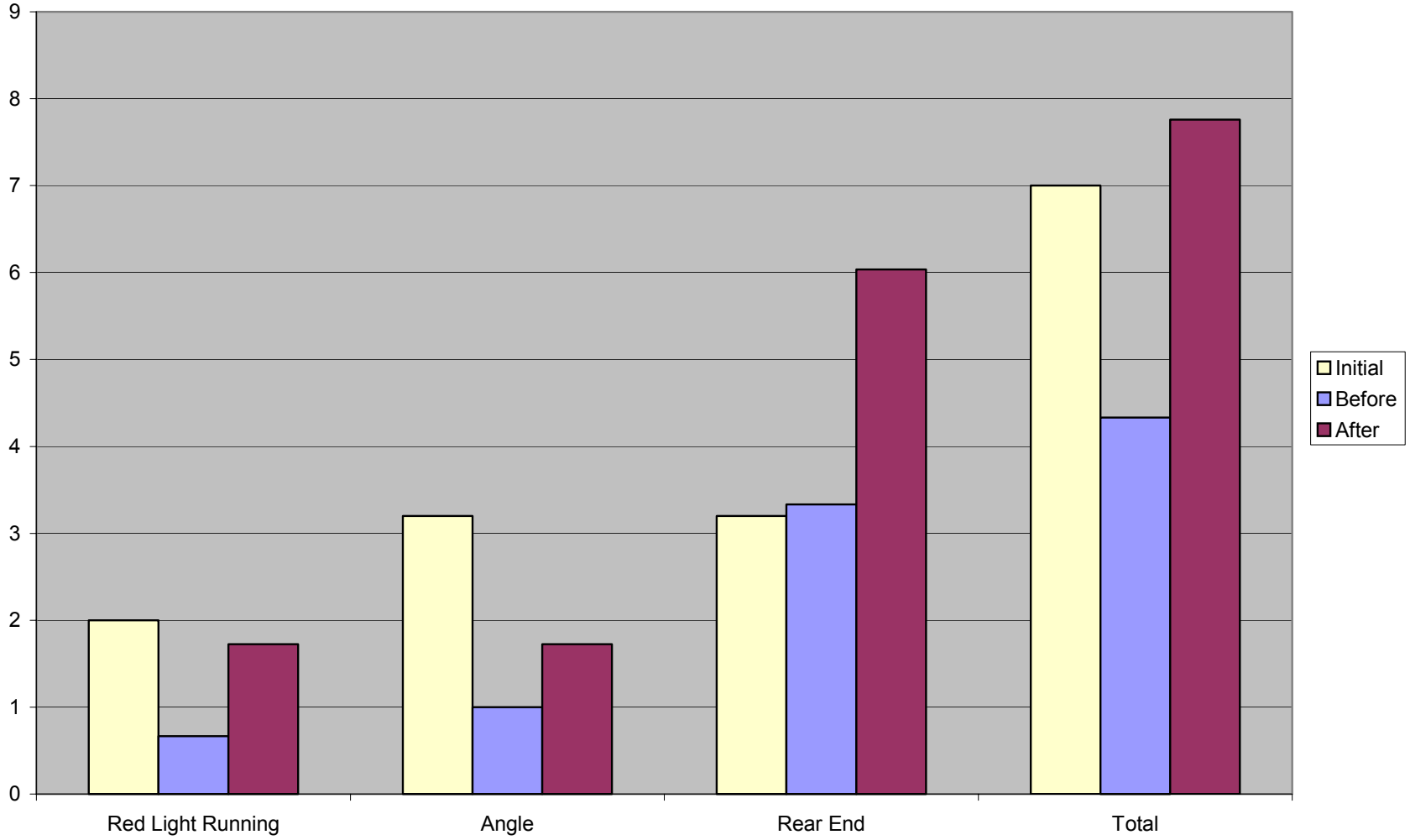
Figure 9: Crashes at U.S. 13 at SR 8/Division Street



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
SB	7,454	4,598	-38%

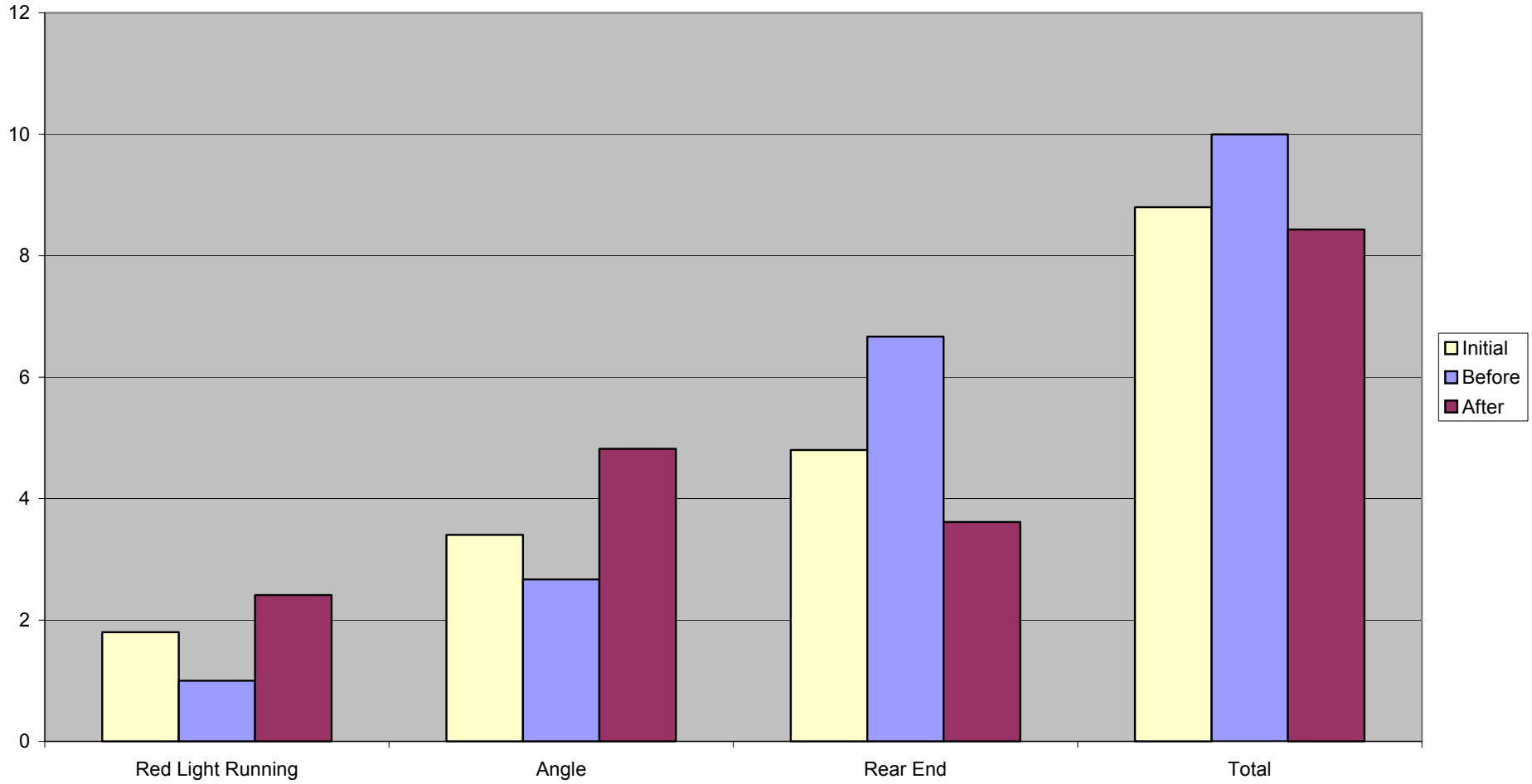
Figure 10: Crashes at U.S. 13 at Roosevelt Avenue (Kent County)



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	660	332	-50%

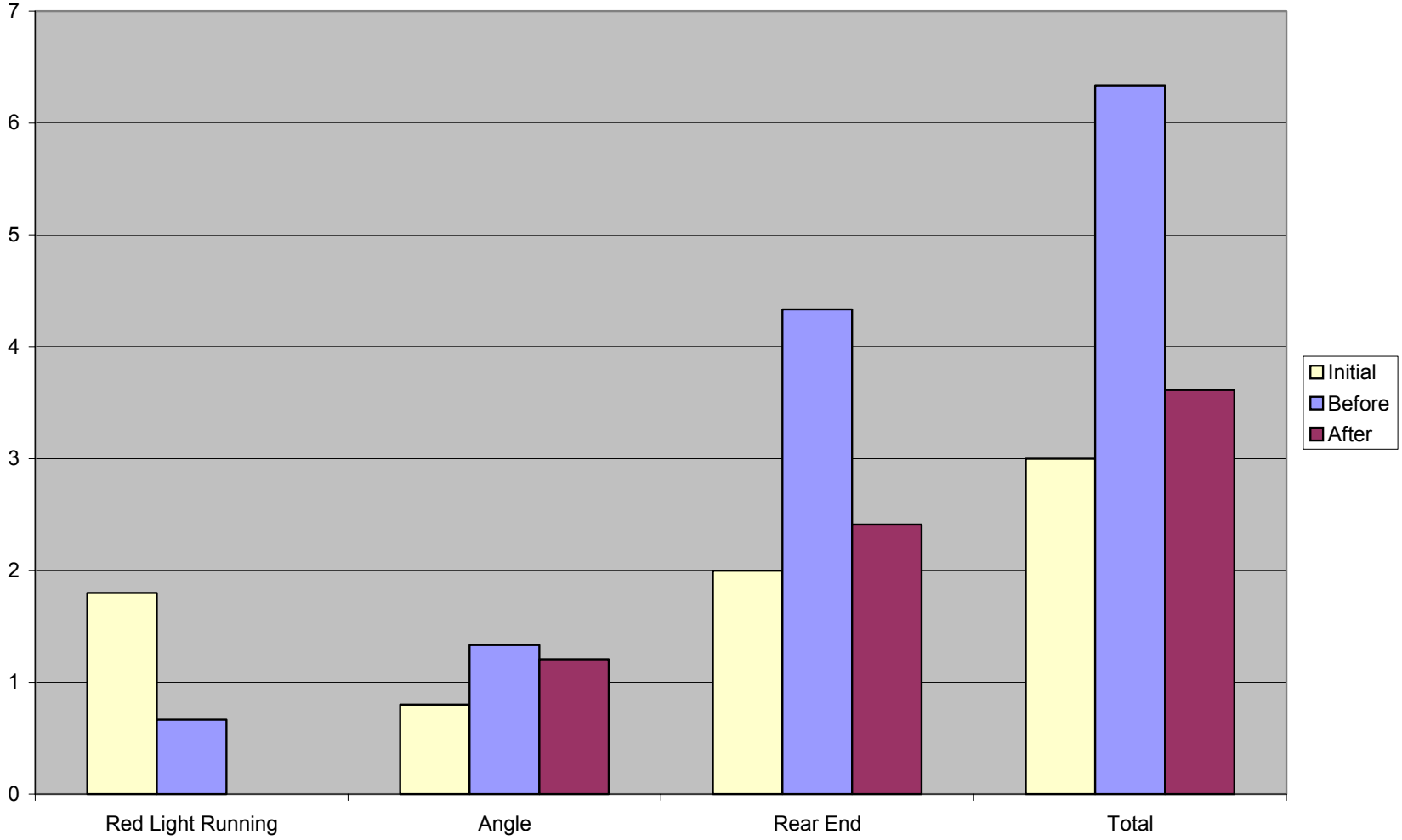
Figure 11: Crashes at U.S. 13 at Kings Highway/White Oak Road



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	9,003	6,083	-32%

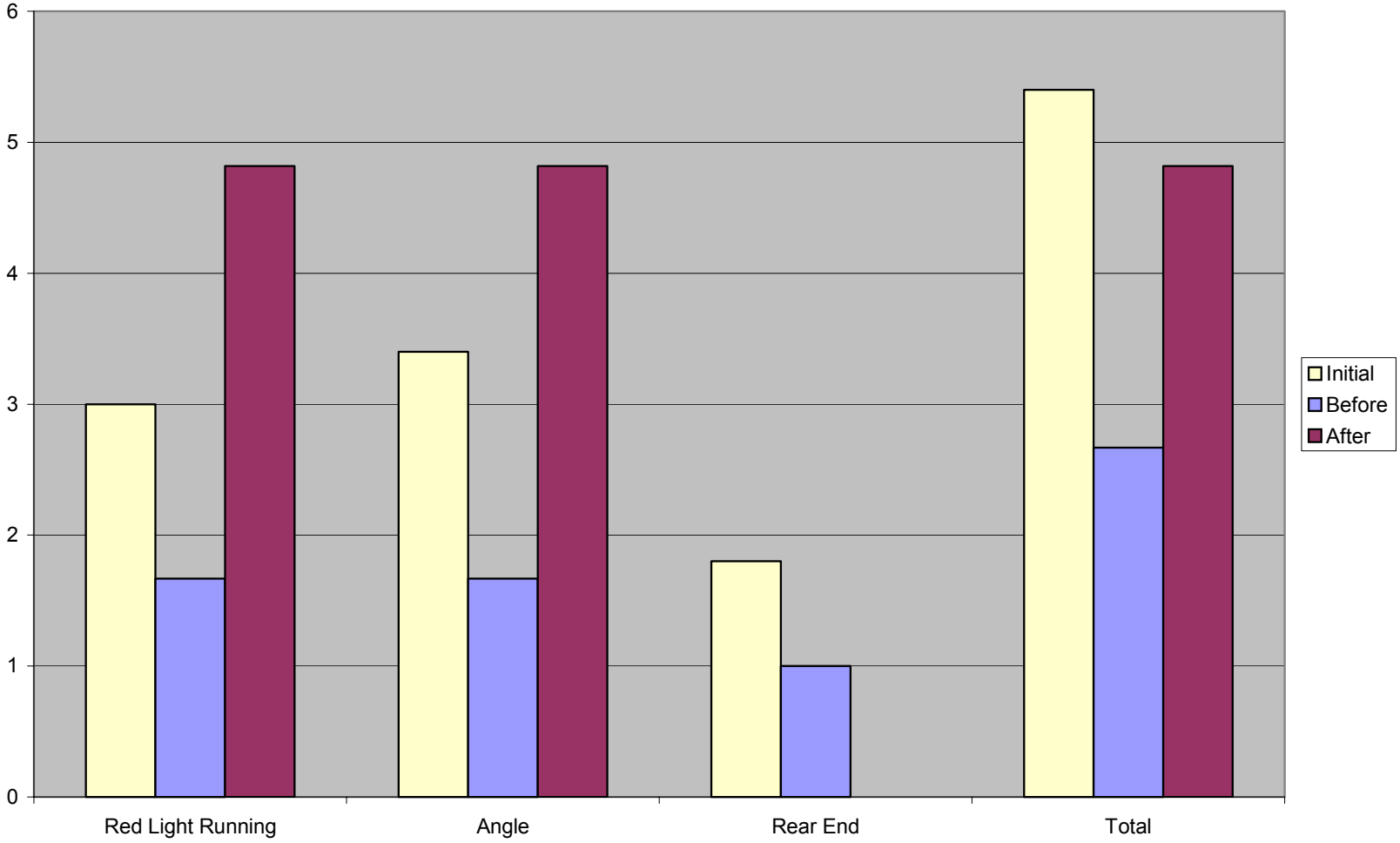
Figure 12: Crashes at U.S. 13 at Loockerman Street



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	4,486	2,684	-40%

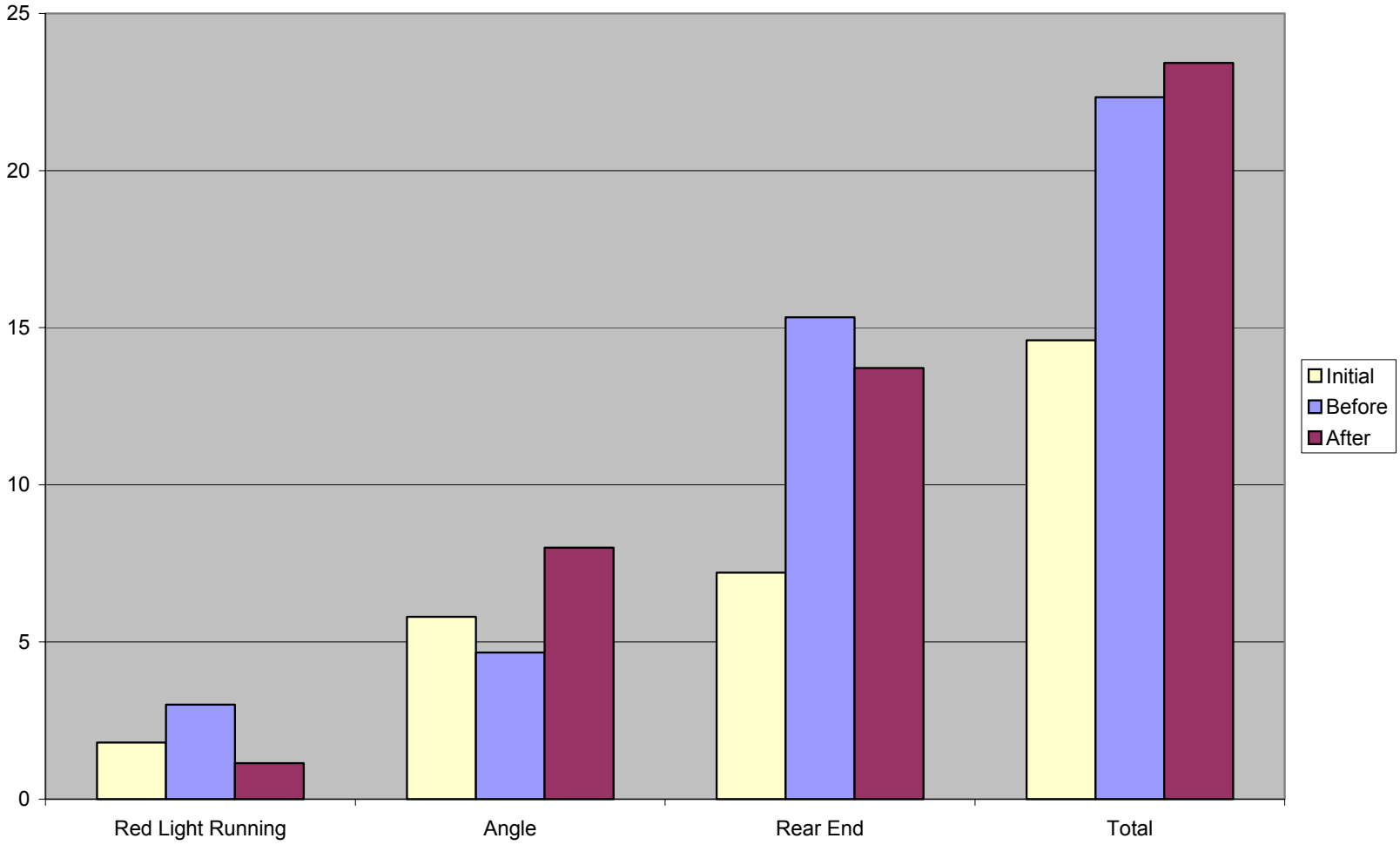
Figure 13: Crashes at Governor's Avenue at North Street



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
SB	1,320	948	-28%

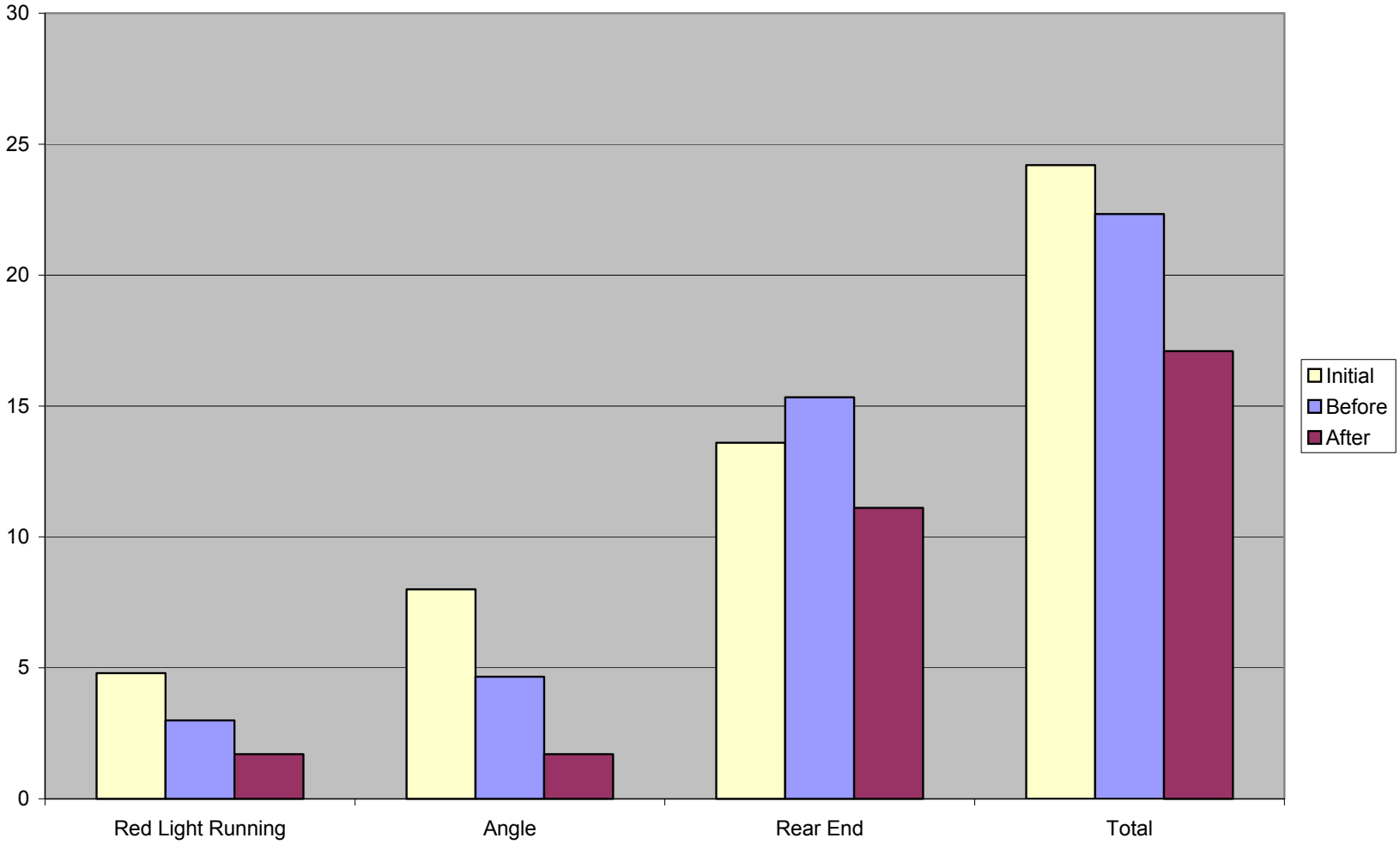
Figure 14: Crashes at U.S. 13 at Tharp Road



VIOLATIONS PER YEAR

Approach	2004	2005	Percent Change	2006	Percent Change
NB	1,012	605	-40%	292	-52%
SB	4,263	3,023	-29%	2362	-22%

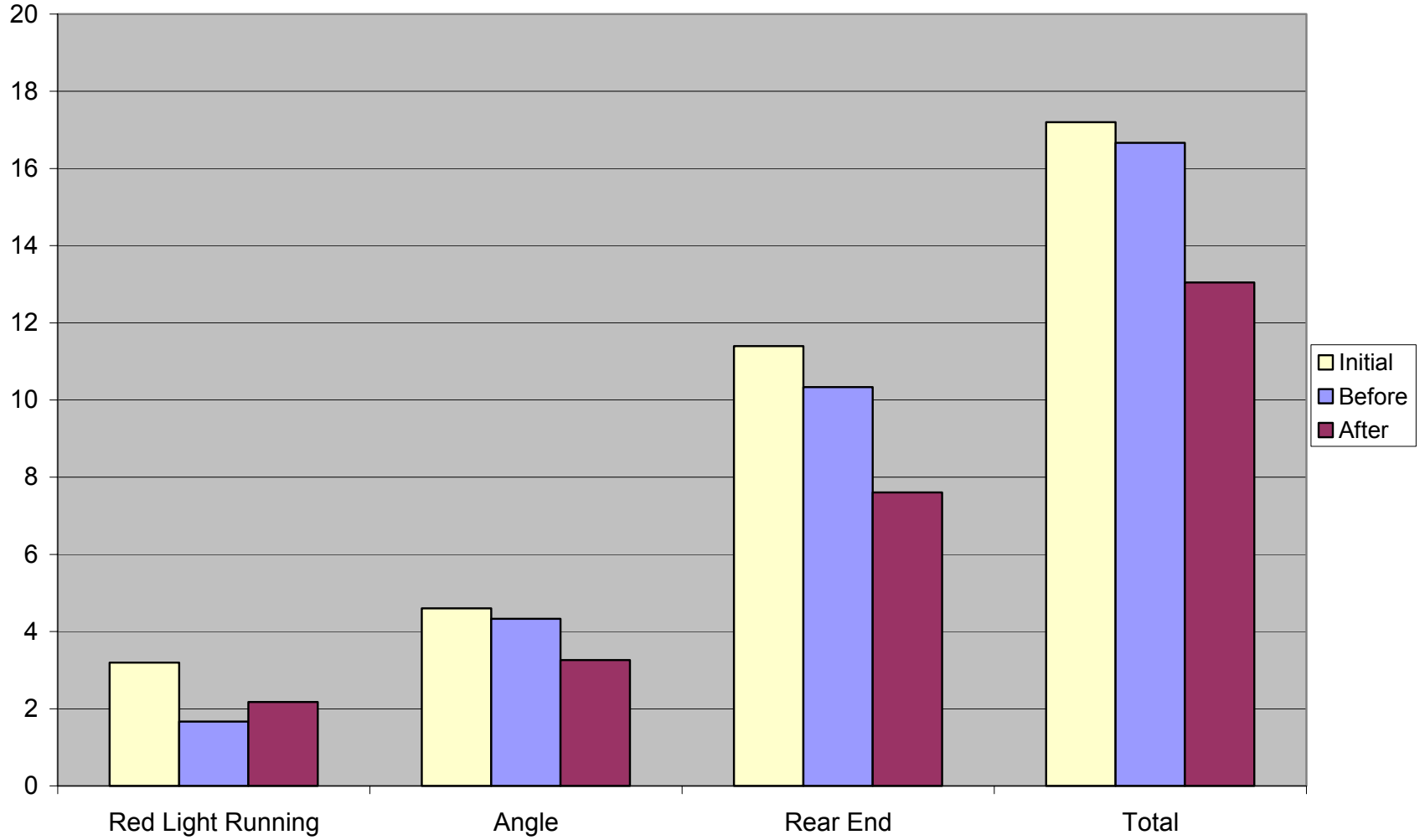
Figure 15: Crashes at U.S. 202 at SR 92/Naamans Road



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	1,751	1,387	-21%
WB	3,488	1,967	-44%

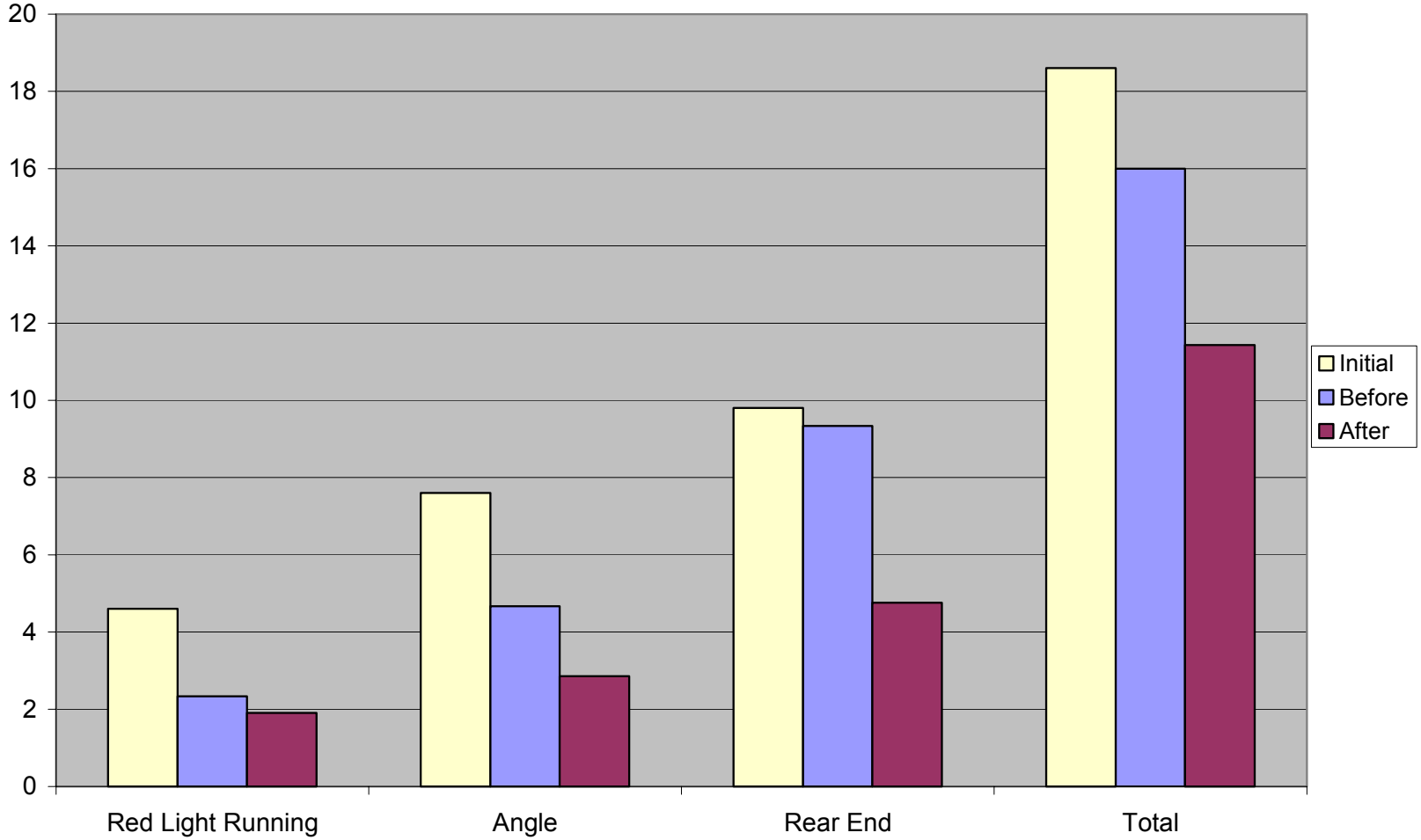
Figure 16: Crashes at U.S. 40 at Scotland Drive



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
EB	2,168	1,861	-14%

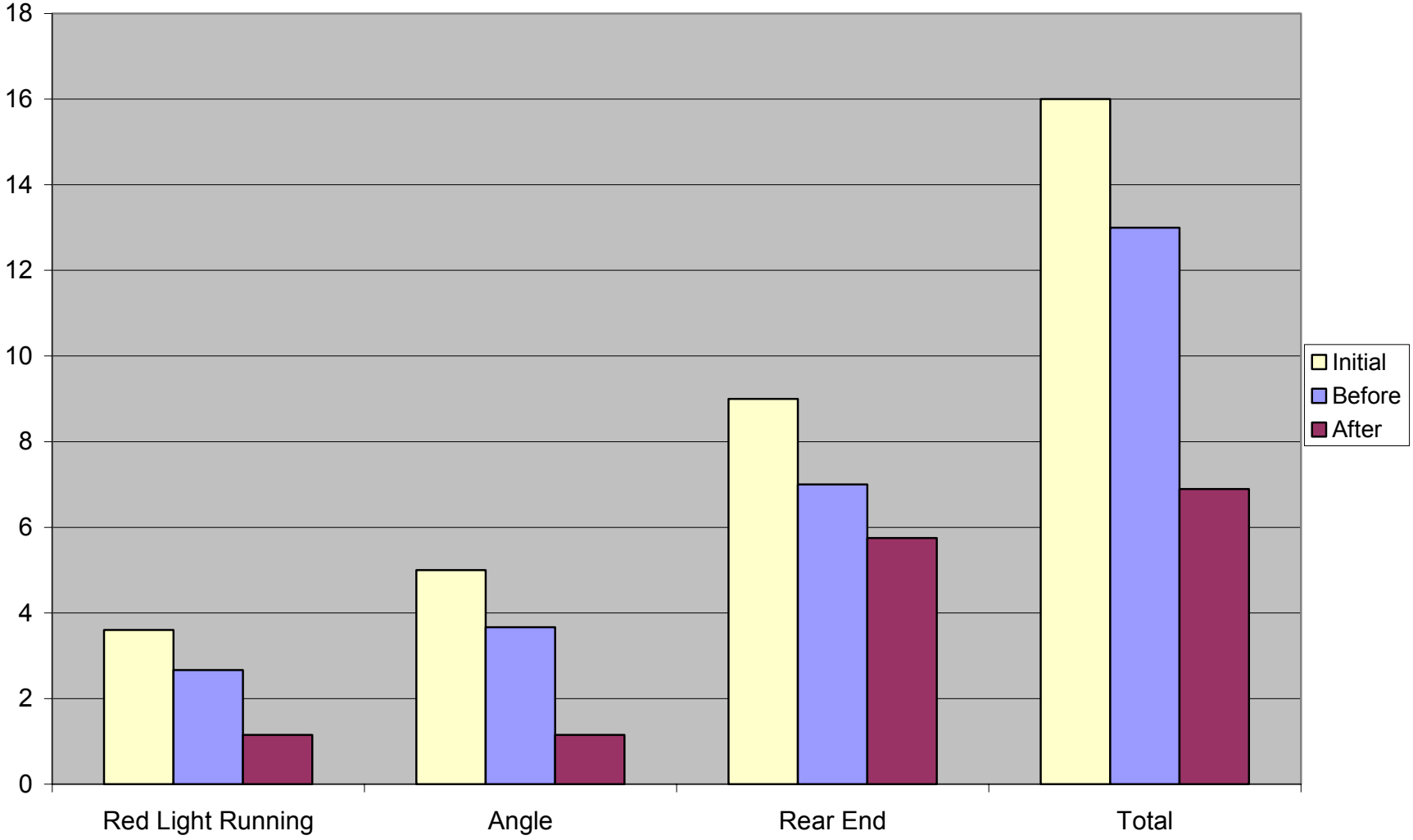
Figure 17: Crashes at SR 4 at Marrows Road



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	1,440	424	-71%
EB	371	169	-54%
WB	1,448	980	-32%

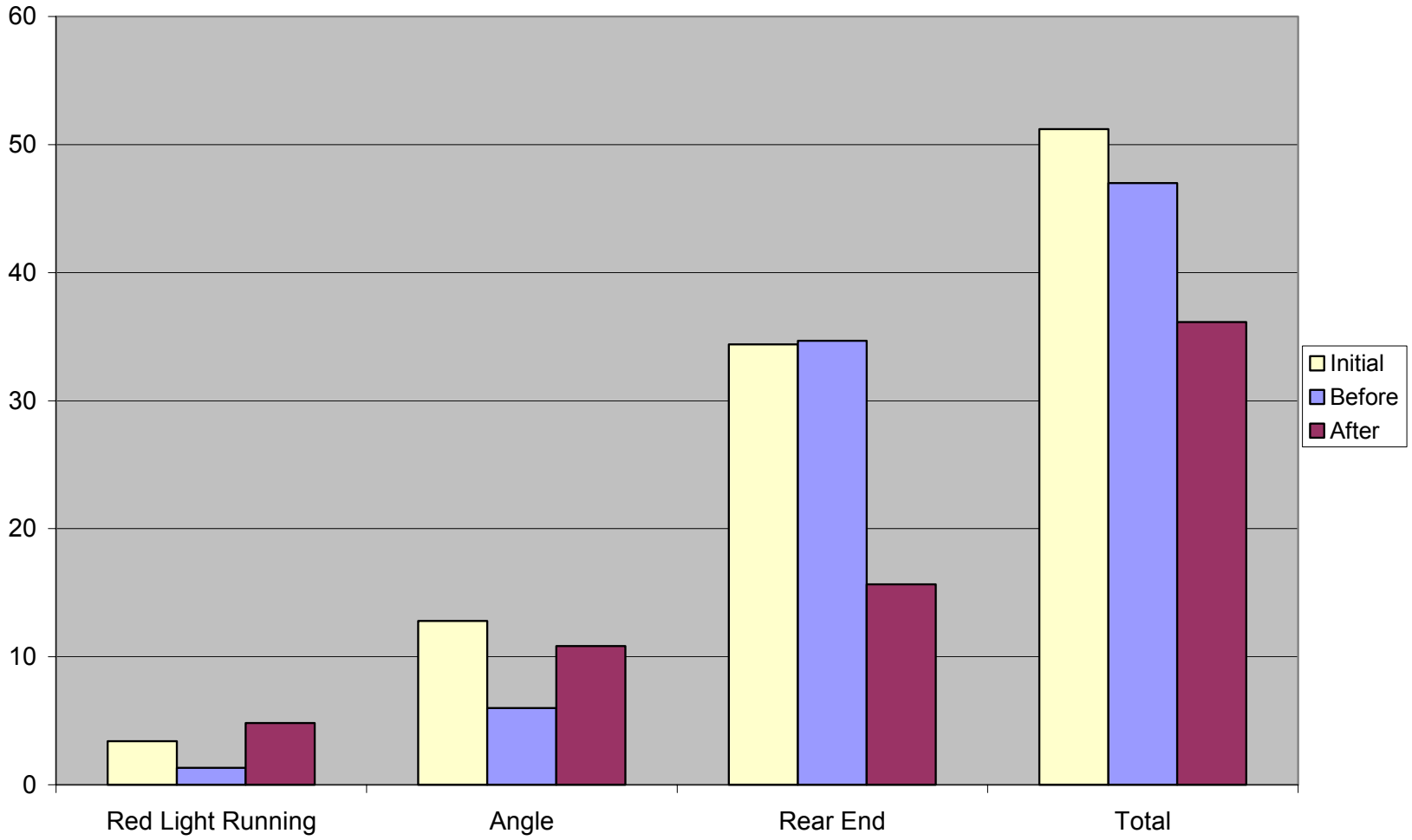
Figure 18: Crashes at U.S. 113 at SR 20



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
SB	1,480	1,440	-3%

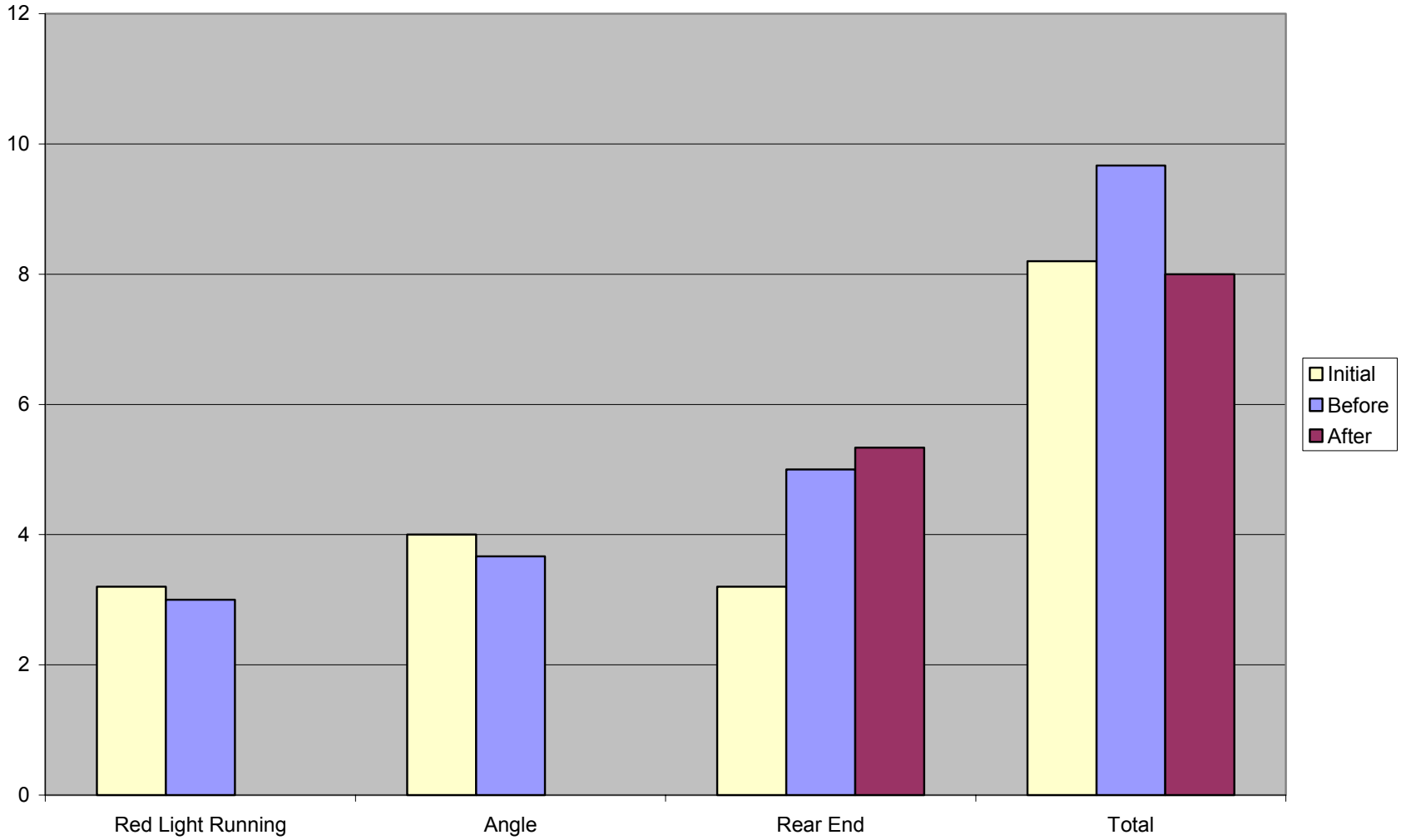
Figure 19: Crashes at SR 2/Kirkwood Highway at SR 7/Limestone Road



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	2,595	1,582	-39%
SB	3,319	2,832	-15%
WB	2,995	2,319	-23%

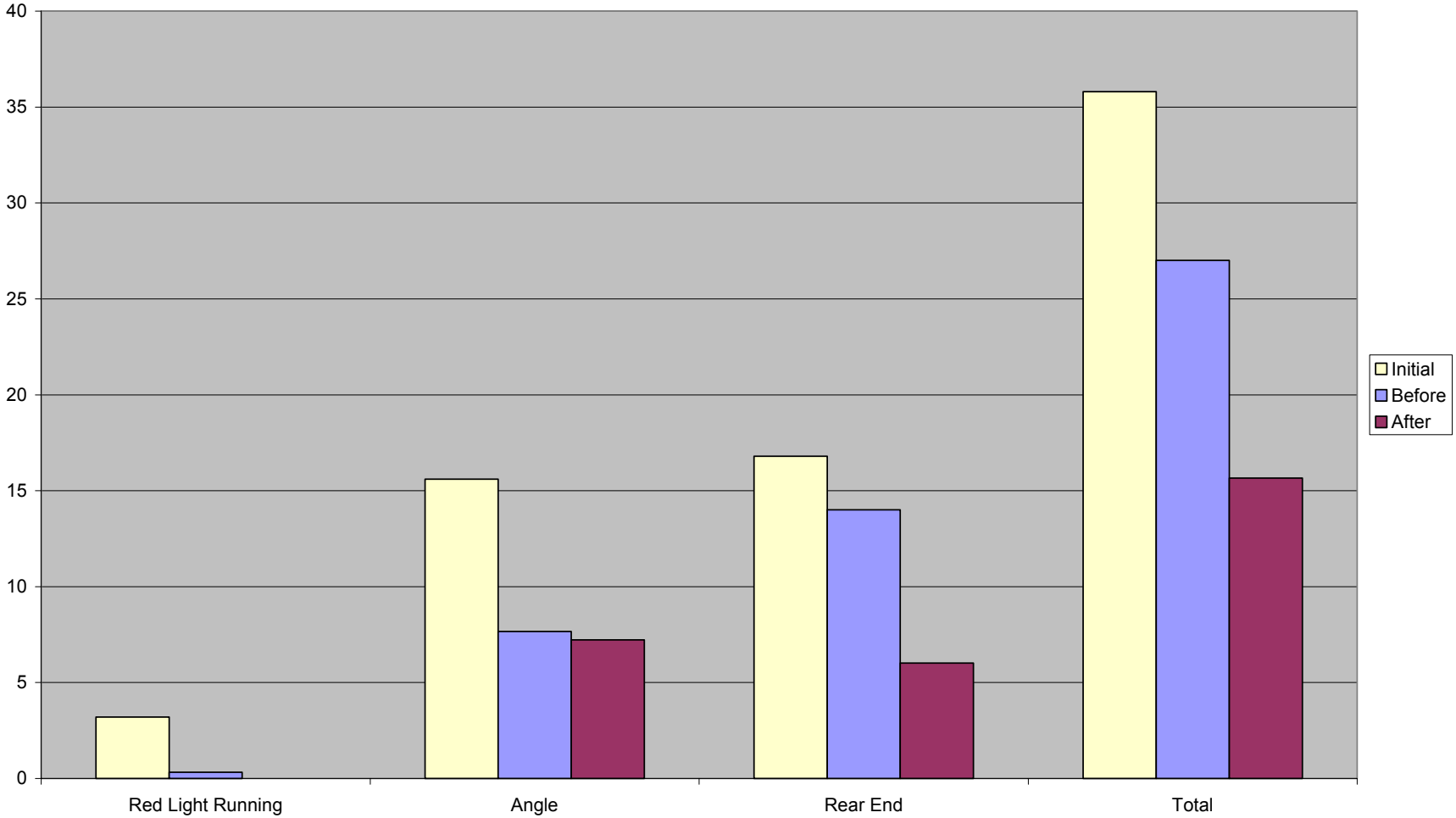
Figure 20: Crashes at U.S. 13 at Redden Road/Road 40



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	1,584	1,025	-35%
SB	2,650	1,568	-41%

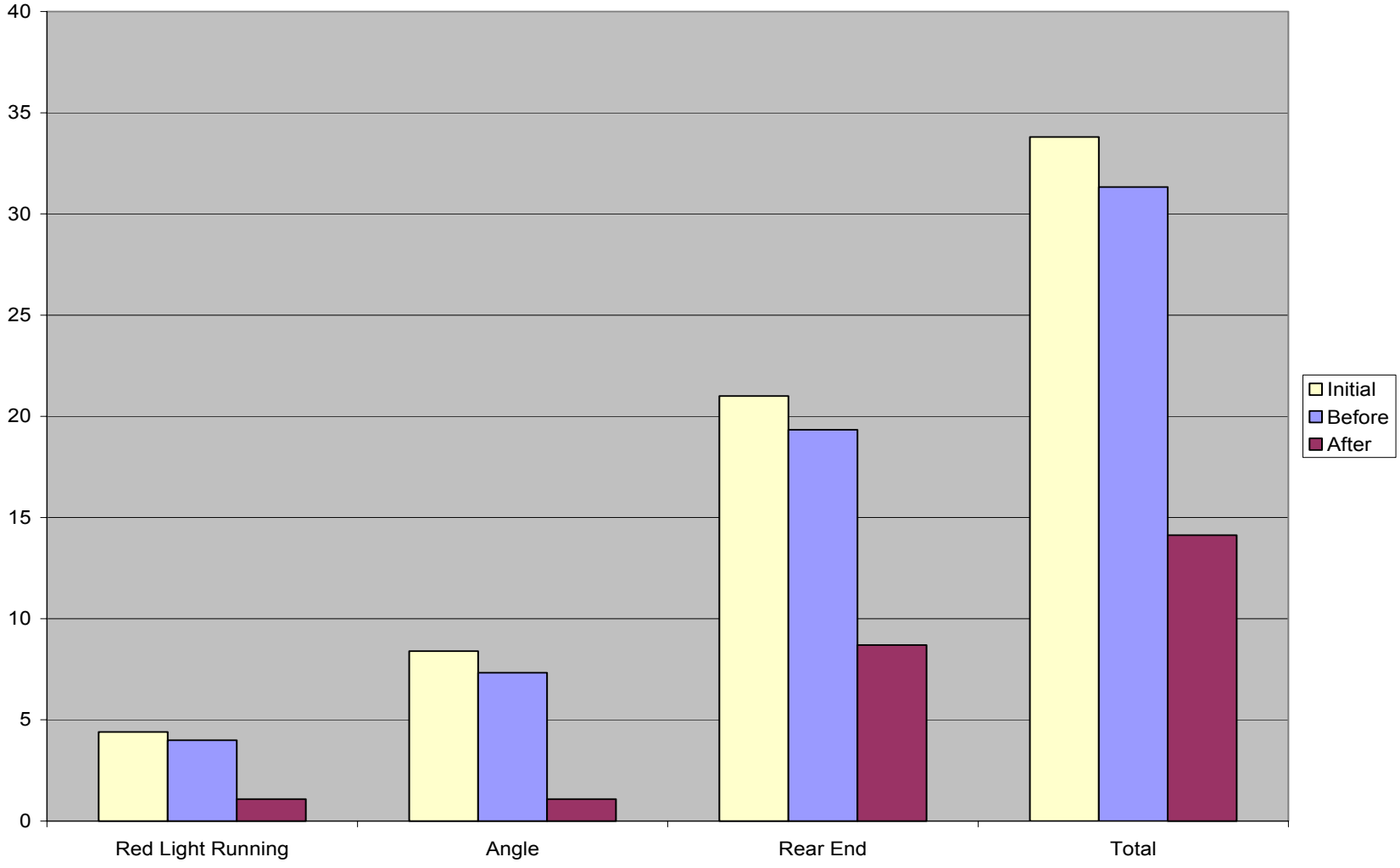
Figure 21: Crashes at SR 2/Kirkwood Highway at SR 41/Newport Gap Pike



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
EB	2,119	986	-53%
NB	1,774	1,876	6%
SB	1,795	1,461	-19%

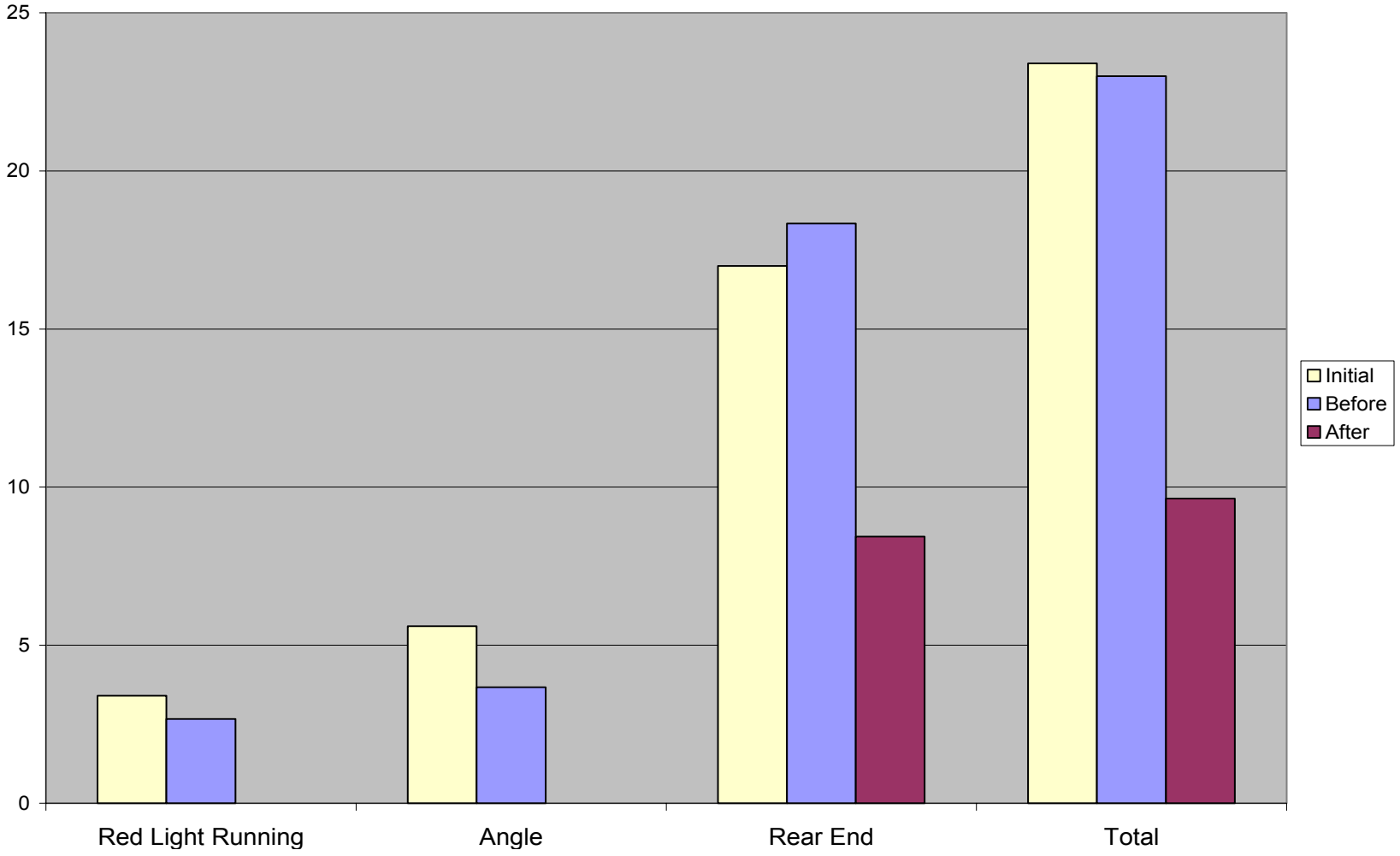
Figure 22: Crashes at U.S. 40 at SR 72/Wrangle Hill Road



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	1,776	919	-48%

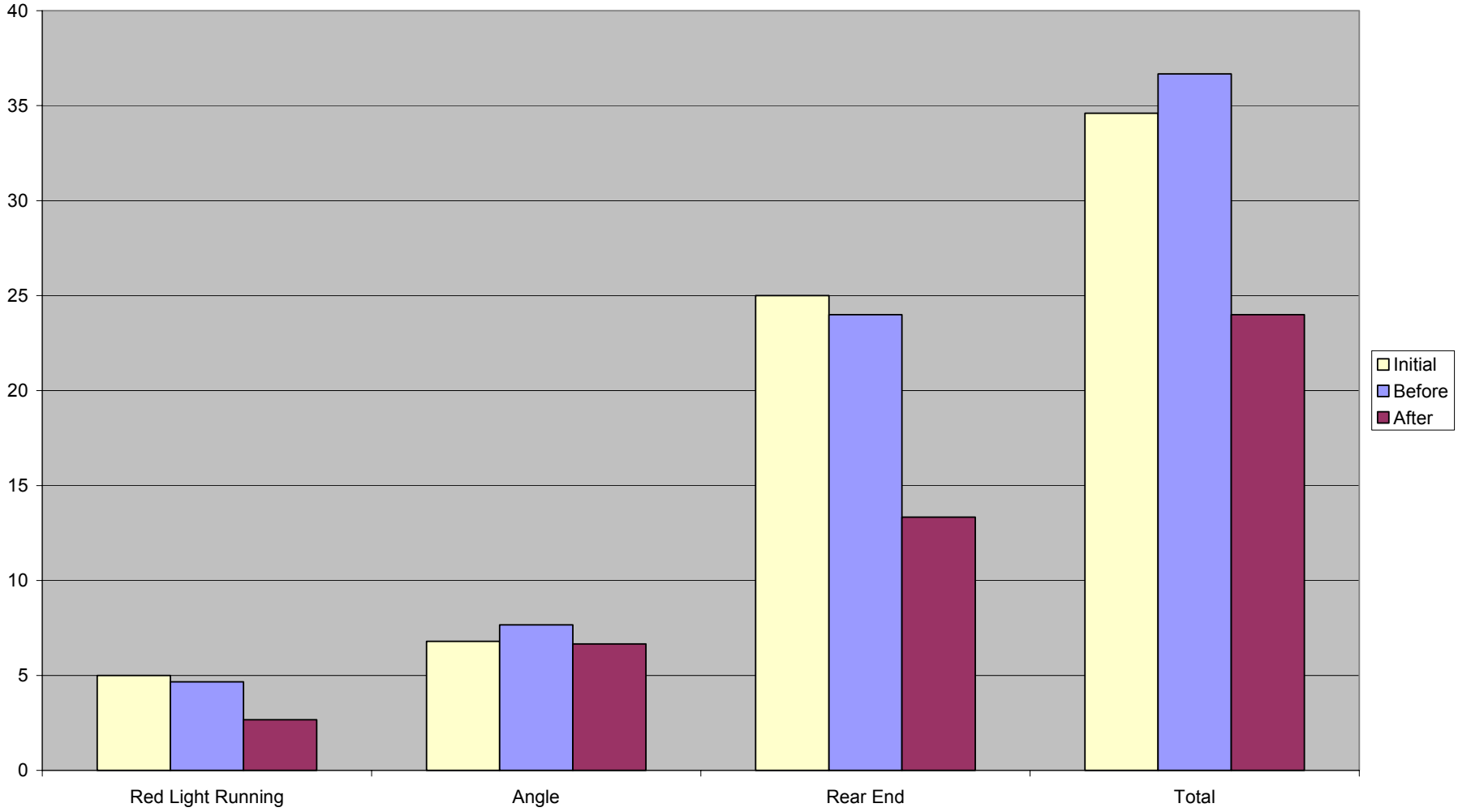
Figure 23: Crashes at U.S. 13 at Roosevelt Avenue (New Castle County)



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
NB	1,636	2,687	64%

Figure 24: Crashes at U.S. 40 at SR 896



VIOLATIONS PER YEAR

Approach	2005	2006	Percent Change
WB	2,861	1,717	-40%

TABLE 2: RED LIGHT CRASHES BY AT-FAULT DRIVER FOR INTERSECTIONS IN ERLSP

Intersection	Jurisdiction	Dates[1]			NB	SB	EB	WB	Total
		Before	After[2]						
SR 2/Kirkwood Hwy at Dupont Rd	Elsmere	2/1/02 - 1/30/05	2/1/05 - 6/30/06	Before	0	0	0	0	**0**
				After	0	1	0	0	**1**
Elkton Road at SR 4/Christina Parkway	Newark	3/31/02 - 3/30/05	3/31/05 - 6/30/06	Before	2	3	1	2	**8**
				After	0	1	0	0	**1**
SR 896/College Avenue at SR 4/Christina Parkway	Newark	3/31/02 - 3/30/05	3/31/05 - 6/30/06	Before	1	0	0	5	**6**
				After	1	0	0	1	**2**
U.S. 13 at Webbs Ln	Dover	4/15/01 - 4/14/04	4/15/04 - 6/30/06	Before	5	4	1	2	**12**
				After	2	1	0	0	**3**
U.S. 13 at SR 8/Division St	Dover	5/26/02 - 5/25/05	5/26/05 - 6/30/06	Before	3	2	0	2	**7**
				After	0	2	0	0	**2**
U.S. 13 at Roosevelt Ave	Dover	2/1/02 - 1/31/05	2/1/05 - 6/30/06	Before	1	0	0	0	**1**
				After	1	0	0	0	**1**
U.S. 13 at Kings Hwy/ White Oak Rd	Dover	5/27/02 - 5/26/05	5/27/05 - 6/30/06	Before	1	1	0	0	**2**
				After	0	2	0	0	**2**
U.S. 13 at Loockerman St	Dover	6/2/02 - 6/1/05	6/2/05 - 6/30/06	Before	1	0	0	0	**1**
				After	0	0	0	0	**0**
Governor's Ave at North St	Dover	5/27/02 - 5/26/05	5/27/05 - 6/30/06	Before	0	1	1	2	**4**
				After	2	0	1	0	**3**
U.S. 13 at Tharp Rd	Seaford	5/24/01 - 5/23/04	7/2/04 - 6/30/06	Before	3	4	1	0	**8**
				After	2	1	0	0	**3**

Intersection	Jurisdiction	Dates[1]			NB	SB	EB	WB	Total
		Before	After[2]						
U.S. 202 at SR 92/Naamans Rd	Unincorporated	1/28/02 - 1/27/05	1/28/05 - 6/30/06	Before	6	1	0	0	**7**
				After	0	0	2	0	**2**
U.S. 40 at Scotland Drive	Unincorporated	4/27/02 - 4/26/05	4/27/05 - 6/30/06	Before	0	0	4	4	**8**
				After	0	0	0	2	**2**
SR 4 at Marrows Road	Unincorporated	3/3/02 - 3/2/05	3/3/05 - 6/30/06	Before	1	0	3	2	**6**
				After	0	0	0	1	**1**
U.S. 113 at SR 20	Unincorporated	5/17/02 - 5/16/05	5/17/05 - 6/30/06	Before	3	4	0	1	**8**
				After	1	0	0	0	**1**
SR 2/Kirkwood Hwy at SR 7/Limestone Rd	Unincorporated	5/27/02 - 5/26/05	5/27/05 - 6/30/06	Before	1	0	1	2	**4**
				After	1	2	0	1	**4**
U.S. 13 at Redden Road/Road 40	Unincorporated	4/27/02 - 4/26/05	6/30/05 - 6/30/06	Before	1	5	2	0	**8**
				After	0	0	0	0	**0**
SR 2/Kirkwood Hwy at SR 41/Newport Gap Pike	Unincorporated	5/27/02 - 5/26/05	5/27/05 - 6/30/06	Before	0	0	0	1	**1**
				After	0	0	0	0	**0**
US 40 at SR 72/Wrangle Hill Road	Unincorporated	4/29/02 - 4/28/05	4/29/05 - 6/30/06	Before	3	1	3	6	**19**
				After	0	0	0	0	**1**
U.S. 13 at Roosevelt Ave	Unincorporated	5/25/02 - 5/24/05	5/25/05 - 6/30/06	Before	2	2	0	0	**4**
				After	0	0	0	0	**0**
U.S. 40 at SR 896	Unincorporated	6/8/02 - 6/7/05	6/8/05 - 6/30/06	Before	4	2	3	0	**11**
				After	0	1	0	0	**2**

- **FY 2007 Bond Bill Epilogue Section 113, 2c: Number of Affidavits Files by Registered Owners Who Implicate Someone Else as Violator**

Under the ERLSP, the Notice of Civil Violation sent to the registered owner contains the following caption:

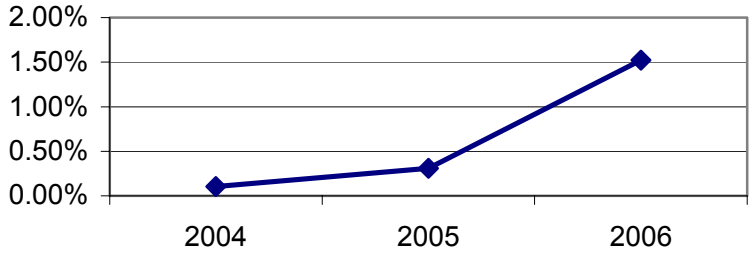
IF YOU WERE NOT THE DRIVER, FILE AN AFFIDAVIT NAMING THE DRIVER. *You may avoid payment of this assessment by completing the AFFIDAVIT section below stating that you were not the driver and providing the name of the person who had custody of the vehicle at the time of the violation. If you do not know the name and address of the person who had custody of the vehicle because it was stolen, or if the plates were stolen, you must include a certified copy of the police report showing that the vehicle or license plates were reported/logged as stolen prior to the time of the alleged violation.*

**If you file an affidavit and this citation is contested by the individual you identified, you will also be required to attend the hearing.*

From a statutory perspective, 21 Del. Code §4101 (d) (9) permits the registered owner identified in a violation to divert responsibility to someone else who was operating his or her vehicle. During the time frame from April 2004 through December 2006, registered owners implicated by this enforcement program filed one thousand eighty-four (1,084) affidavits, attempting to defer responsibility in .6% of the originally alleged violations.

Although some violators have contended they are unable to identify – under a sworn and notarized statement - the operator of the vehicle registered in their name, those who have completed and filed the affidavit identifying the operator – *program-to-date*- have successfully diverted responsibility for the violations to the identified driver without court challenge or further identification of another driver of the offending vehicle.

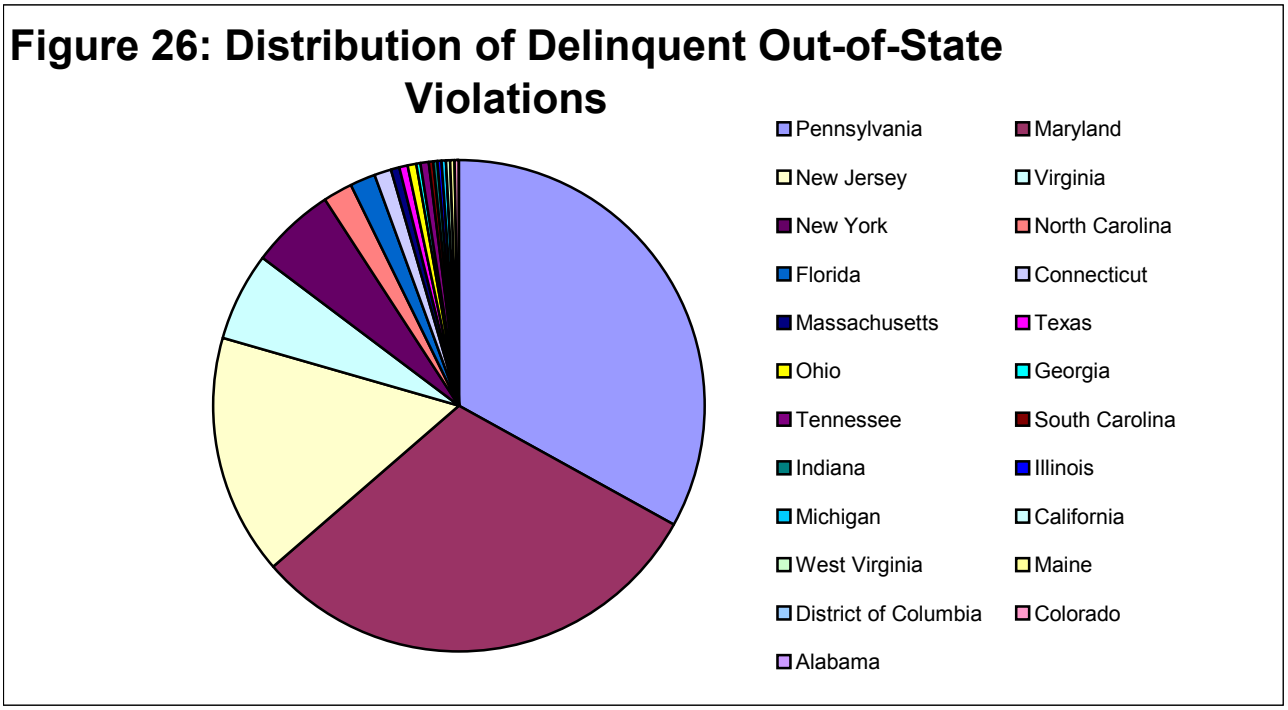
Figure 25: Percentage of Affidavits to Citations Issued



- **FY 2007 Bond Bill Epilogue Section 113, 2d: Number of Violations Recorded by Vehicles With Out-of-State Vehicle Registrations**

Out-of-state violations account for approximately $458,000 in delinquent fine revenue. Neighboring states account for most of the delinquencies. While "In State" delinquent violations can be mitigated by vehicle registration denial, there is no such mitigation vehicle for Out-of-State delinquencies. As of December 31, 2006, the following counts of out-of-state violations remain delinquent:

- 2006 – 16,297
- 2005 – 1,802
- 2004 – 411



- **FY 2007 Bond Bill Epilogue Section 113, 2e: Program-To-Date Operating Expense; 2f: Program-To-Date Fine Revenue, Including Receivables (not yet due) and Delinquent Fines; 2g: Report of Dividend Payments made to participating municipalities**

While the primary objective of the ERLSP is to reduce angle crashes at intersection locations due to red light violations, over its 3-year tenure the program has been fiscally self-sustaining. In addition to recurring monthly costs, expenses were incurred during program development and implementation that were reimbursed using program funds. These initial start up costs of $168, 508.46 break down as follows

Description	Amount
Writing the Request For Proposal and selecting a vendor; data analyses for selecting intersections and approaches; assisting with program implementation (Whitman Requardt and Associates)	$71,786.18
Upgrading the DelJIS system to handle civil cases	$52,178.20
Integrating Crossing Guard technology (Red Light Vendor's control equipment) with traffic cabinet and signal sensing	$44,544.08

Following the construction and installation of enforcement equipment, all intersections identified for enforcement under the ERLSP began producing revenue. The revenue received through violation assessments are first applied to cover program costs before being dispersed to local jurisdictions and the Transportation Trust Fund. The balance is then divided among DelDOT and the local jurisdictions on a pro-rated basis to address program expenditures and expand safety improvements statewide. The following table details the program revenue and the distribution:

Table 3: Dividend Distribution

Expenses	2004	2005	2006
Nestor[1]	$396,643.39	$1,365,982.82	$2,897, 087.57
Unincorporated Dividends	-	$255,708.93	$605,865.24
Dover Dividends	-	$441,465.21	$1,045,590.06
Newark Dividends	-	$118,310.41	$258,070.25
Elsmere Dividends	-	$15,679.69	$87,490.27
Seaford Dividends	-	$122,105.61	$63,133.24
Delaware State Police	-	$86,242.78	$89,335.35
Refunds and Other Exp.	$413	$4,363.58	$3,838.21
Program Expenses[2]	$47,935.70	$90,530.86	$706.08
Total Expenses	$444,992.09	$2,500,389.89	$5,051,117.17
Total Revenue	$501,253.09	$3,129,205.13	$4,285,784.01[3, 4]

[1]Nestor is paid regardless of the outcome of the Notice of Civil Violation. Therefore, the expenses can exceed the revenue.
[2]Program Expenses noted in the table do not account for the $29,335.82 start up costs incurred.
[3]As of 12/31/06, a balance of $298,123.45 remained in the Wachovia National Bank account where lockbox proceeds are deposited.
[4] Delinquent fine receivables as of 12/31/06 were $1,437,480. As of the date of publishing of this report, violations through December 31, 2006 not yet paid would be delinquent and therefore are valued as an accounts payable in the dollar value of delinquent tickets.

Appendix A contains Audit Memorandum 07-084. This document is the written record of a review of the Administration and Application of Fine Recovery for all municipal partners in the ERLSP. It was conducted in February of 2007 for the period of April 15, 2004 through December 31, 2006. Accounts of all four municipalities were examined for fiscal traceability and expensing of dividend payments, which is partially restricted under agreements held with each of the municipalities.

The audit made some recommendations about standardizing agreement language, incorporating a list of approved expenditures into all four agreements; considering a time limitation on use of the dividends, possibly leading to ultimate reversion; obtaining an annual report of expenditures; and setting up additional reporting mechanisms with the lockbox organization. The review concluded with the finding that the four municipalities are in compliance with the accounting and fiscal provisions of the agreements.

- **FY 2007 Bond Bill Epilogue Section 113, 2h: A Comparison Of Technology Currently Used In Similar Programs**

DelDOT's ERLSP vendor, Nestor Traffic Systems, was selected through a professional services procurement process. Nestor is a publicly-traded company (NASDAQ : NEST) and has a full service line of products from red light to mobile speed enforcement.

Nestor's Crossing Guard technology consists of a unique combination of predictive and video technology designed to require lesser intrusiveness to street infrastructure and be more precise in the capturing and handling of video and violation data. Data security features of the Crossing Guard System include video evidence recorded from three different perspectives. Amber times are monitored by an automated feature and if the timings are changed, alarms are triggered in the system itself, enabling Nestor to alert DelDOT officials of a problem.

Nestor technology is recognized as leading the industry. Images are sharper than their counterpart wet film images. In addition, video evidence of a violation provides a compelling evidence for the JP Court System to consider in the event of a challenge by an alleged violator.

DelDOT's ERLSP Manager regularly takes calls inquiring about Nestor's performance as a vendor and asking about the red light enforcement program management, in general. Jurisdictions all over the United State and Canada have indicated interest in how DelDOT identified intersections for placement, how the system works in Court, what the program conviction rate is, and other program-related and technical questions.

In the weeks preceding the due date of this report, Whitman, Requardt and Associates conducted a telephone survey of jurisdictions that administer red light enforcement programs. This information is reduced to a matrix in the pages that follow. Tabulated information includes the name of the jurisdiction, length of the program, number of enforcement sites, the prediction and camera technologies engaged, whether the program is a registered-owner program or a driver program, the fine structure and whether or not the use of affidavits are permitted to divert responsibility.

Table 4: Technology Comparison

Jurisdiction (Contact Person and Phone Number)	Length of Program	Number of Sites (Intersections and/or approaches)	Vendor	Prediction System (Loop detectors, cameras)	Camera System (Wet Film, Digital, Video)	Registered Owner or Driver	Fine Structure	Affidavits Allowed
Delaware	April 2004	20 intersections	Nestor	Cameras	Digital Video	R.O.	$75 fine + late fees up to $100	Yes
Cary, NC Brad Hudson Project manager-SafeLight (919) 462-3430 Brad.Hudson@townofcary.org	January 2004	15 intersections (17 approaches)	Redflex	Loops	Digital Video	R.O.	$50 + $50 late fee	Yes but R.O. ultimately responsible
City of Phoenix, AZ 602-495-0966 (Officer Hancock)	2003	12 intersections (12 approaches)	ACS ATS (starting this year)	Loops (old), video loops (new)	Digital, 7 second video	Gender match to R.O.	$190 + surcharges = $215	Yes; R.O. can send in photograph proving the driver was not them and they do not need to supply the name of the actual driver
Columbus, OH 614-645-4661 (Officer Fore) www.columbuspolice.org	2006	9 intersections	Reflex	Loops	Digital Video	R.O.	$95 + $25 late fee	Yes
Frederick County, MD Lt. Shawn Martyak 301-600-2290	June 2005	7 intersections (12 approaches)	Nestor	Cameras	Video	R.O.	$75	Yes
Howard County, MD George Frangos 410-313-5751	1998	21 intersections	Lasercraft	Lasers	Digital Camera	R.O.	$75 (Max. fine $100)	Yes
Charlotte, NC Clement Gibson 704-336-4905 Safelight.charmeck.org	1998 first camera (Ended program May 2006)	20 intersections	Trafficpax	Loops, Radar	Digital, Some with video	R.O.	$50 + $50 late fee	Yes
Cerritos, CA (562) 860-0044 (Deputy Britt) (562) 468-1044	2003	3 intersections (6 approaches)	Nestor	Camera	Video	Driver	$361 no late fee	N/A

Jurisdiction (Contact Person and Phone Number)	Length of Program	Number of Sites (Intersections and/or approaches)	Vendor	Prediction System (Loop detectors, cameras)	Camera System (Wet Film, Digital, Video)	Registered Owner or Driver	Fine Structure	Affidavits Allowed
Beaverton, OR citymail@ci.beaverton.or.us Holly Thompson (mayor's office) 503-526-2658	Jan 2001	4 intersections (10 approaches)	Redflex	Loops	Digital	R.O.	$336	Yes
Washington, DC www.mpdc.dc.gov Automated Traffic Enforcement PO Box 37075 Washington, DC 20013 Phone: (202) 756-5884	2000	49 intersections	N/A	Cameras Loops	Film	R.O.	$75 + $75 after 30 days	Yes
Georgia's Red Light Running Program Mr. Bill Poole , Special Studies Engineer 404-635-8147	4 years (City of Decatur)	Unknown because the state does not control them	Redflex Lasercraft Nestor ACS PTS	Currently both cameras & loops. Future video only	Digital Video	R.O.	$75	Yes
Clive, Iowa Ph: 515-278-1312 (police department)	June 2006	6 intersections	Redflex	Loops	Digital & Video	R.O.	$75	R.O. is ultimately responsible but they can nominate another driver

- **FY 2007 Bond Bill Epilogue Section 113, 2i: A Performance Rating, Conducted by DelDOT Project Personnel, of the Vendor's Effectiveness in Development, Operation, and Administration of the Program**

Figure 27 below is a facsimile of a survey that was given to all ERLSP program participants including City Managers, enforcement officials, and the program's traffic engineering consultant. As of the time of publishing this report, only surveys from enforcement officials and the traffic engineering consultant have been returned.

Of the responses received, scores selected from the continuum were generally 3 or 4 with two exceptions. The enforcement official from the Seaford Police Department indicated that the sharpness of the citation images "needs improvement" for the southbound thru approach. In addition, a traffic engineer from the program's consultant WRA, indicated that Nestor's interaction with her firm on the program "needs improvement". She further footnoted "Nestor's responsiveness has remained strong in spite of recent staffing changes. Typically, we receive a suitable response within one day of contact, at most. Unfortunately, much of the data we receive is incomplete which limits our ability to assess the program's effectiveness and reach conclusive results." This same engineer has indicated that she would recommend renewal pending a favorable audit review of program events. All remaining responses received thus far have indicated recommendation for vendor renewal.

An enforcement official from the City of Dover remarked that the reliability of technology needed improvement. Clarification and additional information further to this comment was not yet secured as of the time of submission of this report

In the coming weeks, a routine operations audit will be conducted on the event-review portion of the program. This activity is taking place in order to confirm trend indicators that violations have dropped significantly between September 2006 and December 2006.

FIGURE 27: PROGRAM PARTICIPANTS SURVEY

Name: ______________________ **Program Role:** ______________________

Program Partner Satisfaction Survey

Superior	>>	4
Sufficient	>>	3
Needs Improvement	>>	2
Unacceptable	>>	1

Answers of 2 or less must be accompanied by comments

Sharpness of citation images	1	2	3	4
Comments				
Responsiveness of Nestor troubleshooting issues Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness	1	2	3	4
Comments				
Clarity and reliability of Nestor's interaction with your role in the program	1	2	3	4
Comments				
Nestor's responsiveness in communicating with your role in th program	1	2	3	4
Comments				
Reliability of Technology, in terms of your role in the program	1	2	3	4
Comments				

- **FY 2007 Bond Bill Epilogue Section 113, 2j: Recommended Locations Changes for Existing Equipment; 2k: Recommendations for Additional Enforcement Equipment Installation; 2l: Recommendations, if warranted by this evaluation, to remove the sunset limitation on the legal authority for this program and to continue it on an open-ended basis.**

Changing Existing Locations

Three years have transpired since the start of the ERLSP. While initial statistical implications of its effectiveness at reducing angle crashes are positive, a higher confidence level could be reached if current locations were maintained for at least 5 years. Since indicators of success exist at the greater majority of all four types of intersection analysis, this additional time would be used to develop engineering and traffic profiles of the "typically successful" intersection and the "typically unsuccessful" intersection for the application. Therefore, it is recommended that no current enforcement locations be dismantled or turned off.

Additional Locations

The legal authority DelDOT has been given to install red light enforcement equipment has been utilized to its limit – 20 intersections have been equipped with the CrossingGuard system. When identifying prospectively suitable intersections at program onset, DelDOT reviewed candidate intersections' crash data for 5 years and compared this information to a red light violation study. If sufficient cause and effect was met by violations falling above the 85th percentile of all of those intersections recorded and under review, enforcement equipment was advanced. This approach proved to be successful in the majority of the cases. While in the small minority of the cases it did not, using output from the recommendation above concerning developing intersection profiles, once a second generation of intersections is identified, profiles could be applied to eliminate prospectively unsuccessful candidate locations.

DelDOT recommends that a second analysis occur and that efforts begin immediately and concurrently to develop intersection profiles where enforcement technology works effectively, beginning with intersections at the most dangerous end of the crash continuum. Enough intersections should be reviewed so that after full analysis and review is complete, 10 intersections remain for design and installation of equipment.

Current Sunset Limitation

Based on successes experienced thus far, and in conjunction with further actions recommended above, DelDOT recommends that the sunset implications of section 92 of the FY03 Bond Bill Epilogue – the original program authority – be removed so that DelDOT can proceed in earnest with full implementation of its Electronic Red Light Safety Program, without jurisdictional restrictions and on a scientifically sound basis. In addition, it is recommended that requirement to review the rationale and feasibility of a candidate intersection with the cognizant State Senator and State Representative should continue as this attribute of the program more fully embellishes the education endeavors of the program as legislators discuss its benefits with their local constituency.

Conclusion

The ERLSP has largely been successful. The downward trend of violations provides an indication that traffic's attention is more appropriately devoted to traffic signals. The downward trend in all four categories of crashes is the outcome of this effect and this desired outcome has begun to unfold at a relatively early time in the program's history.

While the Program's successes have not been entirely across the board at all intersctions, the scientific approach utilized for intersection selection and program management remains untainted by non-scientific influences. As such, the environment exists for full analysis of current outcomes and second generation intersection identification and program implementation.

APPENDIX A

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

MEMORANDUM

TO: Michael Svaby, Human Resources Support Manager, DTC
DelDOT Electronic Red Light Safety Program Manager

FROM: Daniel J. Maher, Internal Audit Supervisor

DATE: February 1, 2007

SUBJECT: Audit Memorandum 07-084

Review of Administration and Application of Fine Recovery
Participating Delaware Municipalities
DelDOT's Electronic Red Light Safety Program

In 2001, Senate Bill 262 legislated that 20 individual locations across the State could be equipped with cameras for the video enforcement of red light running violations. The specific locations included six cameras in Dover, two in Newark, one each in Seaford and Elsmere. Those four municipalities were given the legal authority by the fiscal year 2003 Bond Bill to participate in a video red light enforcement program. The Delaware Department of Transportation was granted legal authority to establish an Electronic Red Light Safety Program under fiscal year 2003, Bond Bill Epilogue language.

Under the program, the fine for each violation is $75.00 and is assessed when a Notice of Civil Violation is sent to the registered owner of the vehicle involved in violating the traffic signal. After the fixed costs and per citation fees are paid by the fines received within each jurisdiction's locations, the remainder of the fine money collected goes to the municipality, with the obligation to spend no less than 60 percent of the money on public and roadway safety improvements.

The program included a pilot period, to install cameras at all locations and become fully operational. This pilot period would allow the Delaware Department of Transportation to determine if the fine revenue would sustain the program, and is due to expire in 2007.

DelDOT

Michael J. Svaby, DelDOT Electronic Red Light Safety Program Manager, requested that DelDOT Audit conduct a review of the administration and application of the fine revenues by the four municipalities currently participating in the program. This review is part of an overall program review being conducted to determine the overall effectiveness of the program.

When a municipality agrees to participate in the program they sign an agreement, which documents the terms and conditions for the Operation and Administration of DelDOT's Electronic Red Light Safety Program, and the Administration and Application of Fine Recovery. Our review concentrated on the portions of each agreement covering the use of ticket revenue funds.

While some agreements included a requirement for the submission of an annual report of how the entire prior years proceeds were spent, and a list of expenditures targeted for support for the following year, this was not a requirement in all agreements. The agreements did all contain the same requirements for accounting for, and expending, the revenues received from the program. Those requirements include:

A. An accounting of revenue received as proceeds from this program will be maintained by the City, in accordance with generally accepted (yellow book) standards.
B. At the discretion of the Department, the City agrees to openly furnish any and all information requested to assess accountability and compliance with funding restrictions at any time information is requested.
C. The City will secure and maintain separate subsidiary accounts vehicles, both internally and at a bank of its choice, in order to insure program auditability.
D. No less than 60% of all revenues received will be obligated toward the cause of Public and Traffic Safety on local roads and highways.

Two of the four agreements provided a listing of approved expenditure categories, while the two remaining agreements limited guidance on revenue usage to the statement "No less than 60% of revenues received will be obligated toward the cause of Public and Traffic Safety on local roads and highways.

In addition to our review of the agreement signed by each participating municipality, we also obtained:

1. A record of the revenues forwarded to the Department by TDEC, a lock box service retained by the Department to receive and process the payments for citations issued under the Electronic Red Light Safety Program (ERLSP) from program inception through December 31, 2006.

2. A record of program payments processed by the DelDOT Finance Section to Nestor Traffic Systems, the vendor supplying and supporting the Electronic Red Light Safety Program enforcement equipment.
3. A record of program payments processed by the DelDOT Finance Section to the four municipalities participating in the program. Those four municipalities are:

Municipality	Date of their Agreement
City of Seaford	June 14, 2004
City of Dover	June 15, 2004
Town of Elsmere	February 8, 2005
City of Newark	April 4, 2005

Once this portion of our review was completed we contacted each municipality to advise them of our review and schedule site visits to review their accounting procedures for the revenues, and gauge their compliance with the terms and conditions of their respective agreements. Due to the timing of the audit request and the desire to include revenues through the end of calendar year 2006, each municipality required two site visits.

The first series of site visits occurred during the last week of October 2006. During the initial visit the auditors reviewed the revenues received from program inception through July 2006. The final series of site visits reviewed the revenues received from August through December 2006, and took place January 16, 2007 through January 22, 2007. These following will provide an overview of each municipality:

The City of Seaford

Seaford maintains a subsidiary account for their red light program revenues. They deposit and retain the program revenues into this subsidiary account until they need them. Seaford's current policy is to utilize all program revenues received each fiscal year to partially offset the salaries of their local police department. Our review found that the funds for F.Y. 2005 and F.Y. 2006 represented .0741448% of the department's salaries for those two years. The percentage of salaries covered by the ERLSP revenues would appear to be lower than the actual percentage of the officers time devoted to highway safety concerns such as aggressive driving, speed enforcement, accident investigation and training.

The only deficiency found was that Seaford's agreement contained a reporting requirement not found in all agreements for this program. That requirement states "As requested but at the very least, on an annual basis and concurrent to the State's Fiscal Year, the CITY will provide the to the DEPARTMENT, a report of how it spent the entire year's proceeds and a list of expenditures targeted for support by program proceeds for the following year." The Director of Finance for Seaford was unaware of this requirement and to her knowledge; Seaford had not provided such a report since joining the program.

The City of Dover

Dover also maintains a subsidiary account for their red light program revenues. They deposit and retain the program revenues into this subsidiary account until needed. Dover also uses the revenues from this program to offset the cost of operating their local police department. Their police department tracks activity by it's officers and uses that data to provide an annual report showing the percentage of public safety related activity by it's two main units, Motorcycle and Patrol. Their Motorcycle units devote 100% of their time to public safety items such as speed enforcement, accident investigation, aggressive driving, and training. Their patrol unit's average 25 to 30% of their time to highway safety related concerns. They use the information and percentages provided annually by the police department to calculate the maximum salary levels the program revenues could be offset.

The only deficiency found was that Dover's agreement also contained the reporting requirement not found in all agreements for this program. That requirement states "As requested but at the very least, on an annual basis and concurrent to the State's Fiscal Year, the CITY will provide the to the DEPARTMENT, a report of how it spent the entire year's proceeds and a list of expenditures targeted for support by program proceeds for the following year." The Assistant Finance Director for Dover was unaware of this requirement and to his knowledge; Dover had not provided such a report since joining the program.

The Town of Elsmere

Elsmere has experienced a problem different from the other three municipalities participating in the program. The electronic account established to accept the Red Light program deposits has been compromised. The State is now using that account to deposit all court related fines and revenues designated for The Town of Elsmere. To minimize the confusion and to comply with the requirements of their program agreement, Elsmere has established a separate account with Sun National Bank. Once electronic deposits are identified as Red Light Program revenue, they transfer those funds to the account with Sun National Bank. At the time of our initial site visit in October this account balance equaled the value of revenues shown as deposited to Elsmere since they joined the program. The Town had requested and received permission from the Department to purchase and equip a Dodge Charger Police Unit for their police department. The Director of Finance and the Town Manager advised that they were now in the process of ordering that vehicle.

During our second site visit in January, we reviewed and documented their receipt of an additional $56,910.39 in Red Light program deposits between August and December 2006. The Town provided copies of purchase orders and checks totaling $28,412.00 for the purchase of the Dodge Charger and a camera and other equipment for it.

The agreement between the Department and The Town of Elsmere, governing their participation in the program, does not contain the report requirement found in the agreements governing Seaford and Dover's participation.

The City of Newark

Newark also maintains a subsidiary account for their red light program revenues. They deposit and retain the program revenues into this subsidiary account until needed. Prior to our initial visit in October, the Director of Finance was not familiar with the agreement governing the program and requested a copy of the agreement be faxed to her.

At the first site visit the auditors were able to trace receipt of all but one payment, in the amount of $11,572.50. The City advised that they had not been able to identify that payment, as they had not received a payment advice. We requested, by voice mail and a follow-up email, that the DelDOT Finance Section provide the missing remittance advice.

When we conducted our second site visit the report provided by the Newark finance department still did not reflect that missing payment. We again contacted the DelDOT Finance Section and obtained the information regarding that payment. The information was then forwarded to the Acting Finance Director for the City of Newark. They were then able to identify the payment in their system and transfer it to the Red Light account, bringing the account into balance.

Newark's agreement did not contain a listing of possible uses for the revenues received under the program, which was included in two of the four agreements in effect during our review. The initial site visit found that the City had only expended funds from the account to cover police department time spent reviewing and resolving the citations issued, or contested. We provided a copy of the listing of categories contained in the Seaford and Dover agreements and advised that the funds were not limited to resolution of the citations, but any related highway or public safety area. During our second visit in January 2007 we found that the situation had not changed from October.

The current agreement between the Department and the City of Newark governing their participation in the program does not contain the report requirement found in the agreements governing Seaford and Dover's participation.

Our review found that the four municipalities currently participating in the Department's Electronic Red Light Safety Program (ERLSP) program are in compliance with the accounting provisions contained in their respective agreements. Seaford. Dover, Elsmere and Newark each:

- Maintain separate subsidiary accounts to track Red Light Program Revenues
- Utilize at least 60% of the funds received under this program on safety on local roads related issues such as supporting the local police Departments, Purchasing and Equipping new Police Cruisers, reviewing and resolving citations.

We would also recommend consideration of the following items:

1. Standardizing the agreement language so that each participating municipality is operating under the same set of guidelines.
   - Only two of the four current agreements contain a listing of categories of approved expenditures.
   - Only two of the four current agreements contain a requirement for an annual report of current and planned expenditures of program revenues.

2. Retain and incorporate the listing of approved expenditure categories into all agreements, to provide each municipality with guidelines under which the revenues may be expended. Listing would also provide guidance during periods of changeover in local governments.

3. Consider limits on the time program revenues may be retained without being utilized on safety issues. The City of Newark currently has a balance of $376,380.66 in their Red Light account. This is partially due to their agreement being one, which did not include the listing of approved categories, as well as changeover. During our site visits we met with Wilma Garriz. Acting Finance Director.

4. Retain the requirement for the annual report of expenditures and include it in all future agreements. This report would require the municipality to review the account on an annual basis to prepare the report. It would also provide advance notice of planned expenditures, which may not meet program requirements.

5. TDEC, the lockbox service provider for this program, has the ability to provide the Department with a monthly record of the deposits made under the program. The Department should request this report for comparison with our own internal records.

The Audit Team wishes to thank you and your staff for your assistance in providing background information on the Electronic Red Light Safety Program (ERLSP), as well as copies of the current agreements. We also wish to acknowledge the assistance of William Newnom of the DelDOT Finance Section in providing information on the system used to deposit and track payments to the municipalities and the vendor, as well as a record of the deposits to each since the inception of the program.

DJM

cc: Martha N. Dobson, Director, Division of Technology and Support Services
William J. Gallant, Audit Manager, Technology and Support Services
Audit File

APPENDIX B

Name: [illegible] Program Role: [illegible]

Program Partner Satisfaction Survey

Superior	>>	4
Sufficient	>>	3
Needs Improvement	>>	2
Unacceptable	>>	1

Answers of 2 or less must be accompanied by comments

	1	2	3	4	N/A
Sharpness of citation images	1	2	3	4	**(N/A)**

Comments

	1	2	3	4	N/A
Responsiveness of Nestor troubleshooting issues Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness	1	2	3	4	**(N/A)**

Comments

	1	2	3	4	N/A
Clarity and reliability of Nestor's interaction with you in the program	1	**(2)**	3	4	N/A

Comments

	1	2	3	4	N/A
Nestor's responsiveness in communicating with you in the program	1	2	3	**(4)**	N/A

Comments

	1	2	3	4	N/A
Reliability of Crossing Guard, Citation Composer and Citation Viewer to you in the program	1	2	3	4	**(N/A)**

Comments

Would you recommend renewal of the agreement with Nestor? **(Yes)** No N/A

Why, why not? Pending [illegible] [illegible] [illegible] and program costs

Please comment freely about the program below and on separate paper if necessary

Nestor's responsiveness has remained strong in spite of recent staffing changes. Typically, we receive a response [illegible] within one day of contact via e-mail. Unfortunately, [illegible] [illegible] the record is incomplete which limits our ability to assess the program's effectiveness and reach conclusive results.

Name: DAVE KERR NEWARK P.D. Program Role: REVIEWS CITATIONS

Program Partner Satisfaction Survey

Superior	>>	4
Sufficient	>>	3
Needs Improvement	>>	2
Unacceptable	>>	1

Answers of 2 or less must be accompanied by comments

Sharpness of citation images	1	2	(3) circled	4	N/A
Comments					
Responsiveness of Nestor troubleshooting issues Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness	1	2	(3) circled	4	N/A
Comments					
Clarity and reliability of Nestor's interaction with you in the program	1	2	(3) circled	4	N/A
Comments					
Nestor's responsiveness in communicating with you in the program	1	2	(3) circled	4	N/A
Comments					
Reliability of Crossing Guard, Citation Composer and Citation Viewer to you in the program	1	2	(3) circled	4	N/A
Comments					

Would you recommend renewal of the agreement with Nestor?	(Yes) circled	No	N/A

Why, why not?

Please comment freely about the program below and on separate paper if necessary

Name: GERALD CONWAY Program Role: ENFORCEMENT TECH

Program Partner Satisfaction Survey

Superior	>>	4
Sufficient	>>	3
Needs Improvement	>>	2
Unacceptable	>>	1

Answers of 2 or less must be accompanied by comments

Sharpness of citation images 1 2 3 (4) N/A

Comments AS NEWER CAMERAS WERE INSTALLED VIDEO IMPROVED STILL ISSUES AT RT 202 + NAAMAN'S WITH OLDER CAMERAS

Responsiveness of Nestor troubleshooting issues
Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness 1 2 3 (4) N/A

Comments

Clarity and reliability of Nestor's interaction with you in the program 1 2 (3) 4 N/A

Comments

Nestor's responsiveness in communicating with you in the program 1 2 (3) 4 N/A

Comments

Reliability of Crossing Guard, Citation Composer and Citation Viewer to you in the program 1 2 3 (4) N/A

Comments

Would you recommend renewal of the agreement with Nestor? (Yes) No N/A

Why, why not?

Please comment freely about the program below and on seperate paper if necessary

Name: Jon Littlefield Program Role: ______________

Program Partner Satisfaction Survey

Superior	>>>	4
Sufficient	>>>	3
Needs improvement	>>>	2
Unacceptable	>>>	1

Answers of 2 or less must be accompanied by comments

Sharpness of citation images 1 2 (3) 4 N/A

Comments THE ORIGNAL CAMERA IMAGES AT RT202 & NAAMANS RD WERE SUFFICIENT, HOWEVER AS THEY ADDED NEW CAMERA LOCATIONS THE VIDEO'S cont

Responsiveness of Nestor troubleshooting issues 1 2 (3) 4 N/A

Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness

Comments

Clarity and reliability of Nestor's interaction with you in the program 1 2 (3) 4 N/A

Comments

Nestor's responsiveness in communicating with you in the program 1 2 (3) 4 N/A

Comments

Reliability of Crossing Guard, Citation Composer and Citation Viewer to you in the program 1 2 (3) 4 N/A

Comments

Would you recommend renewal of the agreement with Nestor? (Yes) No N/A

Why, why not? FROM WHAT I'VE SEEN THIS PROGRAM GIVES YOU LIVE VIDEO FOOTAGE WHERE OTHER VENDORS STILL USE STILL SHOT PHOTO'S

Please comment freely about the program below and on separate paper if necessary

1) IMAGES BECAME MORE SHARPER/CLEARER IMAGES WITH NEW TECHNOLOGY.

Name: Ll Boka Program Role: ____________________

Program Partner Satisfaction Survey

Superior	>>>	4
Sufficient	>>>	3
Needs Improvement	>>>	(2)
Unacceptable	>>>	1

Answers of 2 or less must be accompanied by comments

Sharpness of citation images	1	(2) Southbound	3	(4) Northbound
Comments March 4, 04				
Responsiveness of Nestor troubleshooting issues Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness	1	2	3	(4)
Comments				
Clarity and reliability of Nestor's interaction with your role in the program	1	2	3	(4)
Comments				
Nestor's responsiveness in communicating with your role in th program	1	2	3	(4)
Comments				
Reliability of Technology, in terms of your role in the program	1	2	3	(4)
Comments				

Name: Sgt. Multer Program Role: ______

Program Partner Satisfaction Survey

Superior	>>	4
Sufficient	>>	3
Needs Improvement	>>	2
Unacceptable	>>	1

Answers of 2 or less must be accompanied by comments

Sharpness of citation images 1 2 (3) 4

Comments

Some night shots are difficult to verify info provided. Depends on intersections

Responsiveness of Nestor/troubleshooting issues

Circle one or more: Laptop Cameras Event Transmission Citations Violation Data **Violation Timeliness** 1 2 (3) 4

Comments

Nestor Good

Clarity and reliability of Nestor's interaction with your role in the program 1 2 3 (4)

Comments

Nestor's responsiveness in communicating with your role in th program 1 2 3 (4)

Comments

Reliability of Technology, in terms of your role in the program 1 (2) 3 4

Needs improvement.

Comments

→ Sharpness of images at night

→ Reliability decreases when multiple vehicle approach

→ Signal indicator at Govt/North can't be seen camera / signal head issues

Name: Ray Simmons Program Role: ____________

Program Partner Satisfaction Survey

Superior	>>	4
Sufficient	>>	3
Needs Improvement	>>	2
Unacceptable	>>	1

Answers of 2 or less must be accompanied by comments

Sharpness of citation images 1 2 3 (4)

Comments
Excellent now.

Responsiveness of Nestor troubleshooting issues 1 2 3 (4)
Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness

Comments

Clarity and reliability of Nestor's interaction with your role in the program 1 2 3 (4)

Comments

Nestor's responsiveness in communicating with your role in th program 1 2 3 (4)

Comments

Reliability of Technology, in terms of your role in the program 1 2 (3) 4

Comments

Name: NEAL D. STRAUSS Program Role: CHIEF OF POLICE

Program Partner Satisfaction Survey

Superior	>>	4
Sufficient	>>	3
Needs Improvement	>>	2
Unacceptable	>>	1

Answers of 2 or less must be accompanied by comments

	1	2	3	4	N/A
Sharpness of citation images	1	2	3	(4) circled	N/A

Comments

	1	2	3	4	N/A
Responsiveness of Nestor troubleshooting issues Circle one or more: Laptop Cameras Event Transmission Citations Violation Data Violation Timeliness	1	2	3	(4) circled	N/A

Comments

	1	2	3	4	N/A
Clarity and reliability of Nestor's interaction with you in the program	1	2	3	(4) circled	N/A

Comments

	1	2	3	4	N/A
Nestor's responsiveness in communicating with you in the program	1	2	3	(4) circled	N/A

Comments

	1	2	3	4	N/A
Reliability of Crossing Guard, Citation Composer and Citation Viewer to you in the program	1	2	3	(4) circled	N/A

Comments

Would you recommend renewal of the agreement with Nestor? (Yes) circled No N/A

Why, why not? THE PROGRAM SEEMS TO BE A SUCCESS & WE HAVE HAD NO PROBLEMS.

Please comment freely about the program below and on separate paper if necessary

Post-it® Fax Note 7671	Date 2/27/ # of Pages 1
To JAMIE	From Neil Strauss
Co./Dept.	Co. ELSMERE BUREAU
Phone #	Phone # OF POLICE
Fax # 302-760-2916	Fax # 302-998-1174