

TECHNICAL REPORT

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June 2009

# **Evaluation of the 2008 Speed Enforcement Program (SEP)**

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# Illinois Department of Transportation

## Division of Traffic Safety

### Evaluation Unit

The Evaluation Unit within the Division of Traffic Safety in the Illinois Department of Transportation (IDOT) focuses on evaluation and monitoring of various highway safety projects and programs in Illinois. The Evaluation Unit conducts research and analyses that enhance the safety and efficiency of transportation by understanding the human factors that are important to transportation programs in Illinois. The main functions of the Unit include the following:

1. Develop an in-depth analysis of motor vehicle related fatalities and injuries in Illinois using several crash related databases (Crash data, FARS, Trauma Registry, and Hospital data, state and local police data).
2. Develop measurable long term and short term goals and objectives for the Highway Safety Program in Illinois using historical crash related databases.
3. Evaluate each highway safety project with enforcement component (e.g., Speed, Traffic Law Enforcement Program, Local Alcohol Program, IMaGE projects) using crash and citation data provided by local and state police Departments.
4. Evaluate several highway safety programs (e.g., Occupant Protection and Alcohol). This involves evaluating the effects of public policy and intervention programs that promote safe driving.
5. Design and conduct annual observational safety belt and child safety seat surveys for Illinois. This survey is based on a multi-stage random selection of Interstate Highways, US/IL Highways, and several local and residential streets.
6. Provide results of research and evaluation as well as annual enforcement activities to the National Highway Traffic Safety Administration (NHTSA) as part of the Federal Requirements of State Highway Safety Program in Illinois.
7. Provide statistical consultation to other Sections at the Division of Traffic Safety and other Divisions at IDOT.
8. Publish results of all research and evaluation at the Division and place them as PDF files at IDOT's Website.

**This report provides a descriptive evaluation of the Speed Enforcement Program (SEP) during the FFY 2008. A total of 54 local police agencies participated and conducted comprehensive speed enforcement activities for six months. The main goal of the speed program was to reduce incidents of speeding which is a major contributing factor in motor vehicle related injuries and fatalities.**

The report was compiled and prepared by the Evaluation staff. Comments or questions may be addressed to Mehdi Nassirpour, Chief of Evaluation Unit, Bureau of Safety Projects and Administrative Services, Division of Traffic Safety, Illinois Department of Transportation, 3215 Executive Park Drive, Springfield, IL 62794-9245.

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## Executive Program Summary

In FY 2008, the Division of Traffic Safety (DTS) administered a highly visible Speed Enforcement Program (SEP) in order to increase speed enforcement activities in communities where excessive speeding is a significant contributing factor in fatal and injury crashes. It has been shown that highly visible enforcement programs focusing on speed violations offer the greatest potential for changing these behaviors. A total of 54 county and municipal police agencies participated in the SEP program. Each participating agency conducted six campaigns in four different locations for a period of six months from October 2007-September 2008. Results of pre and post speed surveys among 54 participating agencies show a reduction in the average speed after the speed enforcement activities. The following materials include specific results of the SEP program.

### Enforcement

- During the speed campaign, 54 agencies logged a total of 30,460 hours and wrote a total of 63,008 citations, 51,581 (81.9%) were speed citations.
- On average, law enforcement wrote one citation every 29 minutes. Only 13 participating agencies met the objective of writing one speed citation for every 30 minutes.

### Cost Effectiveness

- A total cost of enforcement activities among 54 local agencies was \$1,543,243.51. The average cost per patrol hour was \$50.67.
- The average cost per citation was \$24.50 and the average cost per speed citation was \$29.92. The cost per citation ranged from \$15.00 in Rock Island to \$51.59 in Fairview Heights.

### Media

- Media efforts were critical to the success of the program. A public information and education campaign were included in the project specifications. A total of 3,111 media efforts were conducted during the speed enforcement campaign. These efforts included press conferences, radio and television news stories, distribution of posters and fliers, banners, and web announcements.

### Results of Pre and Post Surveys

- Overall results of pre and post speed surveys among 54 participating agencies show a reduction in the average speed after highly visible speed enforcement activities. The average speed reduction ranged from 0.60 mph on roadways with a posted speed limit of 35 mph to 5.18 mph on roadways with a speed limit of 50 mph.
- As expected the average observed speed on the majority of road segments selected for enforcement during pre survey was about 4.5 mph higher than the posted speed limit categories. For example the average speeds for those road

segments with posted speed limits of 25 mph, 40 mph, and 55 mph were 29.7 mph, 45.1 mph, and 60.6 mph respectively.

- Although the average speed was decreased during the post speed enforcement, there were 11 agencies that showed no change or even higher average speed. Reexamining those law enforcement agencies with higher average speed during the post survey, we found that these agencies had many sites with lower average speed than the posted speed limit. After eliminating those sites where the average speed was lower than the posted speed limit during pre survey period, the overall average speed reduction during the post surveys improved significantly.

Overall the enforcement data (such as total number of patrol hours and total citations) provided by the local agencies show modest improvement in reduction of average speed, they should be interpreted with caution since the calculated indicators, such as cost per patrol hour or cost per citation, and/or citations written per X minutes vary substantially across selected agencies.

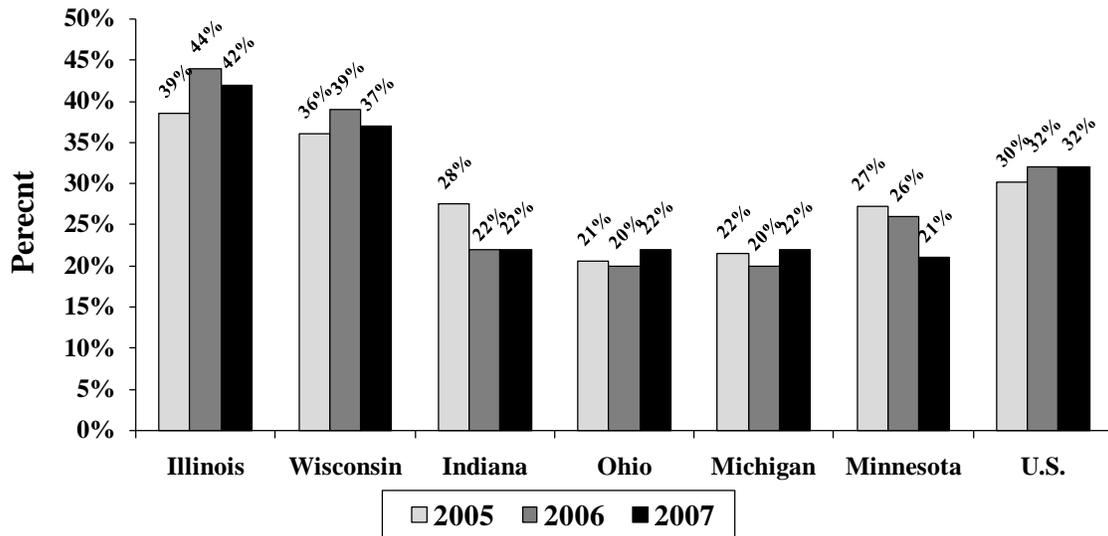
1. Some grantees did not complete the required pre and post speed surveys.
2. Some grantees did not survey the same locations during the Pre and Post Surveys.
3. Most grantees did not conduct pre and post surveys during the same time of day.
4. Some grantees reported different posted speed limits for the same location during the Pre and Post Surveys.
5. Some grantees did not conduct enforcement activities on four required locations due to the lack of personnel.
6. Some grantees did not complete six months of campaigns.

## Problem Statement

Speeding is one of the most prevalent factors contributing to traffic crashes. The economic cost to society of speeding-related crashes is estimated by NHTSA to be \$40.4 billion per year. Nationally, in 2007, speeding was a contributing factor in 31 percent of all fatal crashes; and 13,404 lives were lost in speeding-related crashes. Also, alcohol involvement is prevalent for drivers involved in speed-related crashes. In 2007, 41 percent of the drivers who had a BAC of 0.08 or more involved in fatal crashes were speeding, compared with only 15 percent of the drivers with a .00 BAC involved in fatal crashes. Only 13 percent of speed-related fatalities occurred on interstate highways.

Based on the last three available years of FARS data, Illinois has the highest speed related fatalities among six Great Lakes Region states. As shown in **Figure 1**, over 39 percent of fatalities in Illinois are speed related as compared to about 31 percent nationwide. It is interesting to note that the percent of speed related fatalities in Illinois rose to a high of 42.0 percent in 2007 as compared to 32 percent nationwide in 2007.

**Figure 1: Percent Speed Related Fatalities Among Great Lakes States and US in 2005 - 2007**



## **Description of Speed Enforcement Grant**

In FY 2007, the Division of Traffic Safety (DTS) developed the Speed Enforcement Program (SEP) in order to increase speed enforcement activities in communities where excessive speeding is a significant contributing factor in fatal and injury crashes. Many lives could be saved by changing public attitudes regarding risk taking behaviors such as speeding, impaired driving, and the non-use of occupant protection devices. It has been shown that highly visible enforcement programs focusing on these violations offer the greatest potential for changing these behaviors. Experience across the state and nation clearly demonstrates that keeping drivers within the posted speed limit is not possible in the absence of high visibility speed enforcement. The threat of serious injury and death is not adequate to encourage drivers, especially younger drivers to drive within the posted speed limits. As shown in the literature (NHTSA, 2006), the only way to get people to drive within the posted speed limits is through high visibility enforcement and the possibility of tickets and fines, and convictions.

During the last five years, IDOT has implemented several other traffic safety programs such as "Click it or Ticket", and "You Drink & Drive. You Lose." that required a combination of paid/earned media and high visibility enforcement. These programs have been effective in increasing safety belt usage rates both drivers and passengers and reducing alcohol related fatalities and injuries resulted from motor vehicle crashes. For more information on these programs refer to our website at <http://www.dot.il.gov/trafficsafety/tsevaluation.html>.

Recognizing that speed has been a significant contributing factor in traffic fatalities and severe injuries, DTS has developed and funded special speed program for the last two years. It has been documented that the sustained speed enforcement programs are essential to ensure compliance with speed limit and maintain traffic movement at safe speeds (NHTSA, 2005a). Effective speed programs depend on the interactions of laws and regulations, public awareness and attitudes, and high visibility enforcement programs.

## **Program Objectives of Speed Grant**

The main goal of speed enforcement program was to reduce the incidence of speeding related motor vehicle crashes, and the resulting injuries and fatalities, through highly visible increased enforcement of speed related laws. In order to achieve this goal, the following specific objectives have been defined:

1. To reduce the number of speed related traffic crashes.
2. To increase enforcement of speed laws.
3. To increase compliance with the posted speed limit.

## **Program Requirements**

The 2008 Speed Enforcement Program (SEP) was conducted from October 2007 through September 2008. Fifty-four (54) county and municipal law enforcement agencies that were selected for funding, participated in SEP campaign.

**Appendix A** displays a map of Illinois counties with the number of projects and their locations. The funding agencies were required to accomplish the following tasks and activities during the funding period:

1. All selected agencies shall provide DTS quantifiable data showing speed a contributing factor in motor vehicle crashes in their jurisdictions.
2. Agencies shall identify four locations within their jurisdictions where they would then conduct up to six months of targeted enforcement for the specified hours spread throughout the enforcement period. The selected agencies must utilize only Illinois Law Enforcement Training Standards Board (ILETSB) certified enforcement trained police officers for overtime enforcement. Officers will be permitted and encouraged, to issue multiple citations to drivers who have committed several violations; such as, Speeding, DUI, other alcohol related, and failure to wear safety belt. Emphasis was placed on requesting agencies located within the 23-county model. The 23-county model is based on the analysis that the Evaluation Unit within DTS conducted and concluded that 23 counties out of 102 counties in Illinois contain about 85 percent of population and 70 percent of fatalities as a result of motor vehicle crashes (**see Appendix B**).

3. The primary program emphasis was placed on enforcement of speed related laws. The expectation was that a minimum of two (2) speeding related citations per patrol hour/officer were required to be written.
4. Each grantee shall submit speed surveys before and after the speed enforcement. All surveys must be, each time, conducted at the same time of day and day of the week when the majority of those crashes have occurred. Surveys may be conducted with radar or a speed trailer.
5. Throughout the campaign, information outlining all phases of the program shall be given to police department personnel, news media, and court (prosecutors and judges) personnel.
6. Each grantee must be registered and current on submittal of reports required under the Racial Profiling Law.
7. Each Agency should conduct a Public Information and Education (P. I. & E.) campaign as part of the grant.

## Evaluation Methods

In this report both process and outcome evaluation methods were used to assess the effectiveness of the Speed Enforcement Program.

The process measures include descriptive analysis of enforcement activities across selected local enforcement agencies using the following enforcement and educational data items:

- Number of overtime hours
- Total citation issued
- Total speed related citations issued
- Number of citations issued per hour
- Total actual cost of enforcement
- Cost per citation (calculated by dividing total cost by total number of citations)
- Cost per speed-related citation (calculated by dividing total cost by total number of speed citations)

A cost/benefit analysis was performed to determine the effectiveness of the speed program across selected agencies. The above two cost indicators (cost per citation and cost per speed-related citation) were used to determine: 1) cost effectiveness of the speed program across selected local enforcement agencies; and 2) performance level of the participating agencies. In addition, simple correlation analyses of cost per hour/cost per citation, and cost per hour/cost per speed citation along with scatter diagrams were performed to determine the strength of the relationship between cost and number of citations issued by the participating agencies.

The outcome measure used in this report to test failure/success of the speed program was change in average speed traveled through pre/post speed surveys. The pre and post speed surveys were conducted by the participating local agencies in pre-selected locations where the motorists tend to travel significantly above the posted speed limit. The average traveling speed during the post survey period after high visibility enforcement by local agencies was expected to be significantly lower than that during the pre survey period. The speed surveys were conducted at the same road segments during the pre and post periods to permit comparisons and eliminate location biases. The local agencies attempted to get at least 100 speed samples from each site. At some

sites this was not reasonable due to low traffic volume. Data for selected were collected on the same day of the week and during the same time of day for both pre and post survey periods. This was done as an attempt to minimize the effects that day of week or time of day would have on the study.

Data collection at site was done during pre and post speed enforcement periods. For a copy of the survey form refer to **Appendix C**.

## **Results of Media and Enforcement Activities among the Speed Grantees**

### **Media Activities**

Media efforts are very important part of this grant. A public information and education facet was included in the grant specifications. Grantees were asked to focus media efforts with these emphases and report their efforts:

- Serious/certain enforcement (perception of risk)
- Injury prevention
- Importance of obeying traffic laws
- Cost of traffic ticket fines
- Cost of traffic crash injuries and fatalities
- Participation in media events
- Displays (library, health providers, etc.)
- Presentations (schools)

There were a total of 3,111 Public Information and Education media efforts conducted in coordination with the speed enforcement program. These efforts consisted of press conferences, radio and television news stories, distribution of posters and fliers, banners, or web announcements.

## Enforcement Activities

As indicated earlier, a total of 54 county and local agencies (see **Table 1**) were funded to participate in the statewide speed program and conduct six enforcement campaigns.

Specific locations of these projects are displayed in **Appendix A**.

**Table 2** provides media and enforcement activities for the statewide speed enforcement program by campaign. The reported activities include traffic related citations, patrol hours, and public information and education (P.I. & E.) efforts for each campaign. The main enforcement indicators used to evaluate each agency's enforcement effort were:

- Number of overtime hours
- Total citation issued
- Total speed related citations issued
- Number of citations issued per hour

**Table 1: Selected Speed Grantees in 2008**

Algonquin PD	Cook County SO	Madison PD	Peoria Heights PD
Arlington Heights PD	Danville PD	Maryville PD	Peotone PD
Barrington Hills PD	Decatur PD	McHenry County SO	Rock Island PD
Bartlett PD	East Hazel Crest PD	Metamora PD	Rockton PD
Bartonville PD	East Moline PD	Millstadt PD	Sangamon County SO
Berwyn PD	East Peoria PD	Moline PD	Schaumburg PD
Burnham PD	Elgin PD	Monmouth PD	St. Charles PD
Carol Stream PD	Fairmont City PD	New Athens PD	Tazewell County SO
Caseyville PD	Fairview Heights PD	New Lenox PD	Tremont PD
Champaign PD	Glen Carbon PD	Niles PD	Troy PD
Chicago Heights PD	Granite City PD	Northbrook PD	Wheaton PD
Chicago PD	Joliet PD	Oak Brook PD	Will County SO
Clarendon Hills PD	Kendall County SO	O'Fallon PD	
Clinton County SO	Lombard PD	Pekin PD	

<b>Activities</b>	<b>Campaign 1</b>	<b>Campaign 2</b>	<b>Campaign 3</b>	<b>Campaign 4</b>	<b>Campaign 5</b>	<b>Campaign 6</b>	<b>Total</b>
<b>Total Patrol Hours</b>	5,468	4,852	5,075	4,925	5,285	4,854	30,460
<b>Total P.I. &amp; E.'s</b>	663	558	481	307	736	366	3,111
<b>Speeding</b>	9,210	8,509	8,521	7,966	9,086	8,289	51,581
<b>Other Citations</b>	2,011	1,900	2,006	1,924	1,691	1,895	11,427
<b>Total Citations</b>	11,221	10,409	10,527	9,890	10,777	10,184	63,008

The participating 54 county and local agencies worked a total of 30,460 hours and issued 63,008 citations, of which 51,581 (81.9%) were speeding citations. On average, law enforcement wrote one citation for every 29 minutes of patrol. For more detailed information on media and enforcement activities refer to **Table 6 in Appendix D**.

### **Cost and Benefit Analysis**

The following indicators were used to determine cost effectiveness of the enforcement efforts of the participating agencies:

- Total actual cost of enforcement
- Cost per citation (calculated by dividing total cost by total number of citations)
- Cost per speed-related citation (calculated by dividing total cost by total number of speed citations)

Grantees were required to complete six overtime enforcement campaigns during the grant period. The emphasis was to be placed on speed enforcement with a primary objective of reducing average traveling speed. Grantees reported all citation data by campaign along with patrol hours for reimbursement.

The overall cost of the speed program was \$1,543,243.51. Average cost per citation written was \$24.50. The average cost per patrol hour was \$50.67 (**see Table 3**).

Agency-specific total enforcement hours, total enforcement costs, and total cost per patrol hour were displayed in **Table 7 in Appendix D**.

**Table 3: Speed Grantee Enforcement Activities and Associated Costs**

Grantee	Total Costs	# Patrol Hours	Total Citations	Cost per Citation	Cost per Patrol Hour	Total Speed Citations	Cost per Speed Citation
Statewide	\$1,543,243.51	30,460	63,008	\$ 24.50	\$ 50.67	51,581	\$ 29.92

The primary program emphasis is to be placed on enforcement of speed related laws. All selected agencies were expected to issue a minimum of two (2) speeding related citations per patrol hour. **Table 7** in **Appendix D** provides the total citation contact rate, the speed related citation contact rate, and associated cost per citation across 48 participating agencies.

Of the total of 54 local agencies, only 13 agencies were able to issue speed citation for under 30 minutes (see **Table 4**).

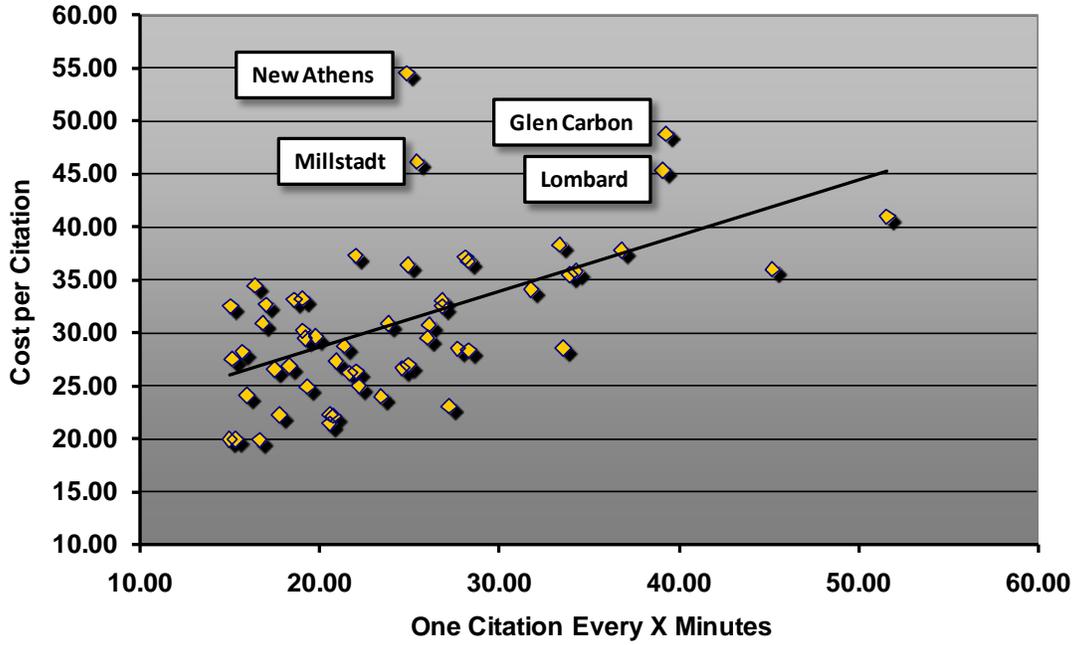
**Table 4: List of Agencies Which Met the Speed Citation Objective**

Agency	Speed Citations every X min.
Arlington Heights PD	24.52
Berwyn PD	29.27
Burnham PD	27.50
Champaign PD	26.79
Chicago Heights PD	24.78
Cook County SO	30.00
East Peoria PD	24.31
Elgin PD	27.50
Madison PD	29.93
Maryville PD	30.00
Rock Island PD	28.99
Sangamon County SO	30.00
Tremont	30.00

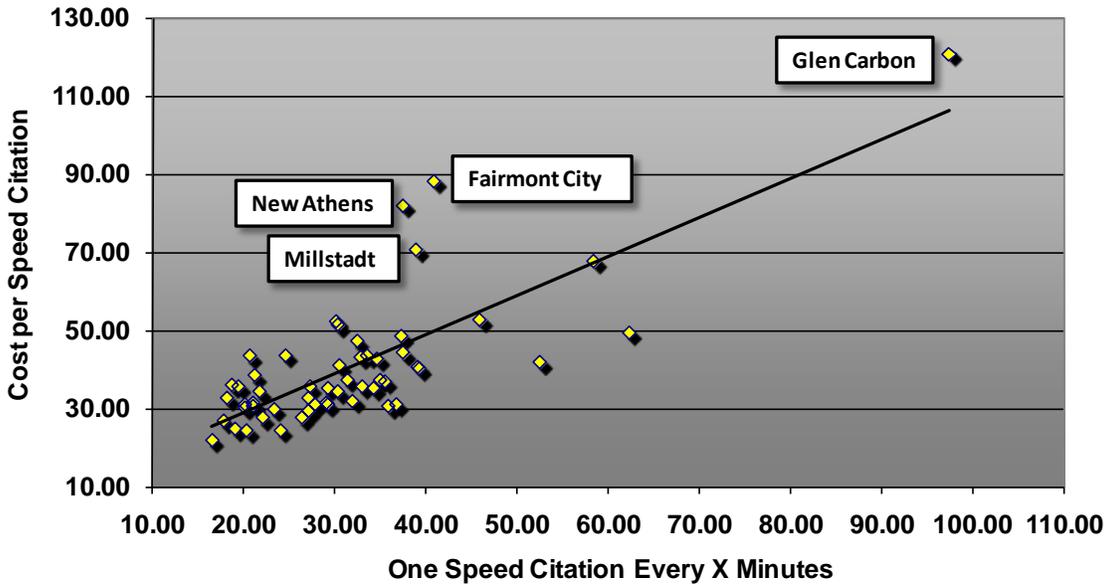
Results of **Tables 4 and 7** reveal that not all the participating agencies provided cost effective enforcement activities since some of the agencies took longer than 30 minutes to issue a speed citation. In order to detect the agencies with high costs and low activities, a correlation analysis along with scatter diagram were performed. The following two Scatter diagrams (**Figure 2 and Figure 3**) show the relationship between

the cost per citation and the total minutes took for an agency to write a citation. The first scatter diagram shows the relationship between cost and total citations and the second scatter diagram shows the relationship between cost and speed related citations issued. The overall correlations of cost/total citations and cost/speed related citations across 54 agencies were 0.57 and 0.77 respectively. These figures indicate that there is a strong positive relationship between total minutes taken to write one citation and associated average cost per citation. In other words, agencies that took a long time to write one citation tend to have higher average cost per citation. As shown in these graphs, a few agencies happened to have extreme values and are considered to be outliers. The DTS staff will contact these agencies to discuss the issues and find out what needs to be done to correct them.

**Figure 2: Scatter Diagram for Citation Per X Minutes and Cost Per Citation**



**Figure 3: Scatter Diagram for Citation Per X Minutes and Cost Per Speed Citation**



## Results of Pre and Post Speed Surveys

**Table 9 in Appendix D** shows average speed figures recorded by the participating local agencies during the pre and post speed surveys by selected posted speed limits. The posted speed limits consisted of seven categories ranging from 20 mph to 65 mph. The first column of this table depicts a list of local agencies within specific posted speed limits. Although all the agencies were supposed to select at least four locations for enforcement activities and survey activities, only seven agencies selected fewer than four locations to conduct enforcement activities. The second column indicates the number of locations (road segments) each local agency selected and conducted speed enforcement and collected speed data. All the participating agencies were advised to select their sites based on their location specific data showing excessive speed as a traffic safety problem. The third and fourth columns show average observed speed before and after speed enforcement activities. The last column represents the change in observed speed. The average speed change column is used to determine the success and failure of the participating agencies in reducing excessive speed. As expected, the majority of the local agencies selected road segments where the posted speed limits ranged from 30 mph to 45 mph. Previous studies (NHTSA 2006) show that the majority of traffic related crash injuries and fatalities as well as property-damaged only crashes occur in rural and residential roads where the posted speed limits are between 30 mph and 45 mph.

As shown in **Table 5**, overall the average speed of selected road segments was significantly higher than the posted speed limit. As expected the average observed speed among the majority of selected road segments during the pre survey was about 4.5 mph higher than the posted speed limits. For example the average speed figures for those road segments within the following posted speed limits of 30 mph, 35 mph, and 45 mph were 34.5 mph, 39.4 mph, and 49.1 mph respectively.

Comparing pre and post speed survey results, the overall average speed decreased after planned enforcement activities across all selected posted speed limit categories. The following materials describe results of the pre and post speed surveys by selected posted speed limits.

1. The overall average speed decreased significantly during the post survey period after speed enforcement activities were conducted. As shown in **Table 9 (Appendix D)**, the change in speed varies across the participating agencies within selected posted speed limits. Contrary to our expectation, there were few agencies that showed an increase in average speed during the post survey. Among those agencies that showed an increase, eleven locations had an average speed below the posted speed limit during the pre survey. After eliminating these agencies from the analysis, the average change in speed between pre and post surveys improved. **Table 5** depicts average speed before and after enforcement activities with and without those sites where the average speed was below the posted speed limits.
2. Within the sites with posted-speed limit of 20 or 25 MPH, a total of eight local agencies participated and conducted enforcement activities within twelve sites. The average speed in these sites was reduced by 0.73 mph percent from 29.7 mph during the pre enforcement period to 28.9 mph during the post survey period. Contrary to our expectation, two agencies (Berwyn and New Athens) had slight increases in average speed from the pre survey to the post survey.
3. Within the posted speed limit of 30 MPH, a total of local 21 agencies conducted enforcement activities in 46 sites. Overall, there was about 0.8 mph decrease in average speed during the post survey period. Among the 21 local agencies that conducted surveys within this posted speed limit, only one agency conducted a survey at a site where the average speed was lower than the posted speed. After eliminating this site with the average speed below the posted speed limit, the average reduction in speed increased from 0.81 mph to 0.91 mph.
4. Within the posted speed limit of 35 MPH, a total of 22 local agencies conducted enforcement activities and collected pre and post speed data. The average speed reduction among these agencies was about 0.6 mph. Three agencies had three survey sites where the average speed was lower than the posted speed during the pre survey. After eliminating these three sites where the average speed was lower than the posted speed limit, the average speed reduction increased from 0.60 mph to 0.66 mph. Furthermore, it should be noted that six

agencies noticed an increase in the average speed from the pre survey to the post survey.

5. A total of ten agencies conducted speed enforcement activities on twenty-two locations where the posted speed limit was 40 MPH. The overall average speed decreased by 2.1 mph from 45.11 mph during the pre survey period to 43.01 mph during the post survey period. There was only one site where the average speed was lower than the posted speed. After removing this site, the average speed decreased by 2.3 mph during the post survey. Two of the ten agencies in this speed limit category noticed an increase in the average speed from the pre survey to the post survey.
6. For a total of 24 locations where the posted speed limit was 45 MPH, there was a reduction of 1.80 mph during the post survey. Three sites were removed from this category because their average speed during the pre survey was lower than the posted speed limit. After removing three sites where the average speed was lower the posted speed limit sites, the average reduction in speed increased slightly to 1.85 mph. Seven of the 24 agencies noticed an increase in speed during the post survey.
7. Within the posted speed limit of 50 MPH, only two agencies conducted activities across four locations and showed an average speed reduction of 5.2 mph. During the pre survey, one of the four locations had a lower average speed than the posted speed limit. After eliminating this location, the average speed reduction increased 6.6 mph.
8. Finally, a total of thirteen agencies conducted speed enforcement activities across 22 locations where the posted speed limit was 55 MPH (Note: two of thirteen sites had a posted speed limit of 65 mph). As result of their efforts, the overall the average speed was reduced by 1.2 mph after the speed enforcement activities. In this posted speed limit category, there were two locations where the average speed was lower than the posted speed limit. After excluding these locations, the average speed reduction increased to 1.3 mph. Within this category, two of the thirteen agencies noticed increases in the average speed from the pre survey to the post survey

**Table 5: Average Speed during Pre and Post Surveys and Average Speed Differences by Selected Posted Speed Limits**

	20 or 25 MPH			30 MPH			35 MPH			40 MPH		
	Avg. Speed Pre	Avg. Speed Post	Avg. Chg	Avg. Speed Pre	Avg. Speed Post	Avg. Chg	Avg. Speed Pre	Avg. Speed Post	Avg. Chg	Avg. Speed Pre	Avg. Speed Post	Avg. Chg
<b>Total</b>	29.66	28.93	-0.73	33.47	32.66	-0.81	36.40	35.80	-0.60	45.11	43.01	-2.10
<b>Total (removing sites with lower than the posted speed limits)</b>	29.66	28.93	-0.73	33.58	32.67	-0.91	36.48	35.82	-0.66	45.65	43.35	-2.30
	45 MPH			50 MPH			55 or 65 MPH					
	Avg. Speed Pre	Avg. Speed Post	Avg. Chg	Avg. Speed Pre	Avg. Speed Post	Avg. Chg	Avg. Speed Pre	Avg. Speed Post	Avg. Chg			
<b>Total</b>	47.26	45.45	-1.80	61.71	56.53	-5.18	60.58	59.41	-1.17			
<b>Total (removing sites with lower than the posted speed limits)</b>	47.35	45.50	-1.85	64.41	57.80	-6.60	60.63	59.32	-1.31			

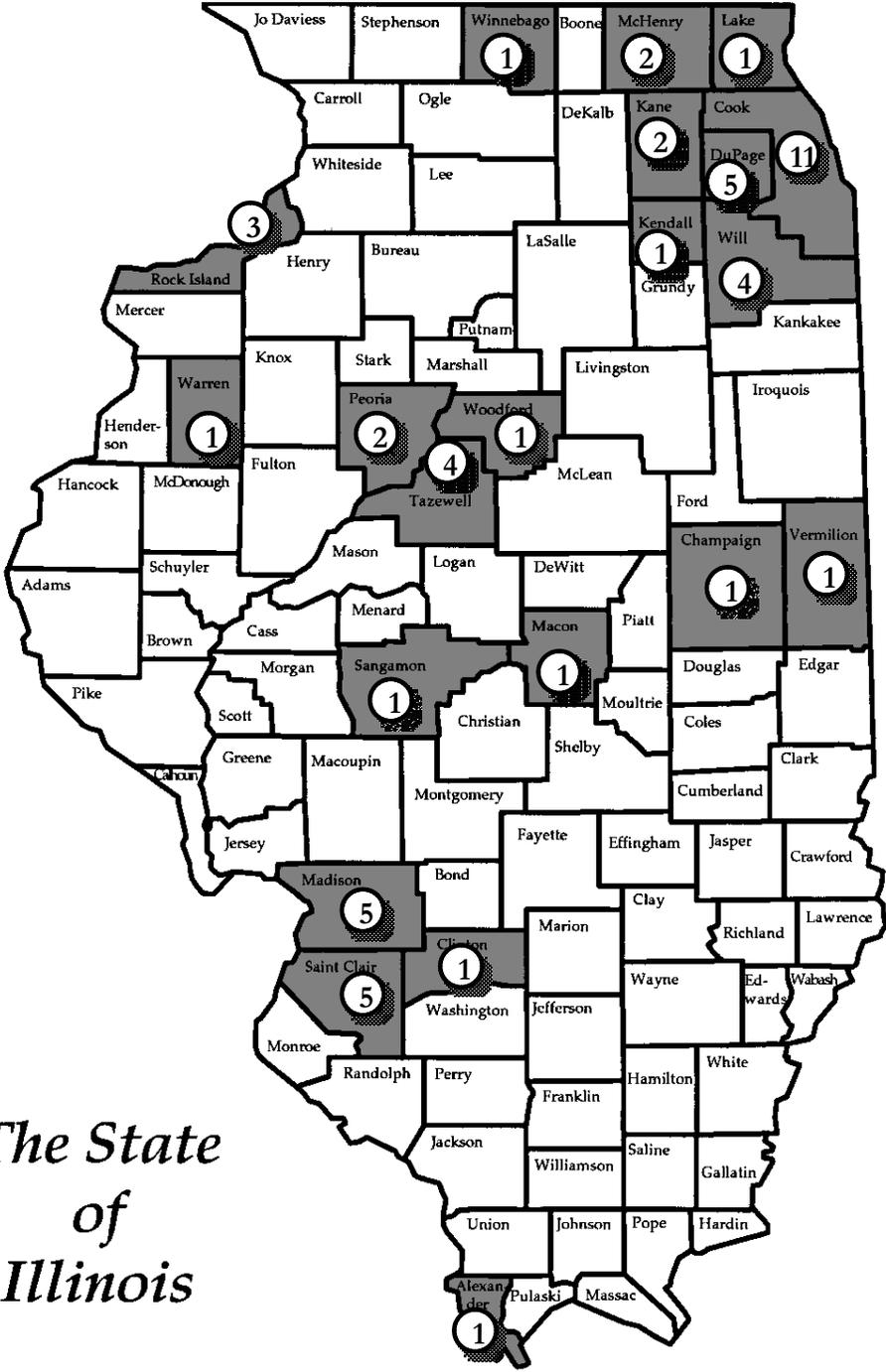
## **Discussion and Limitations of Data**

Results of pre and post speed surveys among 54 participating agencies show a reduction in the average speed after speed enforcement activities. Although overall the average speed decreased during the post speed campaign, there were few agencies that showed no change or even higher average speed. Reexamining those agencies with positive average speed during the post survey, we found out that about 13 agencies had sites with lower average speed than the posted speed limit. After eliminating those sites where the average speed was lower than the posted speed limits, the overall average speed reduction between pre and post surveys improved.

Although all the enforcement data (e.g., total number of patrol hours and total citations) provided by the local agencies show significant improvement in reduction of average speed, they should be interpreted with caution due to the following reasons:

1. Some grantees did not complete the required Pre and Post Speed Surveys.
2. Some grantees did not keep the locations constant between the Pre and Post Surveys.
3. Most grantees did not keep constant the time of the day between the Pre and Post Surveys.
4. Some grantees reported different posted speed limits for the same location when reporting results from the Pre and Post Surveys.
5. Some grantees did not complete surveys and campaigns on four locations.
6. Some grantees did not complete six months of campaigns.

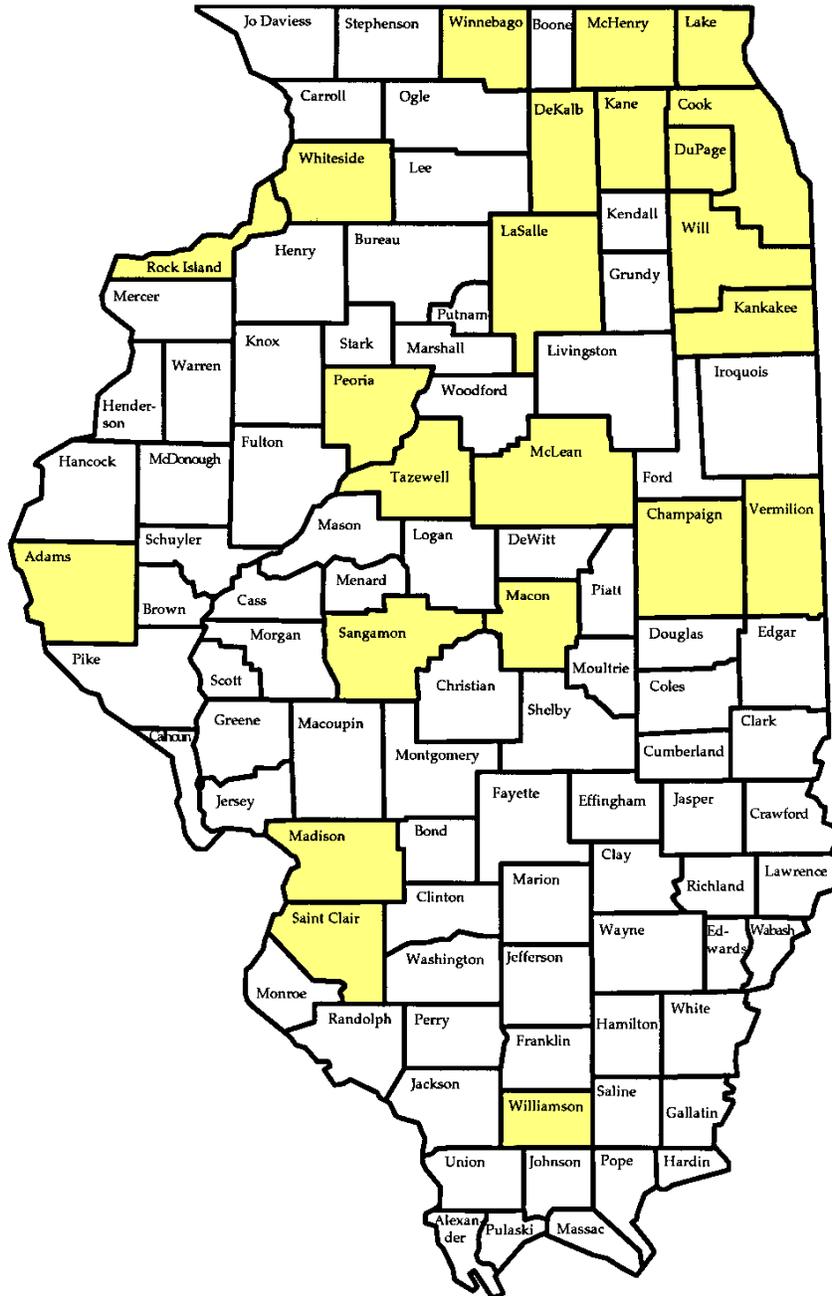
# Appendix A: Map of SEP FY 2008 Projects by County



*The State  
of  
Illinois*

# Appendix B: 23-County Model

## State of Illinois



# Appendix C: Speed Program Survey Form



**Illinois Department  
of Transportation**

**Speed Enforcement Program  
Speed Survey**

City/County: \_\_\_\_\_ Project Number: \_\_\_\_\_

Survey Date: \_\_\_\_\_ Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

Before Project Survey     During (Mid Year) Survey     Final (After) Survey    Posted Speed Limit: \_\_\_\_\_

Survey Location: \_\_\_\_\_

Officer Name and ID: \_\_\_\_\_

Total Number of Vehicles Observed: \_\_\_\_\_

Indicate speed in the appropriate block. **Use one line per vehicle.** The survey applies to all vehicles. Survey must be conducted **for one (1) hour** at each selected patrol location, utilizing an unmarked car with plainclothes officer, one direction of traffic and stationary radar/lidar unit or a speed trailer.

Vehicle Observed Speed							
Vehicle Number	Speed						
1		26		51		76	
2		27		52		77	
3		28		53		78	
4		29		54		79	
5		30		55		80	
6		31		56		81	
7		32		57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14		39		64		89	
15		40		65		90	
16		41		66		91	
17		42		67		92	
18		43		68		93	
19		44		69		94	
20		45		70		95	
21		46		71		96	
22		47		72		97	
23		48		73		98	
24		49		74		99	
25		50		75		100	

**Make additional copies of this form as needed.**

Page \_\_\_\_\_ of \_\_\_\_\_ Pages

**Appendix D:**

**Associated Tables**  
(Tables 6, 7, 8, and 9)

**Table 6: FY08 SPEED CAMPAIGN PROJECT DATA SUMMARY**

**Speed "Overtime" Enforcement**

Type of Citation	1	2	3	4	5	6	Total
DUI	10	10	12	12	11	14	69
Safety Belt	323	302	328	374	282	285	1,894
Child Safety Seat	29	28	27	27	20	26	157
Felony	6	10	11	10	7	11	55
Stolen Vehicles	0	0	0	2	2	0	4
Fugitives	48	40	49	39	36	53	265
Suspended License	208	162	198	223	172	193	1,156
Uninsured	650	592	608	514	571	593	3,528
Speeding	9,210	8,509	8,521	7,966	9,086	8,289	51,581
Reckless Driving	3	0	1	2	4	3	13
Drug Arrest	16	20	9	20	13	10	88
Other	718	736	763	701	573	707	4,198
Vehicles Stopped	9,948	9,575	9,498	9,143	9,933	10,817	58,914
Totals	11,221	10,409	10,527	9,890	10,777	10,184	63,008

**Regular Non-Overtime Patrol**

Type of Citation	1	2	3	4	5	6	Total
Speeding	5,138	5,180	4,614	4,322	4,369	3,817	27,440
Other Moving Viol.	6,036	10,794	9,983	6,220	9,017	7,226	49,276
DUI	330	368	388	341	411	395	2,233
Alcohol Related	142	137	160	193	146	155	933
Safety Belt	683	1,233	2,676	1,630	1,517	1,207	8,946
Child Restraint	34	50	113	84	67	82	430
Safety Belt W/Warn.	38	51	147	79	40	36	391
Child Rest. W/Warn.	3	3	1	4	1	0	12
Regular Enf. Total	12,404	17,816	18,082	12,873	15,568	12,918	89,661

**SUMMARY DATA**

	1	2	3	4	5	6	Total
Total Patrol Hours	5,468	4,852.5	5,075	4,925.5	5,285.2	4,854	30,460.2
Total P.I. & E.'s	663	558	481	307	736	366	3111

**Table 7: Total Enforcement Cost, Total Patrol Hours and Cost per Patrol Hour by Agency**

<b>Agency</b>	<b>Expended</b>	<b>Total hours</b>	<b>Cost per patrol hour</b>
1	2	3	4
Algonquin	\$33,213.44	598	\$55.54
Arlington Heights	\$45,490.74	776	\$58.62
Barrington Hills	\$7,222.25	102	\$70.81
Bartlett	\$26,909.61	504	\$53.39
Bartonville	\$7,403.73	215	\$34.44
Berwyn	\$24,542.56	443	\$55.40
Burnham	\$11,894.40	248	\$47.96
Carol Stream	\$26,672.92	474	\$56.27
Caseyville	\$13,537.88	409.5	\$33.06
Champaign	\$26,360.66	663	\$39.76
Chicago Heights	\$14,517.36	315.5	\$46.01
Chicago	\$177,427.95	2356	\$75.31
Clarendon Hills	\$13,220.17	253	\$52.25
Clinton County	\$12,000.91	260	\$46.16
Cook County	\$104,877.76	1487	\$70.53
Danville	\$23,499.36	663	\$35.44
Decatur	\$26,120.33	513	\$50.92
East Hazel Crest	\$9,480.70	303	\$31.29
East Moline	\$26,358.57	642	\$41.06
East Peoria	\$30,136.06	600	\$50.23
Elgin	\$44,509.19	774	\$57.51
Fairmont City	\$14,421.56	519	\$27.79
Fairview Heights	\$8,460.54	112	\$75.54
Glen Carbon	\$14,305.47	296	\$48.33
Granite City	\$42,750.00	923	\$46.32
Joliet	\$65,850.75	1189	\$55.38
Kendall County	\$12,968.65	285.5	\$45.42
Lombard	\$19,092.74	369	\$51.74
Madison	\$10,063.55	216	\$46.59
Maryville	\$20,022.51	512	\$39.11
McHenry County	\$25,464.65	444	\$57.35
Metamora	\$5,946.39	208	\$28.59
Millstadt	\$661.84	20	\$33.09
Moline	\$58,630.49	1275	\$45.98
Monmouth	\$20,041.22	595	\$33.68
New Athens	\$4,377.66	160	\$27.36
New Lenox	\$5,315.43	106	\$50.15
Niles	\$40,064.53	669	\$59.89

**Table 7: (continued)**

<b>Agency</b>	<b>Expended</b>	<b>Total hours</b>	<b>Cost per patrol hour</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Northbrook	\$20,695.60	354	\$58.46
Oak Brook	\$18,828.79	356	\$52.89
O'Fallon	\$31,960.60	644	\$49.63
Pekin	\$31,506.13	706	\$44.63
Peoria Heights	\$17,765.94	443	\$40.10
Peotone	\$12,361.00	370	\$33.41
Rock Island	\$15,257.89	339	\$45.01
Rockton	\$19,810.50	522	\$37.95
Sangamon County	\$72,382.00	1769	\$40.92
Schaumburg	\$28,127.35	568	\$49.52
St. Charles	\$19,520.88	349	\$55.93
Tazewell County	\$57,074.15	1173	\$48.66
Tremont	\$5,881.04	180	\$32.67
Troy	\$18,394.20	465	\$39.56
Wheaton	\$42,182.65	734	\$57.47
Will County	\$57,660.26	989	\$58.30
<b>TOTAL</b>	<b>\$1,543,243.51</b>	<b>30,458.5</b>	<b>\$50.67</b>

**Table 8: Citation Associated Costs and Contact Rates by Agency**

Agency	Cost per citation	One Citation Written Every X min	Cost per speed citation	Speed Citation Written Every X Min
1	2	3	4	5
Algonquin	\$24.97	26.98	\$28.96	31.28
Arlington Heights	\$23.46	24.01	\$23.96	24.52
Barrington Hills	\$27.25	23.09	\$36.66	31.07
Bartlett	\$22.22	24.97	\$27.77	31.21
Bartonville	\$19.08	33.25	\$30.10	52.44
Berwyn	\$20.61	22.32	\$27.03	29.27
Burnham	\$17.81	22.28	\$21.99	27.50
Carol Stream	\$20.79	22.17	\$29.12	31.05
Caseyville	\$15.18	27.54	\$21.12	38.33
Champaign	\$15.99	24.12	\$17.75	26.79
Chicago Heights	\$15.36	20.03	\$19.00	24.78
Chicago	\$45.22	36.02	\$52.46	41.80
Clarendon Hills	\$33.38	38.33	\$45.90	52.71
Clinton County	\$28.30	36.79	\$37.27	48.45
Cook County	\$33.58	28.57	\$35.90	30.54
Danville	\$22.02	37.28	\$30.28	51.26
Decatur	\$26.12	30.78	\$37.48	44.16
East Hazel Crest	\$17.05	32.70	\$18.74	35.93
East Moline	\$24.94	36.44	\$32.34	47.26
East Peoria	\$16.67	19.91	\$20.35	24.31
Elgin	\$20.57	21.46	\$26.35	27.50
Fairmont City	\$15.07	32.54	\$40.85	88.22
Fairview Heights	\$51.59	40.98	\$62.21	49.41
Glen Carbon	\$39.30	48.79	\$97.32	120.82
Granite City	\$23.84	30.89	\$33.58	43.50
Joliet	\$24.64	26.70	\$32.91	35.65
Kendall County	\$28.13	37.16	\$32.75	43.26
Lombard	\$39.12	45.37	\$58.39	67.71
Madison	\$19.35	24.92	\$23.24	29.93
Maryville	\$19.23	29.51	\$20.14	30.91
McHenry County	\$33.95	35.52	\$39.00	40.80
Metamora	\$16.43	34.48	\$20.65	43.33
Millstadt	\$25.46	46.15	\$38.93	70.59
Moline	\$20.94	27.32	\$27.16	35.43
Monmouth	\$18.61	33.15	\$24.53	43.70
New Athens	\$24.87	54.55	\$37.42	82.05
New Lenox	\$22.06	26.39	\$31.27	37.41
Niles	\$28.33	28.39	\$31.95	32.01
Northbrook	\$36.82	37.79	\$39.20	40.23

**Table 8: (continued)**

<b>Agency</b>	<b>Cost per citation</b>	<b>One Citation Written Every X min</b>	<b>Cost per speed citation</b>	<b>Speed Citation Written Every X Min</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Oak Brook	\$26.04	29.54	\$30.27	34.34
O'Fallon	\$21.70	26.23	\$27.02	32.66
Pekin	\$21.39	28.76	\$30.44	40.93
Peoria Heights	\$19.81	29.63	\$20.95	31.34
Peotone	\$15.73	28.24	\$18.18	32.65
Rock Island	\$15.00	20.00	\$16.44	21.92
Rockton	\$19.10	30.20	\$21.67	34.27
Sangamon County	\$18.33	26.88	\$21.02	30.82
Schaumburg	\$26.84	32.52	\$29.12	35.28
St. Charles	\$31.79	34.10	\$34.86	37.39
Tazewell County	\$26.83	33.09	\$34.63	42.71
Tremont	\$16.85	30.95	\$19.41	35.64
Troy	\$17.52	26.57	\$20.02	30.36
Wheaton	\$34.29	35.80	\$35.42	36.98
Will County	\$27.73	28.54	\$34.18	35.17
<b>TOTAL</b>	<b>\$24.50</b>	<b>29.01</b>	<b>\$29.92</b>	<b>35.43</b>

**Table 9: Pre/Post Average Speed  
By Posted Speed Limit and By Agency**

**Posted Speed 20 or 25**

Agency (Posted Speed)	# of Locations	Posted Speed Limit 20 or 25		
		Pre	Post	Change
Chicago (20)	1	34.47	32.39	-2.08
Barrington Hills PD (25)	4	29.45	27.77	-1.68
Berwyn (25)	1	30.05	30.66	+0.61
East Peoria (25)	1	34.61	33.21	-1.40
Madison (25)	1	30.96	28.95	-2.01
New Athens (25)	1	28.68	29.03	+0.35
Peoria Heights (25)	1	27.59	27.59	0.00
Troy (25)	2	31.54	30.38	-1.16

**Posted Speed 30**

Agency	# of Locations	Posted Speed Limit 30		
		Pre	Post	Change
Arlington Heights	2	32.32	31.75	-0.54
Berwyn	2	37.01	35.55	-1.46
Caseyville	2	36.19	35.52	-0.67
Champaign	1	32.00	30.00	-2.00
Chicago	10	38.83	38.10	-0.73
Chicago Heights	1	36.69	32.80	-3.89
Clarendon Hills	1	34.93	29.47	-5.46
Danville	2	35.22	36.45	+1.23
East Hazel Crest	1	34.90	32.94	-1.96
East Moline	2	27.87	32.00	+4.13
Madison	1	31.91	38.91	+7.00
Metamora	1	33.52	36.36	+2.84
Moline	4	33.26	35.07	+1.81
Monmouth	1	35.52	35.29	-0.24
Niles	1	38.93	34.39	-4.54
Northbrook	1	35.29	33.40	-1.89
O'Fallon	2	34.79	34.20	-0.59
Pekin	2	34.48	36.10	+1.62
Rock Island	3	34.49	32.90	-1.59
St. Charles	3	38.94	35.31	-3.64
Will County	3	36.34	35.73	-0.62

**Table 9: (continued)****Posted Speed 35**

Agency	# of Locations	Posted Speed Limit 35		
		Pre	Post	Change
Arlington Heights	3	36.10	36.17	+0.07
Algonquin	1	38.59	37.36	-1.23
Bartlett	1	40.77	40.13	-0.64
Champaign	3	38.39	38.05	-0.34
Chicago	1	46.62	38.38	-8.24
Chicago Heights	1	44.32	46.67	+2.35
Clarendon Hills	2	43.08	40.26	-2.81
Danville	1	38.55	37.42	-1.13
Decatur	1	44.38	29.04	-5.34
East Hazel Crest	1	39.25	34.32	-4.93
East Peoria	1	45.88	40.55	-5.33
Granite City	3	38.30	36.86	-1.44
Joliet	1	33.94	39.02	+5.08
Lombard	8	36.27	35.52	-0.75
New Athens	1	38.04	37.60	-0.44
Niles	3	41.25	39.32	-1.93
O'Fallon	1	36.73	36.76	+0.03
Pekin	1	35.73	39.34	+3.61
Peoria Heights	1	29.92	35.51	+5.59
Schaumburg	1	44.04	42.11	-1.93
Wheaton	2	38.97	37.75	-1.22
Will County	1	38.59	35.50	-3.09

**Posted Speed 40**

Agency	# of Locations	Posted Speed Limit 40		
		Pre	Post	Change
Bartonville	3	42.64	41.89	-0.75
Burnham	2	46.42	45.70	-0.72
Chicago Heights	2	46.21	42.46	-3.75
Decatur	3	45.89	43.28	-2.61
East Peoria	1	51.81	48.59	-3.22
Fairmont City	2	41.27	41.44	+0.17
Northbrook	2	43.83	43.24	-0.59
Peotone	2	42.61	43.86	+1.25
Sangamon County	4	47.45	44.22	-3.23
Wheaton	1	41.11	39.63	-1.48

**Table 9: (continued)**

**Posted Speed 45**

Agency	# of Locations	Posted Speed Limit 45		
		Pre	Post	Change
Algonquin	1	47.88	44.33	-3.55
Bartlett	2	51.29	50.28	-1.01
Bartonville	1	53.84	50.09	-3.75
Carol Stream	4	51.06	50.57	-0.49
Caseyville	2	51.62	51.03	-0.59
Cook County	2	48.69	51.45	+2.77
East Moline	2	43.39	47.15	+3.76
Elgin	1	54.62	58.56	+3.94
Glen Carbon	1	50.00	49.15	-0.85
Joliet	1	47.69	49.40	+1.71
Lombard	2	47.00	44.94	-2.06
Maryville	2	46.36	46.82	+0.46
McHenry County	1	49.49	47.69	-1.80
Metamora	2	49.04	45.70	-3.34
Monmouth	1	49.59	47.73	-1.86
Pekin	1	44.31	36.65	-7.66
Peoria Heights	2	43.32	46.88	+3.56
Peotone	2	45.42	47.71	+2.29
Rockton	1	49.30	48.67	-0.63
Sangamon County	2	49.31	48.81	-0.50
Schaumburg	1	49.38	49.05	-0.33
St. Charles	1	49.55	47.85	-1.70
Troy	2	52.25	50.65	-1.60
Wheaton	1	45.38	43.66	-1.72

**Posted Speed 50**

Agency	# of Locations	Posted Speed Limit 50		
		Pre	Post	Change
Elgin	2	67.43	58.94	-8.49
Monmouth	2	54.49	54.86	+0.37

# Table 9: (continued)

## Posted Speed 55 or 65

Agency (Posted Speed)	# of Locations	Posted Speed Limit 55 or 65		
		Pre	Post	Change
Clarendon Hills	1	64.86	65.37	+0.51
East Peoria	1	67.79	62.94	-4.85
Elgin	1	65.29	59.90	-5.39
Glen Carbon	1	57.75	54.10	-3.65
Granite City	1	60.72	56.96	-3.76
Kendall County	4	57.36	56.63	-0.73
Madison	1	52.74	55.17	+2.43
McHenry County	3	59.17	55.83	-3.34
New Athens	2	60.04	57.29	-2.75
Rockton	1	58.66	58.56	-0.10
Tazewell County	4	58.30	58.18	-0.12
Glen Carbon (65)	1	62.40	63.70	1.30
Maryville (65)	1	67.57	67.55	-0.02

