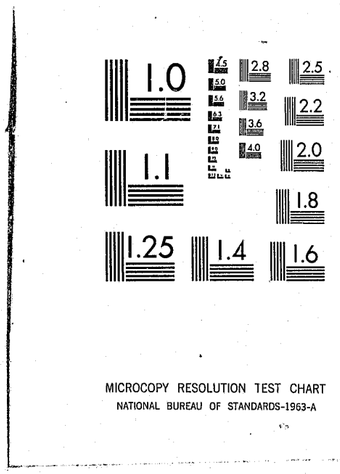

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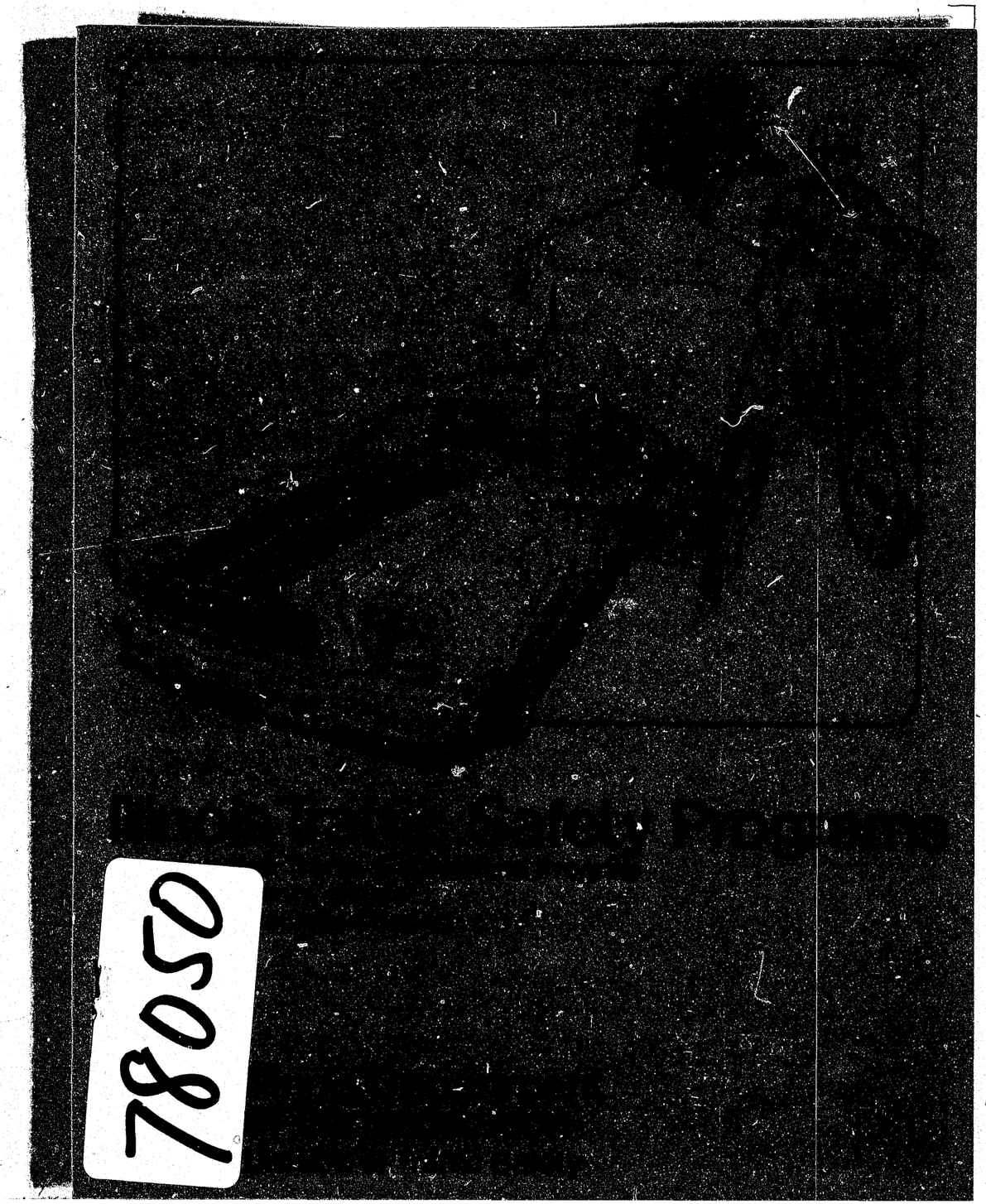
National Institute of Justice
United States Department of Justice
Washington, D.C. 20531



CONCENTRATED TRAFFIC ENFORCEMENT PROGRAM
MCHENRY COUNTY, ILLINOIS
FIRST YEAR
EVALUATION REPORT

Illinois Department of Transportation
Division of Traffic Safety

Questions concerning this paper
may be addressed directly
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December 1979

This report was prepared by
the Evaluation Unit,
Division of Traffic Safety

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TABLE OF CONTENTS

CONCENTRATED TRAFFIC ENFORCEMENT PROGRAM MCHENRY COUNTY, ILLINOIS FIRST YEAR EVALUATION REPORT

SUMMARY

This report is an evaluation of a concentrated traffic enforcement project conducted in McHenry County, Illinois during calendar year 1978. The program of concentrated traffic enforcement was undertaken for the purpose of reducing traffic accidents through the use of visible and active enforcement of traffic laws at specific locations. Funds for equipment and manpower to operate this project were obtained, in part, from a Highway Safety Grant administered by the Illinois Department of Transportation. The grant paid 70 percent ($66,686) of the total cost of the project ($95,266). The project appears to have been successful and cost effective in reducing traffic accidents.

Reduction of traffic accidents at the patrolled locations from predicted levels (based on a three-year trend, January 1975 to December 1977) was statistically significant at the 99 percent confidence level. Moreover, there was also a significant reduction in the number of fatal and personal injury accidents that occurred during the project (1978) when compared to accidents of the previous year (1977). Additionally, the proportion of traffic accidents that occurred during good weather was reduced significantly compared to averaged data of the three previous years. The analysis of accident data indicated that the project was an effective traffic safety measure and was particularly successful during good weather conditions.

During the year of operations, three full-time deputies of the

McHenry County Sheriff's Department spent 3859 hours patrolling the high-accident locations selected for concentrated enforcement. More than 3240 citations and 708 warnings were issued. Hours of increased patrol were distributed to the locations in proportion to the frequency of accidents that had previously occurred at each location. Citations, however, were not issued in proportion to the causes of accidents. In fact, speeding violations constituted 59 percent of those cited, while county records attributed only 20 percent of accidents to this violation. Additionally, an average contact rate of one violator per hour was attained which is comparable with similar projects on rural roads and indicates that the police were active and visibly enforcing traffic laws.

Public awareness was an integral portion of the project. Publicity stressed the highway safety purpose of the project so that the enforcement of traffic laws would not be perceived as harassment.

A benefit-cost ratio of approximately twelve to one was calculated for this project using National Safety Council cost estimates for accidents.

PURPOSE AND SCOPE OF THIS REPORT

The purpose of this report is to assess the effectiveness of the project for the first year of operations. The evaluation examines the contribution of the project to reducing accidents at locations where patrol was increased, and the degree to which the techniques of concentrated traffic enforcement were applied. This report includes an analysis of accidents county-wide and at the patrolled sites. The trend of accidents from 1975 through 1977 is used as a base for comparison purposes. Additionally, enforcement is reviewed in terms of man-hours worked, contacts per hour, and the distribution of citations and warnings. Public information, costs versus benefits, and the effect of changing weather conditions are also discussed. Sources of data include pre-implementation data and quarterly reports prepared by the county as well as accident records kept by the Division of Traffic Safety (DTS), Illinois Department of Transportation.

BACKGROUND

The concentrated traffic enforcement project was undertaken for the purpose of reducing rural traffic accidents in McHenry County through enforcement of traffic laws at specific locations. Enforcement was to be principally directed against those violations identified as contributing to the causes of accidents. Additionally, enforcement was to occur at times during which accidents had been over-represented.

The McHenry County Sheriff's Department provides law enforcement throughout the unincorporated area of the county. This area contains 611 square miles and a population of approximately 125,000 persons. The county is bordered by the Wisconsin counties of Kenosha and Winnebago and

the Illinois counties of Kane, Boone, DeKalb, Lake and Cook. The population is scattered throughout the county, some in rural farm lands, others in suburban housing developments containing several thousand residents each.

Seven locations which had experienced a high frequency of accidents were selected by the McHenry County Sheriff's Department for increased patrol. Figure 1 shows their geographic locations. One of the locations (#5: Ill. 23 from Harvard to Marengo, Ill.-not on map) was dropped after six months of patrol because, according to the Sheriff's Department, engineering improvements helped reduce the number of accidents there. Additionally, travel to and from the location required an excessive amount of time. The six remaining sections totalled 44 miles and were the site of 12 percent of all accidents handled by the Sheriff's Department during 1977. However, from October 1976 through September 1977, 27 percent of the fatal accidents in the county occurred at these locations. Table 1 includes a description of the sites selected for patrol.

The Sheriff's Department assigned three full-time officers to patrol the locations selected for concentrated enforcement. Three squad cars were purchased for their use. However, the cars did not arrive until the second quarter of operations; in the interim, county squad cars were used.

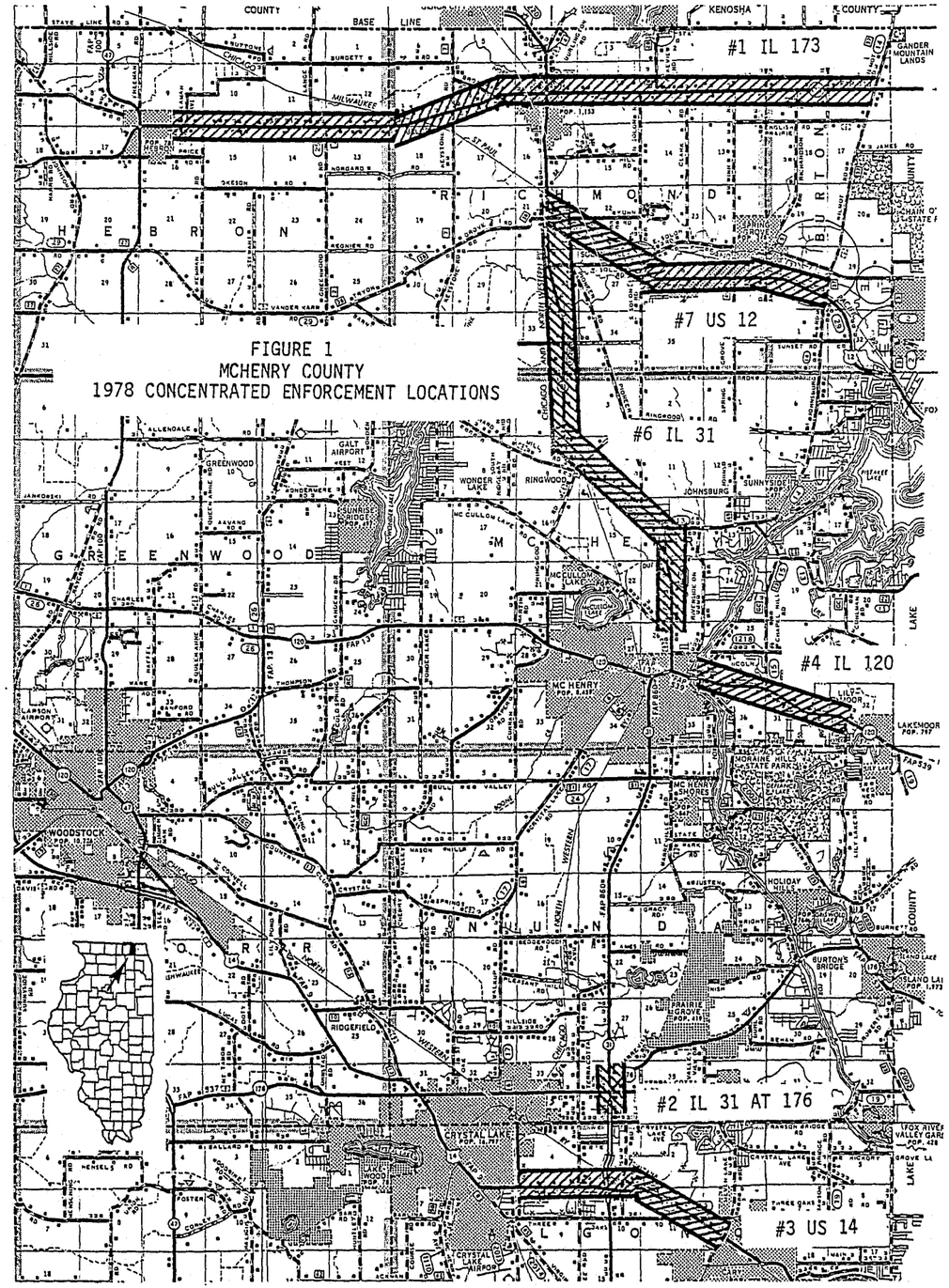

FIGURE 1
MCHENRY COUNTY
1978 CONCENTRATED ENFORCEMENT LOCATIONS

TABLE 1

LOCATIONS SELECTED FOR CONCENTRATED ENFORCEMENT

SITE	DESCRIPTION
#1	Ill. Route 173 . . . Hebron Ill. to Wilmot Road
#2	Intersection of Ill. 31 and Ill. 176
#3	U. S. Route 14 . . . Crystal Lake city limits to Silver Lake Road
#4	Ill. Route 120 . . . River Road to Lily Lake Road
#5	(Deleted from project)
#6	Ill. Route 31 . . . U.S. 12 to McCullom Lake Road
#7	U. S. Route 12 . . . Ill. 31 to Wilmot Road

Since 1972 an Accident Investigation Unit has operated in the county on a 24-hour basis. The five trained officers of this unit handle investigations of personal injury and fatal traffic accidents. These officers also participated in the project when their schedule permitted. The man-hours spent and citations issued by these officers on the six locations selected for increased enforcement are included in this report.

OBJECTIVES

Specific objectives were established by the Sheriff's Department for each location as well as for the overall project. The primary objective of this project was to reduce the number and frequency of motor vehicle accidents at the selected locations by increasing police visibility and by enforcement of traffic laws. The specific objectives appear to have been chosen arbitrarily. Consequently, whether or not the goals were attained is considered irrelevant to the evaluation of this project.

However, they may have been useful to the Sheriff's Department as guidelines or sources of motivation.

Project personnel stated that they intended to:

- Increase patrol hours by 50 percent each month
- Maintain an arrest index[1] of 25 each month
- Maintain an enforcement index[2] of 20 each month
- Limit "speeding" citations to less than 50 percent of all contacts (citations and warnings) made.

Other specific objectives for each site are detailed in Table 2.

TABLE 2

OBJECTIVES FOR EACH SITE

Site (see map or Table 1)	1	2	3	4	6	7
Reduce Accidents	27%	35%	22%	18%	22%	27%
Increase Citations For:						
Speeding	-	100%	50%	35%	35%	50%
Failure to Yield	-	100%	-	100%	-	100%
Improper Lane Use	-	100%	100%	50%	100%	50%
Following Too Close	-	-	100%	-	-	-
Driving While Intoxicated	-	-	100%	-	100%	-

1 Citations for moving violations divided by the number of fatal accidents and injury accidents.

2 Convictions of citations for moving violations divided by the number of fatal and injury accidents.

In summary, the personnel assigned to this project were able to attain the objectives narrated above with the exceptions of increasing patrol hours and limiting the proportion of speeding citations. Additionally, nine of the sixteen goals listed in Table 2 were exceeded. These accomplishments will be elaborated upon later in this report.

ANALYSIS OF ACCIDENTS

The effect of increased enforcement of traffic accidents was evaluated using both data submitted by the McHenry County Sheriff's Department and data from the files of the Division of Traffic Safety. There is a difference between these two sets of data, as can be seen by comparing Tables 3 and 4. However, the changes seen from year-to-year are comparable and similar conclusions can be drawn using either set of data. While this situation is not ideal, there is rarely exact agreement between files because some accidents which are not reported to the county, are reported to DTS by motorists and other law enforcement agencies.

According to the data submitted by the county (Table 3), accidents which occurred at the sites decreased from 313 the previous year (1977) to 293 during the project (1978). This represents a decrease of 20 accidents or 6.4 percent, which is not statistically significant.

Only at site #6 (Ill. 31) was the established objective for the reduction of accidents met. There, accidents declined 31.7 percent which was a greater decrease than the goal of 22 percent. Sites #2 (Ill. 31 at Ill. 176) and #7 (U. S. 12) were close to their target reductions of 35 percent and 27 percent with decreases in accidents of 28.6 percent and 21.3 percent, respectively. However, none of the decreases in accidents

TABLE 3
ACCIDENT DATA SUBMITTED BY
MCHENRY COUNTY

SITE*	FREQUENCY 1977	FREQUENCY 1978	CHANGE	PERCENT CHANGE
#1 - Ill. 173	32	29	- 3	- 9.4%
#2 - Ill. 31 at 176	21	15	- 6	-28.6
#3 - U.S. 14	79	103	+24	+30.4
#4 - Ill. 120	74	68	- 6	- 8.1
#6 - Ill. 31	60	41	-19	-31.7
#7 - U.S. 12	47	37	-10	-21.3
Total	313	293	-20	- 6.4%
County-wide*	5833	5889	+56	+ 1.0%

* DTS data - Sheriff's submission incomplete but show similar percent changes over nine months

TABLE 4
ACCIDENT TREND ANALYSIS
ALL ACCIDENTS

SITE	ACTUAL 1975	ACTUAL 1976	ACTUAL 1977	PRE-DICTED 1978*	ACTUAL 1978	DIFFER-ENCE	PERCENT CHANGE
#1	43	64	54	65	51	-14	-21.5%
#2	12	22	25	33	18	-15	-45.5**
#3	60	84	109	133	104	-29	-21.8
#4	42	88	80	108	68	-40	-37.0**
#6	36	47	59	70	44	-26	-37.1**
#7	54	57	53	54	49	- 5	- 9.3
	247	362	380	463	334	-129	-27.9**

* Predictions based on a linear regression using 1975, 1976, and 1977 data. See Appendix A for six-year trend analysis.

**Statistically significant with 95 percent confidence (p = .05).

at any of the sites were statistically significant and they could have occurred by chance.

Another method of analyzing changes in accidents (Table 4) consists of comparing the actual number of accidents that occurred during the project with the expected number of accidents based on past trends. Because the county furnished data for only one year prior to the project, DTS files were used to examine the trend in accidents over several years. The extension of a trend line calculated for 1975, 1976, and 1977 resulted in a prediction of 463 accidents for the period during which the project was conducted. Because 334 accidents were reported in 1978, a reduction of 129 accidents or 27.9 percent was calculated from the predicted level. This difference was significant at the 99 percent confidence level. Predictions based on trends can also be extended to the individual sites. Table 4 shows that significant reductions occurred at three of the six sites.

The effect of the increased patrol on accidents is of interest because it is expected that concentrated enforcement is most effective during good weather conditions. Enforcement is primarily designed to m modify the behavior of the driver. During bad weather, concentrated enforcement is hypothesized to have a minimal effect because road and visibility conditions rather than motorist behavior are assumed to be the contributing factors to accidents. To test this hypothesis the ratio of accidents that occurred on dry roads, with clear visibility, was calculated with respect to all accidents. A Chi-square test showed a significant reduction in the proportion of accidents that occurred during good weather between 1978 data and the average of data for the years 1975, 1976, and 1977. The same test showed statistically no significant

changes between 1976 and 1977 data nor between 1975 and 1976 data. The validity of this technique is dependent upon a minimal change in the weather throughout the years studied. Tests presented in Appendix B suggest that the conclusions are unaffected by the small weather variations that occurred. Therefore, it appears that this project contributed to significant reductions in the proportion of accidents that occurred on dry roads during clear weather.

TABLE 5
PERCENT OF ACCIDENTS OCCURRING ON DRY PAVEMENT IN CLEAR WEATHER CONDITIONS

SITE	1975	1976	1977	3-Year Average	1978
#1 - Ill. 173	81%	61%	74%	71%	31%
#2 - Ill. 31 at 176	75%	59%	72%	68%	72%
#3 - U.S. 14	61%	74%	51%	61%	46%
#4 - Ill. 120	37%	60%	63%	56%	59%
#6 - Ill. 31	72%	60%	61%	63%	55%
#7 - U.S. 12	61%	75%	57%	65%	61%
Total	63%	66%	61%	63%	51%

Source: Collision Diagram data, Division of Traffic Safety, Illinois Department of Transportation.

Accidents resulting in injury or death were examined to determine if there was any change in their severity during the project. A comparison of data describing fatal and personal injury accidents is presented in Table 6. The frequency of severe accidents as reported by the County Sheriff's Department is uniformly less than the data obtained from the Division of Traffic Safety files. In this case, differing conclusions are indicated by the two data sets. Data submitted by the county show only a three percent decrease in severe (fatal and personal injury) accidents during the year of the project when compared to the previous year. The three percent decrease is not statistically significant. However, data from Illinois Division of Traffic Safety files indicate a 25 percent decrease in severe accidents over the same period. This reduction is statistically significant at the 95 percent confidence level. The data from DTS files are generally considered more accurate because of the large number of sources that contribute to the data base. This assertion is supported by the fact that the data from DTS files are uniformly greater or equal in number to the data submitted by the county. According to DTS data, the 25 percent decrease in fatal and injury accidents was substantially greater than the decrease which occurred on all state highways in McHenry County (5.0 percent). Hence, it appears that the increased enforcement contributed to a reduction in severity of accidents at the patrolled sites.

TABLE 6
SEVERE ACCIDENT DATA COMPARISON
FATAL AND PERSONAL INJURY ACCIDENTS

SITE	COUNTY DATA 1977	COUNTY DATA 1978	DTS DATA 1977	DTS DATA 1978
1	15	11	23	20
2	5	5	11	9
3	17	34	49	37
4	22	14	32	17
6	18	13	26	20
7	11	9	18	16
Total	88	86	159	119
	3% Reduction*		25% Reduction**	
All rural state numbered routes in McHenry County			593	561
			5% Reduction*	

* Not statistically significant
** Statistically significant with 95 percent confidence

SUMMARY OF ENFORCEMENT

1. Hours of Patrol

An average of 320 hours per month was spent patrolling the selected sites. These constituted 44 percent of the 736 hours scheduled per month. Based on a staff of three officers, only 500 hours could have been worked at the maximum. Therefore, the patrol scheduled by the county does not appear to have been in line with their available staff. It should be noted that these hours not only comprise the activity of the three full-time personnel, but also include time spent on enforcement at the project sites by members of the Accident Investigation Team. Because the time invested by members of this team was not paid for with federal funds, the donation of their services illustrates the cooperation of the county during the conduct of the project.

2. Contacts Per Hour

The number of contacts per hour is a measure of the visibility of the police. Logically the more the police stop traffic law violators, whether a citation is issued or not, the more motorists see the police. Some studies have shown that there is an apparent correlation between the visibility of police and a reduction in accidents. The annual average of contacts per hour at the sections patrolled during the project was 1.0. Approximately the same rate was attained by the Illinois State Police on patrol at similar rural locations statewide.[3] Successful projects conducted in urban areas have achieved a rate of two contacts per hour.

Although 18 percent of the contacts were written warnings, little information was kept regarding the time, place or reason they were issued. More complete data were available for citations. The citation rate averaged 0.8 per hour for the entire year with some locations having monthly averages as low as 0.09 per hour while other sites had monthly averages as high as 2.6 per hour. The citation rate peaked in late summer and fall while a decrease was seen with the advent of cold weather. Personnel working this project implied that frequent stops were dangerous to make during winter weather conditions.

3. Distribution of Citations by Location

Participating personnel successfully distributed both patrol hours and citations among the locations in relation to the proportion of accidents that had previously occurred (Table 7) at each. The correlation between accidents that occurred in 1977 at each location and the distribution of patrol hours and citations during 1978 was .97 and

3 Benages, C., Interim Evaluation Report - Illinois State Police Concentrated Traffic Enforcement Program. (Illinois Department of Transportation, Springfield, Illinois, 1978), p. 11.

.90 respectively (perfect correlation is 1.0 and no correlation is 0.0). These correlations indicate that the increased enforcement was concentrated at locations where, previously, a high number of accidents had occurred. This practice was suggested by the results of prior research.[4] However, in this study no correlation was found that implied a relationship between decreases during the project and the proportional distribution of citations among the patrolled locations.

TABLE 7
DISTRIBUTION OF ACCIDENTS AND ENFORCEMENT AT THE PATROLLED SITES

SITE	PRE-PROJECT 1977 ACCIDENTS		DURING PROJECT 1978 PATROL HOURS		CITATIONS	
#1 (Ill. 173)	32	10.2%	299	7.8%	412	13.8%
#2 (31 at 176)	21	6.7%	145	3.8%	134	4.5%
#3 (U.S. 14)	79	25.2%	1061	27.6%	615	20.5%
#4 (Ill. 120)	74	23.7%	1178	30.6%	849	28.4%
#6 (Ill. 31)	60	19.2%	706	18.4%	599	20.0%
#7 (U.S. 12)	47	15.0%	456	11.8%	385	12.8%
Total	313	100.0%	3845	100.0%	2994	100.0%

4. Distribution of Citations by Type of Violation

Ideally, citations should have been issued for violations in proportion to the accidents to which each violation contributes. Data in Table 8 indicate that this was not accomplished. Citations for "Speeding," "Improper Passing," and "Defective Equipment" were over-represented in that they collectively constituted 81 percent of

4 Roche, J. A., Traffic Accident Reduction, New York State Police, New York 1965.

citations issued while the record shows that these violations contributed to only 24 percent of accidents. Although violations such as "Failure to Yield," "Following Too Close," and "Improper Lane Usage" are difficult to detect and cite, efforts should be made to attain a better distribution.

Specific objectives for issuing citations at each of the sites patrolled were outlined previously in Table 2. Nine of these objectives were met, seven were not. "Failure to Yield" and "Improper Lane Usage" citations were apparently the most difficult to cite because these constituted five of the seven objectives that were not met. Overall citations increased 831 percent over levels prior to the project with "Speeding" citations constituting over half the gain.

TABLE 8
TRAFFIC CITATIONS BY VIOLATION
AT THE PATROLLED LOCATIONS

TYPE OF CITATION	ACCIDENT RELATED CITATIONS ISSUED PRIOR TO THE PROJECT (10/76 - 9/77)		CITATIONS ISSUED DURING THE PROJECT (1/78 - 12/78)	
	AMOUNT	PERCENT	AMOUNT	PERCENT
Speeding	39	20.0%	1800	59.9%
Improper Lane Use	39	20.0%	116	3.8%
Failure to Yield	28	14.4%	50	1.6%
Driving While Intoxicated	13	6.6%	36	1.2%
Following Too Close	7	3.6%	7	0.2%
Failure to Stop	7	3.6%	30	1.0%
Ignoring Signal	4	2.1%	77	2.6%
Improper Passing	4	2.1%	309	10.3%
Defective Equip.	4	2.1%	319	10.6%
Other	50	25.5%	258	8.6%
Total	195	100.0%	3007	100.0%

Source: McHenry County Sheriff's Department.

PUBLIC INFORMATION

A basic concept of concentrated traffic enforcement is the assumption that motorists will drive carefully if they expect the presence of the police. In McHenry County the media was used to enhance the effect of actual patrol. The publicity was intended to assure motorists that the increase in enforcement was for improved highway safety and not a form of harrassment or an activity to generate revenue.

The publicity campaign appears to have been evenly apportioned over the year the project was in operation. Ten newspapers stories and seven radio announcements have been documented that mentioned the project by name. Additionally, approximately one thousand posters were distributed throughout the county. The posters were placed in businesses, schools, factories, banks and other public places. Also, a printed brochure explaining the project was distributed to each motorist stopped by the police. The effect of this information on driver attitudes or reductions in accidents was not determined.

BENEFIT-COST ANALYSIS

The National Safety Council each year estimates the average total financial loss to society associated with traffic deaths, non-fatal injuries, and accidents only involving property damage. Medical expenses, property damage, lost wages, and insurance costs are among the factors included. Other costs such as psychological and social traumas are not. The latest available figures (1978) have been used to calculate an average cost per accident for the road segments considered in this study (Table 9). The cost was $7,496 per accident. Therefore, the 129 accidents that did not occur during 1978 as predicted (from the three year trend, 1975 - 1977) benefited society by $966,984 (129 x $7,496). Since the cost of this project was $81,323 (includes only 55% of equipment costs as first year depreciation[5]). The benefit-cost ratio can be calculated as 11.9 ($966,984/$81,323).

TABLE 9
CALCULATION OF THE AVERAGE COST PER ACCIDENT AT THE HIGH-ACCIDENT ROAD SEGMENTS INCLUDED IN THIS STUDY 1975-1977

TYPE	PERCENT OF ACCIDENTS (3 YR. AV.)	PERSONS INVOLVED PER ACCIDENT*	COST PER PERSON PER ACCIDENT**	COST PER ACCIDENT	PROPORTIONATE COST PER ACCIDENT
Fatal	1.8%	1.07	$150,000	$160,500	$2,889
Injury	37.3	1.89	$ 5,800	$ 10,962	$4,089
Property Damage	60.9	-	-	$850	$ 518
AVERAGE COST PER ACCIDENT					$7,496

* Source: DTS files for accidents occurring on these roads.
** Source: National Safety Council - 1977 Figures

5 According to estimates by International Association of Chiefs of Police.

CONCLUSIONS AND RECOMMENDATIONS

Available data on the McHenry County project have indicated that some success in reducing accidents has been achieved. Apparently, the increased patrol was most effective when weather and road conditions were good. Additionally, the benefits resulting from the project (in terms of accident costs) outweighed the costs of operation. However, some improvements in operations may enhance the results of future efforts.

During the first year of operations, citations were not issued in direct proportion to the violations causing accidents. Because this objective was not achieved, the benefits of the project may have been lessened. Enforcement is generally considered preventative only when it deals with the specific violations which are causing accidents although some of these violations may be among the most difficult to detect and cite. As an authority in concentrated enforcement has stated, "good preventative enforcement will require the citation of drivers who violate traffic laws that are difficult (for the officer) to make judgments about."[6] Consequently, the local supervisor should review enforcement on a daily basis and direct the attention of the officers to those types of violations which should be cited most frequently.

The supervisor should also emphasize good patrol procedures which will facilitate the detection and proper documentation of these violations for prosecution. Obviously, flagrant violations of any law cannot be ignored for the sake of attaining a prescribed distribution by category. However, if specific attention is devoted consistently to the most hazardous types of violations, the project may benefit in the long run.

6 Byrne, E. C., "Preventive and Selective Enforcement of Traffic Laws," Law and Order, June 1975, pp. 18-22.

Another deficiency of the project was design of a schedule of patrol which did not reflect the limit of available manpower. Officers were able to patrol during only 44 percent of scheduled hours. This percentage suggests unrealistic planning of operations, rather than an inadequate amount of enforcement. After the experience of one year, the Sheriff's Department should have no difficulty in arranging a more realistic schedule.

The future of this project appears favorable. The problems noted above can be improved with attentive supervision on a daily basis.

APPENDIX A
PROJECTION OF ACCIDENT LEVELS

This discussion is appended to show the affect of including more data in the linear regression used to predict expected accident levels. Usually the inclusion of more data results in an improvement in the validity of trend line projections. In this case, however, including more data in the trend analysis means including accident data for years prior to 1975; this is significant because during 1974 the maximum speed limit was lowered to 55 miles per hour. Therefore including any years prior to 1975 in the calculation is likely to bias the resulting trend-line projections. For this reason only data from 1975 through 1977 were used to make the projections used in the body of this paper.

APPENDIX B
VALIDATION OF THE METHOD USED TO ADJUST THE ACCIDENT DATA FOR WEATHER BIAS

The technique of comparing accidents that occur on dry roads with clear visibility can be invalid if the number of days with dry roads and clear visibility varied substantially on a year to year basis. However, in this case the weather data recorded in McHenry County (Table B-1) show there was only a slight variation in the number of days with precipitation from year to year. The biggest variation observed is a three percent increase between 1977 and 1978. A Chi-square test on accident data which was "weighted" for the weather variation between 1977 and 1978 yielded the same conclusions reached previously.

It is obvious that during the winter months precipitation may remain on the road surface for days after it has fallen. To test whether the duration of this residual varied from year to year road surface conditions were abstracted from reports of accidents that occurred during January, February, and March of both 1977 and 1978. The ratio of days on which the roads were predominately reported as dry to the days the roads were wet, icy, muddy or snow covered were calculated and tabulated in Table B-2. The fact that these ratios are very close indicated that the assumptions made when correcting accidents for weather bias were indeed valid for this situation.

TABLE B-1
DAYS OF PRECIPITATION IN MCHENRY COUNTY**

	1975	1976	1977	1978
Days Per Year	105	98	99	110
Percent of Year	28.8%	26.8%	27.1%	30.1%

*Recorded at Marengo, Illinois - from Illinois Climatological Data, Vol. 80-83, National Oceanic and Atmospheric Administration.

TABLE B-2
MCHENRY COUNTY RURAL STATE-NUMBERED ROADS FROM JANUARY THROUGH MARCH

	Ratio of days roads were predominately dry to days roads wet, icy, muddy or snow covered	
	1977	1978
3 Months	.85	.82
January	.42	.40
February	.87	.63
March	1.58	2.00

Source: Collision diagram summaries of accidents reported to the Division of Traffic Safety, Illinois Department of Transportation.