AN EVALUATION OF THIRTEEN LOCAL SELECTIVE ENFORCEMENT PROJECTS DESIGNED TO REDUCE DRUNKEN DRIVING IN VIRGINIA

by

Cheryl Lynn
Research Scientist

Virginia Highway & Transportation Research Council
(A Cooperative Organization Sponsored Jointly by the Virginia Department of Highways & Transportation and the University of Virginia)

Charlottesville, Virginia

October 1985
VHTRC 86-R14

SAFETY RESEARCH ADVISORY COMMITTEE

W. E. DOUGLAS, Chairman, Director, Planning & Programs Development, Department of Motor Vehicles

V. M. BURGESS, Transportation Safety Administrator, Department of Motor Vehicles

C. P. HEITZLER, JR., Program Manager, Department of Information Technology

B. G. JOHNSON, Supervisor, Driver Education, Department of Education

C. W. LYNN, Reseach Scientist, VH&TRC

R. F. MCCARTY, Safety Program Coordinator, FHWA

W. F. MCCORMICK, Assistant District Engineer, VDH&T

R. M. MCDONALD, Project Director, Transportation Safety Training Center, Virginia Commonwealth University

C. M. ROBINSON, Field Supervisor, Department of State Police

F. F. SMALL, Highway Engineering Program Supervisor, VDH&T

J. A. SPENCER, Assistant Attorney General, Office of the Attorney General

E. W. TIMMONS, Director of Public Affairs, Tidewater AAA of Virginia, Norfolk, Virginia

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The author wishes to express her appreciation to a number of persons who have made valuable contributions to this report. Cheryl Summers and Nellie Mitchell assisted with the data reduction and provided valuable editorial comments, as did Wayne Ferguson and Charles Stoke. Cheryl also assisted in organizing the final report. Philip Harris and the staff of the data group produced accident data specific to each individual project. Thanks also go to Toni Thompson for typing the draft, Harry Craft for his usual comprehensive editorial review, and Jean Vanderberry for typing the reproduction copy.

ABSTRACT

In accordance with federal requirements, the effectiveness of thirteen locally based DUI selective enforcement projects funded with grants from the National Highway Traffic Safety Administration was evaluated. The grants were awarded in the FY 1982 grant period. In the study, projects found to have met their goals for reducing alcohol-related crashes and increasing DUI arrests during target hours were taken to have been successful. According to the criteria for demonstrating program effectiveness, there should not have been corresponding changes in the incidence of non-alcohol-related accidents nor should similar trends have appeared in DUI arrests or among alcohol-related accidents during non-target hours.

This report states whether each project did or did not meet its goals and offers an explanation of the results. In addition, a discussion of the local project areas is included because of the differences among the thirteen localities.

FINDINGS

For the convenience of the reader, Exhibit 1 has been prepared to facilitate comparisons of the degrees of effectiveness among the thirteen DUI selective enforcement projects funded by the National Highway Traffic Safety Administration. It shows if there was a preexisting alcohol-related accident problem, and if the localities had had previous DUI selective enforcement grants. Exhibit 1 also indicates if the localities met either their arrest goals or their accident goals. In addition, the table reflects whether changes in accidents were attributable to the project. Obviously, this tabulation may oversimplify the results, and the reader should be cautioned to refer to the description of each locality and the discussion of each project contained in the body of this report in order to adequately interpret the results.

From Exhibit 1, the following observations can be made:

1. In seven of the localities, there had been a preexisting alcohol accident problem.

2. In ten localities, there had been selective enforcement grants prior to the study period.

3. Twelve localities set DUI arrest goals and six of them met their goals. These six were not necessarily the localities which had a previously existing alcohol problem.

4. Only three of the thirteen localities failed to meet their goals for accident reduction.

5. In seven of the thirteen localities, improvements in the alcohol-related safety environment were attributable to the DUI selective enforcement programs.

It is very interesting to note that there seems to be no correlation between project results and other factors, including (a) whether previous grants had been awarded, (b) whether an alcohol-related crash problem existed prior to the FY 1982 grant period, (c) grant size, or (d) expenditure per person or per square mile of area. Perhaps the most startling conclusion drawn from the data is that increasing the number of arrests for DUI appears to produce no consistent reduction of alcohol-related accidents.

Exhibit 1

A Summary of Findings by Projects

	Bristol	Falls Church	Galax	Newport News	Peters-burg	Rich-mond	Staunton	Waynes-boro	Win-chester	Han-over	Russell	Big Stone Gap	Front Royal
Was there previously an accident problem?	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No
Were there previous DUI Selective Enforcement Grants? (a)	Yes	No	No	Yes	Yes	Yes	No	Yes(8)	Yes(7)	Yes	Yes	Yes(10)	Yes(7)
Did the locality meet its arrest goals?	Yes	No	Yes	Yes	Ø(b)	No	No	Yes	Yes	Yes(c)	No	Ø(d)	Ø(d)
Did the locality meet its accident goals?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes
Were changes in accidents attributable to the project?	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	No	Yes(e)

(a) Numbers in this row indicate the number of months during the year preceding the grant period that no selective enforcement project was operating

(b) No goal set

(c) Determination based on Hanover County figures

(d) Arrest figures are not produced for small towns

(e) Improvements attributable only in part

AN EVALUATION OF THIRTEEN LOCAL SELECTIVE ENFORCEMENT PROJECTS DESIGNED TO REDUCE DRUNKEN DRIVING IN VIRGINIA

by

Cheryl Lynn
Research Scientist

INTRODUCTION

During the 1980's, emphasis on drunken driving as a community health problem has increased dramatically. While a number of large-scale national campaigns to reduce driving under the influence (DUI) have been in operation since the early 1970's, interest in combatting this problem on the local level has come of age only in recent years, as evidenced by the formation of such groups as MADD (Mothers Against Drunk Drivers) and VODD (Virginians Opposed to Drunk Driving). Similarly, countermeasure efforts originally designed to operate on a national level are now receiving increasing support in individual communities. Since there has been a tendency in state assemblies to make DUI laws more strict, and since the arrest of the suspected drunken driver is the first step in stricter sanctions for these offenders, methods of stimulating DUI enforcement are receiving much attention.

This increased scrutiny of selective enforcement methods is not without precedent, since efforts to study the impact of increased arrests have been underway since 1945. In recent years the availability of funds through the National Highway Traffic Safety Administration (NHTSA) has made it possible for states to become more actively involved than formerly in one type of selective enforcement project -- the establishment of special police patrols for DUI.* Federal monies for DUI selective enforcement are administered in the state by the Transportation Safety Administration of the Virginia Department of Motor Vehicles (TSA). Most of the local DUI selective enforcement projects in Virginia are funded by federal grants administered by the TSA. The awarding of the grants, however, is the prerogative of the state's Transportation Safety Board, an autonomous group appointed by the Governor. While this body has the power to let all transportation safety grants for selective enforcement, it usually follows the advice of the TSA. Once grants are awarded, the projects funded are included in the state's Highway Safety Plan, the major planning document for Virginia's highway safety program. In fulfillment of federal

---

* It should be recognized at the outset that there are many methods of selective enforcement. Sobriety checkpoints or roadblocks currently being established in many localities constitute a stationary method of selective enforcement, while special DUI police patrols are essentially the mobile component of the special enforcement effort.

requirements, the FY 1982 Highway Safety Plan specified that an impact evaluation of DUI selective enforcement projects funded for FY 1982 be conducted. Thus, the research reported here evaluates the effects of increased DUI patrols on the numbers of DUI arrests, numbers of alcohol-related accidents, or both.

DESCRIPTION OF LOCAL PROJECT AREAS

The thirteen local DUI enforcement projects under study are dispersed across the state, and their corresponding local communities have diverse demographic and physical characteristics. The localities range in size from 2.0 square miles in tiny Blackstone* to 483 square miles in sprawling Russell County. Populations range from 3,400 persons, again in Blackstone, to 219,000 in Richmond. Because of the extreme ranges in size and population, population densities are also extremely diverse. These densities are as small as 65 persons per square mile (Russell County) and as large as 4,700 persons per square mile (Falls Church). It should be recognized that these population densities can have a dramatic effect on the success or failure of local programs, since the concept of DUI special patrols is premised upon the assumption that the patrols can provide comprehensive coverage in areas where drunken driving is likely to occur. This is much more difficult to accomplish in large, rural areas where population densities are lower than in cities. However, high density creates a large target group of drunken drivers and increases local activity often beyond the ability of available manpower. Falls Church police personnel state, for instance, that their locality's high density and heavy traffic leads to special DUI enforcement problems. Richmond, Staunton, Waynesboro, and Winchester also have high population densities with their concomitant problems for DUI selective enforcement. Russell and Hanover counties have large areas with a low population density, which causes problems such as lack of sufficient officers to cover the large geographic areas. Some localities, notably Winchester, Bristol, and Big Stone Gap, have special problems with large numbers of transient drivers. Other special problems in alcohol-related crashes include the presence of educational institutions and recreational facilities which serve alcohol. Police in these locales state that there are insufficient regular personnel to enforce DUI laws and that the presence of the above-mentioned facilities merely exacerbates these insufficiencies.

---

*The town of Blackstone was originally included in the list of localities receiving grants. However, when initial data were examined, it was found that the number of accidents in Blackstone was not sufficiently large to allow for analysis and subsequent evaluation of project success.

It was hypothesized at the outset that one additional factor would greatly influence the success or failure of local selective enforcement projects, namely the presence of a problem with regard to alcohol-related crashes. In some localities receiving monies, no such problem existed. Indeed, several communities had significantly better highway safety environments than their counterparts and than the state as a whole, and in several of these, the situation was improving even more over time. It seems logical that decreases in alcohol-related crashes during the DUI enforcement program period would be more likely to be found in areas where they were overrepresented. This hypothesis was tested during this evaluation.

Because of the differences in local project communities, it was appropriate that each have its own project goals, schedules, and activities. The one-year grant periods of the thirteen projects began between February and September 1982. In almost all cases, the special enforcement countermeasures funded by the grants involved training officers and setting up special patrols for DUI detection. Most of the special patrols canvassed the entire locality during target hours. The target hours were generally on Friday and Saturday nights beginning between 8 p.m. and 12 a.m. and ending between 1 a.m. and 4 a.m., the times that drunken driving is believed to be most prevalent. Most localities included holidays in their weekend target hours. The two universal goals of the various projects were to increase DUI arrests and to reduce alcohol-related accidents, although the expected changes differed from place to place. It is clear that while local projects were somewhat area-specific they are similar in a general sense and shared a number of salient characteristics. Because of these many similarities, a general methodology was employed for all projects.

METHOD

This study was designed to determine whether the DUI selective enforcement countermeasures effected a change in performance indicators. Once a change was found, it was necessary to determine whether it was due to the selective enforcement countermeasure or some other factor. To accomplish this, the analysis was designed to answer the following questions:

1. Was there an increase in DUI arrests and a decrease in alcohol-related accidents during the selective enforcement grant period? Were these changes in line with stated goals?

2. Was the difference between changes in the numbers of alcohol and non-alcohol-related accidents during target hours significant?

3. Were there corresponding changes in alcohol-related and non-alcohol-related accidents during non-target hours that would account for changes in target hours? If so, the effectiveness of the program would be lessened.

This analysis was conducted using a four-year period beginning three years prior to the grant periods in 1979 and ending in 1983 at the termination of the one-year grant periods.

For several reasons, all data for these analyses were taken from centralized state sources. It had been noted from crash data previously received from a few localities that locally kept accident figures did not match state generated figures. Furthermore, these local statistics did not uniformly over- or underestimate the numbers of crashes. Thus, the reasons for the discrepancies could not be determined, nor could the data be corrected by using some weighting factor. For this reason, accident data were drawn from the 1979-1983 State Police Crash Tapes, the state's compendium of accident information. Since similar discrepancies were noted with regard to DUI arrests, convictions or both, special reports generated at the Department of Motor Vehicles were used as the source for arrest data. Using state sources also avoided the problem of availability of data that had been encountered in other selective enforcement studies.

LIMITATIONS

In the section that follows, each of the projects evaluated is described and data concerning its effectiveness are presented. It should be noted at the outset that there are several extraneous factors that might influence the outcome of the current DUI selective enforcement projects. First, if a locality had had a previous grant the data could be skewed as a result of the cumulative effects of continuous extra enforcement. Falls Church, Galax and Staunton were the only localities that had not had one or more previous DUI selective enforcement grants. The data have been interpreted with the previous selective enforcement grant history in mind. In some cases, however, localities had other federally and non-federally funded alcohol countermeasures in operation concurrent with the selective enforcement project. The Transportation Safety Board regularly approves grants to buy alcohol-related equipment, such as breath testing devices for localities, and public information efforts are also regularly funded. Almost all

localities have Alcohol Safety Action Projects (ASAPs) programs designed to encourage increased arrest and rehabilitation activities for drunken drivers. These projects are generally funded through fees paid by the convicted drivers themselves. A change in a local ASAP program taking place concurrently with the DUI selective enforcement grant period could affect arrest and accident levels. Also, a number of other highway safety programs not specifically dealing with alcohol operate at the state and local levels. These might be expected to affect the overall numbers of crashes and thus could affect similar changes in alcohol-related statistics. Finally, as discussed earlier, it was noted in previous research that the DUI selective enforcement grants under investigation in this study were not awarded on the basis of need. In several cases, communities receiving grants did not have a major problem with alcohol-related accidents as compared with other communities or the state as a whole. These many extraneous factors will be discussed as they apply to the various project grants.

City of Bristol

Bristol is an incorporated city located on the Virginia/Tennessee border in the southwestern part of the state. (Bristol, Tennessee, lying just over the state line, constitutes the other half of the metropolitan area). The city of Bristol is generally considered as part of the tri-cities area of Bristol/Kingsport/Johnson City and is considerably less rural than the surrounding area. The Virginia side of the city has a population of almost 20,700 persons and covers 12.54 square miles. It should be noted that some surrounding localities are essentially "dry," in that the sale of alcohol beverages is prohibited.

Problem Statement

The previously existing problems of each locality have been analyzed in detail and were presented in a separate publication. In order to give perspective to the level of success of the projects under study, a brief summary of the prior alcohol crash problem is presented here.

In 1981, Bristol experienced 418 accidents, 48, or 11.5%, of which were alcohol-related. Both this total number and the percentage of alcohol-related crashes were significantly lower than in previous years. While the number of accidents per registered vehicle was about the same as that for the rest of Virginia, the number of alcohol-related accidents per registration was significantly lower than in the state as a whole. The same was true in terms of severity, where overall severity approximated the state level, and alcohol-related severity was much lower. Finally, the percentage of accidents that were alcohol-related was already much lower than that for the rest of the state, and lower by far than in any other of the funded cities. In general, then, only a minor alcohol-related accident problem existed prior to the grant period under study. This was expected because of previous selective enforcement activities. However, during 1981, the percentage of all arrests which were alcohol-related declined from previous years, indicating that perhaps DUI enforcement activities were less prevalent.

When interviewed, the Bristol Police Department considered DUI enforcement to be a difficult problem because of the heavy traffic flow through the city to its counterpart, Bristol, Tennessee. It may be that while accident levels were being reduced in the Bristol, Virginia, area through tougher enforcement, Bristol, Tennessee, absorbed additional crossover drunken driving. Additionally, the Bristol police felt that the DUI enforcement problem was complicated by the presence of several industrial complexes, colleges, and shopping malls on the Bristol, Virginia, side.

Project History and Activities

The grant under investigation was a continuation of previous funding, running from September 1981 to August 1982. The project evaluated began in September 1982, and there was no time period during which selective enforcement activities were not conducted. Additionally, DUI enforcement activities were funded prior to September 1981, but no dates were available. Reductions in the alcohol-related crash problems in Bristol concurrent with previous program operations made the impact of the 1982 project difficult to attain.

During the current grant period, a selective DUI enforcement patrol was on duty Friday and Saturday nights from 8 p.m. to 4 a.m. and over holiday weekends. Since all officers had completed DUI detection training, all were eligible to serve on patrol on an overtime basis. Patrols covered the entire city of Bristol, rather than focusing on target locations.

Project Goals

Ultimate	:	To reduce alcohol-related accidents by 5% during the one year grant period.
Intermediate	:	To increase DUI arrests by 10% over the same time period.

Project Results

With respect to its intermediate goal, the Bristol Police Department increased the number of DUI arrests by 151%, from an average of 186 during the pre-grant period to 467 for the grant period. Although there was a gradual increase over the four-year period, this was by far the most pronounced increase.

The Bristol police were also successful in meeting their ultimate goal of reducing alcohol-related accidents. As seen in Table 1, while total numbers of accidents during target hours remained stable, numbers of alcohol-related accidents decreased from 18 to 14 during this time period, for a 22% decrease. At the same time, alcohol-related accidents increased during non-target hours, both in absolute numbers and in the percentage of all crashes they represented. This would indicate that the grant awarded to Bristol for DUI selective enforcement was an efficient expenditure of funds.

Table 1

City of Bristol

	Sept. 79-Aug. 80	Sept. 80-Aug. 81	Sept. 81-Aug. 82	Grant Period Sept. 82-Aug. 83
Number of Accidents	327	354	369	326
Fatal	2	1	1	3
Injury	70	83	95	82
Number of Alcohol-related Accidents	49	54	47	45
% Of Crashes Which Were Alcohol-related	15.0	15.3	12.7	13.8
% of Serious Crashes Which Were Alcohol-related	20.8	27.4	26.0	29.4
TARGET HOURS (8:00 p.m. to 4:00 a.m., Fri.-Sat.)				
Number of Accidents	32	35	29	29
Fatal	0	0	0	1
Injury	9	15	10	9
Number of Alcohol-related Accidents	20	22	18	14
Fatal	0	0	0	1
Injury	6	12	9	6
% Of Crashes Which Were Alcohol-related	62.5	62.9	62.1	48.3
% Of Serious Crashes Which Were Alcohol-related	66.7	80.0	90.0	70.0
NON-TARGET HOURS				
Number of Accidents	295	319	340	297
Fatal	2	1	1	2
Injury	61	68	85	73
Number of Alcohol-related Accidents	29	32	29	31
Fatal	1	0	1	2
Injury	8	11	15	13
% Of Crashes Which Were Alcohol-related	9.8	10.0	8.5	10.4
% Of Serious Crashes Which Were Alcohol-related	14.3	15.9	18.6	20.0

City of Falls Church

Falls Church is an incorporated city located in one of the most urbanized portions of Northern Virginia. Over 9,400 persons live within the 2.0 square mile area of Falls Church, making it the most densely populated of all of the grant locations under study. A number of heavily travelled roadways run through the city, causing not only local traffic problems but also problems during peak hours where commuters pass through Falls Church on their way to the bedroom communities surrounding Washington.

Problem Statement

Based upon empirical data, Falls Church had less of an alcohol-related crash problem than the rest of the state prior to the initiation of the current grant. In 1981, there were 341 reportable accidents in Falls Church. Forty-eight, or 14.1%, of these were alcohol-related. These figures represent a reversal of the trend that existed between 1977 and 1980, during which the number of accidents fell to 279 and numbers of alcohol-related accidents to 42. Accidents per registered vehicle also increased in 1981, rising to 3.58 from 2.29 in 1980. While alcohol-related accidents are traditionally more severe than non-alcohol-related accidents, both were less severe in Falls Church than in the state as a whole. Also, while there were more crashes per vehicle in Falls Church than in Virginia, there were fewer alcohol-related crashes per vehicle. Finally, the percentages of serious and nonserious accidents which were alcohol-related were also less than for Virginia. It can be seen from these data that while Falls Church had a less serious alcohol-related accident problem than the rest of the state, it had an increasingly serious problem when compared to past trends.

With regard to arrests, both numbers of DUI apprehensions and the percentage of all arrests they represent have been increasing since 1979. Average blood alcohol levels (BACs) decreased slightly from 0.18% in 1979 to 0.17% in 1981. In terms of the hours DUI arrests were being made, the 1981 distribution appeared to be somewhat different from that for 1979 to 1980. There were fewer daytime and early- to mid-evening arrests, with significantly more alleged DUI violators being arrested after midnight. This appears to be an appropriate distribution, since 38% of all accidents and 47% of all injury accidents in Falls Church occurred during the 12 p.m. to 8 a.m. period in 1980.

Project History and Activities

Falls Church is one of the few localities that did not have a DUI selective enforcement grant prior to the current funding. Because this was the first grant, any decreases in alcohol-related crashes likely could be attributed to DUI selective enforcement.

During the grant period, (March 82 - Feb. 83) a selective enforcement patrol was on duty from 11:00 p.m. to 3:00 a.m., with two officers on duty on weeknights and three on patrol on weekends. Patrols were also on duty over holidays. Officers served on the special patrols on an overtime basis and canvassed the entire city rather than concentrating on specific locations.

Project Goals

Ultimate	:	To reduce alcohol-related crashes by 30% over the life of the grant.
Intermediate	:	To increase DUI arrests by 30%.

Project Results

Falls Church succeeded in increasing the number of DUI arrests from an average of 334 per year for the pre-grant period to 555 for the grant period, or a 66% increase. However, the number is very misleading for the number of DUI arrests increased by only 8% from the previous year, from 515 to 555. Greater increases were made in the years preceding the grant period, where the number of DUI arrests more than doubled from 186 three years preceding the grant period to 515 in the year immediately preceding the grant period. It can be concluded that the selective enforcement project did not have the intended impact on DUI arrests.

With regard to accidents, the results appear to have been mixed (See Table 2). The numbers of alcohol-related accidents during target hours decreased 37.5% from the preceding year, fulfilling Falls Church's stated goal. However, the numbers of alcohol-related accidents also fell substantially during non-target hours, though not to the same extent, and non-alcohol-related accidents also declined during target hours. While the numbers of serious alcohol-related crashes (injury and fatal crashes) declined during target hours, the percentage of all serious crashes they represented increased slightly. However, since these serious alcohol-related and non-alcohol-related accidents increased more during non-target hours, selective enforcement may have "held the line" on such crashes during the target period.

Overall, it would appear that the alcohol accident situation improved during target hours in Falls Church, but since the situation improved during non-target hours as well, not all of this improvement can be attributed to DUI selective enforcement. The major area of improvement which can be attributed in part to the project is the reduction in serious alcohol-related crashes. Authorities in Falls Church should consider some sort of countermeasure to deal with an increase in serious alcohol-related accidents occurring in non-target hours.

Table 2

City of Falls Church

	March 79-Feb. 80	March 80-Feb. 81	March 81-Feb. 82	Grant Period March 82-Feb. 83
Number of Accidents	245	244	291	252
Fatal	0	2	0	2
Injury	49	55	49	53
Number of Alcohol-related Accidents	45	41	49	35
% of Crashes Which Were Alcohol-related	18.4	16.8	16.8	13.9
% of Serious Crashes Which Were Alcohol-related	28.6	26.3	36.7	36.4
TARGET HOURS (11:00 p.m. to 3:00 a.m. all days)				
Number of Accidents	22	29	30	21
Fatal	0	0	0	0
Injury	10	8	12	9
Number of Alcohol-related Accidents	16	21	16	10
Fatal	0	0	0	0
Injury	8	6	9	7
% of Crashes Which Were Alcohol-related	72.7	72.4	53.3	47.6
% of Serious Crashes Which Were Alcohol-related	80.0	75.0	75.0	77.8
NON-TARGET HOURS				
Number of Accidents	223	215	261	231
Fatal	0	2	0	2
Injury	39	47	37	44
Number of Alcohol-related Accidents	29	20	30	25
Fatal	0	0	0	1
Injury	6	9	9	12
% of Crashes Which Were Alcohol-related	13.0	9.3	12.6	10.8
% of Serious Crashes Which Were Alcohol-related	15.4	18.4	24.3	28.3

City of Galax

Galax is an incorporated city situated in a very rural area in the southwestern portion of the state, near the North Carolina border. The city supports about 6,700 persons in a 7.42 square mile area, for the lowest population density of all the cities considered.

Problem Statement

The total number of accidents occurring in Galax has remained stable since 1978, although the numbers of alcohol-related accidents have varied significantly. When controlling for number of registered vehicles, the 1981 overall accident rate for Galax exceeded that of the state, while the rate for alcohol-related accidents was just slightly below the state level. The most serious alcohol-related problem in this locality involved the severity of alcohol-related accidents. While non-alcohol-related accidents occurring in Galax were less severe than in the rest of the state, its alcohol-related accidents were much more severe. Additionally, while the percentage of all accidents which were alcohol-related was less than in the rest of the state, 34% of the serious accidents in Galax were alcohol-related, a figure far exceeding the state percentage. This increasing trend in serious alcohol-related accidents appeared to require additional effort in alcohol countermeasures.

The number of apprehensions for DUI increased dramatically in 1980, from 67 in 1979 to 127. DUI arrests continued to make up about 18% of all moving violations. This grant request was based upon the Galax Police Department's belief that increased manpower at peak periods would result in not only increased numbers of DUI arrests but also in increased numbers of convictions.

Project History and Activities

This DUI selective enforcement grant was the first received by Galax authorities. The grant period began February 19, 1982. During the funding period, a selective enforcement patrol was on duty Friday and Saturday nights from 8:00 p.m. to 2:00 a.m. and on holidays. The special patrols canvassed the whole city, but concentrated on the main arteries rather than on rural roads or residential areas.

Project Goals

Ultimate : To decrease the percentage of all accidents which are alcohol-related by 25%, from 16.4% to 15.5%, during the grant period.

Intermediate : To increase DUI arrests by 25% over the grant period.

Project Results

With regard to its goal of increasing DUI arrests, the Galax Police Department had dramatic success. The data show that DUI arrests have increased 76%, from an average of 125 arrests per year prior to this grant period to 220. However, since Galax had experienced some increases prior to the implementation of this selective enforcement countermeasure, not all of the increase can be attributed to the project.

Galax also met its goals with regard to accident experience (see Table 3). The percentage of all crashes which were alcohol-related decreased from 16.4% to 13.5%, for a 17.6% decrease. Absolute numbers of alcohol-related accidents declined by 33% during target hours, while these numbers remained relatively stable during non-target hours. However, non-alcohol-related accidents were reduced during target hours by 40%, indicating that not all of the improvements noted were attributable to selective enforcement. It should be noted, however, that the mere presence of special DUI patrols may reduce alcohol-related accidents, since the perception of increased arrest risk for all violations could be increased.*

The major impact on alcohol-related accidents noted during the grant period related to their severity, which was a pressing pre-grant problem. While serious alcohol-related accidents quadrupled during non-target hours, returning to 1980 levels, serious alcohol-related crashes during target hours were cut from 6 during the preceding year to 1 during the grant period. Thus, it would appear that the selective enforcement project had a positive impact on the severity problem.

* It should be noted that when broken down by time period, very few accidents occurred during target hours. These small numbers could tend to fluctuate, and thus dramatically affect percentages.

Table 3

City of Galax

	Feb. 79-Jan. 80	Feb. 80-Jan. 81	Feb. 81-Jan. 72	Grant Period Feb. 82-Jan. 83
Number of Accidents	176	169	165	170
Fatal	2	0	0	0
Injury	23	27	22	37
Number of Alcohol-related Accidents	23	27	30	23
% Of Crashes Which Were Alcohol-related	13.1	17.8	16.4	13.5
% of Serious Crashes Which Were Alcohol-related	30.8	37.0	36.4	24.3
TARGET HOURS (8:00 p.m. to 2:00 a., Fri.-Sat.)				
Number of Accidents	19	24	22	13
Fatal	0	0	0	0
Injury	5	5	6	2
Number of Alcohol-related Accidents	7	8	9	6
Fatal	0	0	0	0
Injury	3	3	6	1
% Of Crashes Which Were Alcohol-related	36.8	33.3	40.9	46.2
% Of Serious Crashes Which Were Alcohol-related	60.0	60.0	100.0	50.0
NON-TARGET HOURS				
Number of Accidents	157	145	143	157
Fatal	2	0	0	0
Injury	18	22	16	35
Number of Alcohol-related Accidents	16	22	18	17
Fatal	1	0	0	0
Injury	4	7	2	8
% Of Crashes Which Were Alcohol-related	10.2	15.2	12.6	10.8
% Of Serious Crashes Which Were Alcohol-related	25.0	31.8	12.5	22.9

City of Newport News

Newport News is a heavily populated city in the Tidewater area of Virginia. It is the largest of all the cities studied, extending 118.2 square miles and bordering on several other population centers. Interstate 64 runs the length of Newport News, as do Routes 60 and 143. The presence of Fort Eustis on its northwestern border and the military presence in the Norfolk/Little Creek area create a natural transient population within the city, and its location on the main route to Virginia Beach opens the area to considerable recreational traffic.

Problem Statement

In 1981, there were 3,194 total accidents in Newport News. This was somewhat higher than in 1980, a year which marked the end of a downward trend. While the number of alcohol-related accidents fluctuated quite a bit, it was somewhat higher in 1981 than in 1977. The percentage of serious crashes that were alcohol-related rose steadily from 1977 to 1981, when it was only slightly below the similar figure for the state. The severity of overall and alcohol-related accidents was slightly less than the statewide figures, but both appeared to have gradually increased after 1977. Although on the decline, accident rates in Newport News exceeded statewide rates by 17%. However, as seen in several other localities, alcohol-related crash rates are more resistant to safety efforts and remained at about 0.71 accidents per 100 vehicles, 11% over the rate for the state as a whole. These statistics would indicate that while other types of crashes yielded to highway safety countermeasures, alcohol-related accidents in Newport News did not.

A total of 2,609 DUI arrests were made in the Newport News area in 1981. This figure was higher than that for any other municipality in Virginia. The number of DUI arrests made by the ASAP patrols increased from 124 in 1979 to 255 in 1981.

Project History and Activities

DUI selective enforcement programs have been in operation almost continuously in Newport News since 1979 under the auspices of the local ASAP. The 1982-1983 grant began in April 1982. During the grant period, four officers worked DUI special enforcement patrols from 7:00 p.m. to 3:00 a.m. on Fridays and Saturdays, and from 5:00 p.m. to 1:00 a.m. on Sundays. These patrols canvassed the entire city rather than concentrating on specific locations.

-1064

Project Goals

Ultimate : To reduce alcohol-related accidents by 5% during the one year grant period.

Intermediate : To increase DUI arrests by 10% during the same period.

Project Results

The police department exceeded its goal for DUI arrests by increasing the number of arrests for drunken driving by 12%, from an average of 2,400 per year to 2,698 during this grant period. This indicates that the DUI selective enforcement efforts in this area were effective.

During the grant period, alcohol-related accidents during target hours decreased by 6.1%, exceeding the stated ultimate goal (see Table 4). During that same time, non-alcohol-related crashes increased 9.2% during target hours, and alcohol-related crashes increased 2.1% during non-target hours. Also, the proportion of total crashes and serious crashes attributable to alcohol declined during target hours. While these differences are small, they are attributable to the DUI selective enforcement countermeasure. It can be concluded, then, that the grant awarded to Newport News for DUI selective enforcement was an efficient expenditure of funds, at least for the 1982-83 grant period.

Table 4

City of Newport News

	Apr. 79-Mar. 80	Apr. 80-Mar. 81	Apr. 81-Mar. 82	Grant Period Apr. 82-Mar. 83
Number of Accidents	2,577	2,534	2,680	2,796
Fatal	6	7	5	9
Injury	644	611	669	715
Number of Alcohol-related Accidents	569	567	584	576
% Of Crashes Which Were Alcohol-related	21.3	22.4	21.8	20.6
% of Serious Crashes Which Were Alcohol-related	37.7	35.3	38.3	33.9
TARGET HOURS (7:00 p.m. to 3:00 a.m. Fri.-Sat. 5:00 p.m. to 1:00 a.m., Sunday)				
Number of Accidents	414	378	410	410
Fatal	2	3	1	4
Injury	131	129	153	139
Number of Alcohol-related Accidents	222	234	247	232
Fatal	1	3	1	3
Injury	95	101	120	102
% Of Crashes Which Were Alcohol-related	53.6	61.9	60.2	56.6
% Of Serious Crashes Which Were Alcohol-related	72.2	78.8	78.6	73.4
NON-TARGET HOURS				
Number of Accidents	2,263	2,156	2,270	2,386
Fatal	4	4	4	5
Injury	513	482	516	576
Number of Alcohol-related Accidents	347	333	337	344
Fatal	2	3	0	3
Injury	147	111	138	138
% Of Crashes Which Were Alcohol-related	15.3	15.5	14.8	14.4
% Of Serious Crashes Which Were Alcohol-related	28.8	23.5	26.5	24.3

City of Petersburg

Petersburg is a city of 43,300 persons located in the east central portion of the state. The city, which is south of the state capital, lies at the conjunction of Interstates 95 and 85 and Route 460, all heavily trafficked roadways. All traffic travelling these routes must pass through Petersburg, as there is no bypass. Petersburg is also the southern terminus of the Richmond/Petersburg Turnpike (Route 95) and the presence of toll facilities in the city creates special traffic hazards.

Problem Statement

Preceding the grant period, accident patterns in Petersburg were similar to patterns noted among several other urban cities receiving grants. While the total number of accidents decreased steadily after 1977, both serious and nonserious alcohol-related crashes did not decrease. In 1981, 26% of all serious accidents and 21% of all accidents were alcohol-related, with the latter figure exceeding the state total of 19.6%. While overall accident rates declined in 1981, they were still 40% higher than the rate for Virginia. The alcohol-related crash rate was again more resistant to safety and environmental efforts, not showing a corresponding decrease and exceeding the state figure by 52% in 1981. This clearly indicates that an alcohol-related accident problem existed in Petersburg.

With regard to enforcement, no clear patterns of arrest activity were evident. While the total number of traffic arrests decreased from 1978 to 1981, both the number and percentage of DUI arrests varied considerably.

Project History and Activities

Petersburg has received several DUI selective enforcement grants, of which the present is a continuation. The first such program began in July 1980, while the second began in February 1981 and continued under the second of two extensions until August 15, 1982. Since 1980, there has been no time during which selective enforcement activities have been absent. The current grant period began in August 1982. During the grant period, special patrols were on duty from 11:00 p.m. to 3:00 a.m. on Fridays and Saturdays. On long holiday weekends, patrols were active during the entire holiday period. Patrols consisted of two officers to handle DUI detection and apprehension and a third to administer breath tests.

Project Goals

Ultimate : To reduce the percentage of crashes which are alcohol-related by 5% over the one-year period.

Project Results

Petersburg was the only city receiving a DUI selective enforcement grant that did not set an objective to increase DUI arrests. However, it should be noted that during the grant period, the number of DUI arrests was down by 39% from the previous year, (776 compared to 477), and this figure was also down 11% from an average of 537 per year for the pre-grant period. The fact that Petersburg did not set an objective for DUI arrests precludes drawing a negative inference from these data.

Petersburg did, however, meet its goal of reducing the percentage of alcohol-related accidents by reducing this figure from 69.8% to 54.7% during the grant period, for a decline of 21.6%. The proportion of crashes which were alcohol-related remained unchanged during non-target hours (see Table 5). The numbers of alcohol-related accidents fell 51.7% during target hours, while falling only 17.3% during non-target hours. Non-alcohol-related crashes remained constant during the special patrol hours. From these data, it appears that the DUI selective enforcement countermeasure was very successful in Petersburg in spite of declines in DUI arrests. There is, however, a possible explanation for this phenomenon. As part of the project, Petersburg planned to change the routes of its patrols based upon computer mapping of accident locations. It is possible that this route change resulted in either more efficient deployment of patrols, or in more visible deployment, which would, at the least, increase the perception of risk of arrest for DUI.

Table 5

City of Petersburg

	Aug. 79-July 80	Aug. 80 July 81	Aug. 81-July 82	Grant Period Aug. 82-July 83
Number of Accidents	1,020	801	914	779
Fatal	1	3	2	3
Injury	239	215	236	246
Number of Alcohol-related Accidents	243	171	245	182
% Of Crashes Which Were Alcohol-related	23.8	21.3	26.8	23.4
% of Serious Crashes Which Were Alcohol-related	41.7	38.5	39.9	34.1
TARGET HOURS (11.00 p.m. to 3:00 a.m., Fri.-Sat.)				
Number of Accidents	71	53	86	53
Fatal	0	0	0	0
Injury	20	23	32	14
Number of Alcohol-related Accidents	45	33	60	29
Fatal	0	0	0	0
Injury	17	19	28	8
% Of Crashes Which Were Alcohol-related	63.4	62.3	69.8	54.7
% Of Serious Crashes Which Were Alcohol-related	85.0	82.6	87.5	57.2
NON-TARGET HOURS				
Number of Accidents	949	748	828	726
Fatal	1	3	2	3
Injury	219	192	204	232
Number of Alcohol-related Accidents	198	138	185	153
Fatal	0	3	2	1
Injury	83	62	65	76
% Of Crashes Which Were Alcohol-related	20.9	18.5	22.3	21.1
% Of Serious Crashes Which Were Alcohol-related	37.7	33.3	32.5	32.8

1070

City of Richmond

Richmond, the capital of Virginia, is a city of about 219,000 persons, and is located in the eastern portion of the state at the intersection of Interstate Routes 95 and 64. The city covers 62.55 square miles and has a population density of 3,510, second highest in the state.

Problem Statement

In 1981, there were 7,145 reported crashes in Richmond, over 2,000 fewer than occurred in 1977. This decrease in total crashes was gradual and steady over time. No such trend was noted for alcohol-related crashes, which remained at 1977 levels, or for serious alcohol-related crashes, which increased. While the percentages of all crashes and of serious crashes that were alcohol-related were lower for Richmond than for the rest of the state, both of these figures increased dramatically after 1977. The overall crash rate, while decreasing steadily from 1977 to 1981, was still 67% higher than the same figure for the whole state. The alcohol-related crash rate, seemingly resistant to those factors which reduced total crashes, remained around the 1977 level and exceeded the Virginia total by 27%. Finally, overall accident severity was slightly higher in Richmond than in the rest of the state, while alcohol-related accident severity was about the same. Based upon these data, there has been very little improvement in the alcohol-related crash problem in the Richmond area since 1977, while the still serious overall accident problem has improved.

With regard to enforcement, no clear pattern of arrest activity is evident. While the percentage of DUI arrests compared to total arrests increased steadily from 1978 to 1981, the actual number of DUI arrests varied, and the number of total arrests steadily decreased.

The Richmond Bureau of Police believes that DUI is still a very serious problem, due in part to the numerous educational institutions in the area and the number of recreational facilities that serve alcohol. It is also believed that these factors especially affect the weekend safety environment.

Project History and Activities

The city of Richmond has had a selective enforcement program continuously since 1977. The program studied began in June 1982. Alcohol enforcement patrols were used on Fridays and Saturdays from 12:00 p.m. to 4:00 a.m. and during the same hours on holiday nights. Three officers worked each special patrol on each regular weekend night,

and as many officers as were needed worked overtime during holiday weekends.

Project Goals

Ultimate	:	To decrease alcohol-related crashes by 10% during the life of the grant.
Intermediate	:	To increase DUI arrests by 5% during the one year period.

Project Results

According to DMV statistics, there was a drop in the number of arrests in Richmond from an average of 1,070 per year for the three year pre-grant period to 997 during the grant period. Therefore the city did not meet its objective of increasing DUI arrests. This reflects Richmond's continuing inability to make increases in this activity.

Alcohol-related crashes in Richmond declined from 195 the year prior to the grant period to 174 during the grant period during special patrol hours (see Table 6). This is a drop of 10.8%. Thus, Richmond met its objective of reducing these accidents by at least 10%. However, alcohol-related accidents during non-target hours were also reduced, by 11.1% and only small changes were noted in non-alcohol-related accidents for target and non-target hours. From these data, it can be concluded that changes in these other statistics cannot be attributed to the effect of the additional patrols, but they could indicate the presence of other factors affecting alcohol-related crashes during all times of the day.

Table 6

1073

City of Richmond

	Aug. 79-July 80	Aug. 80-July 81	Aug. 81-July 82	Grant Period Aug. 82-July 83
Number of Accidents	6,361	5,998	5,731	5,474
Fatal	4	11	7	88
Injury	1,638	1,634	1,502	1,654
Number of Alcohol-related Accidents	1,037	1,004	987	878
% Of Crashes Which Were Alcohol-related	16.3	16.7	17.2	16.0
% of Serious Crashes Which Were Alcohol-related	26.8	29.1	29.2	26.0
TARGET HOURS (12:00 a.m. to 4:00 a.m., Fri. - Sat.)				
Number of Accidents	320	331	309	290
Fatal	0	1	0	1
Injury	106	140	102	121
Number of Alcohol-related Accidents	190	202	195	174
Fatal	0	1	0	1
Injury	86	107	78	93
% Of Crashes Which Were Alcohol-related	59.4	61.0	63.1	60.0
% Of Serious Crashes Which Were Alcohol-related	81.1	76.6	76.5	77.1
NON-TARGET HOURS				
Number of Accidents	6,041	5,667	5,442	5,184
Fatal	4	10	7	10
Injury	1,532	1,494	1,400	1,533
Number of Alcohol-related Accidents	847	802	792	704
Fatal	1	6	4	6
Injury	353	364	358	333
% Of Crashes Which Were Alcohol-related	14.0	14.1	14.6	13.6
% Of Serious Crashes Which Were Alcohol-related	23.1	24.6	25.7	22.0

City of Staunton

Staunton is an incorporated city situated in the west central portion of Virginia at the junction of Interstate Routes 81 and 64. The city covers 8.88 square miles and ranks fourth among funded cities in population density, with 2,421 persons per square mile.

Problem Statement

As was the case in several project locations, fluctuations in Staunton crash patterns made determination of its exact accident problems somewhat difficult. Total numbers of accidents increased between 1977 and 1979 and then returned to 1977 levels in 1980 and 1981. During that same time, alcohol-related crashes varied with no clear trend being established. The percentage of crashes which involved alcohol was also lower than the state total, indicating that Staunton had a less serious situation in regard to alcohol-related accidents than did the rest of the state. Similarly, both overall crash rates and alcohol-related crash rates decreased and were considerably lower than the same rates for the rest of the state. Finally, both total accident and alcohol-related accident severity were less than in the state as a whole, again indicating a less serious problem overall. Since conditions in Staunton seem to have gradually improved, and since the problem there was less serious than it was in the rest of the state, it must be noted that very little demonstrable impact of selective enforcement can be expected.

With regard to enforcement, no clear pattern of arrest activity is evident. While the percentage of alcohol arrests increased in 1980, this figure declined in 1981.

According to the Staunton police, DUI enforcement remains a serious concern in Staunton since it is believed that regular patrol officers did not have sufficient time to apply enforcement techniques necessary to apprehend drunken drivers, especially on weekend nights during which routine calls were abundant. Grant monies were pursued to allow more officers to patrol on weekend nights on an overtime basis.

Project History and Activities

Staunton is another one of the few localities that had not had a DUI selective enforcement grant prior to the 1982 award. During this initial project, patrols were on duty Fridays, Saturday, and Sunday nights between 11 p.m. and 4 a.m. except in April 1982, when the hours were from 10 p.m. to 4 a.m. and November and December 1982, when the hours were from 9 p.m. to 9. a.m.

Project Goals

Ultimate	:	To reduce alcohol-related accidents by 10% during the grant period.
Intermediate	:	To increase DUI arrests by 10% during the grant period.

Project Results

The police made an average of 277 DUI arrests per year during the three year pre-grant period. The 378 arrests in the grant year represent a 36% increase in the number of these arrests over the average. However, this represents a decrease from the previous year and indicates the relative lack of change due to selective enforcement during its first year of implementation.

With regard to accidents, Staunton achieved its goal through reducing alcohol-related accidents during target hours by 33.3% (see Table 7). However, alcohol-related accidents during non-target hours were reduced 38.8%. Non-alcohol-related accidents increased 4.1% during target hours and decreased 18.0% during non-target hours. Taken together, these data indicate that accident trends were not as favorable during target hours when extra patrols were functioning as they were during ordinary operations. Additionally, the proportion of alcohol-related injury crashes decreased during non-target hours and increased during target hours. Thus, the current DUI selective enforcement project was not successful in effecting a change in accident patterns.

Table 7

1077

City of Staunton

	Apr. 79-Mar. 80	April 80-Mar. 81	April 81-Mar. 82	Grant Period Apr. 82-Mar. 83
Number of Accidents	375	371	339	267
Fatal	0	0	1	0
Injury	65	72	88	68
Number of Alcohol-related Accidents	61	62	67	42
% Of Crashes Which Were Alcohol-related	16.3	16.7	19.8	15.7
% of Serious Crashes Which Were Alcohol-related	21.5	27.8	29.2	25.0
TARGET HOURS (10:00 p.m. to 4:00 a.m. in April, 9:00 p.m. to 9:00 a.m. in November, December, 11:00 p.m. to 4:00 a.m. all other months Fri. - Sun.)				
Number of Accidents	26	25	24	19
Fatal	0	0	0	0
Injury	6	7	8	7
Number of Alcohol-related Accidents	19	10	18	12
Fatal	0	0	0	0
Injury	5	3	6	7
% Of Crashes Which Were Alcohol-related	73.1	40.0	75.0	63.2
% Of Serious Crashes Which Were Alcohol-related	83.3	42.9	75.0	100.0
NON-TARGET HOURS				
Number of Accidents	349	346	315	248
Fatal	0	0	1	0
Injury	59	65	80	61
Number of Alcohol-related Accidents	42	52	49	30
Fatal	0	0	1	0
Injury	9	17	19	10
% Of Crashes Which Were Alcohol-related	12.0	15.0	15.6	12.1
% Of Serious Crashes Which Were Alcohol-related	15.3	26.1	24.7	16.4

City of Waynesboro

Waynesboro is a city of approximately 16,200 people situated in west central Virginia just east of Staunton. The city is located on Interstate 64 at its junction with Route 250, the Skyline Drive, the Blue Ridge Parkway, and the George Washington National Forest. Because of its scenic location, considerable recreational and out-of-state traffic is expected.

Problem Statement

The alcohol-related accident problem in Waynesboro was either similar to or less severe than the problem statewide. There were 320 reported traffic accidents in Waynesboro in 1981, 49 of which were alcohol-related. Both total numbers of accidents and numbers of alcohol-related accidents appeared to be decreasing over time. In 1981, about 15.3% of all crashes and 22.2% of serious crashes were alcohol-related, with both figures being somewhat less than those for the state. The numbers of accidents and alcohol-related accidents per registered vehicle were also less than state totals and have been decreasing in Waynesboro since 1977 and 1979, respectively. Finally, the alcohol-related and non-alcohol-related crashes occurring in the city were both less severe than those occurring in the rest of the state. The only condition that warrants scrutiny is the progression of accident severity over the years, while increases in alcohol-related accident severity, though present, have been rather erratic. It can be concluded that the accident environment in Waynesboro is significantly safer than in the rest of the state based on overall accident statistics, and it appears to be improving.

The number and percentage of alcohol-related arrests doubled between 1979 and 1980. However, both figures dropped in 1981. The Waynesboro Police Department, when queried, stated that city patrol officers did not have sufficient time to properly apply DUI enforcement techniques due to the large number of routine calls during peak DUI hours. Grant monies were to enable the Department to reinstate special patrols for target hours to deal exclusively with DUI offenses.

Project History and Activities

Waynesboro received its first DUI selective enforcement grant in May 1980, and that project was active until May 1981. The second grant period began in February 1982. In the interim, DUI selective enforcement patrols were not on duty.

Project activities during the 1982 grant period were similar to those employed in the 1980-1981 project. Selective enforcement patrols were on duty Fridays and Saturdays from 7:30 p.m. to 3:30 a.m., and canvassed the city at large.

Project Goals

Ultimate : To reduce alcohol-related accidents by 10% during the grant period.

Intermediate : To increase DUI arrests by 50% over the 1980 totals.

Project Results

The total number of DUI arrests from February 1980 to January 1981 was 278. During the grant period from February 1982 to January 1983 the Waynesboro Police Department made 267 arrests. This represents a 4% decrease. However, the 267 arrests represent a 29% increase from the preceding year, when there were only 190 DUI arrests. It was during this time that Waynesboro did not have a DUI project in force (from June 1981 to January 1982). It can be inferred from this that the DUI selective enforcement project did have an impact on DUI arrests when in operation, even though the police department did not meet its rather ambitious objective.

Unfortunately, alcohol-related crashes increased 40% during target hours, from 15 during the preceding year to 21 during the grant period (see Table 8). This increase was mostly in property damage accidents. It should be noted that these numbers were unusually low during the previous year and may have been returning to normal. However, alcohol-related crashes during non-target hours declined 12.5% and non-alcohol-involved accidents declined 52.6% during target hours, which indicated that DUI selective enforcement was not effective in combatting increases in drinking and driving accidents in Waynesboro.

Table 8

1081

City of Waynesboro

	Feb. 79 Jan. 80	Feb. 80- Jan. 81	Feb. 81- Jan. 82	Grant Period Feb 82.- Jan. 83
Number of Accidents	366	291	258	227
Fatal	1	1	1	0
Injury	73	66	55	50
Number of Alcohol-related Accidents	82	64	47	49
% Of Crashes Which Were Alcohol-related	22.7	22.0	18.2	21.6
% of Serious Crashes Which Were Alcohol-related	41.9	46.3	33.9	30.0
TARGET HOURS (7:30 p.m. to 3:30 a.m., Fri. - Sat.)				
Number of Accidents	60	42	34	30
Fatal	1	0	0	0
Injury	13	16	8	5
Number of Alcohol-related Accidents	33	24	15	21
Fatal	1	0	0	0
Injury	11	14	5	5
% Of Crashes Which Were Alcohol-related	55.0	57.1	44.1	70.0
% Of Serious Crashes Which Were Alcohol-related	85.7	87.5	62.5	100.0
NON-TARGET HOURS				
Number of Accidents	306	249	224	197
Fatal	0	1	1	
Injury	500	47		45
Number of Alcohol-related Accidents	49	40	32	28
Fatal	0	1	1	0
Injury	9	19	113	10
% Of Crashes Which Were Alcohol-related	16.0	16.1	14.3	14.2
% Of Serious Crashes Which Were Alcohol-related	31.7	33.3	29.2	22.2

1082

City of Winchester

Winchester is an incorporated city in the north central tip of the state near the West Virginia border and supports a population of 23,400 in a 9.3-square mile area. Although Winchester lies at the junction of Interstate 81 and Routes 7, 50, 522, 37, and 11, its bypass facility protects it from heavy through traffic.

Problem Statement

Based upon previous accident statistics, Winchester had an identifiable alcohol-related accident problem prior to the grant period. In 1981, there were 594 reported accidents in Winchester, 105 of which were alcohol-related. While the total number of accidents has decreased since 1977, the number of alcohol-related crashes has remained at a relatively constant level. However, the number of serious alcohol-related crashes has decreased proportionally with the total number of crashes, and resulted in a percentage of alcohol-related crashes which has varied around an average of 21%. Both of these figures are lower for Winchester than for the rest of the state. Additionally, both total crashes and alcohol-related crashes are significantly less severe in Winchester than elsewhere. Conditions in Winchester were more serious than in the state as a whole with regard to total accidents per registered vehicle and alcohol-related accidents per registered vehicle. The total figure for accidents per vehicle exceeds the state total by about 28%, while the figure for alcohol involved crashes per vehicle exceed the state figure by 16%. These percentages indicated that the overall accident problem is more serious than the current alcohol-related problem. However, while the total accident rate is declining, no significant decline is noted in the alcohol-related crash rate. This would indicate that this problem may be resistant to change.

The percentage of apprehensions for DUI remained at about 16% in 1979 and 1980, but decreased to 13% in 1981. This is consistent with the fact that for a period of 1981 no selective enforcement patrols were active. The Winchester Police Department feels that DUI incidents remain a major concern because transient motorists drive through the city.

Project History and Activities

Winchester has had several DUI selective enforcement grants. Programs were active from January through December of 1980, from January to February of 1981, and from August through December of 1981. The project evaluated began in March 1982.

Most continuation grants of this type employ essentially the same activities. DUI selective enforcement patrols were on duty Fridays and Saturdays from 9:00 p.m. to 3:00 a.m., and consisted of two officers and one certified breathalyzer operator, all of whom worked on an overtime basis. All of the officers in the department have been trained in DUI detection and apprehension, and 18 are certified breathalyzer operators.

Project Goals

Ultimate	:	To reduce the number of alcohol-related crashes by 5% during the life of the grant.
Intermediate	:	To increase DUI arrests by 10% over the same period.

Project Results

Winchester exceeded its objective of increasing the number of DUI arrests. There was a 37% increase, from 538 per year in the pre-grant period to 739 for the grant period. This is a definite indication of the effectiveness of extra patrol, for during the period when selective enforcement activities were suspended there was a decrease in the number of DUI arrests.

As seen in Table 9, Winchester also exceeded its goal of reducing accidents. Alcohol-related crashes declined 21.0% during target hours, from 38 to 30. However, alcohol-related accidents during non-target hours decreased 29.5%, indicating that the decrease during target hours may be due to factors other than DUI selective enforcement. Additionally, the number of serious alcohol-related accidents increased during target hours, as did the proportion of all accidents they represented. These same figures declined during non-target hours. Since non-alcohol-related accidents decreased only slightly during non-target hours, it is hypothesized that a program that affects all times of day is responsible for declines in alcohol involved crashes.

Table 9

City of Winchester

	Mar. 79-Feb. 80	Mar. 80-Feb. 81	Mar. 81-Feb. 82	Grant Period Mar. 82-Feb. 83
Number of Accidents	548	483	504	460
Fatal	2	0	0	1
Injury	95	90	74	95
Number of Alcohol-related Accidents	93	103	99	73
% Of Crashes Which Were Alcohol-related	17.0	21.3	19.6	15.9
% of Serious Crashes Which Were Alcohol-related	40.2	33.3	32.4	25.0
TARGET HOURS (9:00 p.m. to 3:00 a.m., Fri. - Sat.)				
Number of Accidents	47	62	55	45
Fatal	0	0	0	0
Injury	19	19	12	12
Number of Alcohol-related Accidents	36	40	38	30
Fatal	0	0	0	0
Injury	19	14	9	11
% Of Crashes Which Were Alcohol-related	76.6	64.5	69.1	66.7
% Of Serious Crashes Which Were Alcohol-related	100.0	73.7	75.0	91.7
NON-TARGET HOURS				
Number of Accidents	501	421	449	415
Fatal	2	0	0	1
Injury	76	71	62	83
Number of Alcohol-related Accidents	57	63	61	43
Fatal	1	0	0	0
Injury	19	16	15	13
% Of Crashes Which Were Alcohol-related	11.4	15.0	13.6	10.4
% Of Serious Crashes Which Were Alcohol-related	25.6	22.5	24.2	15.5

1087

County of Hanover

Hanover County is located in the central portion of the state just north of Richmond. It covers 466.98 square miles and has a population of 50,219 which results in a rather low population density of 109 persons per square mile.

Problem Statement

The accident picture in Hanover is similar to that for the counties in general. Considerable improvements in the total number of crashes were noted through 1980, when numbers of accidents declined. However, the total numbers of crashes increased again in 1981, partially as the result of a dramatic increase in alcohol-related crashes. The percentage of all crashes which were alcohol-related rose in 1981 and the percentage of serious crashes which were alcohol-related rose to 30.7%, second only to the 34.0% for the city of Galax. These increases are especially alarming when compared with statewide figures. The representation of alcohol in crashes in Hanover exceeded state totals significantly. Additionally, overall accident severity in Hanover exceeded state severity by 29% and alcohol-related accident severity exceeded the state figure by 39%, again indicating a distinct overrepresentation of alcohol. The only bright light among these statistics involves overall and alcohol-related crash rates, which are lower for Hanover than for the state. However, as in other areas, while overall crash rates have been declining, alcohol-related crash rates have not, which indicates a continuing problem resistant to highway safety efforts.

Project History and Activities

Although the most recent DUI selective enforcement grant ran from July 1981 to July 30, 1982, Hanover County has had DUI selective enforcement activities ongoing since 1979. The evaluated grant began in July 1982. Obviously, there was no period in which DUI selective enforcement was suspended.

With regard to the grant under study, a selective enforcement patrol was on duty during the evening shift (6:00 p.m. to 2:00 a.m.) on Friday and Saturday nights to continue this two-man patrol schedule. The patrols canvassed the entire county, rather than concentrating on target locations.

Project Goals

Ultimate : To reduce alcohol-related accidents by 10% during the grant period.

Intermediate : To double the 1980 DUI arrest total of 202 during the current grant period.

Project Results

In relation to DUI arrests, there is some discrepancy between figures originating in Hanover County and those kept by the DMV. According to the Hanover County Police, 202 DUI arrests were made in 1980. Using this figure, they more than exceeded their objective of doubling DUI arrests by apprehending 472 drivers during the grant period. The DMV figures, on the other hand, listed 340 DUI arrests in 1980; if these figures are used, Hanover did not meet its goal. In any case, Hanover has experienced an increase in DUI arrests during the 1982 selective enforcement grant.

There has been very little activity in accident figures for Hanover during the past several years (see Table 10). Alcohol-related accidents decreased less than 2% during target hours while they increased less than 2% during non-target hours. Non-alcohol-related accidents decreased by 2% during target hours and increased by 16.1% during non-target hours. It is hypothesized that some highway safety situation or countermeasure is responsible for the lack of increase and subsequent decrease in non-alcohol-involved accidents on weekend nights, but it is not the DUI selective enforcement program operating in Hanover.

Table 10

County of Hanover

1089

	July 79-June 80	July 80-June 81	July 81-June 82	Grant Period July 82-June 83
Number of Accidents	708	783	713	696
Fatal	3	4	6	8
Injury	198	278	215	238
Number of Alcohol-related Accidents	164	189	180	181
% Of Crashes Which Were Alcohol-related	23.2	24.1	25.3	26.0
% of Serious Crashes Which Were Alcohol-related	33.3	36.9	38.4	40.7
TARGET HOURS (6:00 p.m. to 2:00 a. m., Fri. - Sat.)				
Number of Accidents	120	130	117	107
Fatal	0	0	2	3
Injury	41	54	39	45
Number of Alcohol-related Accidents	57	54	61	60
Fatal	0	0	1	3
Injury	23	30	28	29
% Of Crashes Which Were Alcohol-related	47.5	41.5	52.1	56.1
% Of Serious Crashes Which Were Alcohol-related	56.1	55.6	70.7	66.7
NON-TARGET HOURS				
Number of Accidents	588	653	596	589
Fatal	3	4	4	5
Injury	157	224	176	193
Number of Alcohol-related Accidents	107	135	119	121
Fatal	2	2	2	4
Injury	42	72	54	64
% Of Crashes Which Were Alcohol-related	18.2	20.7	19.9	20.5
% Of Serious Crashes Which Were Alcohol-related	27.5	32.5	31.1	34.3

County of Russell

Physically, Russell County was the largest of all the localities funded for DUI selective enforcement, covering 483 square miles in the southwest portion of the state. Among the funded counties and cities, however, Russell had the lowest population density, due to its rural nature. The success of DUI selective enforcement is premised upon the comprehensive police coverage of areas where drunken driving occurs, and this end is very difficult to achieve in such a large and rural locality.

Problem Statement

In 1981, there were 492 crashes in Russell County, 16.3% of which were alcohol-related. This percentage was down slightly from the peak year of 1980. While about 23% of all serious crashes were alcohol-related, this is still lower than the percentage of all serious and nonserious crashes in Virginia which involved alcohol. Additionally, the overall crash rates per registered vehicle and the alcohol-related crash rates were significantly lower in Russell County than for the state as a whole. The only area in which Russell County crashes exceeded state figures was in accident severity. While the severity of all accidents was similar in both Russell County and Virginia, the severity of the alcohol-related county accidents exceeded that of the state. Thus, from these data it appears that special emphasis should be placed on reducing the number of fatal and injury-producing alcohol-related crashes.

The Russell County Sheriff's Department made 1,162 total arrests in 1981. About 65% of these, or 753, were alcohol-related. Based upon the limited arrest information received from funded localities, this is a very impressive figure, much higher on a percentage basis than in any other area. Of the 753 alcohol-related arrests, 19%, or 142, were made through DUI selective enforcement. Based upon these statistics, it would appear difficult to increase the percentage of all arrests which are alcohol-related in Russell County, since such a high level of alcohol-related arrest activity already exists. However, it may be possible to increase the number and percentage of those arrests which are made through DUI selective enforcement.

Project History and Activities

The March 1982 grant constituted the continuation of a previous DUI selective enforcement project which began in March 1981. Thus, there has been no period since March 1981 when selective enforcement patrols were not active. During the 1982 grant period, selective enforcement

patrols were on duty on Fridays and Saturdays, from 7:00 p.m. to 3:00 a.m., and attempted to cover the entire county.

Project Goals

Ultimate : To reduce the number of alcohol-related accidents by 15% during the grant period.

Intermediate : To increase DUI arrests by 10% over the same period.

Project Results

Russell County did not meet its goal of a 10% increase in the number of DUI arrests. These figures decreased by 2%, from an average of 363 per year in the pre-grant period to 355 in the grant period. This could indicate that the county's objective was too ambitious in view of the fact that the level of enforcement there was already more comprehensive than in the rest of the state.

Russell County exceeded its accident goal, reducing alcohol-related crashes during special patrol hours by 20.0% (see Table 11). This is even more impressive when non-target hours are examined. Alcohol-related accidents rose about 30% during non-target hours, and serious alcohol-related accidents rose 46.2%. It should be noted that while the number of serious alcohol-involved accidents declined during target hours, their proportional representation in all serious crashes increased somewhat. Overall, it appears that DUI selective enforcement was responsible for declines in alcohol-related crashes in Russell County.

Table 11

1093

County of Russell

	Mar. 79-Feb. 80	Mar. 80-Feb. 81	Mar. 81-Feb. 82	Grant Period Mar. 82-Feb. 83
Number of Accidents	324	355	396	407
Fatal	8	3	6	2
Injury	101	97	108	133
Number of Alcohol-related Accidents	89	88	75	85
% Of Crashes Which Were Alcohol-related	27.5	24.8	18.9	20.9
% of Serious Crashes Which Were Alcohol-related	43.1	51.0	35.1	37.8
TARGET HOURS (7:00 p.m. to 3:00 a.m., Fri. - Sat.)				
Number of Accidents	64	48	48	40
Fatal	1	0	0	0
Injury	21	21	18	14
Number of Alcohol-related Accidents	34	26	25	20
Fatal	1	0	0	0
Injury	17	16	12	11
% Of Crashes Which Were Alcohol-related	53.1	54.2	52.1	50.0
% Of Serious Crashes Which Were Alcohol-Related	85.7	76.2	66.7	78.6
NON-TARGET HOURS				
Number of Accidents	260	307	348	367
Fatal	7	3	6	2
Injury	80	76	90	119
Number of Alcohol-related Accidents	55	62	50	65
Fatal	4	3	2	2
Injury	25	32	26	38
% Of Crashes Which Were Alcohol-related	21.0	20.2	14.4	17.7
% Of Serious Crashes Which Were Alcohol-related	33.3	44.3	29.2	33.0

Town of Big Stone Gap

Big Stone Gap is a town of less than 5,000 persons located in the extreme southwestern corner of Virginia, about 10 miles from the West Virginia border and about 20 miles from the Tennessee border. It covers 4.0 square miles and has a population density of just over 1,000 persons per square mile. The town lies in a relatively rural area and is surrounded on three sides by National Forest, making it vulnerable to some recreational traffic. Routes 58 and 23 pass through Big Stone Gap.

Project Statement

Big Stone Gap is categorized as a small town, a category for which detailed crash statistics are not produced. Therefore, very little preproject accident history exists. While the town has not experienced a fatal accident since 1977, total accidents increased from 18 in 1979 to 118 in 1981. The percentage of those which were alcohol-related decreased from 28% to 19%. By 1981, this figure was still less than the percentage for the state as a whole.

According to the project director, DUI incidents were a major concern of the Big Stone Gap Police Department due to the large number of nonresident drivers who pass through the town. A previous DUI selective enforcement program proved to be effective in increasing arrests for DUI. During the first 6 months of the previous program (July-December 1980), there were 118 DUI arrests, compared to 49 during the same period in 1979. A reduction in accidents was also noted during this time.

Project History and Activities

The first DUI selective enforcement grant awarded to Big Stone Gap ran from July 1980 to July 1981. The second grant, and the one under investigation, ran from May 1, 1982 to April 30, 1983. The patrol activities for the two grant periods were identical. A selective enforcement patrol using an unmarked vehicle was on duty Thursdays, Fridays, and Saturdays from 7:00 p.m. to 2:00 a.m. All officers were eligible for special patrol duty, since the entire force had attended VASAP training programs on DUI detection and apprehension. The special patrols provided coverage for the entire town rather than focusing on particular locations.

Project Goals

Ultimate : To reduce alcohol-related accidents by 10% during the one-year grant period.

Intermediate : To increase DUI arrests by 10% over the same time period.

Project Results

As noted in Table 12, because of its small size, accident figures for Big Stone Gap are also very small. There was a drop in numbers of accidents in the community concurrent with the grant period, mostly in the property damage only category. The percentage of crashes which were alcohol-related also dropped during the grant period, from 20.9% to 14.9%. However, from examining the remainder of the table, it can be seen that the bulk of the decrease in alcohol-related accidents occurred during non-target hours. During target hours, total accidents increased 50% and alcohol-related accidents increased 100%. In Big Stone Gap's defense, it should be mentioned that when small numbers are involved, crash statistics can change erratically, simply because accidents are relatively rare events. However, in this case it is likely that administrators in Big Stone Gap overestimated the potential benefits of a continued project. In any case, it can be said that the selective enforcement project in Big Stone Gap was unsuccessful in meeting its stated objectives and that alcohol-related accidents during target hours actually increased during the grant period. It must be concluded, then, that the expenditures for DUI selective enforcement in Big Stone Gap were an inefficient expenditure of funds.

Table 12

1097

Town of Big Stone Gap

	May 79-April 80	May 80-April 81	May 81-April 82	Grant Period May 82-April 83
Number of Accidents	36	112	110	87
Fatal	0	0	0	0
Injury	4	23	27	28
Number of Alcohol-related Accidents	4	15	23	13
% Of Crashes Which Were Alcohol-related	11.1	13.4	20.9	14.9
% of Serious Crashes Which Were Alcohol-related	0	30.4	33.3	32.1
TARGET HOURS (7:00 p.m. to 2:00 a.m., Thurs.-Sat.)				
Number of Accidents	4	19	8	12
Fatal	0	0	0	0
Injury	0	6	2	7
Number of Alcohol-related Accidents	1	5	3	6
Fatal	0	0	0	0
Injury	0	3	1	4
% Of Crashes Which Were Alcohol-related	25.0	26.3	37.5	50.0
% Of Serious Crashes Which Were Alcohol-related	0	50.0	50.0	57.1
NON-TARGET HOURS				
Number of Accidents	32	93	102	75
Fatal	0	0	0	0
Injury	4	17	25	21
Number of Alcohol-related Accidents	3	10	20	7
Fatal	0	0	0	0
Injury	0	4	8	5
% Of Crashes Which Were Alcohol-related	9.4	10.8	19.6	9.3
% Of Serious Crashes Which Were Alcohol-related	0	23.5	32.0	23.8

Town of Front Royal

Front Royal is a town of approximately 8,000 persons located in the north central portion of the state. The town itself lies at the northern terminus of the Skyline Drive and is the conduit from Skyline Drive to Interstate 66. It is also close to the George Washington National Forest. For these reasons, Front Royal is particularly vulnerable to recreational and transient traffic.

Problem Statement

Like Big Stone Gap, Front Royal is classified as a small town for the purpose of accident statistical reporting and, therefore, little historical crash data exist. In 1979, there were 253 classifiable accidents in Front Royal, 51 (or 20.2%) of which were alcohol-related. By 1981, the calendar year preceding the grant, there were 228 accidents, 50 of which (21.9%) were alcohol-related. It would appear that since alcohol-related accidents were not increasing in Front Royal, there was only a minimal DUI accident problem in the area. In terms of arrests, the percentage of all arrests which were for drunken driving increased from 18.6% in 1979 to 24.8% in 1981, even though actual numbers of DUI arrests decreased slightly over this time period.

Project History and Activities

This is the second DUI selective enforcement grant received by the town of Front Royal. The first grant ran from September 1981 to October 1981. The second began in May 1982. Selective enforcement activities were suspended between grants. The project involved special enforcement patrols on duty from 6:00 p.m. to 2:00 a.m. on Fridays and Saturdays. These patrols canvassed the entire town rather than concentrating on any specific locations.

Project Goals

Ultimate : To reduce the number of alcohol-related accidents by 5% over a one-year period.

Intermediate : To increase the number of DUI arrests by 5% over a one-year period.

-1100

Project Results

As seen in Table 13, target hour alcohol-related accidents in Front Royal were reduced from 13 in the year preceding the current grant to 8 during the grant period, a decrease of 38.5%. Additionally, there was no previously existing trend to explain this decline. However, non-alcohol-related accidents also declined during target hours, though to a lesser extent (17.4%) and alcohol-related accidents during non-target hours were reduced by 16%. Thus, not all of the improvement in the alcohol accident situation during target hours can be attributed to the DUI selective enforcement operation. The percentage of all crashes (and all serious crashes) which were alcohol-related increased during non-target hours, while they were decreased during target hours, again contrary to previously existing trends. It should be noted that these percentages are based upon a small number of accidents and that small changes in absolute numbers of accidents could produce seemingly large changes in percentages.

In summary, Front Royal met and exceeded its goal of reducing alcohol-related accidents during target hours by 5%. However, the town's selective enforcement countermeasure was only partially responsible for this improvement.

Table 13

Town of Front Royal

1101

	May 79-April 80	May 80-April 81	May 81-April 82	Grant Period May 82-April 83
Number of Accidents	233	218	240	169
Fatal	1	0	1	0
Injury	46	27	34	22
Number of Alcohol-related Accidents	47	50	38	29
% Of Crashes Which Were Alcohol-related	20.2	22.9	15.8	17.2
% of Serious Crashes Which Were Alcohol-related	29.8	51.8	31.4	45.4
TARGET HOURS (6:00 p.m. to 2:00 a.m., Fir.-Sat.)				
Number of Accidents	31	31	30	22
Fatal	0	0	0	0
Injury	5	9	5	6
Number of Alcohol-related Accidents	14	15	13	8
Fatal	0	0	0	0
Injury	2	6	4	3
% Of Crashes Which Were Alcohol-related	45.2	48.4	43.3	36.4
% Of Serious Crashes Which Were Alcohol-related	40.0	66.7	80.0	50.0
NON-TARGET HOURS				
Number of Accidents	202	187	210	147
Fatal	1	0	1	0
Injury	41	18	29	16
Number of Alcohol-related Accidents	33	35	25	21
Fatal	1	0	1	
Injury	11	8	6	4
% Of Crashes Which Were Alcohol-related	16.3	18.7	11.9	14.3
% Of Serious Crashes Which Were Alcohol-related	28.6	44.4	23.3	25.0

State of Virginia

Once individual localities' progress was documented, the total impact of the 1982 DUI selective enforcement funding was evaluated. Accident data for the state are aggregated in Table 14 in the same format as those for the towns, counties, and cities. The same criteria for effectiveness were applied to these data.

During target hours, alcohol-related accidents fell 13.45%, while the same figures fell only 9.2% during non-target hours. Non-alcohol-related accidents fell about 3% during both target and non-target hours. These data support the hypothesis that the selective enforcement projects had some impact on alcohol-related accidents during target hours. Additionally, alcohol-related accidents became significantly more severe during non-target hours ($X^2 = 11.1$, $p < .01$), while non-alcohol-related accidents became more severe during both time periods ($X^2_{target} = 833$, $p < .05$; $X^2_{non\text{-}target} = 273.4$, $p < .01$). That no significant change in severity occurred for alcohol-related accidents during target hours indicates that DUI selective enforcement projects may have had a positive impact on the severity of alcohol-involved accidents.

1104

Table 14

Summary Accident Data for All Selective Enforcement Localities

	Grant Period 3-Years	Grant Period 2-Years	Grant Period 1-Year	Grant Period
Number of Accidents	13,396	12,713	12,710	12,110
Fatal	30	32	30	39
Injury	3,245	3,278	3,174	3,421
Number of Alcohol-related Accidents	2,506	2,438	2,468	2,211
% of Crashes Which Were Alcohol-related	18.7	19.2	19.4	18.3
% of Serious Crashes Which Were Alcohol-related	31.6	32.8	33.1	30.0
TARGET HOURS				
Number of Accidents	1,230	1,207	1,202	1,091
Fatal	4	4	3	9
Injury	386	452	407	390
Number of Alcohol-related Accidents	694	694	718	622
Fatal	3	4	2	8
Injury	292	334	315	287
% of Crashes Which Were Alcohol-related	56.4	57.5	59.7	57.0
% of Serious Crashes Which Were Alcohol-related	75.6	74.1	77.3	73.9
NON-TARGET HOURS				
Number of Accidents	12,166	11,506	11,508	11,019
Fatal	26	28	27	30
Injury	2,859	2,826	2,767	3,031
Number of Alcohol-related Accidents	1,812	1,744	1,750	1,589
Fatal	13	18	14	19
Injury	726	729	728	724
% of Crashes Which Were Alcohol-related	14.9	15.2	15.2	14.4
% of Serious Crashes Which Were Alcohol-related	25.6	26.2	26.6	24.3

DISCUSSION

From the data presented in this report, we can determine that ten of the thirteen localities either met or exceeded their stated goal of reducing alcohol-related accidents during targeted, special patrol hours. In seven localities, alcohol-related improvements could be attributed to the selective enforcement project (i.e., there were reductions in alcohol-related crashes during target hours in the absence of similar reductions during non-target hours). Interestingly, however, there seemed to be no relationship between the outcome of a project and whether the locality had a problem or whether it had had a previous selective enforcement grant. Nor does there appear to be any correlation between results, grant size, expenditure per person, or expenditure per square mile of area. Finally, and against common logic, whether a project succeeded in increasing the number of arrests had no consistent effect upon whether reductions in alcohol-related accidents were experienced.

There are several possible explanations for these anomalies. First, although previous selective enforcement programs in localities seem identical from year to year, it is possible, as in the case of Newport News, that the distribution of patrols over the area of the city or county could have been changed, either deliberately or accidentally. Since one major factor in success of selective enforcement is its impact on perceptions of risk of arrest for DUI, a more visible patrol could result in more arrest paranoia and thus fewer accidents, whether or not arrests are actually increased. Additionally, since mobile patrols are not as visible and do not attract the attention of the press as well as stationary roadblocks or checkpoints, it may take several years for awareness of patrol activities to be disseminated. Thus, the perception of risk may not reach a level where effectiveness can be measured until several project grant periods have expired.

The lack of a concrete relationship between a pre-existing accident problem and project results is more difficult to explain. In most cases, localities did not specify a goal that related in any way to the character of their alcohol-related accident problem. Many met specified goals anyway. In only one case was the project objective tailored to the local problem as it had been identified. In Galax, officials noted a problem in alcohol-related accident severity and succeeded in correcting it. In most other areas, however, minimal goals were set and these did not relate to observed problems. Perhaps if specific goals were set based upon previous data analysis, success or failure to improve the alcohol-related safety environment could be more accurately documented.