Combining Enforcement and Public Information to Deter DWI: The Experience of Three Communities

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16. Abstract

This report summarizes the results of three field tests of the concept of combining enforcement with public information and education (PI&E) activities to achieve general deterrence of driving while intoxicated (DWI). Test communities were Clearwater/Largo, Florida, Indianapolis, Indiana and Boise, Idaho. Each community identified several specific DWI enforcement techniques to implement and PI&E materials were developed that highlighted those specific enforcement techniques. The programs were implemented in each community for approximately a one year period and measures of public awareness, reported drinking driving behavior and crash experience were examined in the test communities and comparison communities.

The test programs represented a variety of enforcement and PI&E approaches as dictated by local conditions. Similarly there were varying effects of the programs. The salient enforcement technique associated with program effectiveness was the use of checkpoints. Overall command emphasis was also found to be important. A comprehensive PI&E program using public service ads, hard news coverage and community appearances was also associated with program success while reliance on a single PI&E approach was less likely to achieve desired results.

Methodological issues in implementing and evaluating such interventions are also discussed.

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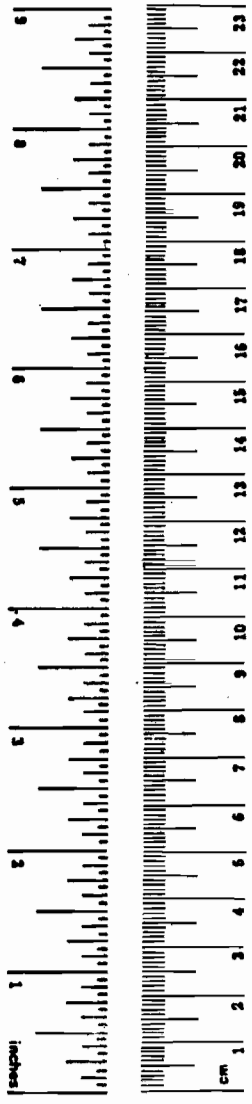
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.



Approximate Conversions from Metric Measures

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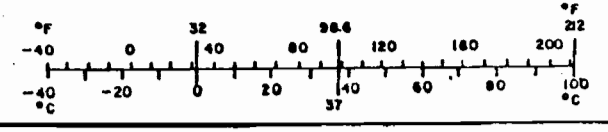
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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1. INTRODUCTION

This report summarizes the results of a project entitled "Enforcement and Public Information Strategies for the General Deterrence of Driving While Intoxicated." The major objective of that project was to test whether general deterrence of driving while intoxicated (DWI) could be achieved through combining DWI enforcement techniques with public information and education (PI&E) activities designed to be supportive of the specific enforcement techniques being used rather than using more generalized PI&E messages.

The project involved testing this general approach in three different sites with the specific approach and activities being selected and implemented by local personnel. The results of each of those individual tests are presented in three separate reports: "Enforcement and Public Information Strategies for DWI General Deterrence: ARREST DRUNK DRIVING -- The Clearwater and Largo, Florida Experience" (DOT HS 807 066), "Enforcement and Public Information Strategies for DWI General Deterrence: The Boise City, Idaho Experience" (DOT HS 807 191), and "Enforcement and Public Information Strategies for DWI: The Indianapolis, Indiana Experience" (DOT HS 807 434).

Each test site used a different mix of enforcement strategies and PI&E elements with differing results. One site (Clearwater/Largo) realized increased awareness of DWI enforcement activities and improvements in self-reported DWI behavior as measured by telephone surveys. One site (Indianapolis) evidenced highest awareness of enforcement activity just prior to the project inception, but did experience improvement in self-reported DWI behavior. Boise also experienced highest levels of awareness of DWI enforcement activities prior to project inception and experienced no change in self-reported DWI behavior. The elevated levels of awareness of enforcement prior to project implementation in Boise and Indianapolis may have been due to heightened awareness of DWI issues in general brought about by recent changes in the DWI laws in those jurisdictions. The results in terms of crash patterns varied more among sites. Clearwater/Largo experienced a

clear reduction in alcohol-related crashes, while some slight improvement could be discerned in Indianapolis, and none in Boise.

The purpose of this report is to attempt to shed some light on those differing results and on the viability of the overall concept by briefly summarizing the approach followed at each site and the ensuing results, followed by a discussion of differences in experiences at the three sites and their implications for the usefulness of the concept of attempting to deter drinking driving behavior through combined enforcement and PI&E.

1.1: Project Design

The overall project design was to identify and recruit three separate test sites at which to implement and evaluate the concept and compare their experience with that at three comparison sites. It was felt that in order to truly test the concept, it was important to identify test jurisdictions that already had good traffic enforcement programs in place. By using that design, if reductions in alcohol- related crashes were observed, they could be attributable to improvements brought about due to the implementation of the combined strategies rather than to going from minimal enforcement efforts to a level that was detectable on the part of the public.

An attempt was made to have geographic dispersion among the sites and some variation in size so that the results could be more generalizable. Diversity in size was constrained somewhat by a need to have test jurisdictions that were large enough to have a sufficient monthly crash frequency to allow the detection of an effect, if present.

Another important component of the site recruitment process was to obtain the participation of jurisdictions that were willing to mount what amounted to a major initiative with minimal funding from the project. This criterion was adopted because of the desire to test programs that reasonably could be implemented by other jurisdictions across the country. With limited highway safety funding available nationwide, we felt that this approach would yield results of maximum utility. Specifically, test sites were desired that would participate without using project

funds to pay for police officer time to conduct enforcement. Experience in some previous projects had been that a large infusion of federal funds for such activities resulted in dramatic increases in enforcement efforts followed by similar reductions in enforcement after outside funding had been removed. We wished to avoid this potential pitfall. Consequently project funds were used at the sites primarily to conduct training, coordinate PI&E activities, purchase limited equipment and provide some funding for materials reproduction.

1.2: Basic Implementation Approach

The basic approach followed in designing the specific program to be implemented at each site was to offer the test jurisdictions the choice of many options from which to select enforcement techniques they were to implement and encourage them to identify the most appropriate PI&E approach for their jurisdiction, so that they were, in effect, designing their own program. This approach was followed because we felt that local persons would have the best understanding of local needs and what might work in their community and, most importantly, to ensure that the program was one that the local personnel felt was their own rather than something imposed on them from outside. The hope was that this approach would maximize local involvement and increase the likelihood that the program might continue after project activities ceased.

A list of potential DWI enforcement strategies and descriptions was developed for use by the local enforcement agencies in developing their overall implementation plan. "Potential Enforcement, Adjudication and Public Information Strategies for the General Deterrence of Driving While Intoxicated" (DOT HS 806 360), listed twelve potential DWI enforcement techniques, ten sanctions and six additional PI&E themes which had potential for raising public perceptions of the risk of arrest and punishment for DWI. A brief description, specific general deterrence objectives, critical use features, critical assumptions and candidate PI&E tie-ins were provided for each enforcement technique and sanction. Additional public information themes were also briefly described. These materials

were intended to indicate to project participants the types of enforcement and public information strategies that could be implemented but were not intended to limit the range of techniques that might be implemented. The local agency was encouraged to identify additional strategies, modify the ones offered to suit their needs, and basically design their own enforcement program, including an implementation schedule for the specific techniques identified.

Again, rather than the project developing and producing PI&E materials and handing them over to the jurisdictions for use, the development of an overall PI&E plan was a cooperative effort of project staff and local personnel. As a part of this planning effort, a project report on "Existing DWI Enforcement-Oriented Public Communications Themes and Materials" (DOT HS 806 359), was reviewed along with a videotape of some eighty TV PSA's relating to DWI. This activity stimulated thinking, but in practice, new themes and materials were developed that specifically supported the enforcement techniques implemented in each jurisdiction. Materials development was also a cooperative process between local personnel and project personnel. In many instances, after the concept was jointly developed, art work or storyboards were developed by project staff and then turned over to local personnel for production and distribution.

1.3: Study Design

For each test jurisdiction a comparison jurisdiction was identified which was similar in size and in the same geographic area. An implementation period of one year was planned for each jurisdiction, however, local logistics caused the actual test periods to vary from twelve to fifteen months. Monthly series of nighttime and alcohol-related crash statistics were generated for each jurisdiction from state maintained crash files, and patterns on those measures were compared, using the program kickoff date in the test jurisdiction as the intervention point. Additionally, random-digit-dialing telephone surveys were conducted in both test and comparison jurisdictions before implementation, mid-project and near the conclusion of the project period. Patterns of responses in the two locations were

then compared.

1.4: Study and Comparison Sites

1.4.1: Clearwater and Largo, Florida/Sarasota and Bradenton, Florida. The initial test jurisdictions, where a project program was implemented from October 1983 through December 1984, were the adjoining cities of Clearwater and Largo, Florida on the west coast of Florida near Tampa and St. Petersburg. Clearwater and Largo had a combined population of approximately 105,000. The comparison jurisdictions were Sarasota and Bradenton, Florida, adjoining cities also on the west Florida coast, south of Clearwater and Largo. Their combined population was approximately 88,000. Both sets of jurisdictions are characterized by having a large proportion of older, permanent residents and experiencing tourist influxes during both winter and summer months.

Prior to project activities, enforcement procedures in both sets of jurisdictions were quite similar with DWI stops typically being generated through officer observation of erratic driving behavior. Both sets of jurisdictions operated under Florida's DWI statutes, which contain two definitions of DWI: a qualitative standard called "driving under the influence" and a quantitative standard prohibiting vehicle operation with a blood alcohol level of 0.10 or above, called "driving with an unlawful blood alcohol level" or "DUBAL." DUI and DUBAL were punishable by the same penalties.

1.4.2: Indianapolis, Indiana/Cincinnati, Ohio. Indianapolis, Indiana (population approximately 700,000), the capital city of Indiana, implemented project activities from May 1984 through April 1985. Cincinnati, Ohio, a city of approximately 385,000 persons in southern Ohio, was selected as the comparison jurisdiction as another large city in the same geographical area. DWI enforcement had been emphasized in the Indianapolis Police Department (IPD) since the early 1970's when Indianapolis had been a participant in the federally funded Alcohol Safety Action Project (ASAP) program. Though the IPD had no formal written DWI enforcement policies, actual practice included enforcement at high DWI incidence

locations and occasional roadblocks. Likewise, the Cincinnati Police Department had no formal written DWI enforcement strategy policies, however, officers in its traffic division had received training in the NHTSA-developed DWI Detection Guide and improved field sobriety testing prior to the project period. They did not use roadblocks. Thus, though DWI enforcement practices did not change substantially during the project period, traffic officers in Cincinnati had received substantial training in DWI during the years prior to project implementation in Indianapolis.

Indiana's DWI laws included both a per se offense for operating a vehicle with a blood alcohol concentration at or above 0.10, and an "operating a vehicle while under the influence" statute. Additionally, Indiana had an administrative license revocation law in place which called for administrative revocation of the operator's license upon notification of the Bureau of Motor Vehicles of a test result of 0.10 or greater or refusal to submit to a chemical test. Ohio's laws provided for the per se offense as well as the traditional DWI offense, but administrative revocation as described above for Indiana was not in place in Ohio.

1.4.3: Boise, Idaho/Billings, Montana. Boise City, Idaho, the capital city of Idaho, with a population of approximately 100,000, implemented project activities from December 1983 though February 1985. Billings, Montana a city of approximately 70,000 was selected as the comparison jurisdiction. Though not in the same state, Billings was close geographically and viewed as being a more appropriate comparison jurisdiction than other cities in Idaho, primarily because it was close to Boise in population.

Prior to project initiation in Boise, both jurisdictions were typically generating DWI arrests by police officer observation of erratic driving behavior or investigation of crashes. However, Boise did have a selective traffic enforcement unit for which DWI enforcement was one of the priorities, while Billings did not. Both jurisdictions operated under statutes which provided both for an illegal per se DWI offense and a qualitative driving under the influence offense.

1.5: General Findings

Measures of public perceptions and reported DWI behavior as well as measures of alcohol-related and nighttime crashes were taken in both experimental and comparison communities. Survey results indicated higher awareness of DWI enforcement activities in the experimental communities than in their comparison communities. In Clearwater/Largo, these perceptions increased during the project period and increased relative to changes in their comparison communities, whereas Indianapolis and Boise experienced highest awareness just prior to the inception of the project probably because of recent changes in their DWI laws. In Clearwater, statistically significant benefits in terms of both alcohol-related and nighttime crashes were evident coincident with implementation of the program. In Indianapolis such benefits were only apparent for nighttime crashes, and no such benefits were identified in Boise.

The following chapters contain brief descriptions of the enforcement and public information and education programs put in place in each of the test jurisdictions, a more detailed summary of the study results and a discussion of the projects findings' overall implications for this approach to seeking general deterrence.

2. DWI ENFORCEMENT STRATEGIES

At each test site, local enforcement personnel developed an overall enforcement plan in concert with project personnel. As indicated in the introduction, a starting point for this discussion was a listing and description of potential enforcement strategies contained in a packet of information that was made available to site personnel. These strategies fell into three general categories: deployment, detection and screening, and improved processing of DWI arrestees. They are listed below:

Deployment Strategies

- Patrol at high DWI accident locations
- Patrol at high DWI incidence locations
- Patrol in areas surrounding drinking locations
- Roadblocks or checkpoints

Detection and Screening Strategies

- Use of the NHTSA DWI detection guide
- Use of improved psychomotor roadside sobriety tests
- Use of preliminary breath testers
- Citizen involvement in DWI reporting
- Breath test for any traffic violations

Strategies to Improve Processing of DWI Arrestees

- Use of audio or video tapes in the booking process
- Four hour lock-up of DWI arrestees
- Impounding of car of DWI arrestees

This listing of strategies provided the starting point for the strategy selection and planning process, and in each jurisdiction, some of these were selected or modified, and additional strategies were identified for implementation. A schedule of implementation was then developed. Many strategies were implemented throughout the project period, but some, particularly those involving training or

the purchase of equipment, were phased in when practicable. This phasing in actually tended to lend itself well to PI&E activities, since it created fresh news items and themes as the project period progressed. The enforcement strategies selected at each of the test sites are listed in Figure 2.1. A brief discussion of the overall enforcement program at each of these locations follows.

2.1: DWI Enforcement Program in Clearwater and Largo, Florida

Clearwater/Largo identified high DWI incidence and accident locations and used this information in the deployment of patrol officers. Additionally, they made extensive use of well publicized checkpoints, conducting twelve during the project period. Properly run checkpoints can be fairly manpower intensive and thus a burden on the personnel resources of small departments. By using personnel from both jurisdictions in staffing each checkpoint and making use of volunteer reserve officers in support functions, they were able to mount extensive checkpoint activities using existing resources.

The jurisdictions made training in DWI enforcement a focal point of activities. Virtually every patrol officer in the two departments was exposed to eight hours of instruction on DWI enforcement policies and procedures, which included review of the project and its objectives, newly promulgated departmental general orders and instruction in the NHTSA-developed DWI detection guide and procedures. Additionally, each officer was trained in the use of standardized field sobriety tests, including horizontal gaze nystagmus.

Steps taken to improve processing of offenders included videotaping of in-station testing and processing of offenders, streamlined forms to speed processing, faster breath testing equipment, and the opening of a new substation with testing equipment which reduced prisoner transport and testing time.

Perhaps of pivotal importance in Clearwater and Largo was the enthusiastic command emphasis given to the program by the top level administrators in each department. The Chiefs were actively involved in the site recruitment and strategy selection process and remained involved throughout the project duration. This was

Clearwater/Largo	Indianapolis	Boise
Deployment Strategies:	**Deployment Strategies:**	**Deployment Strategies:**
• High DWI Accident Locations • High DWI Incidence Locations • Checkpoints	• High DWI Accident Locations • High DWI Incidence Locations • Checkpoints	• High DWI Accident Locations • High DWI Incidence Locations
Detection and Screening Strategies:	**Detection and Screening Strategies:**	**Detection and Screening Strategies:**
• DWI Detection Guide • Improved Sobriety Tests (including Gaze Nystagmus)	• DWI Detection Guide • Improved Sobriety Tests (including Gaze Nystagmus) • Preliminary Breath Testing Instruments	• DWI Detection Guide • Improved Sobriety Tests (including Gaze Nystagmus) • Citizen Reporting • Nighttime Crash Tests
Strategies to Improve Processing of DWI Arrestees:	**Strategies to Improve Processing of DWI Arrestees:**	**Strategies to Improve Processing of DWI Arrestees:**
• Videotaping of Post Arrest Process • Improved DWI Processing Procedures • Faster Breath-testing Equipment • New Substation	• Faster DWI Processing	• Faster DWI Processing
General Strategies:	**General Strategies:**	**General Strategies:**
• Command Emphasis • Police Officer Training in DWI Enforcement	• Command Emphasis	• Audio Tapes

Figure 2.1. Enforcement Strategies Selected by the Three Project Sites.

evidenced not only by their active involvement in PI&E activities, including press conferences, TV PSA's and public engagements but also by their promulgation of general orders on DWI and their continued attention to operational aspects of the project.

Overall, Clearwater/Largo experienced an approximate seventy percent increase in its volume of DWI arrests during the project period as compared to the preceding period.

2.2: DWI Enforcement Program in Indianapolis, Indiana

Indianapolis also selected high DWI accident and incident locations as deployment strategies. Twelve high DWI accident and 18 high DWI incident locations were identified by traffic division supervisory personnel based on prior years' crash and arrest experience. DWI task force officers (on duty from 10:30 p.m. to 4:00 am) were directed to concentrate patrol activities in those areas. Other patrol officers were advised of the areas and instructed to give special attention to those areas without compromising their other patrol responsibilities.

Checkpoints were also selected as a deployment strategy. Six checkpoints were conducted during the project period, two by the Indianapolis Police Department (IPD) alone and four in conjunction with other police agencies.

Training was conducted in the proper use of the DWI detection guide and in the use of improved roadside sobriety tests including horizontal gaze nystagmus. Nearly all of the regular patrol officers received the DWI detection guide training. Training was prioritized to ensure that those who would be most likely to use it (those who worked late shifts, DWI task force and accident investigation officers) would receive the training first. Consequently virtually all of the officers in the categories listed above received not only DWI detection training but training on the use of the improved sobriety test battery, as well as in the use of preliminary breath testers (PBTs). Fifteen PBTs were purchased and put in use primarily by task force and accident investigation officers.

An additional breath test instrument was purchased to help speed processing. However, an older unit failed at about the same time and little net decrease in processing time was observed.

Although the IPD had a history of emphasizing DWI enforcement within its traffic division, additional command emphasis was provided during the project, primarily in the form of written directives and attendance of senior level management at training sessions to introduce the training and reinforce the importance of the issue.

The Indianapolis Police Department experienced an increase of 34 percent in the volume of DWI arrests during the project period.

2.3: DWI Enforcement Program in Boise City, Idaho

Boise police selected high DWI accident and incident locations as their primary patrol deployment strategies. These locations were identified based on crash and arrest experience over the preceding three years. Both general patrol and selective traffic enforcement patrol (STEP) officers were advised of the locations. STEP officers were directed to concentrate DWI enforcement in those areas and general patrol officers were instructed to patrol there as much as possible but not to compromise their other patrol area responsibilities. Checkpoints were not adopted as a strategy but three informational roadside surveys in which impaired drivers were offered a ride home were conducted during the project period.

General patrol and STEP officers received training in both the DWI detection guide and in the improved roadside sobriety test battery. STEP officers received the training first, with general patrol officers receiving it later. The training did not begin until the fourth project month, and general patrol officers did not begin receiving the roadside sobriety test battery training until nine months into the project. Eventually, virtually all patrol officers received both categories of training.

Another detection strategy involved citizen reporting of DWI. Entitled Report Every Drunk Driver Immediately (REDDI), this program used a statewide 800 number to the Highway Patrol, which in turn notified the Boise Police Department

(BPD) dispatcher, who dispatched officers. An innovation in this program was a practice of sending a letter to the registered owners of vehicles reported to the police but not apprehended, notifying them that their vehicles had been reported as being driven erratically. Over 700 citizen reports were received that resulted in seven actual DWI arrests.

A further detection strategy involved instructing STEP officers to administer roadside sobriety tests to all drivers involved in nighttime crashes they investigated. Over 85 percent of eligible drivers were tested and approximately 25 percent of those tested were eventually arrested.

An additional breath testing instrument was purchased in an effort to speed processing of DWI offenders. However, actual processing time was not reduced after installation of the instrument. Patrol officers' equipment was supplemented with a small portable tape recorder which was used to assist in evidence gathering during the arrest.

In Boise, the project coordinator was an officer from the nighttime STEP team who was reassigned from patrol duties to coordinate project activities including PI&E. The nighttime STEP officers historically made most of the DWI arrests. Though the initial intent was for the department to replace that individual on the STEP team, departmental reorganization and budget difficulties precluded that taking place. Consequently, there was a net reduction in the specialized enforcement effort directed at DWI. As a result, Boise experienced a reduction rather than an increase in DWI arrests during the project period.

2.4: Summary

There is a good deal of similarity among sites in terms of basic enforcement strategies adopted. In terms of deployment strategies, all three adopted both high accident and high incidence locations. However, of the three only Boise did not implement checkpoints, and Clearwater/Largo implemented twice as many checkpoints as Indianapolis. All three sites implemented use of the DWI detection guide and improved roadside sobriety testing including horizontal gaze nystagmus,

with Boise adding citizen reporting and tests of nighttime crash-involved drivers to the list of detection strategies and Indianapolis implementing the use of preliminary breath testers.

All three sites attempted to speed offender processing with the addition of breath testing equipment, and Clearwater/Largo supplemented that effort with streamlined forms and an additional substation. An apparent benefit in terms of processing time was observed only in Clearwater/Largo.

There were differences among the sites in terms of command emphasis. In Clearwater/Largo the Chief of each of the agencies took an active role both in terms of the project operation and public information activities. In Indianapolis, this role was confined more to general support of the project, particularly training efforts. In Boise, command emphasis was less evident with a diminishment in the manpower allocated to specialized enforcement and a reluctance to have press conferences to announce program activities.

3. PUBLIC INFORMATION AND EDUCATION STRATEGIES

The general objective of the public information and education (PI&E) activities conducted at each of the three project sites was to bring the selected DWI enforcement strategies to the attention of the public. This was done by focusing public information efforts on the specific enforcement techniques that were being used to detect, arrest and effectively prosecute DWI offenders rather than more general enforcement themes.

The enforcement strategies chosen by each site (described under Section 2.) formed the core PI&E themes for each site. Our approach was to work with each of the enforcement agencies in developing an overall PI&E plan for the project period and provide technical assistance in materials development where necessary. For the most part, we relied on the local agencies to carry out materials production and distribution and other aspects of implementing the plan.

For the purpose of comparing the PI&E efforts of each site, project publicity is described in three forms: 1) hard news, 2) public service publicity, and 3) educational efforts. Hard news includes information that the media considers to be newsworthy, such as the beginning of a campaign, an event, the announcement of new techniques or equipment, or results. This includes newspaper articles, and radio and television news coverage and is generated in the form of press releases, press conferences, and media events. Although this publicity is of limited duration, it receives excellent exposure by virtue of being on the radio during drive time, on TV during the news hour, and printed in prominent sections of the newspaper.

Public service activities, on the other hand, consist of messages that are not necessarily news but contain information that contributes to the public good. These public service announcements (PSA's) are aired free on radio and television stations and printed free in available space in some newspapers (weekly or community newspapers are more receptive than larger papers, which are more able to sell all their ad space). The advantage of this publicity is that it is not constricted by timeliness and can run over the entire length of the program effort. Additionally, the dollar value of this free advertising can be quite high, well beyond the ability of

most organizations to budget for paid advertising. The disadvantage in PSA's is that they are not usually shown during optimum times for achieving extensive exposure.

The third category is general educational efforts. For this report, this category includes general promotional items such as brochures, bumper stickers, posters, displays, and presentations. These items can receive exposure for the duration of the project, such as posters and bumper stickers, or be limited in exposure such as presentations and displays.

Each of the sites used these three approaches differently and with varying degrees of success. Each site developed their own PI&E plan and selected their own materials mix to promote the specific enforcement themes and auxiliary themes chosen to support the overall project. For each PI&E theme, local personnel were provided the tools to generate the public information activities themselves. A typical theme package included text for a press release and a suggested media event to highlight the topic, a storyboard for a TV PSA, scripts for radio PSA's, and artwork for a print ad.

At the outset, the sites selected their own logos and slogans. These elements were used in all PI&E materials to afford continuity to the PI&E efforts and enhance project identification. Figure 3.1 outlines the elements of the PI&E campaigns conducted in Clearwater and Largo, Florida; Indianapolis, Indiana; and Boise, Idaho.

3.1: Public Information and Education Program in Clearwater and Largo, Florida

Clearwater and Largo, Florida had the most comprehensive PI&E program of the project, generating extensive hard news coverage, TV, radio and print public service announcements and producing many educational materials. This site had an enthusiastic and effective coordinator based within the Clearwater Police Department. He was not a public information officer, but rather an operations person who adapted easily to conducting the public information activities. His enforcement experience appeared to enhance his credibility and effectiveness with

Clearwater/Largo

Enforcement PI&E Themes:

- Checkpoints
- DWI Detection Cues
- High Priority Locations
- Improved Sobriety Tests (including Gaze Nystagmus)
- Videotaping of Post Arrest Process
- Faster DWI Processing

Other PI&E Themes:

- Results
- Expanded Program
- Arrest and Sanction

Slogan:

Arrest Drunk Driving

Logo:

Circle with Slash indicating no drinking and driving

Media Mix:

Hard News

- Press Releases
- Events
- News Conferences

Public Service

- TV PSA's
- Radio PSA's
- Print PSA's
- Billboards

Educational Materials

- Bumper stickers
- Brochures
- Street Signs
- Slide Presentation
- Exhibit
- Decals
- Key Chains
- Posters

Indianapolis

Enforcement PI&E Themes:

- Checkpoints
- DWI Detection Cues
- High Priority Locations
- Improved Sobriety Tests (including Gaze Nystagmus)
- Preliminary Breath Testing Instruments
- Faster DWI Processing

Other PI&E Themes:

- Results

Slogan:

None

Logo:

Circle with Slash indicating no drinking and driving

Media Mix:

Hard News

- Press Releases
- Events
- News Conferences

Public Service

None

Educational Materials

- Information Cards

NOTE: An extensive statewide advertising campaign on drunk driving was being conducted during the same time period. To avoid competing for public service activities, the project concentrated on generating hard news.

Boise

Enforcement PI&E Themes:

- DWI Detection Cues
- High Priority Locations
- Improved Sobriety Tests (including Gaze Nystagmus)
- Nighttime Crash Tests
- Citizen Reporting
- Faster DWI Processing

Other PI&E Themes:

- Roadside Survey
- Voluntary Breath Tests

Slogan:

We Do DUI's Right
Boise Cares

Logo:

Circle with Slash indicating no drinking and driving

Media Mix:

Hard News

- Press Releases
- Events

Public Service

- Radio PSA's
- Print PSA's

Educational Materials

- Bumper Stickers
- Decals
- Brochures
- Key Chains

NOTE: Program developed TV PSA's but none were used during project time period.

Figure 3.1. Elements of PI&E Campaigns at the Three Project Sites

the media, the public and fellow officers. The Largo Police Department also supported the project with a part time coordinator during the initial months of the campaign. Both the Clearwater and Largo police chiefs gave support to the program, appearing jointly on the first TV PSA. Early in the project, general orders were issued by the local law enforcement agencies that DWI enforcement would be given high priority and would be a real and permanent initiative. PI&E messages and materials reflected this commitment to tough enforcement.

The program chose as its logo the circle with slash symbol indicating no drinking and driving. The slogan "Arrest Drunk Driving" was chosen because of its double-entendre: stop (arrest) drunk driving by apprehending (arresting) and sanctioning drunk drivers. The logo and slogan were well used by the media and that, combined with the extensive use of it on the educational and public service materials, gave the program good identification.

Clearwater and Largo had a good mix of hard news and public service activities. The local newspapers supported the project through news coverage and the donation of space for print advertisements. The local radio and TV stations, likewise, covered the events of the project and produced and aired numerous PSA's. Twenty-five radio PSA's, 4 TV PSA's, 5 print PSA's, and a billboard concept were developed, produced and received free exposure during the course of the project.

Reflective street signs displaying the project logo were printed and displayed beneath speed limit signs along city roads. These signs were easily seen and lent the project a sense of priority and permanence. Reflectorized decals and bumper stickers were used on patrol cars and local government vehicles, and were available for use by the public. Brochures, key chains and posters were also widely distributed. A portable exhibit and slide presentation describing the program were also produced and used extensively. The local coordinator was active in making appearances before civic groups, schools, at fairs and other gatherings. During the project period over 220 public presentations were given, directly reaching nearly 13,000 persons. Local enforcement personnel also discussed project activities on 15 radio talk shows and 5 TV talk shows.

Five enforcement strategies formed the core themes for the PI&E effort. These were: 1) Checkpoints, 2) DWI Detection Cues, 3) High Priority Locations, 4) Improved Sobriety Tests (including Gaze Nystagmus), and 5) Videotaping of Post Arrest Processing. Each core theme was supported by press releases and media events to generate news coverage by the various media. Other themes included program results, the expansion of the program, and an explanation of the arrest process and sanctions for DWI.

3.1.1: Checkpoints. The checkpoint strategy, which called for roadblocks to stop drivers at predetermined intervals in a line of traffic, began at the start of the project and was sustained during holiday seasons and at regular intervals throughout the project. Twelve checkpoints were conducted during the project with each a media event in itself. The media attended every one and gave them excellent print and electronic hard news coverage. TV, radio and print PSA's were developed and used along with a brochure and presentations.

3.1.2: DWI Detection Cues. This strategy was developed to promote the fact that all personnel were trained in the use of DWI detection cues, and that by using these cues, police can detect drunk drivers more effectively and increase the chance of being arrested for drunk driving. Much of the publicity for this strategy was generated through speaking engagements since the communication of the nature of detection cues is a complex task. A radio and television PSA were developed for this theme and the NHTSA publication "Guide for Detecting Drunk Drivers at Night" was printed using the project logo, slogan and identifying text and distributed to officers and the public.

3.1.3: High Priority Locations. This strategy, to use identified areas of high DWI incidence and accidents to assign patrol activity, promoted two messages: police know where most of the drunk driving activity takes place and that increased patrols in these areas make it more likely that drunk drivers will be detected. Radio PSA's and press releases were developed for this theme along with 3 events. Two of the special events involved handing out brochures at high incidence locations. The third event used "Wolfpacking", or the deployment of DWI teams. The public was

warned of these strategies in a series of press releases that attracted print and TV news coverage.

3.1.4: Improved Sobriety Tests. These sobriety tests, including the walk and turn, one-leg stand, and gaze nystagmus test increased the ability of officers to determine intoxication at the roadside. The gaze nystagmus test was promoted as increasing the precision of the officer in determining the level of intoxication and was considered the most newsworthy by the media. This strategy was promoted through press releases, media events, radio PSA's, and presentations.

3.1.5: Videotaping of Post Arrest Process. This strategy was a method of improving the processing of drunk drivers through the installation of videotape equipment at police stations and substations. Sobriety tests were videotaped for use later, if needed, as evidence for conviction of drunk drivers. Publicity included a press release, media event, TV, print and radio PSA's and presentations.

3.1.6: Other DWI Themes Supported by Project PI&E. Campaign results were released on a monthly basis in the form of press releases. Two radio PSA's, a TV and a print PSA explained that the project enforcement strategies were working and that the stepped-up enforcement efforts would continue. With DWI arrests up by more than 70 percent, the chances of being arrested had increased.

A subtheme within the improved processing strategy was the opening of a new substation which resulted in faster processing and enabled the officers to return to patrol more quickly.

Midway through the project, the neighboring towns of Dunedin and Tarpon Springs joined the Arrest Drunk Driving Program. This event was marked by a press conference, press release and a radio PSA.

Supplemental to enforcement themes was an effort to inform the public about the sanctions for a DWI. A poster, brochure, radio PSA and several appearances and news stories were used to emphasize that being arrested for DWI is a very unpleasant experience, that a DWI arrest involves a minimum four-hour lockup, that there are severe sanctions for first and subsequent offenders and there are many indirect penalties for DWI such as increased insurance premiums.

3.2: Public Information and Education Program in Indianapolis, Indiana

The public information program in Indianapolis, Indiana used a different approach in both the selection of publicity components and in the location of the PI&E coordinator's position. Indianapolis chose to concentrate its PI&E efforts on attracting hard news coverage only, and not to use project resources for public service and educational items such as TV and radio PSA's, brochures, billboards, and other forms of advertising. It was believed that the desired messages could be communicated to a greater number of people by staging newsworthy events that would attract news coverage by TV, radio, and print media.

The local coordinator in Indianapolis, while planning her activities in close cooperation with the police, was located in the prosecutor's office and worked under the direction of the chief prosecutor. Unlike the coordinators in Clearwater and Boise who were enforcement officers new to public information duties, she was experienced in conducting public information campaigns but did not have a police background.

The decision to concentrate on hard news coverage was supported by two local conditions. First, the site coordinator and the people she worked with believed that people listen more to hard news than advertising. Second, an elaborate statewide advertising campaign on drunk driving was being carried out by the Governor's Task Force on Drunk Driving at the same time this project was being implemented. The Governor's Task Force campaign involved, to a large extent, the development of materials and the use of public service advertising mechanisms. Local personnel felt that these media outlets might not be receptive to additional requests for donation of public service activities on this subject.

The program chose the circle with slash symbol indicating no drinking and driving as its logo but decided not to have a slogan. Because of the emphasis on hard news, no TV, radio, print or billboard public service messages were produced and educational materials were limited to press kits and informational cards. The publicity for each enforcement theme relied primarily on press releases and media events.

Early in the project, it was indicated that DWI enforcement would be given high priority and command emphasis, and that this stepped-up enforcement would be a real and permanent initiative. Five specific DWI enforcement techniques formed the core enforcement strategies for PI&E efforts. These were: 1) Checkpoints, 2) DWI Detection Cues and Improved Sobriety Tests, 3) High Priority Locations, 4) Preliminary Breath Testing Instruments, and 5) Faster DWI Processing.

3.2.1: Checkpoints. The checkpoint strategy, which called for roadblocks to stop drivers at predetermined intervals, was initiated with the project kickoff and was repeated on three more occasions during the course of the project. A media briefing was called on the day of each checkpoint and media representatives were asked to assemble at a specified location that evening. The location of the checkpoint was announced to the media at these gatherings, and the media representatives were escorted to the site. Informational cards, explaining the purpose of the checkpoints and containing a survey asking motorists about their attitudes concerning checkpoints were handed out to drivers who were stopped. Extensive news coverage was provided by the television and radio stations and newspapers for the first checkpoint, with coverage of subsequent checkpoints less intense.

3.2.2: DWI Detection Cues and Improved Sobriety Tests. The message in this strategy was that the likelihood of being detected and arrested for drunk driving was increased through the training of officers in the use of DWI detection cues and improved roadside sobriety tests such as the walk and turn, one-leg stand and gaze nystagmus. Both the ability of officers to spot cars operated by impaired drivers and the ability to ascertain whether drivers, once stopped, were likely to be intoxicated were enhanced. This strategy was launched in conjunction with the campaign kickoff and was reintroduced later in the project through a media event demonstrating the use of the gaze nystagmus test. The gaze nystagmus training event, in terms of volume of publicity, was the most successful PI&E effort of the project. In addition to media events, several speaking engagements were held and a card depicting the visual detection cues was passed out.

3.2.3: High Priority Locations. This strategy involve stepped-up enforcement at high DWI incidence and accident locations. At the direction of the police, this theme was not emphasized in the PI&E program. Although concentrated patrols were deployed in high priority locations, police were reluctant to inform the public about this. There are a number of explanations: police did not want to publicize that enforcement was being concentrated in certain areas, implying harassment for some and neglect for others; police did not want to reveal the location of concentrated enforcement initiatives. The media, for its part, was not interested in publicizing the location theme without knowing the exact locations.

3.2.4: Preliminary Breath Testing Instruments. Preliminary breath testers (PBT's) were added to the detection tools used by officers midway through the project. The message conveyed by the PI&E in support of this theme was that PBT's improve the ability of officers to determine at the roadside whether a driver is intoxicated. The strategy was announced with a news release, and it received newspaper and television coverage.

3.2.5: Faster DWI Processing. This strategy involved the acquisition of a new evidential breath test instrument and was the last strategy implemented in the campaign. The message was that new equipment would speed up the DWI processing, enabling officers to return to their patrol duties more quickly and thus increase the chances of detecting more drunk drivers. Publicity included two news releases and an event which provided a demonstration of the new instrument. The event was covered in a hard news spot by one TV station.

3.2.6: Other DWI Themes Supported by Project PI&E. A Christmas holiday DWI enforcement effort held jointly by several police agencies received television and radio coverage. Several newspaper articles were devoted to project results and a statewide meeting of young people known as Hoosiers Against Drunk Driving (HADD) received coverage by both the print and electronic media. Project participation in the youth conference included demonstrations of the PBT's, distribution of detection cue cards and a workshop on detection cues. The campaign conducted by the Governor's Task Force on Drunk Driving, although it did not

promote awareness of any enforcement strategies, complemented this program with brochures, key chains, buttons, bumper stickers, and posters using the theme "Sobering Advice Can Save a Life."

3.3: Public Information and Education Program in Boise, Idaho

The public information campaign in Boise, Idaho employed a combination of hard news coverage, radio and print public service announcements, and educational materials. The site's PI&E coordinator was an officer within the Boise Police Department who had enforcement experience but was new to conducting public information programs.

The circle and slash symbol indicating no drinking and driving was chosen as this site's logo. Applications of the logo included bumper stickers, vehicle window decals, brochures, key chains and folders. The media used the logo in their coverage of the campaign. A project slogan "We Do DUI's Right" was selected by the police department from suggestions made by the police personnel. This slogan along with "Boise Cares" was used in all PI&E materials during the project, however, it was not used by the media in their coverage.

Messages were prepared for display on electronic signs at a bank, a local truck stop, and the Boise State University stadium, where sports-related DWI messages were displayed during football games. During the project, 14 presentations were given before a variety of civic groups and schools, directly reaching nearly 600 persons, and local law enforcement personnel appeared on 2 radio and 1 TV talk show to discuss project activities.

The availability of local personnel committed to the project varied during the project period, and this affected the PI&E activities. The project coordinator sustained a serious injury early in the project period and the recovery and rehabilitation period caused a significant disruption to his schedule. Also the degree of cooperation and participation of the local media was highly variable and created problems in adhering to the planned PI&E schedule. For instance, the program developed TV PSA scripts but none were produced or aired during the project time

period. The local TV stations did not want to contribute free coverage of the program while the local newspaper had obtained sponsorship from local merchants for their DWI ads. Unfortunately, a goodly amount of space in the print ads was occupied by the list of sponsors and may have compromised the effectiveness of the print ads. Thus, the potential public service publicity for the program was compromised with both media.

Core program themes were supported by press releases, radio PSA's, and media events. Five enforcement strategies formed the core themes for the PI&E efforts: 1) DWI Detection Cues, 2) High Priority Locations, 3) Improved Sobriety Tests, 4) Nighttime Crash Tests and 5) Citizen Reporting. Unlike Clearwater and Indianapolis, Boise did not choose to use checkpoints, a theme usually well publicized by the media, as an enforcement strategy. Other themes included roadside surveys and voluntary breath tests at high DWI locations.

3.3.1: DWI Detection Cues. This strategy, the training in and use of DWI detection cues, was launched at the beginning of the project. The NHTSA publication "Guide for Detecting Drunk Drivers at Night," a brochure describing visual DWI detection cues and how to use them, was reprinted using the project logo and slogan and distributed to officers and the public. Radio PSA's and press releases also supported this theme.

3.3.2: High Priority Locations. This theme, launched at the midpoint of the project, publicized that law enforcement officers would be patrolling at areas identified as high DWI incident and accident locations. The message was that police know where most of the drinking and driving activity takes place and that increased patrols in these areas make it more likely that drunk drivers will be detected. A media event, held to announce the strategy, resulted in radio, TV, and newspaper coverage.

3.3.3: Improved Sobriety Tests. These sobriety tests, including the walk and turn, one-leg stand and gaze nystagmus, increased the ability of officers to determine intoxication at the roadside. The PI&E campaign began with an event in which media representatives were invited to participate in gaze nystagmus training. This

strategy received considerable news coverage. It appears that involving the active participation of the local media in an event is a good approach for receiving widespread coverage. The event was followed by press releases and radio PSA's.

3.3.4: Nighttime Crash Tests. The Boise Police Department developed a policy of administering standardized sobriety tests to drivers in all nighttime crashes investigated by the STEP team. A press release and radio PSA were generated in support of this activity.

3.3.5: Citizen Reporting. This strategy encouraged citizens to report to police drivers they saw who appeared to be intoxicated. The strategy was launched with a press release and radio PSA, followed by a second release and radio PSA. This theme promoted citizen reporting as increasing the chance that drunk drivers will be detected. A subtheme of this strategy was a procedure used by the police in which letters were sent to the registered owners of cars observed by citizens to be operated by possible drunk drivers but not apprehended. Several activities supported this subtheme, including a radio PSA, press release, and a statewide REDDI (Report Every Drunk Driver Immediately) billboard.

3.3.6: Other DWI Themes Supported by Project PI&E. Roadside surveys were conducted 3 times during the project. These surveys involved setting up what amounted to DWI checkpoints without arrests. Drivers passing through the surveys were asked to voluntarily submit to a breath test using a preliminary breath test device (PBT). Those above the legal limit were detained and offered a ride home but not arrested. These events received news coverage from both the print and electronic media.

Another method of conducting voluntary breath tests involved setting up testing stations at high DWI accident and incident locations with signs indicating their purpose. The public was encouraged to stop and see the equipment the police were using and have breath tests run using the PBT's. This event also received substantial television, radio and newspaper coverage.

3.4: Summary

The three test sites implemented public information and education programs based on their perceptions of the most appropriate approach in their jurisdiction. Clearwater and Largo chose to combine hard news coverage with public service activities and extensive use of educational materials. Indianapolis, on the other hand, chose to rely almost exclusively on generating hard news coverage because another program was already tapping public service resources. Boise attempted the more comprehensive approach but because of conflict between media had no TV PSA activity, and because of personnel discontinuity was less able to generate extensive educational contacts or hard news coverage.

4. SUMMARY OF RESULTS OF THE THREE PROGRAMS

Two basic measures of program effectiveness were used in this project. They were: 1) response patterns to questions asked about DWI issues on telephone surveys conducted in both the experimental and comparison jurisdictions before during and near the conclusion of formal project activities; and 2) comparison of trends in crash patterns (alcohol-related and nighttime) between the experimental and comparison jurisdictions.

For each test site, the telephone survey was administered to 400 licensed drivers who were drinkers in each of three waves, in both the experimental and comparison jurisdictions. Respondents were contacted through random-digit -dialing procedures. Data for the crash analyses were obtained from the state level custodians of crash data for each of the jurisdictions. Summaries of the results of the analyses of these data are presented below for each program. A more detailed discussion appears in the separate reports on each site.

4.1: Results of Clearwater and Largo, Florida Program

Telephone surveys were conducted in Clearwater and Largo, Florida (experimental) and in Sarasota and Bradenton, Florida (comparison) in September 1983, March 1984 and October 1984. The active phase of the project was from October 1983 through December 1984.

One question asked was, "If you were to drive after drinking too much in _____ , what do you feel would be the chances of getting caught and punished, given what you know about the police and courts in _____?" The response patterns to that question are shown in Table 4.1. Clearwater/Largo experienced a decrease in the mean value of that response from the initial wave to the second (from 35.7 to 32.4) with the final value being higher than the initial measure (37.7, two percentage points or a relative increase of 5.6 percent). In contrast, Sarasota/Bradenton experienced an even larger initial decrease (from 33.7 to 26.7), with less of an increase between the second and third waves, so that the

final value was 4.4 percentage points lower than the initial value, a 13.1 percent relative decrease. Thus the mean perceived risk of arrest was higher in Clearwater/Largo than in Sarasota/Bradenton throughout the project period and was higher at the end of the program than at the beginning, while in Sarasota/Bradenton, it was lower at the end of the study period.

Table 4.1. Mean Perceived Risk of Being Caught and Punished by Wave.

	Sept 83	Mar 84	Oct 84
Clearwater/Largo	35.7	32.4	37.7
Sarasota/Bradenton	33.7	26.7	29.3

As a measure of awareness of new DWI enforcement activities, respondents were asked, "From what you have noticed, read or heard, have there been any changes in the enforcement of drinking driving laws of _____ in the past six months?" The pattern of responses to that question appears in Table 4.2. Clearwater/Largo experienced a substantial increase in respondents replying affirmatively to that question in the second wave, with some tailing off by the third wave but still at a level above that initially observed. Sarasota/Bradenton, on the other hand, experienced a decline over time. Those responding affirmatively were further asked to characterize those changes. On the first wave, .5 percent of the Clearwater Largo respondents volunteered roadblocks as a description of the change in enforcement that they had observed, as contrasted with 32.5 percent on the second wave and 45.7 percent on the third. This compares with values of .5 percent, 1.6 percent and 11.3 percent for the Sarasota/Bradenton respondents. Clearly, the respondents in Clearwater/Largo were sensitized to the conduct of roadblocks. No other enforcement strategies attracted such attention.

Self-reported drinking driving behavior was measured by asking, "In the past month, how many times have you driven after having had too much to drink?" In

Clearwater/Largo an increasing proportion of respondents reported not having engaged in that behavior as the project went on, while in Sarasota/Bradenton that proportion remained relatively stable.

Table 4.2. Percentage of Respondents Noticing Changes in DWI Enforcement by Wave.

	Sept 83	Mar 84	Oct 84
Clearwater/Largo	48.7	69.1	58.3
Sarasota/Bradenton	52.3	47.4	41.5

A more direct criterion of effectiveness for a program such as this is whether a measurable reduction in affectable crashes can be discerned. The intent of the combined DWI enforcement and public information activities was to deter the driving public from engaging in drinking and driving which leads to crashes. Two of the measures frequently used in examining such programs are nighttime crashes and alcohol-related crashes. For this study, nighttime crashes were defined as those occurring between 8 p.m. and 4 a.m., and crashes were categorized as alcohol-related if, in the opinion of the investigating officer, at least one driver had been drinking. Nighttime crashes are considered a proxy measure of alcohol-related crashes because a much higher proportion of nighttime than daytime crashes are found to involve drinking drivers in in-depth studies which objectively measure the extent of alcohol involvement through breath or blood sample analysis. Though only a proxy measure of drinking and driving crashes, nighttime crashes have the virtue of being defined by an objectively determined variable--time of day. Alcohol-related crashes, as defined in this study, rely on the officer's subjective assessment of whether one of the drivers had been drinking. The virtue of this measure is that it is a direct measure of the outcome variable being addressed by the program; its drawback is

that its reporting by police officers may be influenced by such things as training and command emphasis. In this study, we examined each outcome separately. If the results obtained from both analyses are similar, there can be enhanced confidence in the results of each one considered separately. A discussion of the adequacy of these measures appears in Section 5.

Traffic accident data were obtained from the Florida Department of Highway Safety and Motor Vehicles for both the experimental cities (Clearwater, Largo) and comparison cities (Bradenton, Sarasota). Monthly accident frequencies over the time period of January 1980 through December 1984 were then examined. The goal of the analyses of these data series was to examine them to identify any changes (or lack of change) which could be attributed to the special DWI enforcement efforts and public information and education activities, which were begun in the experimental cities in October 1983.

Using these data time series models were developed for both alcohol-related and nighttime crashes to test for a shift at the time of implementation of the program. The measures examined were the monthly percentage of alcohol-related or nighttime crashes occurring in both the experimental and comparison cities which occurred in the experimental cities. The model fit to this data series for alcohol-related crashes is shown in Figure 4.1. The shift represents a decrease of over 20 percentage points in the percent of total alcohol-related crashes that occurred in the experimental cities. The shift parameter was highly significant ($p > .0005$). A similar model was fit for nighttime crashes. The shift in this case represented a decrease of 8 percentage points and was again statistically significant.

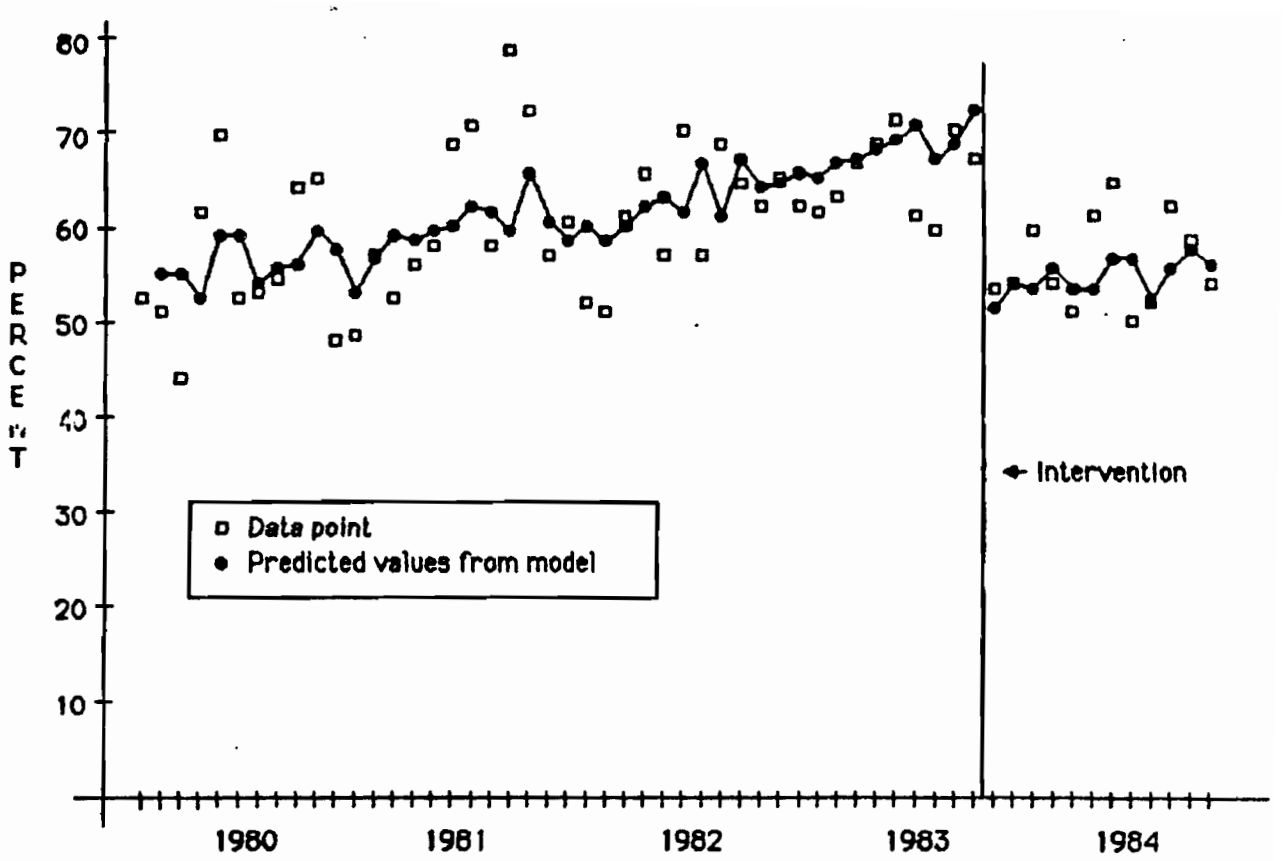

Figure 4.1. Alcohol-Related Crashes in Experimental Cities as a Percent of Alcohol-Related Crashes in Experimental and Control Cities with Time Series Model.

The consistency of these results leads us to conclude that the combined DWI enforcement and public information program in Clearwater/Largo was effective in reducing alcohol-related crashes.

4.2: Results of Indianapolis, Indiana Program

Telephone surveys were conducted in Indianapolis, Indiana and in Cincinnati, Ohio in March 1984, November 1984 and May 1985. The active phase of the project ran from May 1984 through April of 1985.

Response patterns to the question dealing with perceived risk of arrest and punishment for DWI appear in Table 4.3. Though the values for Cincinnati were consistently higher than for Indianapolis, Indianapolis experienced a 19.4 percent relative increase in the mean response from the first wave to the second with a slight decrease between the second and third waves while in Cincinnati the initial relative increase was 7.2 percent and the value decreased to near original levels by the third wave.

Table 4.3. Mean Perceived Risk of Being Caught and Punished by Wave.

	Mar 84	Nov 84	May 85
Indianapolis	24.2	28.9	27.0
Cincinnati	29.2	31.3	29.9

Indianapolis and Cincinnati respondents were also asked if they were aware of recent changes in the enforcement of DWI laws. Table 4.4 summarizes the responses to that query. One can see that on all three waves the reported level of awareness of enforcement changes was higher in Indianapolis than in Cincinnati. However, the highest levels in both cities, but particularly Indianapolis, was on the first wave, before any project PI&E activities had been conducted. This high level may have been due to awareness of recent changes in the DWI laws rather than enforcement.

Table 4.4. Percent of Respondents Noticing Changes in DWI Enforcement by Wave.

	Mar 84	Nov 84	May 85
Indianapolis	78.8	57.0	55.8
Cincinnati	54.3	45.8	49.3

The Indianapolis respondents, particularly during the last two waves, were more likely to indicate specific enforcement activities whereas Cincinnati respondents were more likely to mention specific sanctions. The most striking difference between jurisdictions in response patterns to this question was in the proportion of those responding who cited roadblocks or checkpoints. In Indianapolis over a third volunteered roadblocks during and after the program (up from 20 percent before the program) while in Cincinnati roadblocks were mentioned by fewer than five percent of respondents on any of the waves.

Another question was, "In the past month, how many times have you driven after you have had too much to drink?" In Indianapolis there was a slight increase in the proportion of respondents who responded "zero" on successive interview waves (from 85.8% to 89.5%) as opposed to a more stable pattern among Cincinnati respondents (87.2% to 86.5%).

In Indianapolis and Cincinnati several different monthly series of crash data from 1982-1986 were examined to determine if an effect due to the program might be present. These included:

1. Ratio of frequency counts of crashes occurring at night (Indianapolis) to frequency counts of crashes occurring at night (Cincinnati).

2. Ratio of frequency counts of crashes reported to be alcohol-related (Indianapolis) to frequency counts of crashes reported to be alcohol-related (Cincinnati).

Time series models were fit to each of the data series listed above. Each of the models contained two intervention parameters, one representing a shift in the level of the series beginning May 1, 1984, the beginning of the experimental period in Indianapolis. The second parameter represented a similar shift beginning May 1, 1985, after the experimental program had essentially been completed. Thus, if alcohol-related crashes were reduced by the program, we would expect to find a statistically significant negative coefficient (downward shift) for the first parameter, possibly followed by a positive parameter (upward shift) at the second intervention point if ending the program ended its effect.

Table 4.5 shows the estimated shift parameters and significance levels from models fit to these two data series. A positive number in the columns labeled Intervention (May 1984 being the beginning of the program and May 1985 being its conclusion) would be associated with an increase in alcohol-related or nighttime crashes in Indianapolis and a negative number would be associated with a decrease.

No picture of consistently significant intervention effects emerges from the estimates of Table 4.5. However, using the ratio for nighttime crashes to compare Indianapolis to Cincinnati indicates an effect in the desired direction. Figure 4.2 shows a plot of the monthly data series consisting of the ratio of crashes occurring at night in Indianapolis to those occurring at night in Cincinnati (Series 1 from Table 4.5). This series shows a significant reduction at the onset of the project. A slight but non-significant increase at the end of the project period is also apparent.

Table 4.5. Estimated Intervention Effects.

	Intervention	Significance	Intervention	Significance
1. Ratio of Indianapolis nighttime crashes to Cincinnati nighttime crashes	-.131	.05 < p < .10	.087	n.s.
2. Ratio of Indianapolis alcohol-related crashes to Cincinnati alcohol-related crashes	-.001	n.s.	.098	n.s.

While the May 1984 to May 1985 dates represent the official beginning and ending points of the program, it may be that other intervention points would more realistically reflect program activities. For example, the data suggest somewhat more of a decrease in June 1984 than May 1984 and more of an increase in alcohol-related and nighttime crashes in April 1985 than in May 1985. Though the program was announced May 1, 1984, the actual increases in enforcement activity did not occur until June 1984 because of the Indianapolis Police Department's special requirements in conjunction with hosting the Indianapolis 500 automobile race. In addition, project activity tended to wane towards the end of the planned project period. Models fit to each of the ratio type data series with the initial intervention at June 1, 1984 all yielded results indicating a reduction in alcohol-related or nighttime crashes coincident with an intervention at that time. The negative effect (decrease) was statistically significant only for the ratio of nighttime crashes ($p < .05$). The proportion of crashes occurring at night decreased by eleven percent for the project period. Figure 4.3 depicts that series.

The overall conclusion that may be drawn from this analysis is that the program had no effect on alcohol-related crashes as measured by officer's report of alcohol involvement but that an effect on nighttime crashes was probably evident during the period when the project activities were underway.

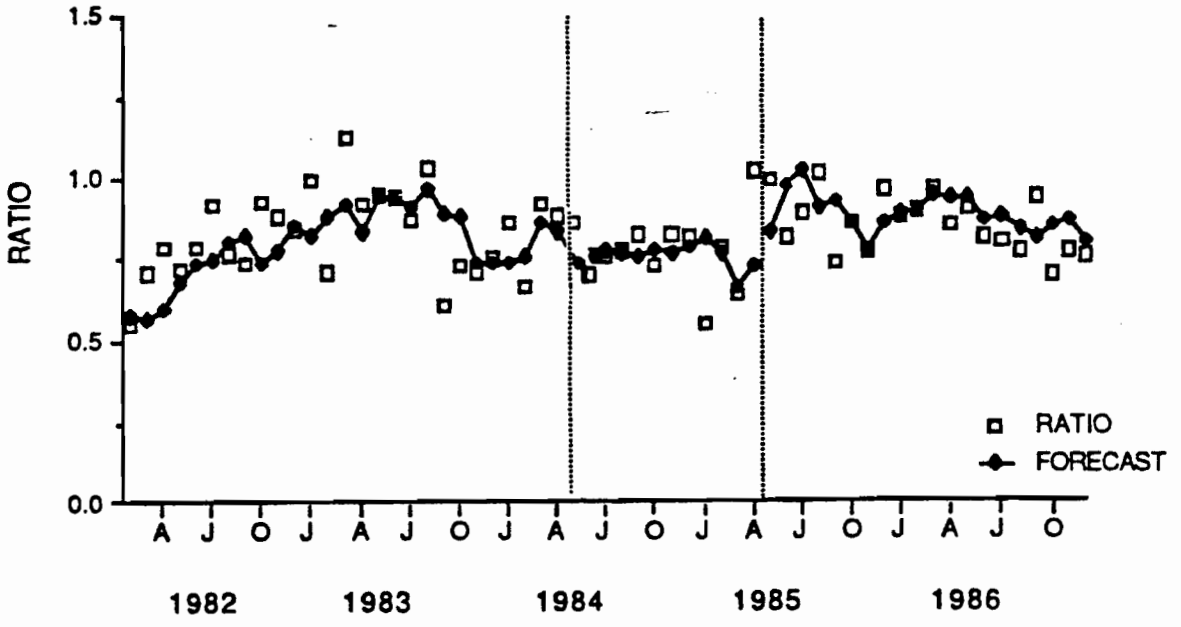

Figure 4.2. Model with Interventions at Beginning (May 1984) and End (May 1985) of Program Fit to Night Crash Ratio Series.

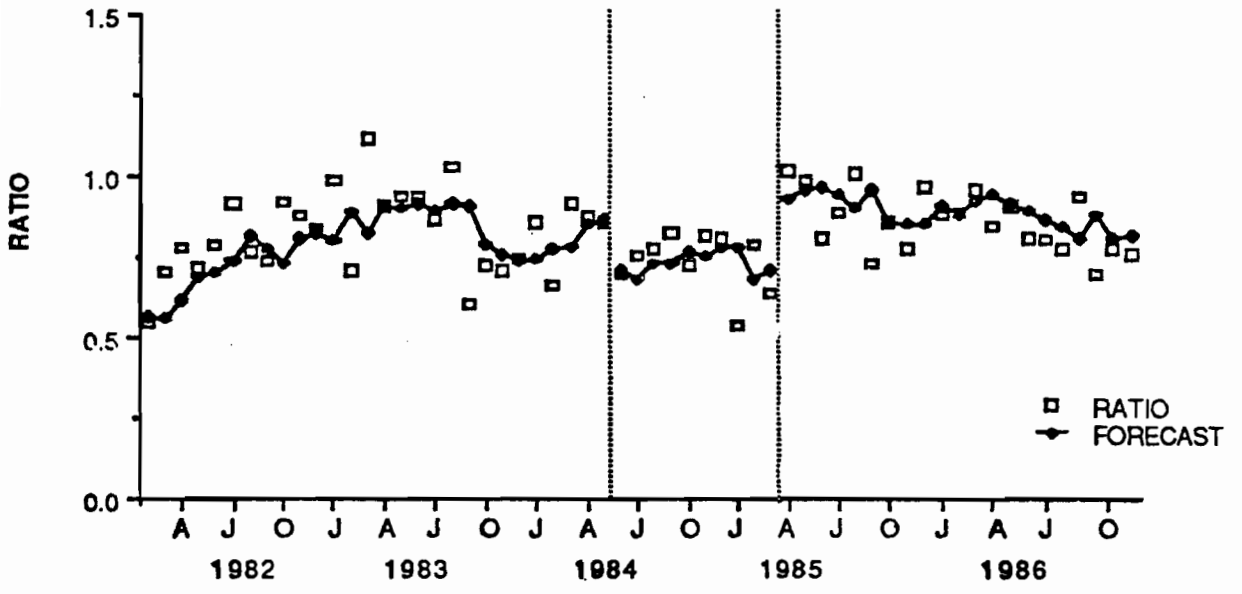

Figure 4.3. Model for Night Crash Ratio Series with Interventions Shifted to June 1984 and April 1985.

4.3. Results of Boise City, Idaho Program

Telephone surveys were conducted in Boise City, Idaho and Billings, Montana during October and November 1983, April 1984 and March 1985. The active phase of the project was from December 1988 through February 1985.

The response pattern to the question about perceived risk of arrest is depicted in Table 4.6. The patterns of responses are similar in the two sites with a somewhat lower level at the second wave and the highest perceived risk of arrest on the final wave. The perceived risk of arrest was markedly higher in Boise than in Billings in all three waves. In terms of perceived changes in enforcement level (Table 4.7), the highest value on any wave in either site was in Boise on the first wave (81.2%). That wave was conducted before any project stimulated enforcement activity was begun and before the program was announced. It may be that the Boise respondents were reacting to the stiffening of the DWI laws which went into effect in July of that year rather than to any enforcement activity. In Billings the same phenomenon occurred but to a somewhat lesser degree. The values for Boise were higher than Billings on all waves of the questionnaire. When asked to describe the changes they had observed, the Boise respondents, particularly at the last wave, were more likely to indicate specific enforcement activities. Most frequently mentioned were roadblocks, breathalyzers and citizen reporting of drunk driving.

Table 4.6. Mean Perceived Risk of Being Caught and Punished by Wave.

	Oct/Nov 83	Apr 84	Mar 85
Boise	30.7	27.6	32.4
Billings	22.7	20.0	24.1

Table 4.7 Percentage of Respondents Noticing Changes in DWI Enforcement by Wave.

	Oct/Nov 83	Apr 84	Mar 85
Boise	81.2	66.7	64.1
Billings	62.5	51.5	60.4

When asked how frequently they had driven in the previous month after drinking too much, the response patterns were consistent across waves in both jurisdictions with about 88 percent of Boise responders indicating zero times as opposed to around 85 percent of Billings respondents.

Monthly data series of night crashes were obtained from both Boise and Billings from January 1980 through June 1985. For alcohol-related crashes, however, data were only available from January 1982 through June 1985.

The experimental enforcement and public information program began in earnest in Boise in February 1984. Billings had no such program. Thus, as evidence of program effectiveness we would expect to see decreases in the Boise series relative to the Billings series beginning in about February 1984.

Figure 4.4 shows a plot of monthly data series consisting of ratios of the percentage of crashes occurring at night in Boise to the percentage of crashes occurring at night in Billings, together with predicted values from a model fit to the series. This model is characterized by fluctuations about one level throughout the pre-program period and a slightly higher level beginning in February, 1984. While this shift in levels is not statistically significant, it is definitely not the downward shift which we would interpret as evidence of program effectiveness.

Plots of (Boise to Billings) ratios of crash frequencies for both night crashes and alcohol-related crashes revealed this same pattern of an essentially constant

level during the pre-program followed by a slightly higher level in the post program period. Since the alcohol-related crash series were shorter than and, otherwise, quite similar to the night crash series, no time series models were fit to them.

The overall conclusion to be drawn from this analysis is that the program as implemented in Boise did not have an effect on nighttime or alcohol-related crashes.

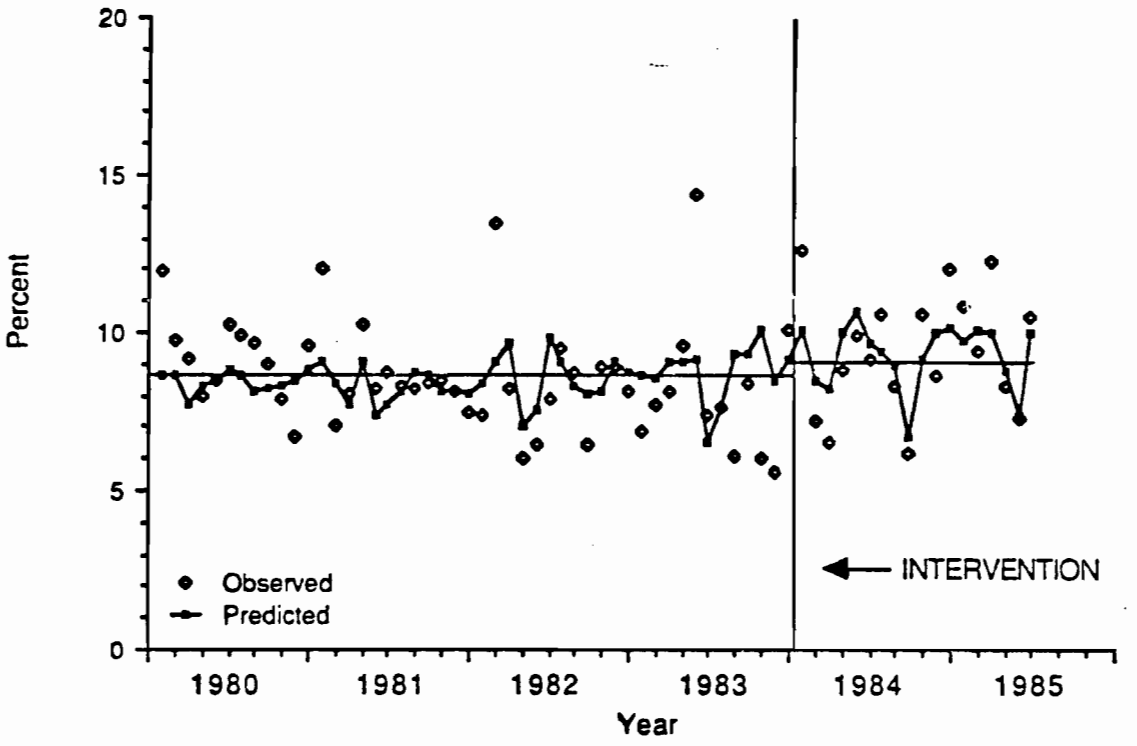

Figure 4.4. Ratio of Boise Night Percent to Billings Night Percent.

4.4: Summary

In summary, analysis of crash data revealed a clear intervention effect in Clearwater/Largo coincident with program implementation, coupled with a pattern of increasing awareness of enforcement activities and identification by the public of specific strategies that were actually implemented, and with increases in perceived risk of arrest and decreases in reported impaired driving.

In Indianapolis, an effect on nighttime crashes was discerned, but only when examined in conjunction with the comparison jurisdiction. The effect was most evident when intervention points were adjusted to reflect actual program activity rather than the announced beginning date. Survey results indicated somewhat less awareness of specific enforcement techniques than in Clearwater/Largo, but increases in perceived risk of arrest and decreases in reported impaired driving.

In Boise, no program effect was discernible on crashes. Though there was a net increase in perceived risk of arrest, it was proportionately no more than in the comparison jurisdiction, and there was less recognition of specific enforcement activities than in the other test sites.

5. SIMILARITIES AND DIFFERENCES IN TEST PROGRAMS

As indicated in the introduction, the approach followed in the conduct of this project was to present the basic concept of combining DWI enforcement and PI&E to achieve general deterrence to the participating test jurisdictions and to have them implement a program of their own design with technical assistance from the project team. As a result, varied approaches were pursued at the three sites with similarly varied results. The purpose of this section of the report is to reflect on some of those differences.

5.1: Variation in Enforcement and Command Emphasis

5.1.1: Clearwater/Largo Enforcement and Command Emphasis Approach. The focal point of the Clearwater/Largo enforcement activities was the use of checkpoints. Their use was announced at a program kickoff press conference held by the chiefs and was the subject of the first TV PSA (which featured the chiefs) that was produced and distributed. Generally conducted on high volume roadways, they generated a good deal of direct exposure to the public and each of the twelve checkpoints received media coverage.

The involvement of the chiefs in publicizing the checkpoint activities was indicative of the extent of command emphasis placed on DWI enforcement during the project period. In Clearwater/Largo, the involvement of the chiefs not only helped gain attention for the PI&E efforts but made it clear to the enforcement officers that DWI was to be treated as a priority. A dramatic increase in volume of arrests is indicative of the attention gathering benefits of that involvement.

Another aspect of the Clearwater/Largo approach was that the project coordinators in both departments were Sergeants with experience in operations as well as an aptitude for PI&E work. This tended to give them credibility in both areas.

5.1.2: Indianapolis Enforcement and Command Emphasis Approach. Though checkpoints were also a part of the Indianapolis enforcement program, they

were conducted half as frequently as in Clearwater/Largo. Indianapolis relied exclusively on hard news coverage which accompanied virtually every checkpoint. Command emphasis was provided primarily by the attendance of either the Chief, Deputy Chief for Operations or Assistant Chief for Traffic at training sessions and indicating support of the concept of increased attention to DWI. Training, particularly in roadside sobriety tests was another prominent enforcement activity which generated news coverage. A major spokesperson for the project was the prosecutor, who in a sense, also provided command emphasis, but also probably diffused public understanding of the overall intent of the project because of his natural association with prosecution and sanctioning. The project coordinator worked in the prosecutor's office. Though extremely competent and professional, her effectiveness may have been diminished somewhat by not being as clearly identified with enforcement activities.

5.1.3: Boise Enforcement and Command Emphasis Approach. Boise was the one site that did not use checkpoints as an enforcement strategy. The major enforcement strategy in Boise was training in detection and screening of suspected impaired drivers. Additionally, important supplementary enforcement approaches involved detection: citizen reporting of impaired drivers and sobriety tests for nighttime crash involved drivers. Command emphasis was less evident in Boise both in terms of public visibility (the Chief was reluctant to call press conferences and was less visible than command personnel in other jurisdictions at other occurrences associated with the project). Additionally, the failure to replace the project coordinator on the specialized DWI enforcement unit, thus reducing its strength, may have been interpreted by some in the department as diminished interest in DWI enforcement.

5.2: Variation in PI&E Approaches

5.2.1: Clearwater/Largo PI&E Approach. Clearwater and Largo, Florida had a comprehensive and highly active PI&E approach that involved the extensive use of generating both hard news coverage and public service activities on the part of all

forms of mass media. This site also had the most elaborate array of educational materials. The project coordinator aggressively pursued the production and exposure of TV, radio, and print PSA's, outdoor advertising, the generation of events that produce hard news coverage and educational opportunities such as presenting the program to groups, schools and at fairs and exhibits.

Several characteristics of this program stand out as particularly noteworthy:

1. Virtually every enforcement strategy was supported by a media event, with some strategies generating several opportunities for media coverage. The strategy with the most appeal to the media was the checkpoints theme. With twelve checkpoints conducted during the project time period, and with the press invited to attend each one, the coordinator made optimum use of the theme with the greatest potential for leveraging coverage.

2. The relationship fostered with the media was well conceived and executed. All media had equal access to the program and were asked to participate equally. Each of the four TV stations produced a PSA and shared the spots with the other stations. The local coordinator personally delivered the radio PSA, developing a relationship with each station. The local newspapers ran four print PSA's that were produced by the program.

3. Local assistance and funding was a priority and its success was responsible for the fact that many educational materials were produced in quantity. In addition to enhancing the resources available, the sense of community ownership was expanded through these efforts.

4. One innovative method of getting the project exposure was the production of reflective street signs displaying the project logo that were placed beneath speed limit signs on city streets. This signs were highly visible and created a sense of permanence and priority for the program.

5. The project's logo and slogan, Arrest Drunk Driving, were selected because they were thought to be attractive to the media. Both were, in fact, well used by the media. This, in combination with their use on all the educational and public service materials, gave the program good identifiable exposure.

6. An intangible that, although hard to measure, was evident throughout the project was the enthusiasm of the coordinator that helped to sell the program to others, whether media representatives, local leaders and businesses or neighboring towns. This was evidenced by the addition of 2 other jurisdictions to the program during the project period and 14 other jurisdictions since our program ended.

5.2.2: Indianapolis PI&E Approach. Indianapolis chose to concentrate its PI&E effort on attracting hard news coverage only. Indiana had a very active statewide drunk driving task force headquartered in Indianapolis that was conducting an extensive media campaign focusing on the theme "Sobering Advice Can Save a Life." It was felt that the project should not compete with that program for PSA time, and thus project activities concentrated primarily on generating hard news coverage through news conferences, press releases and media events. The local coordinator worked under the direction of the chief prosecutor who was also the chairman of the drunk driving task force.

Points to consider about this site include:

1. Indianapolis chose not to have a program slogan. The drunk driving task force's slogan, "Sobering Advice Can Save A Life," received high visibility. It may be that the multitude of activities about impaired driving with varying thrusts detracted from the potential impact of the enforcement-related themes.

2. Because of its concentrated emphasis on hard news coverage, this site can provide insight as to which strategies lend themselves most readily to media coverage. Sobriety checkpoints, six of which were conducted during the project, were the most publicized events by the media. The second highest coverage was given to the campaign kickoff, followed closely by the introduction of the gaze nystagmus test. Low use strategies were faster processing, detection cues, and preliminary breath tests. It should be noted that Boise, on the other hand, was able to generate media interest in preliminary breath tests when their use was combined with the conduct of roadside surveys, a form of checkpoints without enforcement.

5.2.3: Boise PI&E Approach. Boise, Idaho had a PI&E approach that used a combination of hard news coverage with public service activities and educational materials. However, several factors caused the use of all three approaches to be somewhat limited. The local coordinator was injured during the course of the program and had an extended recovery period causing interruptions in the generation and continuity of the PI&E efforts. Although, there was a reluctance on the part of the chief to have news conferences about the program, the local coordinator was able to arrange some news events, most notably media participation in controlled drinking experiments to provide subjects for field sobriety testing training and coverage of roadside surveys. However, the roadside survey was not a checkpoint because of the reluctance on the part of the chief to conduct enforcement checkpoints, a strategy normally well publicized by the media. Finally, the cooperation of the local media was compromised by the local newspaper's generation of revenue by selling sponsorship of their DWI print ads to local merchants. This not only devalued the print ads, but resulted in the refusal of the local TV station to contribute the production or airing of PSA's to the project.

The following are noteworthy points about this site:

1. Although this site did not conduct enforcement checkpoints, a form of checkpoints without arrests was carried out through roadside surveys in which motorists were asked to voluntarily submit to a preliminary breath test. Another form of voluntary breath testing involved the setting up of test stations at high DWI incidence locations, where the public was encouraged to stop and test the equipment. Both of these events, although they lacked the enforcement emphasis, did generate substantial news coverage for the program.

2. This site teamed up with a statewide REDDI program to encourage citizen reporting of drunk driving. This was the only site to use this strategy and it was well received by the public and the media.

3. The program chose as its slogan, "We Do DUI's Right" through a contest in which police personnel submitted suggestions and the winning entry won a prize. Although this increased the sense of ownership within the department, the result

was a slogan that was not easily adapted for use by the media.

4. Innovative project exposure included the use of electronic signs at a truck stop, a bank and at the local college football stadium.

5.3: Enforcement Strategies Effective as Public Information Themes

Certain enforcement strategies were more likely than others to generate media attention. When evaluating the ability to leverage PI&E coverage by examining experience across all three sites, checkpoints and field sobriety test training with dosed subjects seemed to be the best at generating hard news coverage, whereas strategies such as detection cues and enforcement at high priority locations were consistently low leverage themes.

Clearwater/ Largo made the most extensive use of checkpoints, conducting 12 during the project period, followed by Indianapolis, where six were conducted. Boise chose not to use checkpoints, but did conduct roadside surveys that were essentially checkpoints without arrests. As shown in Table 5.1, checkpoints were the highest media-leveraging themes for the sites that conducted them and the roadside surveys attracted the most coverage for the site without checkpoints.

Table 5.1 High and Low Leverage Themes by Site

	Clearwater/Largo	Indianapolis	Boise
High Leverage Themes	•Checkpoints •Results •Arrest/Sanction	•Checkpoints •Sobriety Tests	•Roadside Survey* •Voluntary Tests •Nighttime Crashes •Sobriety Tests •Citizen Reporting
Low Leverage Themes	•Detection Cues •High Priority Locations •Sobriety Tests •Videotaping of Post Arrest Process •Expanded Program	•Detection Cues •High Priority Locations •PBT's •Results •Faster Processing	•Detection Cues •High Priority Locations

*A form of checkpoints without arrests.

Media coverage of improved sobriety tests was dominated by the gaze nystagmus test. This subtheme attracted coverage through the invitation of the media to training sessions and their participation as the dosed subjects for the tests. The media also used this theme to generate catchy copy such as "Unwilling Pupils," and "The Eyes Have It," and visuals for television. Of the themes unique to one site only, the ones that received good media coverage were Boise's DWI testing of nighttime crashes and citizen reporting of drunk drivers. The results theme worked best in Clearwater where regular monthly press releases documented the progress.

6. ISSUES IN MEASURING PROGRAM EFFECTS

In this project two basic measures of program effect were taken: public awareness as indicated by telephone surveys, and examination of crash patterns. The overall design involved identification of a comparison jurisdiction for each test jurisdiction so that patterns in both could be examined on both sets of measures. Studies such as this are not pure experiments but rather involve implementing programs within ever changing environments of which the intervention being tested is only one of the parts. This approach attempts to discern if the intervention makes a difference. Ideally, one attempts to identify comparison jurisdictions as comparable to the test jurisdictions as possible but often compromises must be made. For example, comparable test comparison jurisdictions in terms of size could only be found within the same state for the Clearwater/Largo test site. Thus, the comparison jurisdictions for the other sites were from different states and had somewhat different statutory environments and crash reporting practices.

However, comparison sites do offer benefits in terms of providing insights into the meaning of patterns observed in test sites.

6.1: Telephone Survey Measures of Effect. Telephone survey response patterns can help to provide a barometer of program effects. However, they must be viewed with some caution because they involve measures of self-reported behavior which may not accurately reflect actual behavior.

One measure we attempted to use in this study was perceived risk of arrest which often was reported as being in the range of arrest occurring for 30 times out of 100 impaired driving events. This is clearly a gross over estimation of the actual risk, estimated to range from 1 in 200 to 1 in 2000 depending on intensity of enforcement. Thus, it might not be wise to base conclusions about the program effect solely on the basis of responses to this question when initial estimates are already so grossly inflated. However, relative changes on this measure may provide insight as to increased public sensitivity to the DWI enforcement program.

We find the most useful questioning in terms of gathering insight into

potentially effective enforcement strategies to be questions in which the respondent volunteered responses describing enforcement activity of which they had recently become aware. This information was helpful in interpreting the results of crash analyses.

6.2: Measures of crash outcomes. A major component in the evaluation of programs directed toward reducing occurrences of drinking and driving is the extent to which the number of crashes involving drinking drivers is lessened as a result of the programs. States typically classify crashes as alcohol related, if in the judgment of the investigating officer, alcohol was a factor in the accident. While the use of alcohol related crashes as an outcome measure has considerable face validity, this measure is, to some extent, subjective since it is based on the officers' assessment of whether alcohol was present. These assessments may be influenced by many factors such as perceived command emphasis and increased ability to detect alcohol due to special training.

Nighttime crashes is another often used outcome measure. Nighttime crashes are objectively defined and, thus, can be assumed to be consistently reported across jurisdictions and over time. It is believed that a high percentage of nighttime crashes involve drinking drivers, though, of course, not all do. Moreover, not all crashes involving drinking drivers occur at night. Thus, nighttime crashes while more objective, may have less face validity than alcohol related crashes, and may lack sensitivity due to the masking effect of non-alcohol related crashes also occurring at night.

Consideration need also be given to the way the outcome measure is to be used to construct the unit of analysis. One such consideration involves the interval of time over which crash frequencies are to be accumulated, (e.g., overall before and after time periods, yearly frequencies, monthly counts, or some other time intervals). If long time periods such as before and after periods are used, apparent differences may be due to some pre-existing trends or different seasonal composition of the time intervals. At the other extreme, with very short time intervals, the

crash frequencies within intervals may be rather small and tend to fluctuate wildly from interval to interval.

Monthly intervals often seem to be a rather natural unit to use in the sense that:

- for at least moderate sized jurisdictions, monthly crash frequencies are reasonably stable over time,
- data covering a five-to-ten year period provide an adequate sample of monthly counts for analysis purposes,
- enforcement and other programs are often begun at the beginning of a month,
- analysis routines are often developed to accommodate 12 month seasonal cycles.

Other choices concerning the unit of analysis might involve analyzing:

- alcohol-related and nighttime crash frequencies from the study jurisdiction alone,
- alcohol related and nighttime crashes relative to all crashes for the study jurisdiction alone,
- alcohol related and nighttime crash frequencies in the study jurisdiction relative to similar crashes in a comparison jurisdiction.
- proportions or percents of alcohol related and nighttime crashes in the study jurisdiction relative to similar proportions or percents in a comparison jurisdiction,
- some other function of the crash frequencies.

Raw crash frequencies are the most direct use of the outcome measure. These frequencies may, however, tend to vary due to factors other than the program being evaluated such as changes in population or economic conditions, other types of legislative change or enforcement strategy, season of the year, etc. The use of percent of total crashes may result in much smoother data series since many of the factors mentioned may affect both numerator and denominator in, roughly, the same way, and, thus, cancel out.

Similarly, a ratio of crash frequencies would seem to offer the most direct comparison between study and comparison jurisdictions with respect to the chosen outcome measures. Again, however, the same factors described above may have differential effects in the two jurisdictions, and, again, the ratio of percents or proportions may eliminate some of these effects.

For a very effective program it might be expected that corresponding changes over time should be detected in data series based on each of the above forms. For less effective programs, effects may be seen for some forms, but, perhaps, not all. In general, it seems like good practice to analyze the data in several different forms. When the results are consistent, then their interpretation should be straightforward. When the results are not so consistent, then there may be some suggestion of an effect, but no evidence of a very strong effect.

In the case of the current set of programs, evaluations represent a range of the types of data series discussed above. For the Clearwater/Largo program a relatively consistent pattern appeared using a variety of measures.

In Indianapolis, the results were more equivocal in that an increase in alcohol-related crashes was observed when examining Indianapolis alone, but when those data were examined in conjunction with the comparison community that negative effect was washed out. Examination of the percentage of crashes occurring at night in Indianapolis revealed no effect but when examined in conjunction with Cincinnati a significant effect was evident. This leads to a more cautious conclusion about the potential program effect.

In Boise, the results on all measures examined confirmed that no program effect was evident.

6.3: Summary

The continuum of the experience from the three sites reflected in the crash analyses was also supported by the survey results which indicated more positive changes in awareness in Clearwater/Largo than in Indianapolis, than in Boise.

These results also reflect the impressions gained from observing program activity in the sites. Greater relative increases in arrest volume were realized in Clearwater/Largo than in Indianapolis and in Boise where there actually was a decrease. Greater command emphasis was evident in Clearwater/Largo than in Indianapolis than in Boise. Checkpoints were used most extensively in Clearwater/Largo.

Similarly, PI&E activities were most comprehensive and consistently applied in Clearwater/Largo. Indianapolis aggressively sought and obtained hard-news coverage primarily in the first two-thirds of the project period but chose not to pursue other PI&E avenues. Though Boise attempted a comprehensive approach, conflict between media and interruptions in project PI&E activities diminished potential effectiveness.

Thus, the experience in the three sites indicates that the more aggressively this approach to seeking deterrence of impaired driving is pursued, both in terms of enforcement and public information efforts, the more likely a discernible effect may be achieved.

7. CONCLUSIONS AND RECOMMENDATIONS

The objective of this project was to assess whether combining DWI enforcement techniques with public information and education activities designed to bring the specific enforcement efforts to the public's attention could result in a reduction in alcohol-related and nighttime crashes. If such changes were achieved, a second objective was to determine what were the mechanisms that contributed to these changes. Previous chapters summarize the changes that occurred in each of the three experimental sites and identified project components that contributed to these changes. In this chapter we offer general recommendations for future efforts of this nature.

The following recommendations are based on a review of the efforts of all three programs:

1. Need for true command emphasis. The leadership for this type of project begins at the top. Ideally, command emphasis includes commitment that DWI enforcement will be given high priority, that resources will be available to make the program a real and permanent initiative, and that an active role by the chief(s) will be taken in both the enforcement and public information activities.

2. Need for police-based coordinator. Coordination is best handled by a local coordinator that is based within the enforcement agency. Ideally this person would be an operations officer who adapts easily to conducting public information activities or a public information officer who has an understanding of the operations end. Being part of both the enforcement and public information components of the program enables the coordinator to more effectively manage both and appears to enhance credibility with the media, the public and other officers.

3. Need for comprehensive public information and education. Public information efforts have the best chance of producing the desired effect if they

include both hard news coverage and public service activities. Hard news coverage adds credibility to PSA messages while PSA activities can be sustained more consistently over time. Educational activities, often characterized by speaking engagements, are time consuming, however, as shown by the experience in Clearwater and Largo, significant numbers of persons can be reached if this approach is pursued aggressively.

4. Effectiveness of checkpoints. Checkpoints should seriously be considered as an enforcement strategy when mounting any special DWI enforcement effort. Checkpoints lend themselves to excellent news coverage and person-to-person communication. Checkpoints were the highest media-leveraging theme for the sites that conducted them, while roadside surveys, a form of checkpoints without arrests, led in media coverage in the site that did not have true checkpoints. However, checkpoints are manpower intensive and require a commitment of the part of command to this activity, particularly in the absence of outside funding.

5. Use of enforcement techniques and events that generate media interest. Certain themes were more attractive to the media than others. In addition to checkpoints, improved sobriety testing, specifically the horizontal gaze nystagmus test was highly effective in gaining media exposure. This strategy was particularly effective in receiving coverage when media representatives were asked to participate in events, such as being dosed subjects for sobriety tests. Voluntary breath testing stations at high DWI incidence locations and a citizens reporting of drunk driving program also received good coverage. Consistently low media -leveraging themes were detection cues, high priority locations and faster DWI processing techniques.

6. Maintain dominant enforcement themes while using secondary support themes. One of the strengths of the Clearwater and Largo program was that every enforcement strategy was supported by a media event, press releases, public service activities and educational materials. These main themes were enhanced by support

themes such as results, general DWI information and seasonal messages.

7. Selection of program identifier. A good logo and slogan can be a real asset to a program. A logo or slogan that readily lends itself to incorporation in media coverage can result in extensive use by the media, and when coupled with extensive use in PI&E materials, can lead to high recognition by the public. Although allowing a slogan to be selected through suggestions from within the law enforcement agency can increase department ownership in the program, the slogan selected may not be easily adapted for media or general use.

8. Need to aggressively seek public service activities. A well conceived media plan involves ensuring that all media have equal access to the program and are asked to participate equally. A good approach is to ask each of the area TV and radio stations to produce a PSA and share the spots with the other stations. Hand carrying PSA's to the various media and establishing a relationship with each outlet can help to increase support for the program. Most media are willing to support good programs that aggressively seek their support in an honest and fair manner.

9. Avoiding media pitfalls. Avoid allowing any media outlet to profit from cooperation with the project. The local newspaper in Boise generated revenue by selling sponsorship of their DWI ads to local merchants. This not only devalued the print ads, but resulted in the refusal of the local TV station to contribute PSA's to the project.

10. Tapping community resources. Soliciting local assistance and funding outside of the enforcement agency can enhance a program by fostering community ownership. It can also provide additional funding for educational materials, volunteer manpower and assistance in obtaining donation of media services. One method of organizing community support is through the use of an advisory committee comprised of individuals and representatives of organizations that can

contribute to this type of program.

11. In-state comparison site. Ideally, the comparison jurisdiction should be an in-state site. In addition to operating under the same DWI statutes, this allows for equal exposure to state initiatives in enforcement, public information and other DWI-related actions. Caution should be taken to thoroughly investigate the control site for situations such as experienced in Cincinnati, where no new DWI initiatives were planned, but which had been the long-term recipient of federal traffic safety assistance funds that were used for DWI activities.

12. Special problems of populous sites. Indianapolis, with a population of over 700,000, was by far the largest of the three test sites and as such posed different challenges. The size of the uniformed police force was much larger than the other sites and training of the officers posed a greater logistical problem. Likewise there were many competing priorities such as other crime problems and hosting large sporting events. Indianapolis was also affected by the presence of the very active public-service-oriented, public information campaign of the Governor's Task Force on Drunk Driving. This presence largely contributed to the decision to limit the program to hard news coverage only. The task of getting program messages out is magnified in large media markets where so many issues are competing for exposure.

13. Ideal outcome measures. Though survey results and analysis of crash patterns are useful in assessing program effects, they also have some inherent problems. As indicated earlier, survey responses often show unrealistic assessments of the actual situation but can provide insight into what captures the public attention. Crash measures in communities of this size either must involve subjectively determined variables (police report of alcohol involvement) or objectively determined variables of which only a part is likely to be affected by the program (nighttime crashes). Fatal crashes (for which objectively determined

alcohol concentrations in fatally injured drivers is becoming increasingly available) are useful for only more global analyses, (at a minimum, assessment of statewide changes). For smaller jurisdictions, accurate assessment of program effects may only be reliably determined by carefully conducted special data collection activities such as roadside surveys of BAC levels among the population at risk. These should be sought for program evaluations of major initiatives though one must be aware of problems such as cost and obtaining proper bureaucratic clearances.

14. Cooperative enforcement efforts. We found that cooperative enforcement efforts between enforcement agencies not only served to generate additional media interest, and thus greater potential contributions to public awareness but also involved more readily conducting more manpower intensive enforcement efforts (notably checkpoints) which had greatest potential for affecting public awareness.

The overall conclusion gathered from the three site studies is that general deterrence of DWI as measured by crash involvement can be achieved through combining innovative DWI enforcement techniques with PI&E activities specifically designed to support those efforts. However, we also found that to achieve deterrence, a true commitment to both the enforcement and PI&E efforts is necessary, that checkpoints may be an almost essential strategy and that both enforcement and public information efforts must be aggressively pursued in as comprehensive a manner as possible.