



Nighttime Enforcement Of Seat Belt Laws: An Evaluation of Three Community Programs

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Technical Report Documentation Page

1. Report No. DOT HS 811 189		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Nighttime Enforcement of Seat Belt Laws: An Evaluation of Three Community Programs				5. Report Date August 2009	
				6. Performing Organization Code	
7. Author(s) Mark G. Solomon, Robert H. B. Chaffe, David F. Preusser				8. Performing Organization Report No.	
9. Performing Organization Name and Address Preusser Research Group, Inc. 7100 Main Street Trumbull, CT 06611				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. DTNH22-05-C-05094	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration 1200 New Jersey Avenue SE Washington, D.C. 20590				13. Type of Report and Period Covered September 2005 – March 2009	
				14. Sponsoring Agency Code	
15. Supplementary Notes Alan Block served as the NHTSA Contracting Officer's Technical Representative for the study.					
16. Abstract Programs to enforce seat belt laws at night were conducted in Asheville and Greenville, North Carolina and Charleston, West Virginia. Asheville used night belt use checkpoints in a primary belt law State. Greenville used saturation patrols. Charleston used night belt use checkpoint style enforcement in a secondary belt law State. Paid and earned media publicized each of four enforcement waves conducted in each community during calendar year 2007. Both checkpoint communities showed statistically significant increases in night belt use. Drivers at Asheville belt use checkpoints were asked to provide a voluntary breath test. The percentage of "had been drinking" drivers decreased from 16 percent to 10 percent over the course of the program. It was concluded that night belt use publicity and enforcement efforts can be effective both for increasing belt use and decreasing drinking and driving.					
1. Key Words Seat belt Enforcement Night STEP Paid media			18. Distribution Statement		
19. Security Classif.(of this report) Unclassified		20. Security Classif.(of this page) Unclassified		21. No. of Pages 76	22. Price

ACKNOWLEDGEMENTS

The authors of this paper would like to thank a number of individuals who assisted in the development and conduct of this project. First and foremost, the authors would like to acknowledge Mr. Alan Block of the National Highway Traffic Safety Administration for the time and effort that he put forth on this shared effort. The authors would also like to thank several members from participating law enforcement agencies who assisted this program effort through to its conclusion. Those members are: Officers Stony Gonce and Officer Robin Lyles of the Asheville, North Carolina Police Department and their Commanding Officer Captain Sarah Benson; Sergeant Phil Worthington of the Greenville, North Carolina Police Department; and Officer Shawn Williams of the Charleston, West Virginia Police Department, along with his Commanding Officer Captain Jerry Hill. Special acknowledgement goes to Retired Captain J.D. Meadows for providing advice and assistance regarding the State of West Virginia.

GLOSSARY OF KEY ACRONYMS

BAC	Blood Alcohol Concentration
CIOT	<i>Click It or Ticket</i>
DL	Driver License Office
DMA	Designated Market Area
DMV	Department of Motor Vehicles
DWI	Driving while Intoxicated
FARS	Fatality Analysis Reporting System
GRPs	Gross Rating Points
HSO	State Highway Safety Office
HVE	High Visibility Enforcement
LEA	Law Enforcement Agency
NHTSA	National Highway Traffic Safety Administration
NOPUS	National Occupant Protection Use Survey
OCCI	NHTSA's Office of Communication and Consumer Information
OP sTEP	Occupant Protection Selective Traffic Enforcement Program
SFST	Standard Field Sobriety Testing
sTEP	Selective Traffic Enforcement Program
SUV	Sport Utility Vehicle
TOPS	Traffic Occupant Protection Strategies

DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

TECHNICAL SUMMARY

CONTRACTOR Preusser Research Group, Inc.	CONTRACT NUMBER DTNH22-05-C-05094
REPORT TITLE Nighttime Enforcement of Seat Belt Laws: An Evaluation of Three Community Programs	REPORT DATE
REPORT AUTHOR(S) Mark G. Solomon, Robert H. B. Chaffe, David F. Preusser	

INTRODUCTION

Enforcement of seat belt laws has been conducted largely during daylight hours. Daytime enforcement programs have worked well to improve observed belt use rates during the day, but they have been shown less often to affect late-night usage. Fatality data show that unbelted occupants at night are a large portion of the fatality problem in the U.S. and that a substantial reduction in fatalities could be achieved by getting late-night occupants to buckle up.

STUDY OBJECTIVES

The first study objective was to collect information regarding methods of nighttime seat belt enforcement from law enforcement agencies. The second study objective was to implement and evaluate programs that enforce the seat belt law at night. Study questions included:

- Can a program that enforces the seat belt law at night improve nighttime belt use?
- Does the type of enforcement tactic make a difference?
- Is there any spillover effect from a night enforcement belt program on drinking and driving?

EVALUATION METHODS

Law enforcement agencies (LEAs) were contacted to discuss enforcement approaches to improving seat belt usage at night. The agencies were contacted for their practical knowledge and experience concerning the topic. The discussions with the LEAs provided insight into important characteristics regarding traffic enforcement programs and improving seat belt use at night in particular. This information was used to set the criteria for the programs to be evaluated.

Three study communities participated in High Visibility Enforcement (HVE) demonstration programs designed to improve nighttime seat belt use. The study communities were Asheville and Greenville, North Carolina and Charleston, West Virginia. Two comparison communities were selected: Gastonia, North Carolina and Wheeling, West Virginia. The HVE programs consisted of four 10 day periods of nighttime traffic enforcement throughout calendar year 2007. Enforcement efforts were supported with paid and earned media that focused on the nighttime belt enforcement. Program evaluation included:

(Continued on additional pages)

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collection of enforcement and media data, program awareness surveys, and observation surveys of seat belt use at night and day. Breath tests at roadside to obtain blood alcohol concentration (BAC) measures and analysis of data on single vehicle crashes at nighttime were used in Asheville to determine if the night belt program affected drinking and driving.

RESULTS

The project administered the awareness surveys shortly before each enforcement Wave, and immediately after the conclusion of each Wave. Residents of the demonstration communities were asked if they were aware of special seat belt efforts in the past 30 days. Statistically significant increases in awareness were measured in Asheville across Waves 1 and 2 (+16 and +10 percentage points, respectively). Survey data collected in Greenville also showed statistically significant increases across Waves 1 and 2 (+18 and +12 percentage points, respectively). Pre versus post wave differences were not statistically significant for Waves 3 and 4 for either site. In Charleston, statistically significant increases were measured after Wave 1 (+14 percentage points), Wave 2 (+25 percentage points), and Wave 4 (+14 percentage points).

Increases in the night belt use rate occurred in Asheville and Charleston using checkpoint style enforcement. In Asheville, the seat belt law contained primary enforcement provisions. In States with primary enforcement, law officers may ticket a non-belt user when they see a violation of the seat belt law. Charleston was working with a law containing secondary enforcement provisions. With secondary enforcement laws, officers may issue a citation only after stopping the vehicle for another traffic infraction. Less improvement was measured in Greenville which worked with a primary enforcement law and used saturation patrol type of enforcement.

Three Test Communities: Observation Survey Results; Nighttime Belt Use

	Wave 1			Wave 2 ¹	Wave 3			Wave 4		
	Pre	Post	dif.	(CIOT)	Pre	Post	dif.	Pre	Post	dif.
ASHEVILLE (N=16,490)										
Raw	83.3%	85.5%	+2.2^b		85.9%	89.3%	+3.4^a	83.7%	91.0%	+7.3^a
Weighted	85.6%	87.5%	+1.9²		86.3%	89.5%	+3.2¹	83.4%	92.5%	+9.1¹
GREENVILLE (N=21,729)										
Raw	86.1%	85.8%	-0.3		86.3%	88.5%	+2.2^a	87.2%	87.3%	+0.1
Weighted	83.4%	84.6%	+1.2		86.2%	87.6%	+1.4	86.8%	87.1%	+0.3
CHARLESTON (N=12,327)										
Raw	58.4%	66.7%	+8.3^a		70.2%	71.4%	+1.2	63.2%	66.5%	+3.3^b
Weighted	58.4%	61.8%	+3.4²		66.1%	70.2%	+4.1¹	64.5%	60.2%	-4.3¹

^aChi-square Test; Statistically Significant at p<.01

^bChi-square Test; Statistically Significant at p<.05

¹Binary Logistic Regression; Statistically Significant at p<.01

²Binary Logistic Regression; Statistically Significant at p<.05

¹ Observation survey data were not collected surrounding Wave 2. Wave 2 coincided with the Click It or Ticket (CIOT) National Mobilization.

Voluntary breath tests were conducted at Asheville checkpoints. The results showed that the percentage of drinking drivers decreased over the course of the program.

Asheville: Driver BAC at Roadside

	Wave 1 Pre	Wave 1 Post	dif.	Wave 2 CIOT	Wave 3 Pre	Wave 3 Post	dif.	Wave 4 Pre	Wave 4 Post	dif.
BAC Requests	537	756			849	767		767	704	
BAC Samples	92%	88%			85%	85%		85%	85%	
BAC > .0	78 (16%)	72 (11%)	-5 ^a		99 (14%)	91 (14%)	0	91 (14%)	59 (10%)	-4 ^a
BAC > .049	29 (6%)	30 (4%)	-2		26 (4%)	22 (3%)	-1	22 (3%)	17 (3%)	0
BAC > .079	9 (2%)	19 (3%)	+1		12 (2%)	11 (2%)	0	11 (2%)	6 (1%)	-1

^aChi-square Test; Statistically Significant at p<.05

CONCLUSION

It was concluded that nighttime programs to enforce the seat belt law, combined with publicity about the enforcement effort, can be effective both for increasing nighttime belt use and decreasing drinking and driving. NHTSA, the States, and local law enforcement agencies should consider supporting nighttime seat belt enforcement programs.

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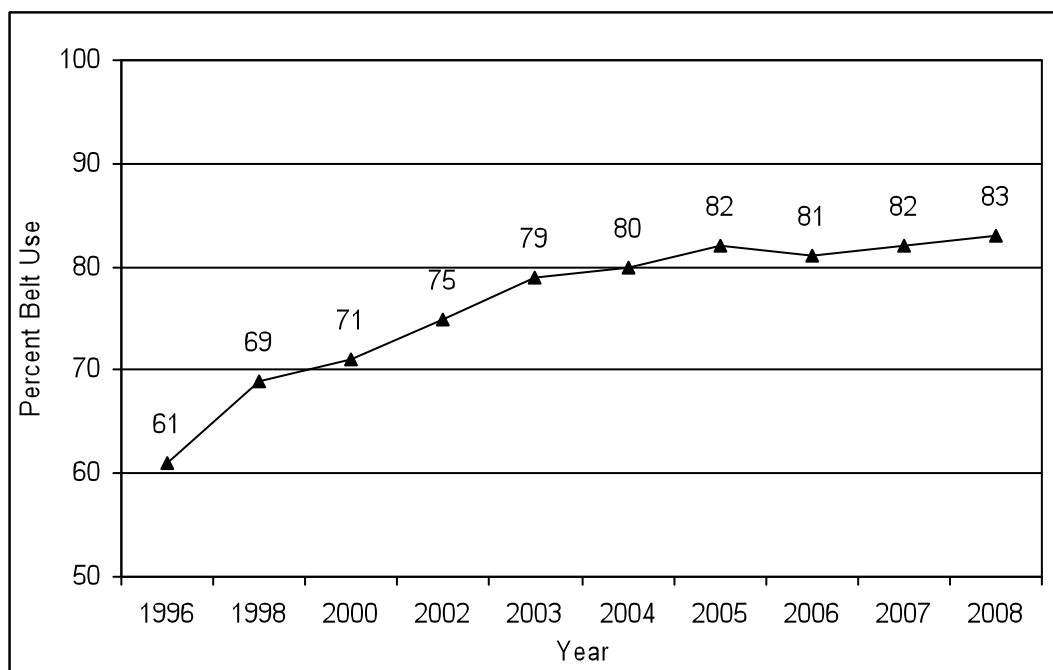
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I. INTRODUCTION

High Visibility Enforcement and Belt Usage

Many more people in the United States are now buckling up as compared to years past. According to NHTSA's National Occupant Protection Use Survey (NOPUS), the national seat belt use rate improved from 61 percent in 1996 to 83 percent in 2008 (see Figure 1). This increase has been attributed to the passage of primary seat belt laws and High Visibility Enforcement (HVE). The effect of the law upgrades has been documented elsewhere (see e.g., Nichols and Ledingham, 2008). The effect of HVE is the focus of this report.

Figure 1. National Front Seat Belt Use Rate: 1996 - 2008 NOPUS



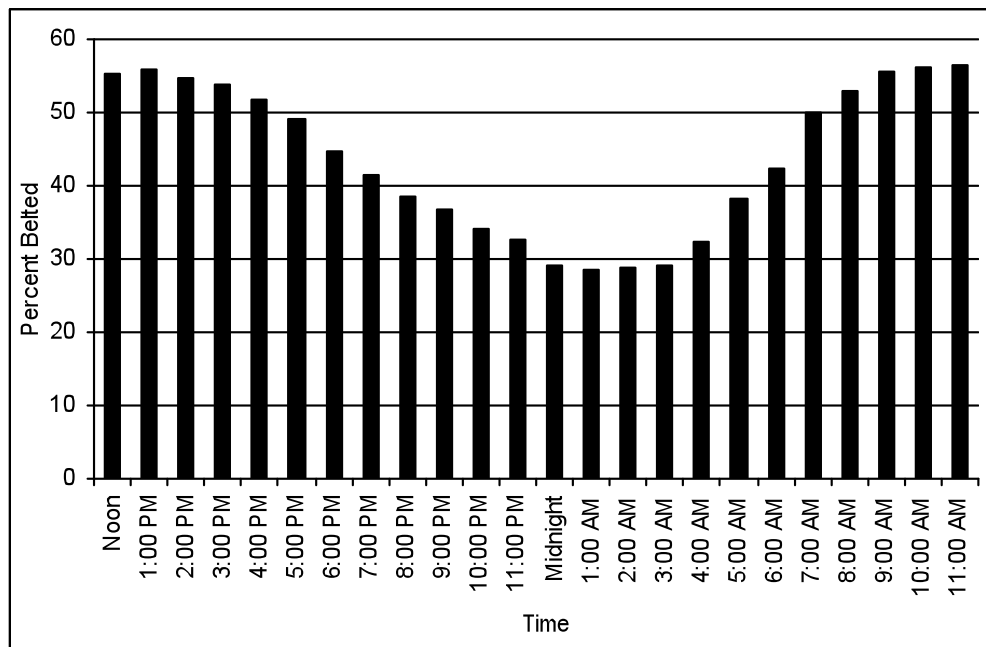
The first HVE programs in North America were conducted in Canada. Jonah et al. (1982) ran a series of limited duration (two to four week) enforcement efforts in Ottawa-Carleton. Belt use increased from 58 percent shortly before the initial enforcement activity to 80 percent immediately following its conclusion; then declined to 70 percent six months later. In the second wave, belt use increased from 66 percent to 84 percent. In the third wave, belt use increased from 79 percent to 87 percent. The pattern from these limited duration efforts, now referred to as Selective Traffic Enforcement Programs or “sTEPs,” was for a large increase in belt use as an immediate result of the program followed by a decrease which never returned to baseline. Therefore, the next sTEP in the series would start from a somewhat higher level than the original baseline. It would also rise to a somewhat higher peak. Succeeding sTEPs produced a “sawtooth” pattern, achieving higher and higher peaks.

This “sawtooth” pattern of results has been repeated several times in the United States: first, in Elmira, New York (Williams et al., 1987), then Statewide in North Carolina (Williams et al., 1994), and then across a series of States participating in NHTSA's Occupant Protection sTEP Program (Solomon et al., 1999). The pattern was always the same. Namely, brief yet high intensity seat belt enforcement led to an immediate increase in belt use followed by a decline followed by another brief duration period of enforcement that began at a slightly higher baseline and led to a slightly higher peak.

Short duration HVE programs have been implemented in nearly every State over the past decade. Many of these programs began as part of national efforts like *Operation ABC* and *Click It or Ticket* (CIOT) mobilizations. The national mobilizations were conducted twice a year from 1998 through 2004 and annually since 2005. Until recently, these mobilizations focused solely on belt use during daylight hours.

Observation surveys of belt use have been conducted almost exclusively during daylight hours. The annual national seat belt use rate publicized by NHTSA (NOPUS) and depicted in Figure 1 covers only daytime usage. Similarly, annual surveys conducted at the State level deal with daytime usage only. NHTSA has not conducted any night observation surveys with a national sample. Statewide use rates at night have been documented for only a few States: Connecticut, New Mexico, and Indiana (Chaudhary, 2004; Solomon 2007; Vivoda, Eby, St. Louis, & Kostyniuk, 2006). These Statewide surveys have provided evidence that belt use rates are typically lower at night compared to daytime. Furthermore, Fatality Analysis Reporting System (FARS) data show lower usage rates among fatalities occurring at night compared to daytime, with belt use at its lowest around the hour of 1:00 a.m. (Figure 2).

Figure 2. Percent Belted of Fatally Injured Front Seat Occupants: FARS 2000-2006



A number of factors that likely contribute to lower belt use at night have been identified. One is that people who wear a seat belt during the day may be less likely to put it on at night because they believe law enforcement officers are less likely to observe and enforce the belt law after dark. Another is that the drivers and passengers who are most likely to buckle up in general (e.g. parents with children, older adults) are less likely to be traveling at night (Nichols & Ledingham, 2008). Conversely, drivers and passengers who engage in risk taking behaviors like speeding and impaired driving are more likely to be on the roads into the late hours of the night and be unbuckled. These high-risk occupants are typically young males driving older vehicles or pickup trucks and with poor driving records (Reinfurt, Williams, Wells, & Rodgman, 1996).

Two studies measured day and night belt use before and after a daylight belt use enforcement program. Chaudhary (2004) conducted day and night observations in Connecticut surrounding the May 2004 *Click It or Ticket* Mobilization (CIOT). The results showed belt use to be higher during the day compared to night and found that the *Click It or Ticket* Mobilization (daytime effort) had a greater effect on night compared to day. Another direct observation study of nighttime seat belt use was conducted in Indiana before and after the May 2006 *Click It or Ticket* Mobilization (Vivoda, Eby, St. Louis, & Kostyniuk,

2006). This study found that mobilization activities (daytime effort) had a positive effect on the daytime belt use rate but no positive effect on the nighttime rate.

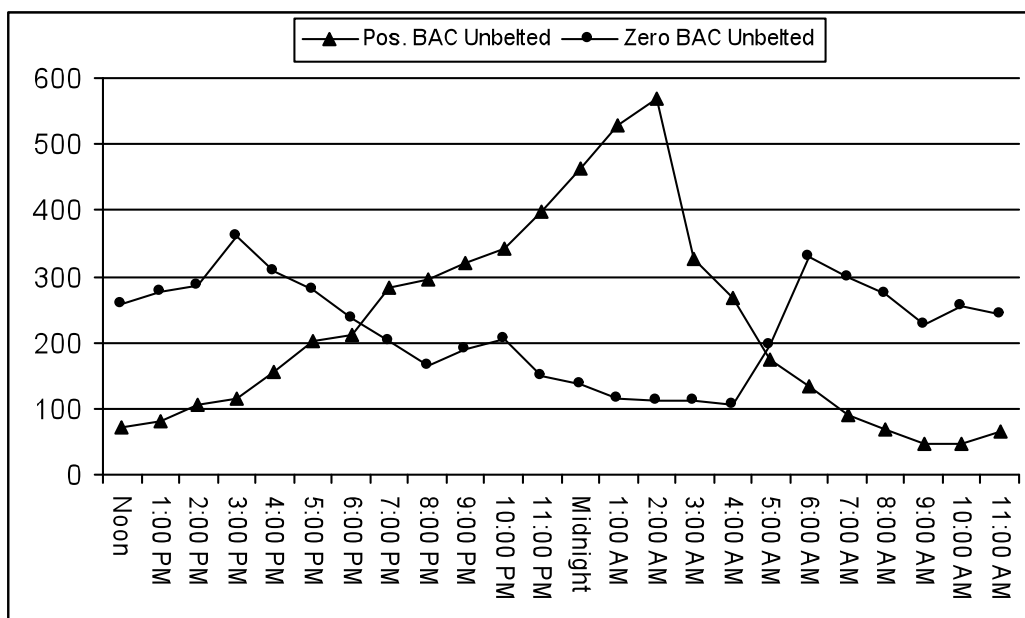
Chaudhary (2005) assessed HVE focused principally on seat belt use at night in Reading, PA. Earned media informed motorists that they could be seen not wearing a belt at night and that the belt law was being enforced with special enforcement patrols. The study collected data from observation sites in Reading and a comparison location. The pre-campaign Reading observations showed higher belt use during the day compared to night. The post-campaign measures showed belt use increasing more during the night than during the day, although belt use continued to be higher during the day. Belt use rates in a comparison location remained unchanged during the HVE period.

Seat Belts and Alcohol Use

Seat belt use was observed among late night bar patrons in New York soon after the implementation of New York's seat belt law. Only 25 percent of bar patrons were buckled up compared to 36 percent of drivers observed in surrounding communities during the same late night hours and 43 percent during daylight (Preusser et al., 1986). Similarly, 36 percent of "had been drinking" drivers arriving at late night sobriety checkpoints in Ontario, Canada checkpoints were belted as compared to 62 percent of non-drinking drivers arriving at the same checkpoints. Lower observed belt use rates among drinking drivers have also been found in British Columbia, Saskatchewan and Denmark (Lawson et al., 1982; Noordzij et al., 1988).

More recent data from the Fatality Analysis Reporting System (FARS) show belt use, particularly at night, related to alcohol involvement (Figure 3). According to 2006 FARS data, there were a total of 7,359 driver fatalities in alcohol-related crashes. Of these, 2,948 were drivers with a positive BAC, unrestrained, and involved in a nighttime crash (9:00 p.m.-3:59 a.m.). FARS data summarized in Figure 3 show that the number of *unbelted* fatally injured drinking drivers (imputed) of passenger vehicles increases into the night hours and surpasses the number of non-drinking unbelted drivers. These data suggest that some number of alcohol-related deaths could be prevented by enforcing belt use laws at night.

Figure 3. Number of Alcohol-Related Driver Fatalities by Belt Use and Hour of Day and Night, 2006



The only known study to combine seat belts and alcohol use was the *Buckle Up and Drive Sober* program in Binghamton, New York. The program concept was that belt law violations would be enforced, particularly at night, and each driver stopped would be screened using a passive alcohol sensor. HVE was used. Checkpoints were conducted almost exclusively at night (combined seat belt and alcohol enforcement). Paid media publicized the enforcement efforts. Belt use was measured through day and night observation surveys. Drinking and driving was measured using voluntary and anonymous breath testing at checkpoints. During the course of the program, more than 5,000 drivers were tested for BAC. More than 10,000 drivers were observed for belt use during night hours and more than 10,000 drivers were observed at the same locations during daylight (Wells, Preusser and Williams, 1992).

Binghamton was very successful. Survey results showed that the number of drinking drivers at checkpoints decreased from 23 percent before the program to 14 percent after. Belt use at night rose from 35 percent to 49 percent. Belt use also increased during daylight hours, though not as great as the increase found at night (46 to 51 percent).

In summary, enforcement of seat belt laws has been conducted largely during daylight hours. Daytime enforcement programs have increased belt use rates at daytime, but they have been shown less often to affect late-night usage. Fatality data show that fatally injured occupants during the late night hours are a large portion of all U.S. fatalities and that further progress in reducing fatalities could be achieved by getting more late-night occupants to buckle up.

Nighttime conditions present law enforcement with obstacles to detecting unbelted occupants. Approaches that overcome obstacles to nighttime enforcement of seat belt laws need to be identified and disseminated. Then, useful and proven examples can be replicated, in so far as possible, at the local, State, and national levels. The objective of this project was to identify and test approaches to nighttime enforcement of seat belt laws in order to improve belt usage at night.

II. EVALUATION DESIGN

This study had two objectives. The first objective was to collect information regarding methods of nighttime enforcement from law enforcement officers and law enforcement agencies. The second objective was to implement and evaluate programs that enforced the seat belt law at night.

Study Objective 1

Discussions were conducted with law enforcement agencies (LEAs) to better understand current or planned approaches to night belt enforcement and determine prerequisites to those approaches. The contacts included LEAs not currently conducting nighttime belt enforcement. For those that never had conducted coordinated efforts, determination of reason(s) why, and whether the agency would ever consider conducting efforts in the future, were made.

Topical Discussion

The primary data collection procedure for Objective 1 was to use a topical discussion guide to gather information from select law enforcement agencies. In this procedure, the objectives of the discussion are established beforehand along with all of the topics for which information is sought. Discussion continues until all topics have been covered and all the desired information obtained. The respondent is not confined by structured and specifically worded questions. Instead, this style allows for the free flow of information and provides the opportunity for respondents to discuss topics in their own terms, at their own pace, and in their own words. The topical discussion guide developed for this study had two modules, one module for use with LEAs that had conducted stepped up enforcement focusing on seat belt use at night, and the other module for LEAs that had no such experience.(see Topical Discussion Guide, Appendix B).

General topics covered were:

- Department characteristics;
- Typical traffic enforcement situation;
- Experience with nighttime enforcement of the seat belt law;
- How nighttime belt enforcement got started;
- Concerns/challenges;
- Important conditions;
- Necessary program components;
- Inclusion of DWI in night belt enforcement activities.

Development of the LEA topical discussion guide was completed in March, 2006. Soon thereafter, NHTSA Regional Offices were contacted to identify local LEAs that had experience with night belt enforcement. NHTSA Regional officials identified LEAs in 15 States. All discussions were conducted by phone during March and April 2006. Discussion participants (Captains, Sergeants, and other line level law enforcement officers) were contacted in advance to schedule the call, to explain its purpose, and request that available information be prepared prior to the call.

A synopsis of the discussion was written after each call. Topical discussion summary information is presented in Chapter III Topical Discussion Results.

Study Objective 2

Study objective 2 sought to answer the following evaluation questions:

- Can nighttime enforcement improve the belt use rate at night? And what happens at daytime?
- Does enforcement technique make a difference?
- Does a nighttime belt enforcement program also deter alcohol-impaired driving?

Objective 2 led to the recruitment of study sites and identification of comparison sites, establishment of an incentive plan for participating law enforcement agencies, development of paid and earned media, implementation of high visibility enforcement programs at night, and evaluation.

Recruitment of Study Sites

All NHTSA Regions were asked to recommend potential study sites. The Regions were told that the sites had to meet the following criteria:

- Population between 50,000 and 300,000;
- Located in a single self-contained media market;
- Support for the program from key parties in the community;
- Have a protocol for handling drunk drivers and have SFST-trained officers participating;
- Have someone on staff knowledgeable on how to generate earned media;
- Show willingness to conduct traffic enforcement at night:
 - Four 10-night HVE waves focused on belt use;
 - One HVE Wave per quarter in calendar year 2007 with the second Wave synchronized with the May 2007 *Click It or Ticket* (CIOT) Mobilization;
 - Enforcement between the hours of 10:00 p.m. and 2:00 a.m. at a minimum.

The potential sites identified by the NHTSA Regions were contacted by letter with a request to apply for participation. The letter provided a general description of the year long demonstration program and explained the selection criteria. Attached to that letter was a short application.

In order to qualify for selection, law enforcement agencies had to complete the application in full. Signature on that application required the contracted law enforcement agency to:

- Carry out program enforcement;
- Assist local media efforts;
- Cooperate in the program evaluation.

Demonstration Sites

Staff from Preusser Research Group and NHTSA reviewed the submitted applications, from which they selected three test sites. Contracts were then signed by the Asheville Police Department (North Carolina), the Greenville Police Department (North Carolina), and the Charleston Police Department (West Virginia) to conduct nighttime belt enforcement programs. One important distinction among the test sites was type of seat belt law. The seat belt law in Asheville and Greenville contained primary enforcement provisions. A primary enforcement law allows officers to issue a citation to a non-user of a seat belt when they see a violation of the seat belt law. Charleston worked with a law that contained secondary enforcement provisions. Officers working with a secondary enforcement law may issue a citation to a non-user of a seat belt, but only after stopping the vehicle operator for another traffic infraction. In West Virginia, officers can pull someone over for one offense, give a warning, and then can write a belt ticket.

The Charleston Police Department worked independently on the program effort. While the Asheville and Greenville Police Departments served as principal points of contact in their communities, the program efforts at their sites included participation from agencies in surrounding and nearby communities who shared in the NHTSA overtime and equipment grant provided to the contracted LEAs. Table 1 identifies the participating agencies.

Table 1. Participating Law Enforcement Agencies

Asheville, NC	Greenville, NC	Charleston, WV
Asheville Police Buncombe County Sheriff Biltmore Forest Police Woodfin Police NC State Highway Patrol	Greenville Police Winterville Police Bethel Police Farmville Police Ayden Police Pitt County Sheriff East Carolina University Police Pitt County Memorial Hospital Police	Charleston Police

Identification of Comparison Sites

Comparison sites were selected based on a number of criteria. First and foremost was that the comparison site be located outside any of the test site media markets. The second was that the comparison site undertake no enforcement initiatives specifically focused on seat belt use at night. Lastly, the comparison site had to be in the same State as the test site(s), and match as closely as possible the demographic characteristics of the corresponding test site(s). Population, race/ethnicity composition, and median household income were each a factor in choosing sites. The two comparison locations in this study were Gastonia, NC and Wheeling, WV.

Program Enforcement

The study required each test community to carry out four nighttime traffic enforcement waves, one per quarter during calendar year 2007, with the second enforcement wave taking place concurrently with the 2007 *Click It or Ticket* National Mobilization in May. The calendar for enforcement activities is presented in Table 2. Each enforcement wave was to last at least 10 nights over a two week period, and had to include Thursday through Saturday night during both weeks. Enforcement had to occur, at a minimum, between the hours of 10:00 p.m. and 2:00 a.m. each night and focus on seat belt use.

Table 2. Program Enforcement Calendar: 2007

Program Wave	Wave 1	Wave 2 (CIOT)	Wave 3	Wave 4
Asheville, NC	Mar. 16 - Mar. 25	May 23 - June 3	Sept. 5 - Sept. 16	Oct. 17 - Oct. 28
Greenville, NC	Mar. 16 - Mar. 25	May 21 - June 1	Sept. 19 - Sept. 28	Nov. 9 - Nov. 18
Charleston, WV	Mar. 16 - Mar. 25	May 25 - June 3	July 27 - Aug. 5	Nov. 23 - Dec. 2

Each test community designated a specific enforcement tactic that would be carried out during the duration of the program year. Enforcement tactic was an important independent variable for the study.

1. Asheville, NC committed to “**seat belt checkpoints**.” This technique was similar to sobriety checkpoints in that each night of the enforcement period a highly visible group of law enforcement officers and marked vehicles occupying a set point on a roadway stopped approaching vehicles to check for violations. This tactic required much equipment (variable message signs, reflective vests, cones, portable lights, command trailer, etc.) and manpower as one large checkpoint per night was scheduled in a highly visible location. Checkpoint sites were different each night of the enforcement wave. Each checkpoint required the development of an operations plan that specified the timing and location of enforcement activities and procedures that would be used. The Asheville Police Department partnered with other local agencies to make this work.
2. Greenville, NC committed to setting up “**saturation patrols**” in well lighted areas. Small groups of uniformed officers positioned portable light towers in various locations around the city. The

light towers illuminated a section of roadway well enough for officer spotters to identify if drivers and passengers were in compliance with the seat belt law. The enforcement tactic primarily used motorcycle officers (but also patrol cars) to watch for violators as they went by the lighted area. When violators were observed, the spotting officer stopped and ticketed the violator. Portable light towers were repositioned after each night of enforcement. In later waves, officers positioned the light towers in high crime locations as a deterrence tool. Each spotter/saturation patrol required the development of an operations plan that listed the timing, location, staffing, and procedures for the operation. The Greenville Police Department also invited nearby agencies to participate in nightly enforcement activities.

3. Charleston, WV committed to “**safety enforcement zones**.” These efforts were carefully explained as “safety enforcement zones” and not “seat belt checkpoints.” Albeit these efforts were akin to seat belt checkpoints, West Virginia is a secondary law State and efforts could not be based solely on seat belt enforcement. Rather, they were focused on safety in general. Each safety enforcement zone required equipment necessary for safe operation (variable message signs, reflective vests, cones, portable lights, etc.). Many officers staffed the zones because they were typically implemented in high traffic (visible) locations in the city of Charleston. Each safety enforcement zone required the development of an operations plan that specified the timing and location of enforcement activities and procedures that would be used.

NHTSA Grant for Participation

In return for participation, NHTSA offered each test community grant funds totaling \$200,000 to put towards program equipment and overtime. Any equipment obtained through the grant was to be used for activities associated with this study and ideally used for future night traffic enforcement initiatives. Similarly, any overtime taken from this grant had to be used on activities associated with this study, namely, seat belt enforcement. In return for the NHTSA grant, the study communities were required to provide not only program enforcement but also support the program media and provide assistance to program evaluation (e.g., tabulate enforcement data including number of citations).

Program Media

Each enforcement wave included the use of earned and paid media. Media typically preceded enforcement activity for less than a week’s time then continued through the enforcement period. The centerpiece of the media effort was a television advertisement developed specifically for this demonstration program and tailored for the individual test communities. A radio advertisement also developed specifically for this program added to the publicity. The media mix (e.g. network, cable, radio) and intensity varied between intervention quarters, providing an additional treatment condition.

NHTSA’s Office of Communications and Consumer Information (OCCI) and their Contractor, The Tombras Group, produced the television and radio advertisements. Appendix A displays a copy of the television advertisement storyboard followed by the radio advertisement script. The television advertisement focused on young adult males 18 to 34, the primary target group, encountering law enforcement at night. Both the radio and television advertisement scripts included a short, clear enforcement-centered message.

Earned media developed by OCCI and their Contractor, Akins Crisp Public Strategies, supported the program enforcement. It included press releases, Op Ed, talking points, etc. Examples of the earned media are included in Appendix A. Local enforcement officials were asked to disseminate these materials to the local news media each wave.

Program Evaluation

This was a demonstration program with extensive evaluation. The evaluation effort entailed measuring program inputs (enforcement and media), the public’s awareness of enforcement activities, and belt use behavior. In one study community, Asheville, roadside surveys of driver BACs were collected and the number of single vehicle crashes at night was tracked.

Collection of Program Input Data

The principal evaluation questions regarding **program enforcement** were:

- How much enforcement occurred during the 2007 program waves?
- Was the enforcement effort sustained over the 10 day intervention wave periods?
- What types and how many ticketed infractions were there during the wave periods?

Local program contacts reported the amount of enforcement per intervention wave using a hardcopy report form. The form was specifically developed for this evaluation effort and was standardized across all three test locations (see copy of form in Appendix C). The participating law enforcement agencies recorded the details of their nightly enforcement activities on the form during each intervention period. This provided the level of effort in the study community each night of the ten night enforcement wave, as the form documented the:

- Dates of enforcement;
- Participating agencies;
- Principle enforcement tactic and the number of special enforcement activities (checkpoints, traffic safety zones, spotters, etc.) each night;
- Number of tickets issued and arrests made each night by category of offense.

This study used the above information to assess the size of each intervention effort. Tracking enforcement information in the study communities over the course of succeeding intervention intervals enabled the project to determine if efforts were sustained, increased, or decreased over time. Local contacts were asked to submit the report form within a month's time after concluding each intervention wave.

NHTSA's HVE model relies on two types of media: **paid media** and **earned media**. Here, paid media means purchasing advertisement placement (placing advertisements during specific programming, on specific days, and at specific times) using both radio and television. Earned media is news coverage of the enforcement mobilization by television, radio, newspaper, and other outlets.

The general evaluation questions regarding **paid media** were:

- How many dollars were spent on paid advertisements delivered to the test communities?
- How many Gross Rating Points (GRPs) and airings were delivered?
- What types of paid media were used (e.g. radio, cable television, network television)?

NHTSA's paid media Contractor, The Tombras Group, provided advertisement data for the media buys used to support enforcement efforts in the test sites. These data provided dollar amounts spent for placing advertisements on network and cable television and radio.

Descriptions and counts of **earned media** were requested from local program contacts. They were asked to report number of earned media "events" generated per intervention wave. Local contacts used activity report forms (Appendix C) to tabulate the following:

- Number of press conferences related to nighttime belt enforcement;
- Number of TV news stories related to nighttime belt enforcement;
- Number of radio news stories related to nighttime belt enforcement;
- Number of print news stories related to nighttime belt enforcement.

Awareness Surveys

This study used awareness surveys to determine:

- If community residents were aware of the nighttime enforcement campaign;
- Whether community perceptions of enforcement changed coincident with the enforcement waves.

The project design called for awareness surveys timed to occur before and after each intervention period at the test sites. The plan was to administer telephone surveys to randomly selected samples of approximately 400 community residents per survey wave. However, delay in completing administrative procedures internal to the government precluded administration of a baseline telephone survey prior to Wave 1. Instead, a self-administered pen and paper survey was organized as a surrogate measure. The questionnaires were one-page in length and included fewer questions compared to the telephone surveys. Departments of Motor Vehicles collected these surveys from motorists doing business in Licensing Offices (DMV DL) the week before the inception of Wave 1 and the week following its conclusion.

The telephone surveys commenced after the conclusion of Wave 1, thereby overlapping with a post Wave 1 DMV DL paper survey. M. Davis and Company, Inc (MDAC) conducted the telephone interviews with randomly selected samples before and after each succeeding enforcement wave at the three test sites. The sole exception occurred in Asheville, where the close proximity of intervention waves made it impossible to administer both a post Wave 3 survey and a pre Wave 4 survey. In that situation, one telephone interviewing wave served as both a post and pre survey. In addition, starting with Wave 3, screening procedures were adjusted at all test sites in order to over-sample young adults, as they were the primary targets for the enforcement campaign.

Copies of both the telephone and DMV DL surveys are presented in Appendix D. Table 3 shows the final achieved administration schedule.

Table 3. Schedule for Awareness Surveys

	Intervention Wave 1			Intervention Wave 2 (CIOT)		Intervention Wave 3		Intervention Wave 4	
Asheville	Pre ¹	Post ¹	Post	Pre	Post	Pre	Post/Pre	Post	
Greenville	Pre ¹	Post ¹	Post	Pre	Post	Pre	Post	Pre	Post
Charleston	Pre ¹	Post ¹	Post	Pre	Post	Pre	Post	Pre	Post

¹Self-administered survey collected from motorists doing business at DMV DL Offices; all other surveys conducted by telephone.

Seat Belt Observation Surveys

Observation surveys were used to measure the seat belt use rate over time in both the test sites and the comparison communities. Observations were conducted during the day and at night. Surveys were conducted both prior to, and after, three of the four intervention waves. Wave 2 was the exception. That wave coincided with the National *Click It or Ticket* Mobilization that took place in all three test communities as well as in both comparison communities. No observation surveys were conducted for Wave 2.

The general evaluation question addressed by the **seat belt observation surveys** was:

- Did HVE focused on night belt use improve usage at nighttime? At daytime?

The pre-/post design was used to determine if the enforcement activities were associated with a change in belt use behavior, at night and/or at day. Tracking the seat belt use rate in the study communities over time provided information on whether belt use increased or failed to increase with subsequent intervention intervals. Comparisons in observed use rate were not only made within each program community but also between the program communities and their comparison sites to determine whether any measured changes in usage could have been due to some factor outside the program.

Observation Survey Site Selection

There were 30 observation sites per test community and 25 sites per comparison community. The site selection process randomly assigned observation locations based on **traffic density** and roadway **functional class** information provided by the North Carolina and West Virginia Departments of Transportation. This process accounted for the amount of traffic traveling annually on different

functional class roadways in the study communities. Site selection did not include interstates and freeways as the media for the programs was community-based and therefore would not be expected to affect traffic “traveling through” on the highest volume roadways. Much of the traffic on these roadways is likely to be from outside the community. Site selection also excluded small local roads due to the very low volume of traffic expected in the late night hours. An approximate equal number of roadway segments from each of the remaining functional classes (major arterial, minor arterial, primary collector) were selected.

Each observation site was located somewhere on a sampled roadway segment. Roadway segments were identified and mapped in advance before observers went out into the field. In advance of actual site observations, each site’s roadway segment was described by map details such as road name or number and beginning and ending points. Because of the amount of data to record for each vehicle (see sample data collection form, Appendix E), observation points were situated along sampled roadway segments where traffic naturally slows or stops. Site locations were preferred at or near intersections which cause vehicles to slow, increasing the time for observation and improving data completeness and accuracy. Preference was also given to well-lit areas for the nighttime observations. Night vision equipment was used only where necessary. Final choice of survey locations along sampled roadway segments was a process completed on location prior to actual survey data collection. Once a site was selected, that site, and all observation procedures at that site, remained unchanged for each succeeding wave of data collection.

Scheduling Observation Surveys

Observations were conducted during both daytime and nighttime. The types of data collected at night and day were the same. All days of the week and hours of day and night were represented in the observation survey data. Days and times were randomly assigned beforehand. Schedules were developed in advance to meet the observation requirements while making efficient use of travel and labor.

Nighttime observations were conducted Friday through Thursday between the hours of 9:00 p.m. and 3:00 a.m. Observers were provided a schedule and maps that specified time of night, nights of week, roadway to observe, and direction of traffic to observe. Time of night was specified as one of six time periods, each straight up clock hour between 9:00 p.m. and 3:00 a.m., with the 45 minute observation period to take place within the one-hour time period. Sunday through Thursday nights were considered weekday nights; Friday and Saturday were considered weekend nights.

Daytime observations were conducted Friday through Thursday during daylight hours, between 7:00 a.m. and 6:15 p.m. Observers were provided a schedule and maps that specified time of day, day of week, roadway to observe, and direction of traffic to observe. Time of day was specified as one of five time periods, 7:00 a.m. – 9:15 a.m., 9:15 a.m. – 11:30 a.m., 11:30 a.m. – 1:45 p.m., 1:45 p.m. – 4:00 p.m., and 4:00 p.m. – 6:15 p.m., with the 45 minute observation period to take place within the broader allowable time period. Monday through Friday were considered weekdays; Saturday and Sunday were considered weekend days.

Data Collection Form

Surveyors used a hardcopy data collection form to record data. The form was designed so that pertinent site information would be documented, including county name, exact roadway location, date, day of week, time of day, weather condition, and direction of traffic flow and lane(s) observed.

The data collection form included space to record information on 50 vehicles, the driver of that vehicle, and the outboard front seat passenger if there was one. If more than 50 observations were made, additional sheets were used and all sheets for that observation period would eventually be fastened together. Observers also recorded vehicle type and occupant gender in addition to belt use. Observers received training and practice and followed directions stated in observer instruction manuals that were provided with training. A copy of the data collection form is provided in Appendix E.

Observation Methods

Observations during daylight hours required only one person but usually were conducted by a team of two individuals. Observations at night were always conducted by a two-person team. One team member was the observer, the second team member was a recorder who wrote down the information verbalized by the observer. Observers at night operated without vision enhancing equipment in locations with adequate overhead lighting. They used night vision equipment when roadway lighting was insufficient to make observations. The near-military grade equipment provided visibility in both dark and less dark conditions. Specifically, an XR5 “Image Intensifier” tube, manufactured by Delft Electronic Products, mounted in Unitec GS7 night vision goggles, was used. According to the manufacturer, the XR5 tube contains an “Auto-Gating” feature which results in no “blooming” and the smallest “halo” available. That is, the tube does not shut down in bright light and headlights make only a relatively small ring of light. To supplement this equipment, handheld infrared spotlights visible only with the use of the night vision goggles and not to the naked eye further illuminated the roadway. This made vehicle occupants visible for belt observations even in total darkness. The goggle/spotlight method was only used when naked eye observations were not possible.

PRG employed quality control methods to train and monitor the performance of the daytime and nighttime observers. All PRG observers were trained according to stated procedures and they also received on-the-street training. Practice work was reviewed for accuracy before observer deployment in the field. Data collected by the observer in the field were examined for completeness and checked for accuracy.

Observer Safety

Observers were trained to the specific requirements for this study. All had prior observation survey experience. Local enforcement agencies were made aware of survey operations. On-duty desk sergeants at local law enforcement agencies were made aware by letter and phone call as to what days and nights observers would be working in the area. Observers wore reflective vests and bright yellow hard hats providing some level of safety for observers.

Observation Calendar

Pre and post observation surveys were conducted surrounding intervention waves in both the test and comparison communities (see Table 4). Surveys typically took place over seven-day periods.

Table 4. Schedule for Observation Surveys of Belt Use

T = Test C=Comparison	Intervention Wave 1		Intervention Wave 2 (CIOT) ¹		Intervention Wave 3		Intervention Wave 4	
T - Asheville	Pre	Post	X	X	Pre	Post	Pre	Post
T - Greenville	Pre	Post	X	X	Pre	Post	Pre	Post
C - Gaston	Pre	Post	X	X	Pre	Post	Pre	Post
T - Charleston	Pre	Post	X	X	Pre	Post	Pre	Post
C - Wheeling	Pre	Post	X	X	Pre	Post	Pre	Post

¹ Observation survey data were not collected surrounding Wave 2. Wave 2 coincided with the *Click It or Ticket* National Mobilization.

Roadside BAC Surveys

Roadside surveys were used to measure BACs of drivers before and after seat belt enforcement interventions in one test community, Asheville. The reason for conducting roadside surveys of BAC was to see if there was any spillover effect on drinking and driving behavior from night seat belt enforcement. The procedures below were IRB approved².

² New England Institutional Review Board.

Asheville was selected for roadside BAC surveys since checkpoint enforcement was the primary enforcement tactic. The checkpoint enforcement tactic lends itself to the BAC survey procedures, given that the procedure for collecting BAC at roadside required surveyors to operate within a law enforcement checkpoint environment. As such, the BAC survey resembled an extension of the enforcement tactic. BAC surveys did not take place during the ten day enforcement periods, but rather before and after.

Collecting BACs at roadside is relatively expensive. The project budget supported collecting roadside BACs in only one test community without a comparison site.

The general evaluation question regarding **roadside BAC surveys** was:

- Will a nighttime program to enforce the seat belt law, in this case using seat belt checkpoints, have a “spillover effect” on drinking and driving?

Roadside BAC surveys were conducted over a three night period, Thursday through Saturday, using one law enforcement checkpoint per night for data collection. These same three locations were used on the same day of week during each data collection interval. Each time a survey location was visited, the same procedures were followed. Driver BACs were collected between the hours of 10:00 p.m. and 2:00 a.m.

Procedure for Roadside BAC Collection

Roadside BAC data collection occurred within a law enforcement checkpoint environment. This approach allowed researchers to obtain voluntary and anonymous driver BACs from drivers traveling through checkpoints. Drivers of passenger vehicles were randomly sampled before entering the checkpoint. Drivers in the sample were first contacted and assessed for signs of intoxication by an officer prior to participation in the study. This required officers on site trained in Standard Field Sobriety Testing (SFST) and a protocol for dealing with any impaired drivers. Unimpaired drivers were then directed by the officer to make contact with a researcher who requested their voluntary, anonymous participation in the survey. This usually occurred in a turn lane or parking lot just past the officer contact point. When the BAC data collection area was cleared of the last randomly selected drivers, a new group of drivers was randomly selected. If a driver that was randomly selected to be in the research sample was pulled aside by the officer for an infraction (e.g. no seat belt) or for suspicion of DWI, the researcher waited to approach the driver until after the infraction processing or officer evaluation was completed and the driver was cleared to talk to the researcher. To ensure driver and researcher safety, drivers pulled aside by the officer were interviewed where they were pulled over to remove the need to ask them to move to the research area. If a driver in the research sample was arrested for DWI, the researcher did not make contact with that driver, but obtained the BAC result for the driver from an evidentiary breath test. A traffic count total was maintained for each half-hour, to track traffic volume compared to the number of drivers sampled during each half-hour throughout the night.

Researchers conducted the surveys wearing white lab coats and reflective, high visibility (ANSI Class II) vests with the words “Research Team” on them. The researcher “uniform” was used to allay any driver suspicions that the researchers were undercover officers or that the driver’s BAC would be reported to the officer along with identifying information. The first contact by researchers was to inform the driver that he or she had been randomly selected to take part in a highway safety study and that the driver’s information and participation were voluntary and anonymous. The researcher then requested a “blind BAC” test from the participant. Participants were made aware that the individual results would not be displayed, but simply stored in the machine and later downloaded by the lead researcher into a database. After collecting the driver’s breath sample, the researcher then recorded characteristics including (estimated) age, sex, race, number of passengers, and type of vehicle. The BAC data were later matched by a machine-generated number to the demographic information the researcher recorded earlier.

Breath testers used hand-held Intoxylizer 400 breath test machines. These machines were calibrated before each data collection trip and to within .003 point accuracy for BAC.

BAC Data Collection Calendar

The schedule for roadside BAC data collection is presented in Table 5. Pre and post roadside BAC surveys were conducted surrounding Intervention Wave 1. No roadside surveys were conducted surrounding Wave 2 (CIOT). A third roadside survey took place just before Wave 3. A fourth survey was scheduled to take place at a point in time between Waves 3 and 4. As occurred with the telephone surveys, the close proximity of Waves 3 and 4 made it impossible to conduct two data collections between the interventions, resulting in a single BAC data collection wave serving as both a “post” for Wave 3 and “pre” for Wave 4. The fifth and final roadside survey took place immediately after Wave 4.

Table 5. Schedule for Roadside Surveys of BAC

	Intervention Wave 1		Intervention Wave 2 (CIOT)		Intervention Wave 3		Intervention Wave 4
Asheville	Pre	Post	X	X	Pre	Post/Pre	Post

Crash Data

Crash data for the program year (2007) and preceding years were sought for all three test communities. In particular, the project sought the number of single vehicle crashes³ per hour of day by month of year. Due to a time-lag in the availability of crash data, the respective States could not provide year 2007 crash counts in time for this report. Therefore, local law enforcement agencies were contacted. The Asheville Police Department was able to provide summary information for year 2007 and the preceding year. The Greenville Police Department and the Charleston Police Department could not answer this project’s specific requests for 2007 crash data at that time.

The general evaluation question regarding crash data was:

- Did alcohol-related crashes decrease, as determined by the surrogate measure single vehicle crashes at night?

³ Single vehicle crashes was used as a surrogate measure for alcohol related crashes because they disproportionately involve alcohol. This type of crash is expected to increase or decrease as drinking driving increases or decreases.

III. TOPICAL DISCUSSION RESULTS

This Chapter summarizes results from the topical discussions with law enforcement officers (**Study Objective 1**). Most, but not all, of these officers had prior experience enforcing the seat belt law at night.

Night Enforcement Techniques

Techniques of night enforcement varied among LEAs. Four general techniques were identified with sub-types. These techniques and sub-types were:

1) Checkpoints/Safety Zones/Mini-Cades

- A. **Seat Belt Checkpoint** – Much like a sobriety checkpoint, but clearly identified as a seat belt checkpoint, this is a set point somewhere on a roadway where highly visible law enforcement officers with marked vehicles check motorists for seat belt violations.
- B. **Combined Alcohol/Belt Checkpoint** – A seat belt checkpoint and a sobriety checkpoint are implemented at the same time. The dual focus operation shares physical and monetary resources for both types of enforcement.
- C. **Safety Enforcement Zone** – Like a checkpoint operation but with signage indicating a “safety enforcement zone” is ahead. Typically used in secondary law States, these efforts use equipment similar to what is used with a sobriety checkpoint (lights, signage, generator, gas, flares, cones, flashlights, vests, etc.).
- D. **Mini-Cade** – This tactic requires as few as three officers who put up signs stating that a “seat belt check” or “safety check” is ahead. Patrol car lights are left on for attention. Moving violations are not necessarily ticketed with this technique due to a relatively low number of officers on the scene. A warning and safety literature is often provided to passing motorists who are not complying.

2) **Unsigned Enforcement Spotters** – A plain clothes or uniformed officer stands well ahead of other enforcement officers and spots violations. This technique works best if conducted in a primary law environment. It can be done in a secondary law environment, but a primary violation has to be observed first, then the belt violation, and this is difficult in the dark. This technique is judged to be the most productive tactic for issuing seat belt tickets, when done in a primary law environment. This enforcement tactic may be less expensive than other enforcement techniques.

3) **Saturation Patrols** – This tactic includes putting more patrol vehicles than usual in a designated area and asking officers to spot and stop motorists not complying with the seat belt law. It can lack mobility at night because it is limited to lighted locations. This approach is very difficult in secondary law locations, given that the primary violation has to be observed prior to the seat belt violation. Artificial lighting (i.e. portable light towers) can be used to illuminate otherwise dark locations, enabling saturation patrols to be set up just about anywhere.

4) **Routine Patrol** – Officers are asked to spot and enforce seat belt violations during their normal traffic patrol activities. This technique lacks mobility because it is limited to lighted locations. This approach is very difficult in secondary law locations, given that a primary violation has to be observed prior to the seat belt violation.

Important Considerations Associated with a Night Belt Enforcement Program

Officers reported the following issues in carrying out a night belt enforcement program.

Type of Seat Belt Law – An important factor in the development and productivity of a night enforcement seat belt program is whether the State has primary or secondary enforcement provisions. Officers in primary law locations may enforce the belt law at night and, as long as efforts are properly explained, meet little or no resistance from local government leaders, members of the court system, or the media. Officers in secondary law locations explained that they are limited in what enforcement techniques they

can use due to the fact that seat belts cannot be treated as a primary violation. No-light and low-light conditions compound the difficulty of enforcing a primary law violation prior to the seat belt violation. Officers in secondary law locations must also use messaging that is sensitive to secondary belt enforcement. For example, they may run “safety checkpoints” but not “seat belt checkpoints.” In secondary law locations, officers are more likely to issue warnings when conducting an enforcement zone or safety check.

Physical Resources – The amount of physical resources required depends on method of enforcement and planned publicity activities. Large enforcement efforts like checkpoints or enforcement zones may require equipment similar to what is used during a sobriety checkpoint (lights, signage, generator, gas, flares, cones, flashlights, vests, etc.).

Monetary Resources – Money for overtime labor or equipment incentives for special detail operations are necessary in most locations. LEAs are often strapped for cash and welcome overtime pay for special detail. However, overtime is not allowed in all States and other compensation or incentives are necessary to bring officers out for special detail.

Support from the Community – Motorists often have an expectation of privacy when driving in darkness. This expectation evokes resistance to LEAs using special devices to aid night vision. But, looking at motorists under street lights or in other ambient light environments is not out of the ordinary for traffic officers. Officers recommended that law enforcement efforts focused on night belt use not use unexpected technology to see into motor vehicles. Law enforcement agencies should meet with local legal counsel to determine the possibility of challenges to nighttime enforcement technique(s).

Political permission also should be sought in the event that backlash or negative publicity occurs. The community should be made aware of four things concerning nighttime initiatives beforehand:

- 1.) Why the activities are planned;
- 2.) How the activities will be conducted;
- 3.) When the activities will occur;
- 4.) Where the activities will be carried out.

The idea is to not surprise anyone.

Geography and Population – Night enforcement of seat belt laws is more efficient in areas with higher traffic volume and during earlier night hours. Night enforcement in the sparse traffic of rural areas and in the early morning hours is less efficient. High crime locations likely mean more officers are necessary to process criminals and ensure the safety of the officers.

Program Components

Officers offered the following advice concerning program components for nighttime belt enforcement:

- 1) Leadership** – For a night belt use program to be successful, it is important for someone in the LEA to take the lead, not necessarily the Chief but a delegated officer, preferably with team leadership skills. That person will explain efforts to community leaders and the media. That person will also organize and schedule efforts among the officer’s LEA and any partnering LEAs.
- 2) Staffing** – Overextending staff resources can lead to an ineffective campaign. Officers usually have competing interests beyond special detail projects. Special detail staff are needed in most cases, given that traffic enforcement is usually scheduled during daytime hours. Sustained night enforcement efforts may mean reorganizing labor shifts. Unfortunately, officers usually prefer working overtime during daytime hours.

Some officers noted the importance of picking correct project staff. Have officers on board who are able to see well enough to spot violations in the dark. There may also be a need for a broader range of law enforcement skills. For example, if operating in a high crime area, will officers trained in criminal interdiction be necessary? Officers trained in Standard Field Sobriety Testing (SFST) will almost certainly be needed. Picking locations and hours of operation dictate how much personnel and what expertise is needed.

3) Equipment – The chosen enforcement technique will dictate the type and amount of equipment required. Again, seat belt checkpoints and safety zones are similar to sobriety checkpoints. Both need a variety of equipment on-hand, including signage, vests, light generator, gas, gas cans, extension cords, cones, etc. Larger LEAs have this equipment on hand because it is used for other purposes, such as sobriety checkpoints, crime scene investigations, and crash reconstructions. Less equipment is necessary for most other enforcement techniques.

4) Publicity - Publicizing enforcement is a core component of any HVE program. Night efforts need to be as much about publicizing enforcement as the enforcement itself and steps must be taken to explain why special efforts are going to occur. Many felt it helpful to explain this using health and safety information. Some even found it helpful to present the night belt enforcement effort as a method for crime deterrence. Most expressed the need to be upfront and clear as to what officers would do, explain where they were doing it, and when. Furthermore, they advised explaining why an enforcement intervention is a wise choice.

Officers by and large reported that there needs to be a media hook. Some officers who had checkpoint experience thought the checkpoint itself was a useful media hook, but they noted difficulties in keeping the media interested in something that becomes less novel over time. Only a few mentioned using earned media that specifically talked about seat belt enforcement at night, and most appeared to promote CIOT without specifically mentioning their night enforcement efforts. Officers pointed out that they rely on their State Highway Safety Office for publicity support (e.g. fill in the blank press releases, letters to the editor, etc.) and the HSOs have done little to talk about or promote using seat belts at nighttime.

5) Training - Most discussion participants indicated that special training for spotting violators is not needed. Only one location said that they augmented their Traffic Occupant Protection Strategies (TOPS) training to inform officers as to why night enforcement of belts is important. The need for SFST training was mentioned by most since arresting drunk drivers at night should be expected.

Benefits of Night Enforcement of Seat Belt Laws

Notable benefits associated with night enforcement of belt laws included:

- Seat belt enforcement can be used to reduce fatalities and injuries at night;
- Night enforcement programs may reach motorists not influenced by daytime programs;
- The public may perceive that officers are out at all hours of day and night;
- This is something new for the media to cover;
- Night traffic enforcement is a crime deterrent.

Noted Reluctance among Officers

Some officers expressed reluctance towards night belt enforcement. Reasons included:

- Not understanding how night enforcement can be done;
- Fear that tickets will be thrown out of court;
- Officers won't be able to write as many tickets at night;
- Traffic volumes at night are down and there is difficulty seeing violators.

In addition, some officers complained that enforcing belt laws is not crime fighting.

Drawbacks of Night Enforcement of Seat Belt Laws

Notable drawbacks associated with night enforcement of belt laws included:

- Many LEAs are not used to doing traffic enforcement at night;
- Resources for getting officers out at night are difficult to obtain;
- Officers prefer working overtime during daytime hours;
- There is increased danger at night, raising safety issues;
- Equipment needed for certain enforcement techniques can be expensive.

Willingness to Conduct Nighttime Seat Belt Enforcement

Most officers expressed a willingness to continue or start night enforcement of belt laws. The few that did not offered their reasons, including:

- Lack of overtime funding for special detail;
- Lack of equipment (including vehicles);
- Competing priorities at nighttime;
- Disinterest from political leaders.

IV. DEMONSTRATION PROGRAM RESULTS

This chapter presents the results from the nighttime HVE demonstration programs in three test communities, Asheville, Greenville, and Charleston, and results from two comparison communities, Gastonia and Wheeling (**Study Objective 2**). Amounts of media and enforcement applied to the demonstration (“test”) sites are described first. Results regarding change in observed belt use and community awareness follow. Analyses of BAC data and crash data for the Asheville community are presented in Chapter V.

Program Media and Enforcement

Four HVE waves were conducted per test community. Table 6 displays the program enforcement calendar. NHTSA set the Wave 1 and Wave 2 dates. The sites chose the dates for Waves 3 and 4. Each wave included both enforcement and media principally focused on improving belt use at night.

Table 6. Program Enforcement Calendar

	Wave 1	Wave 2 (CIOT)	Wave 3	Wave 4
Asheville, NC	Mar. 16 - Mar. 25	May 23 - June 3	Sept. 5 - Sept. 16	Oct. 17 - Oct. 28
Greenville, NC	Mar. 16 - Mar. 25	May 21 – June 1	Sept. 19 - Sept. 28	Nov. 9 – Nov. 18
Charleston, WV	Mar. 16 - Mar. 25	May 25 - June 3	July 27 - Aug. 5	Nov. 23 - Dec. 2

Paid Media

The media plan for the project was developed by NHTSA, the Evaluation Contractor (PRG), and NHTSA’s Media Contractor (The Tombras Group). The strategy was to purchase sufficient media time for Wave 1 to “make a splash.” The project would rely primarily on network television and radio to do so. A decision was made not to have the project purchase any media for Wave 2 but instead have the sites rely on national and State media publicity surrounding the national *Click It or Ticket* mobilization. Wave 3 was designated as an intervention period where low cost media (cable and radio) would be used. The intent was to ascertain whether a lower cost media mix could produce results comparable to a higher cost plan. For Wave 4, the project intended to review results from the earlier Waves and judge from that the best allocation of resources to answer remaining research questions regarding media. However, there proved not to be sufficient time to obtain the needed data and conduct the analyses to make those judgments. As a result, media expenditures during Wave 4 largely reflected availability of media time for purchase, time constraints, and remaining resources in the project.

As a consequence of the strategy described above, the amount of dollars spent on advertisements varied for each program wave.⁴ Table 7 shows the amounts spent per wave according to media type.

Purchasing advertisement placement in a designated market area (DMA) costs more or less depending on market factors. A dollar spent in one DMA can purchase far more, far less, or the same as in another DMA. One “standard” unit of purchase power often used is the number of Gross Ratings Points (GRPs) delivered. As defined on the Web site www.trafficsafetymarketing.gov:

Ratings are an estimate of the percentage of individuals or households who will be exposed to a television or radio commercial. Each TV or radio daypart delivers a specified number of rating points. GRP’s are the sum (total) of all ratings delivered by a given media buy or schedule.

Another unit of purchase power is the number of spots aired, “purchase” and “bonus.” Table 8 displays these units per test site.

⁴ All purchases were under the direction of NHTSA’s Office of Communication and Consumer Information and their contracted media specialist, The Tombras Group.

Table 7. Amount of Dollars Spent on Purchasing Advertisements

Asheville (Checkpoint)	Wave 1	Wave 2	Wave 3	Wave 4
Total \$\$ spent on TV	\$55,326 (89%)	CIOT ¹	\$23,187 (72%)	\$21,836 (80%)
\$\$ spent on Cable TV	\$1,802		\$23,187	\$2,193
\$\$ spent on Network TV	\$53,524		\$0	\$19,643
Total \$\$ spent on Radio	\$7,080 (11%)		\$8,840 (28%)	\$5,567 (20%)
Total \$\$ spent on TV and Radio	\$62,406 (100%)		\$32,027 (100%)	\$27,404 (100%)
Greenville (Saturation Patrol)	Wave 1	Wave 2	Wave 3	Wave 4
Total \$\$ spent on TV	\$26,554 (80%)	CIOT ¹	\$14,450 (70%)	\$33,481 (86%)
\$\$ spent on Cable TV	\$2,232		\$14,450	\$3,791
\$\$ spent on Network TV	\$24,322		\$0	\$29,690
Total \$\$ spent on Radio	\$6,815 (20%)		\$6,319 (30%)	\$5,402 (14%)
Total \$\$ spent on TV and Radio	\$33,369 (100%)		\$20,769 (100%)	\$38,883 (100%)
Charleston (Safety Zone)	Wave 1	Wave 2	Wave 3	Wave 4
Total \$\$ spent on TV	\$36,298 (84%)	CIOT ¹	\$2,962 (31%)	\$27,273 (85%)
\$\$ spent on Cable TV	\$1,550		\$2,962	\$1,972
\$\$ spent on Network TV	\$34,748		\$0	\$25,301
Total \$\$ spent on Radio	\$6,681 (16%)		\$6,511 (69%)	\$4,836 (15%)
Total \$\$ spent on TV and Radio	\$42,979 (100%)		\$9,473 (100%)	\$32,109 (100%)

¹May Mobilization - Click It or Ticket (CIOT)

Table 8. Network Television GRPs Delivered and Number of Cable/Radio Spots Aired

Asheville	Wave 1	Wave 2	Wave 3	Wave 4
Network GRPs (Delivered)	347	CIOT	0	110
Cable Spots Aired (Purchased)	128		239	258
Cable Spots Aired (Bonus)	108		119	129
Radio Spots Aired (Purchased)	348		411	296
Radio Spots Aired (Bonus)	283		307	160
Greenville	Wave 1	Wave 2	Wave 3	Wave 4
Network GRPs (Delivered)	160	CIOT	0	205
Cable Spots Aired (Purchased)	150		622	164
Cable Spots Aired (Bonus)	127		622	162
Radio Spots Aired (Purchased)	300		322	323
Radio Spots Aired (Bonus)	273		297	227
Charleston	Wave 1	Wave 2	Wave 3	Wave 4
Network GRPs (Delivered)	321	CIOT	0	184
Cable Spots Aired (Purchased)	136		79	132
Cable Spots Aired (Bonus)	106		75	76
Radio Spots Aired (Purchased)	228		209	154
Radio Spots Aired (Bonus)	114		175	99

Earned Media

PRG asked contacts in the demonstration sites to tally earned media. Contacts provided information on press conferences and news stories if related to the nighttime demonstration program. Reporting was incomplete at best (Table 9). Contacts gathering earned news media information knew only what they encountered. There was some concern that officers did not thoroughly search local media sources and knew less than what was actually publicized. Notwithstanding that concern, the general feeling was that less earned news media occurred in Asheville and Greenville and more in Charleston.

Program contacts in Asheville and Greenville reported that local news media appeared to lack interest. That was especially true in Greenville, where the local contact explained that local news reporters saw this program as “more of the same.” There was some truth to that, given that Greenville had a history of conducting night belt enforcement using spotters in ambient lighted locations, typically near well-lighted automobile dealer car lots. It is also worth noting that Wave 3 garnered the most interest in Greenville, where officers set up light towers in crime prone locations serving a dual purpose of demonstration program enforcement and crime deterrence. That worked as a media hook.

Contacts in Asheville and Charleston explained that they garnered some attention in later waves using checkpoint results as a hook. Asheville received much publicity for the first wave but attention waned after that. From the outset, Charleston was understood as having very good relations with local news media and that apparently worked in their favor to garner the most attention over the course of all program waves.

Table 9. Reported Earned News Media

Asheville	Wave 1	Wave 2 (CIOT)	Wave 3	Wave 4
Press Conferences	2	Unknown	1	0
TV News Stories	5	Unknown	1	0
Radio News Stories	3	Unknown	0	2
Print News Stories	2	Unknown	0	1
Greenville	Wave 1	Wave 2 (CIOT)	Wave 3	Wave 4
Press Conferences	0	1	1	0
TV News Stories	1	3	3	Unknown
Radio News Stories	Unknown	Unknown	Unknown	Unknown
Print News Stories	2	2	2	0
Charleston	Wave 1	Wave 2 (CIOT)	Wave 3	Wave 4
Press Conferences	2	4	2	2
TV News Stories	7	10	6	6
Radio News Stories	3	5	3	3
Print News Stories	4	8	1	3

Program Enforcement

Table 10 shows the recorded level of enforcement across the intervention waves. The test sites reported complete enforcement information for all intervention waves.

Each LEA was responsible for conducting the site’s chosen enforcement tactic every night of the program. Asheville reported at least one four-hour checkpoint each night of program enforcement. Charleston also reported at least one four-hour safety enforcement zone for each night of the program enforcement with one exception (9 safety zones during Wave 4). Greenville counted and reported many more saturation patrols compared to the number of checkpoints and traffic safety zones in Asheville and

Charleston. That was because multiple patrols took place around the city of Greenville every night of enforcement, each including a handful of officers. Conversely, large numbers of officers were used for the nightly checkpoints and enforcement zones conducted in the two test communities using checkpoints.

Personnel hours differed between the three test communities and number of hours of enforcement varied across waves. Nonetheless, all three test sites had a large enforcement presence each wave. Level of effort, as measured by personnel hours, fluctuated over the course of all four waves in Asheville. Exit discussions with the law enforcement coordinator in Asheville revealed that level of officer interest fluctuated over the course of individual waves and from wave-to-wave. Reasons for this included inclement weather (rain and snow) and fatigue due to the length (number of nights) of each enforcement wave. Also, the delegation of enforcement hours across multiple participating agencies was said to be somewhat difficult, as expectations of outside agency participation were not always met. Officer interest also waned in Greenville. Here, fatigue was identified as a factor. Lower number of personnel hours did not appear to affect the number of nightly enforcement events.

Table 10. Enforcement Efforts

Test Site – Enforcement Type	Wave 1	Wave 2 (CIOT)	Wave 3	Wave 4
Asheville – Checkpoint				
Program Checkpoints	10	10	13	15
Personnel Hours	518	720	592	406
Seat Belt Tickets	32	20	60	35
DUI Arrests	21	31	17	8
Speeding	9	9	40	77
Other Tickets/Arrests	283	396	364	161
Greenville – Saturation Patrol				
Spotter/Saturation Patrols	35	34	35	36
Personnel Hours	536	536	329	370
Seat Belt Tickets	421	301	223	149
DUI Arrests	25	18	17	16
Speeding	51	11	25	44
Other Tickets/Arrests	222	210	198	166
Charleston – Safety Zone				
Traffic Safety Zones	17	10	10	9
Personnel Hours	739	1009	1041	640
Seat Belt Tickets	40	32	31	27
DUI Arrests	26	34	36	17
Speeding	24	74	150	225
Other Tickets/Arrests	229	461	250	78

There were far more personnel hours committed in Charleston compared to the other two test communities. There were two apparent reasons for this. One was that officer enthusiasm for overtime pay was said to remain high across all waves in Charleston. That was aided by the fact that the Charleston Police Department made use of their agency’s Traffic Safety Unit for the program, working as a team. The second was that the hourly costs of overtime pay for officers in Charleston were less compared to the other test communities. Officer hours applied to the program increased from Waves 1 to 3. After that, there was a substantial drop in hours due to the lack of funds to sustain previous personnel levels. The decrease in personnel in Wave 4 resulted in less manpower for traffic enforcement zones, and as such, the zones were situated in locations where less law enforcement work was expected; locations with less volume of traffic, and a lesser likelihood of violators.

Officers in Asheville and Charleston typically issued far fewer seat belt citations (20 to 60 per enforcement wave) compared to Greenville due to checkpoint style enforcement every night of enforcement. Drivers approaching well-signed checkpoints are likely to put their seat belt on before entering the checkpoint. Some effort was made in Charleston during later waves to put spotters ahead of the enforcement zones to watch the upstream traffic, and to use laser speed detectors to identify oncoming

speeding violators who were also unbelted. That resulted in many more speeding tickets being issued in the later waves, but not an increase in belt tickets.

Seat belt tickets were issued in Greenville for the most part by officers on motorcycles situated near portable light towers. Motorcycles provided spotters a higher point of view compared to sitting in a patrol car, enabling the officer a better line of sight into the passing occupant's vehicle. The number of belt tickets decreased in Greenville each succeeding wave (from 421 to 149). Greenville officers surmised that drivers began noticing placement of the portable light towers that spotters used to identify violators. Aware of the nighttime belt enforcement effort, they reacted accordingly. In other words, if non-users noticed a light tower ahead, they were likely to put on their seat belt. The Greenville law enforcement coordinator said that by the mid-point of an enforcement wave, very few occupants passing by a light tower did so unbelted.

Law enforcement in all three test sites expected to arrest drinking drivers given the hours of the enforcement operation (10:00 p.m. to 2:00 a.m.). One requirement for participation in the study was to have officers trained in SFST on hand. Arresting drivers who are drunk requires additional law enforcement work and an investigation must be properly done at the time of arrest. Otherwise, lack of evidence or an improper investigation could result in a failed prosecution. It usually is a time consuming task for officers, taking them away from other activities while processing the arrestee.

Officers in all three test locations encountered drivers who were drunk. Typically, an average of two to four drivers were arrested per night during the first three enforcement waves. Fewer drivers were arrested for DWI in Wave 4.

Overall Observation Survey Results

Observation surveys of belt use were used to determine if nighttime enforcement improved the use rate at night and if there was an effect on daytime use as well. Six observation waves were completed for each study community. Observation waves were conducted before and after intervention Waves 1, 3 and 4. Observations were not conducted surrounding Wave 2; which coincided with the National *Click It or Ticket* May Mobilization.

Within study communities, the observed use rate for each observation site was given an equal weight and then averaged (1:1) so that each site contributed equal influence to the overall community use rate. That is, each site's use rate (total occupants belted/total occupants observed) contributed to the final belt use rate equally, irrespective of the number of observations made at the site. Otherwise, heavy volume arterials would dominate the results while the lesser volume collectors and county roads would make little contribution to the final results. Pre-to-post comparisons for significant differences included the same sites observed in both the pre and post surveys that surrounded independent intervention intervals.⁵ Linear Binary Regression was used to test significance.

Weighted data were used for the overall estimate of belt use. Raw data were used for sub-group analyses. Weighting data for sub-group analyses would not have been feasible since many low volume observation sites would have produced zero or very low numbers of observations for some classifications of vehicles and drivers for some times of day. Division by zero is not possible and low numbers (e.g., one observation for which the driver was or was not belted) would have produced extremely high variance. The variables of interest for sub-group analyses were driver or passenger status, gender, type of passenger vehicle, time of night, and type of roadway. Chi-Square test for significance was applied to look for significant differences in pre-to-post wave comparisons.

⁵ Data were not collected at two of the 25 observation sites for Charleston's preceding Wave 1; that was due to logistical errors. Data for these two sites were collected in the post survey following Wave 1, but were not used in pre-post comparisons for Wave 1.

Test Sites

Asheville

The project collected nighttime observation survey data in Asheville at 25 sites located within the city limits and 5 sites located in surrounding Buncombe County. Daytime observations occurred at the same 25 sites used at night within Asheville city limits.⁶ Observers collected data on 16,490 observed front seat passengers at night and 43,292 during the day across the six observation intervals.

Prior to Wave 1, nighttime and daytime belt use in Asheville was about the same (85.6% versus 86.3%). Belt use increased approximately 2 percentage points at both night and day over the course of the first intervention interval. These improvements were statistically significant ($p < .05$ at night and $p < .01$ at day). Wave 2 was the CIOT Mobilization and no belt observations were conducted. Observation surveys were conducted again surrounding Wave 3 and the data showed belt use improving for a second time at night (+3.2 percentage points; significant at $p < .01$) but not during daytime. That put the nighttime use rate just ahead of the daytime rate (89.5% versus 88.5%). The pre-survey conducted just before Wave 4 showed nighttime belt use at its lowest point for the entire program period (83.4%). Daytime belt use remained just under 90 percent (89.0%). The Wave 4 post-survey showed belt use at night at its highest (92.5%) registering a statistically significant 9.1 percentage point increase ($p < .01$). Belt use at daytime remained essentially unchanged, putting the use rate at night 3.1 percentage points higher compared to daytime (92.5% versus 89.4%).

TABLE 11. Asheville Pre and Post Percent Belt Use Rates (Weighted)

	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	dif.
ASHEVILLE										
Nighttime (N=16,490)	85.6%	87.5%	+1.9 ^b		86.3%	89.5%	+3.2 ^a	83.4%	92.5%	+9.1 ^a
Daytime (N=43,292)	86.3%	88.4%	+2.1 ^a		89.2%	88.5%	-0.7	89.0%	89.4%	+0.4

^aBinary Logistic Regression; Statistically Significant at $p < .01$

^bBinary Logistic Regression; Statistically Significant at $p < .05$

The Asheville nighttime observation data were examined for differential effects by group characteristics. Table 12 presents use rates based on raw data counts. Chi-Square tests for significance were used to look for significant differences between pre and post waves survey results.

Based on raw data, statistically significant improvements were found each program wave for the total sample of observed motor vehicle occupants. When disaggregated into driver and passenger subgroups, the data continued to show improvement in the usage rate for each program wave. However, the improvements for both drivers and passengers were not statistically significant for Wave 1. The improvements were statistically significant for Waves 3 and 4.

Statistically significant improvements were measured every wave for male occupants. A statistically significant improvement was found among female occupants only for Wave 4. The result was a reduction in the gap between males and females in the belt usage rate, with the female rate no longer substantially higher than that for males.

Improvements were found for occupants in all vehicle types, all waves, with the exception of Wave 1 passenger cars. Improvement occurred most among occupants in pickup trucks, who began the study at a

⁶ Daytime use rates were computed from data collected at 25 sites where daytime observations took place; nighttime use rates were based on data collected at all 30 sites where nighttime observations took place.

much lower usage rate than other vehicle occupants. That improvement greatly reduced the gap in use rates between occupants in pickup trucks and the other vehicle types.

Observation data were examined for differences between two time periods, 9:00 pm – 12:00 am and 12:00 am – 4:00 am. The data revealed improvements both before and after midnight across all program waves, although the difference was not always statistically significant. Statistically significant improvements occurred before midnight for Waves 3 and 4 and after midnight for Wave 4. Amount of improvement varied between the two time periods with most improvement occurring with Wave 4 for both.

Table 12. Percent Belt Use in Asheville at Nighttime by Observation Characteristics (Unweighted)

	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	dif.
All Occupants (N=16,490)	83.3	85.5	+2.2^b		85.9	89.3	+3.4^a	83.7	91.0	+7.3^a
Driver (N=12,253)	85.0	86.9	+1.9		87.4	89.6	+2.2^b	84.5	91.9	+7.3^a
Passenger (N=4,237)	78.2	81.4	+3.1		82.1	87.2	+5.1^a	81.4	88.4	+6.9^a
Male (N=9,408)	79.7	83.7	+4.0^a		83.9	88.0	+4.1^a	82.0	90.3	+8.3^a
Female (N=6,979)	88.1	87.9	-0.2		88.9	91.0	+2.1	86.1	92.2	+6.1^a
Passenger Car (N=10,024)	84.6	84.4	-0.2		87.3	89.9	+2.6^b	80.7	90.9	+10.2^a
Pickup (N=2,287)	73.9	85.4	+11.5^a		76.0	83.2	+7.1^b	74.6	87.3	+12.6^a
SUV (N=3,065)	85.0	87.3	+2.3		87.2	91.6	+4.3^b	88.1	93.4	+5.3^a
Van (N=1,095)	89.5	91.6	+2.1		89.7	91.2	+1.5	87.7	93.5	+5.8
9 pm – 12 am (N=12,273)	83.4	85.7	+2.3		85.6	89.6	+4.0^a	83.4	89.9	+6.5^a
12 am – 4 am (N=4,208)	83.0	85.6	+2.6		86.8	88.5	+1.7	85.0	93.3	+8.3^a
Arterials (N=8,360)	86.0	85.4	-0.6		87.2	90.1	+2.9^b	86.1	91.9	+5.8^a
Collectors (N=6,171)	79.7	84.5	+4.8^a		84.9	88.3	+3.4^b	81.5	89.0	+7.5^a
County Roads (N=1,951)	82.4	90.6	+8.2^a		83.9	89.3	+5.4	81.6	93.0	+11.4^a

^aChi-Square Test; Statistically Significant at p<.01

^bChi-Square Test; Statistically Significant at p<.05

Belt use rates also varied by roadway type. Arterials are roadways that provide a high level of travel mobility (interstates and larger highways were excluded). Collectors are roadways that provide mobility within residential neighborhoods and commercial and industrial areas and carry a lesser density of traffic compared to an arterial. County roads (for this study) were arterials and collectors not located within the city limits of the primary test community (Asheville).

Improvements were measured for all road types, all waves, with the exception of arterials for Wave 1. All the improvements except one were statistically significant; only the improvement on county roads for Wave 3 was not statistically significant. Largest improvements were measured on county roads outside the Asheville city limits.

Greenville

Greenville nighttime observations occurred at 25 sites within the Greenville city limits and 5 sites in surrounding Pitt County. Daytime observations occurred solely at the 25 sites within the Greenville city limits. Observers collected data on 21,729 front seat passengers at night and 47,419 at day across the six observation intervals.

Belt use in Greenville was higher at daytime compared to night both before and after all of the intervention waves, but much of the difference was reduced over the course of the year. Observation data suggested improvements in belt use at night, albeit slight. None of the pre-to-post wave differences were statistically significant. Taken collectively, nighttime belt use rose from 83.4 to 87.1 percent. Before the program, the gap between night and day belt use rates was 6.2 percentage points. At the end of the demonstration program that gap was only 2.8 percentage points.

TABLE 13. Greenville Pre and Post Percent Belt Use Rates (Weighted)

	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	dif.
GREENVILLE										
Nighttime (N=21,729)	83.4%	84.6%	+1.2		86.2%	87.6%	+1.4	86.8%	87.1%	+0.3
Daytime (N=47,419)	89.6%	89.0%	-0.6		89.2%	90.6%	+1.4^a	89.8%	89.9%	+0.1

^aBinary Logistic Regression; Statistically Significant at p<.01

^bBinary Logistic Regression; Statistically Significant at p<.05

The observation data collected at night in Greenville were also examined for differential effects across group characteristics. Table 14 presents use rates by group characteristics based on raw data counts.

Table 14. Greenville: Percent Belt Use at Nighttime by Observation Characteristics (Unweighted)

	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	dif.
All Occupants (N=21,729)	86.1	85.8	-0.3		86.3	88.5	+2.2^a	87.2	87.3	+0.1
Driver (N=16,455)	85.3	85.1	-0.2		86.3	87.9	+1.6	87.2	87.5	+0.3
Passenger (N=5,274)	88.2	88.0	-0.3		86.2	90.1	+3.9^a	87.1	86.4	-0.7
Male (N=12,378)	81.8	82.6	+0.7		83.2	85.5	+2.4^b	84.9	84.9	-0.1
Female (N=9,336)	91.5	90.0	-1.6		90.7	92.1	+1.4	90.0	90.5	+0.5
Passenger Car (N=13,238)	86.3	85.8	-0.5		86.9	88.6	+1.7	86.8	87.1	+0.3
Pickup (N=2,599)	79.5	82.1	+2.6		81.9	84.1	+2.2	86.0	83.3	-2.7
SUV (N=4,702)	88.0	87.0	-1.0		87.7	90.0	+2.3	87.7	88.6	+0.9
Van (N=1,190)	91.0	88.8	-2.2		84.6	90.2	+5.5	92.2	91.2	-1.0
9 pm - 12 am (N=16,246)	86.9	86.3	-0.6		86.7	89.1	+2.4^a	87.5	87.3	-0.2
12 am - 4 am (N=5,483)	83.5	84.3	+0.8		84.9	86.4	+1.5	86.4	87.2	+0.8
Arterials (N=13,972)	85.2	86.4	+1.2		86.4	88.5	+2.1^b	87.2	88.1	+0.9
Collectors (N=5,318)	85.8	83.3	-2.5		84.6	87.7	+3.1	86.6	84.7	-1.9
County Roads (N=2,439)	93.7	87.7	-6.0^b		89.4	90.2	+0.8	88.1	87.1	-1.0

^aChi-Square Test; Statistically Significant at p<.01

^bChi-Square Test; Statistically Significant at p<.05

The only statistically significant improvement for the total sample of observed occupants in Greenville appeared for Wave 3. Passengers posted a statistically significant improvement that wave, drivers did not.

Belt use rates among male occupants were lower compared to female occupants throughout the entire program period. The only statistically significant improvement was measured among males for Wave 3. Female occupants also improved during Wave 3, but the improvement was not statistically significant.

No statistically significant improvement in belt use appeared for any intervention wave when the data were examined by type of vehicle. Few statistically significant improvements emerged when the data were examined by time period or type of roadway, the exceptions occurring in Wave 3. In general, the raw data collected in Greenville suggested that Wave 3 worked to improve belt use. Positive increases were measured across all observation characteristics that wave. Results corresponding to the other waves were problematic.

Charleston

Table 15 summarizes observation data collection results at 25 survey sites, all within the city limits of Charleston. These sites yielded 12,327 front seat occupants observed at night and 35,442 at day across all six observation periods.

TABLE 15. Charleston Pre and Post Percent Belt Use Rates (Weighted)

	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	dif.
CHARLESTON										
Nighttime (N=12,327)	58.4%	61.8%	+3.4^b		66.1%	70.2%	+4.1^a	64.5%	60.2%	-4.3^a
Daytime (N=35,442)	72.7%	72.7%	0.0		78.4%	74.7%	-3.7^a	71.0%	71.9%	+0.9

^aBinary Logistic Regression; Statistically Significant at p<.01

^bBinary Logistic Regression; Statistically Significant at p<.05

Statistically significant improvements were obtained in Charleston’s nighttime use rate for Wave 1 (+3.4 percentage points; p<.05) and Wave 3 (+4.1 percentage points; p<.01). Daytime use rates did not increase during these same two waves. Instead the daytime use rate remained unchanged across Wave 1 then decreased during Wave 3 (-3.7 percentage points; p<.01). A statistically significant decrease in the nighttime belt use rate was observed across Wave 4 (-4.3 percentage points; p<.01), while the daytime use rate remained unchanged. The Wave 4 decrease was largely driven by a handful of observation sites, with relatively few observations collected at night, pulling the weighted use rate downward. This is a disadvantage of using a limited number of survey sites (“mini-surveys”) and conducting them where traffic is scarce (i.e. at night). The reason for weighting the site data was to eliminate disproportionate pull from any individual site. Here, the opposite happened, where too much variability from sites with low N’s influenced site use rates. Examination of the raw data (Table 16) presented a different picture, where a +3.3 percentage point increase (p <.05) was obtained and positive changes were evident across all characteristics in the Wave 4 observation data.

The nighttime observation data were examined for differential effects by group characteristics. Statistically significant improvements in belt use occurred for Waves 1 and 4 for the total sample of observed occupants. Large increases in passenger belt use were measured in Waves 1 and 4. Statistically significant improvement was also measured among drivers in Wave 1. The passenger belt use rate was lower than the driver belt use rate throughout all observation periods, except at the conclusion of Wave 4.

Male belt use rates were lower compared to female usage rates throughout the entire program period. Statistically significant improvement in belt use among males was found only for Wave 1. Statistically significant improvements were found among female occupants immediately after Waves 1 and 4.

Belt use was higher after all three waves for occupants in pickups, SUVs and vans, but the only statistically significant difference was among occupants in SUVs immediately after Wave 1. Belt use

among passenger car occupants was higher after Wave 4, but that difference was not statistically significant.

Table 16. Charleston: Percent Belt Use at Nighttime by Observation Characteristics (Unweighted)

	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	dif.
All Occupants (N=12,327)	58.4	66.7	+8.3^a		70.2	71.4	+1.2	63.2	66.5	+3.3^b
Driver (N=9,131)	59.3	66.9	+7.7^a		72.8	74.0	+1.2	64.7	65.5	+0.8
Passenger (N=3,196)	55.3	65.9	+10.6^a		63.7	64.4	+0.7	58.7	69.1	+10.4^a
Male (N=7,041)	53.4	62.9	+9.5^a		65.4	68.9	+3.4	59.6	61.3	+1.7
Female (N=5,238)	65.6	72.7	+7.1^a		76.6	74.4	-2.2	67.6	73.3	+5.7^a
Passenger Car (N=7,107)	68.1	65.2	-2.9		69.6	69.0	-0.6	61.6	64.5	+2.9
Pickup (N=1,688)	40.0	48.1	+8.1		61.4	65.7	+4.4	53.0	56.2	+3.2
SUV (N=2,503)	63.0	79.1	+16.0^a		74.6	76.9	+2.3	72.3	73.6	+1.4
Van (N=944)	70.0	77.8	+7.8		76.5	82.7	+6.2	71.1	79.8	+8.6
9 pm - 12 am (N=9,946)	59.9	67.1	+7.2^a		71.1	72.0	+0.9	63.5	66.3	+2.8
12 am – 4 am (N=2,382)	51.7	65.4	+13.7^a		66.3	69.2	+2.9	61.3	67.3	+6.0
Arterials (N=7,191)	56.2	64.6	+8.4^a		69.1	70.2	+1.1	62.2	66.3	+4.1^b
Collectors (N=5,137)	60.8	69.0	+8.2^a		72.1	72.8	+0.7	65.1	66.7	+1.6
County Roads (N=4,739)	62.4	63.0	+0.6		69.3	70.2	+0.9	61.6	68.0	+6.4^a

^aChi-Square Test; Statistically Significant at p<.01

^bChi-Square Test; Statistically Significant at p<.05

Positive increases in belt use were measured before and after midnight after each program wave, but only the Wave 1 increase was statistically significant. Belt use after midnight increased more compared to increases before midnight every wave.

Statistically significant improvements were measured for arterials immediately after Waves 1 and 4, collectors at the end of Wave 1, and county roads at the end of Wave 4.

Comparison Sites

Gastonia

Twenty-five observation sites located within the city limits of Gastonia were used at both day and at night for comparison with Asheville and Greenville. Observers in Gastonia collected data on 13,520 occupants at night and 35,411 at day across six observation intervals.

Weighted data showed that nighttime belt use did not significantly improve in Gastonia during the intervention periods in Asheville and Greenville. Instead, statistically significant decreases were measured over the course of Wave 3 (-3.0 percentage points; p<.01) and Wave 4 (-2.2 percentage points; p<.05). Decreases in belt use were expected given that no program activities were conducted during this period in Gastonia and belt use typically declines after the May CIOT program. Decreases in nighttime belt use were not obtained in the test communities over any of the program waves.

**TABLE 17. Gastonia (Comparison) vs. Asheville & Greenville (Test):
Pre and Post Belt Use Rates (Weighted)**

C=Comparison T=Test	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	dif.
C-GASTONIA										
Nighttime (N=13,520)	73.2%	75.1%	+1.9		83.5%	80.5%	-3.0^a	87.6%	85.4%	-2.2^b
Daytime (N=35,411)	80.9%	80.6%	-0.3		83.2%	83.1%	-0.1	84.7%	84.7%	0.0
T-ASHEVILLE										
Nighttime (N=16,490)	85.6%	87.5%	+1.9^b		86.3%	89.5%	+3.2^a	83.4%	92.5%	+9.1^a
Daytime (N=43,292)	86.3%	88.4%	+2.1^a		89.2%	88.5%	-0.7	89.0%	89.4%	+0.4
T-GREENVILLE										
Nighttime (N=21,729)	83.4%	84.6%	+1.2		86.2%	87.6%	+1.4	86.8%	87.1%	+0.3
Daytime (N=47,419)	89.6%	89.0%	-0.6		89.2%	90.6%	+1.4^a	89.8%	89.9%	+0.1

^aBinary Logistic Regression; Statistically Significant at p<.01

^bBinary Logistic Regression; Statistically Significant at p<.05

There were no enforcement initiatives in Gastonia that coincided with the demonstration program waves in Asheville or Greenville, however nighttime enforcement occurred in Gastonia at times in-between this project's intervention waves, and observation surveys showed that large increases in belt use occurred at times between waves. Gastonia participated in large statewide *Booze It & Lose It* crackdowns throughout the program year. Asheville Police Department and the Greenville Police Departments also participated in *Booze It & Lose It* crackdowns in year 2007 but not during the intervention waves. *Booze It & Lose It* crackdowns in 2007 included grant-funded HVE checkpoints and saturation patrols principally focused on drinking and driving during holiday periods throughout the year. Program enforcement was typically supported with earned media; paid media was used both Statewide and nationally around the Labor Day holiday period. Nighttime HVE efforts may have resulted in increases in belt use measured in Gastonia prior to Wave 3 and Wave 4. Information from law enforcement officials in Gastonia and statistics from the North Carolina Governor's Highway Safety Program suggest that high levels of enforcement activity both Statewide and in Gaston County (includes city of Gastonia) took place at that time of year.

The Fourth of July Statewide crackdown, *Operation Firecracker*, preceded the pre-Wave 3 observations in Gastonia. During that time law enforcement officers reported working 58 special checkpoint/saturation events over a period of 11 days/nights (June 28-July 8). The effort in Gaston County yielded 27 arrests for DWI and 152 belt tickets. Statewide, 6,173 checkpoints/saturation patrols were reported, 2,129 DWI arrests were made, and 8,334 seat belt citations were issued. This effort appeared to be larger than any single program enforcement wave in this study's test communities.

The Statewide *Halloween Booze It & Lose It* crackdown immediately preceded the pre-Wave 4 observation survey and lasted 6 days/nights (Oct. 26-31, 2007). Gaston County enforcement included 6 special checkpoint/saturation events that yielded 3 DWI arrests, but no occupant restraint charges. Efforts across the State included 2,399 checkpoints/saturation patrols, 900 DWI arrests, and 2,493 seat belt citations.

These enforcement data confirmed that large enforcement efforts occurred in Gastonia and across the State of North Carolina in-between this study's demonstration waves. Observation surveys of belt use suggested these large enforcement efforts, focused principally at nighttime and on alcohol use may have

affected belt use rates in the comparison location. Even in the absence of paid media, significant increases in belt use at nighttime occurred when enforcement supported with earned media was present.

Wheeling

Twenty-five observation survey sites within the city limits of Wheeling were used at both day and night for comparison with Charleston. Observers in Wheeling collected belt use data on 15,699 front seat occupants at nighttime and 39,576 at daytime across six observation periods.

There were no enforcement initiatives in Wheeling that coincided with the demonstration program waves in Charleston. Nighttime enforcement did occur in Wheeling specifically surrounding the Fourth of July holiday period.

There were no significant improvements in belt use in Wheeling at day or night during the test site intervention waves. There were however a number of statistically significant decreases at both night and day. This was expected given the absence of any program activities during program waves.

Wheeling law enforcement officials confirmed that high levels of grant-funded overtime enforcement activity occurred during a three week period surrounding the 4th of July holiday period. The Wheeling Police Department and the Ohio County Sheriff’s Office began implementing a speed reduction and aggressive driving enforcement effort and a DWI enforcement effort on June 22, 2007. These enforcement efforts concluded on July 7, 2007. The timing of these efforts was just prior to the Wave 3 effort in Charleston and just prior to pre-wave observation surveys in Wheeling.

The Wheeling Police Department and the surrounding Ohio County Sheriff’s Department conducted 327 overtime hours of speed enforcement and 151 hours of DWI overtime enforcement. During that time, 456 speeding citations were issued, 6 DWI arrests were made and 34 seat belt citations were issued. Paid media did not support the enforcement effort but rather an earned media effort was carried out at the local level. Newspapers were said to have printed articles on the crackdown and two television stations publicized the crackdown throughout the holiday period with video of law enforcement units on a local roadway. The earned media message informed the public that increased law enforcement were working the local roadways during the 4th of July holiday period. Several days after the crackdown ended, another media release was issued with the results of the increased patrols. This information confirmed that a large enforcement effort took place prior to Wave 3 and that could have contributed to the higher use rate observed in Wheeling just before that wave period.

**TABLE 18. Wheeling (Comparison) vs. Charleston (Test);
Pre and Post Belt Use Rates (Weighted)**

C=Comparison T=Test	Wave 1			Wave 2 (CIOT)	Wave 3			Wave 4		
	Pre	Post	dif.		Pre	Post	dif.	Pre	Post	Dif.
C-WHEELING										
Nighttime (N=15,699)	64.5%	60.6%	-3.9^a		69.8%	67.4%	-2.4^b	68.9%	67.7%	-1.2
Daytime (N=39,576)	68.0%	68.5%	+0.5		74.7%	72.4%	-2.3^a	72.9%	70.6%	-2.3^a
T-CHARLESTON										
Nighttime (N=12,327)	58.4%	61.8%	+3.4^b		66.1%	70.2%	+4.1^a	64.5%	60.2%	-4.3^a
Daytime (N=35,442)	72.7%	72.7%	0.0		78.4%	74.7%	-3.7^a	71.0%	71.9%	+0.9

^aBinary Logistic Regression; Statistically Significant at p<.01

^bBinary Logistic Regression; Statistically Significant at p<.05

Comparison of Enforcement Tactics Used at Night

Which enforcement tactic had the greatest impact on the nighttime belt use rate? The answer is checkpoint enforcement.

Both Asheville and Charleston used checkpoint style enforcement. Belt use improved at night across all three program waves in Asheville. Increases were found among drivers and passengers, at early and late night hours, and on all road types. Most of the increases were statistically significant. It is worth noting that those “needing” improvement the most in Asheville increased the most. The checkpoint tactic in this primary law location proved to work well for improving belt use among the highest risk and lowest use occupants (i.e., males; occupants in pickup trucks; passengers; late night travelers).

Charleston likewise obtained an increase in overall nighttime belt use for program Waves 1 and 3 that was statistically significant. Wave 4 results were more complicated. On the one hand, data giving each observation site equal weight resulted in an overall decrease in nighttime belt use for Wave 4. Closer examination of site-by-site survey data revealed that a handful of sites, with very few observations, pulled the overall weighted average down. The raw data presented a more positive picture in which nighttime belt use improved across all data characteristics in the Wave 4 data, with the difference being statistically significant for all occupants combined. Improvements also occurred across almost all data characteristics in Waves 1 and 3, although only in Wave 1 did those improvements show statistical significance. The results in Charleston were encouraging given that this study site worked within the confines of a secondary seat belt law.

Greenville used an enforcement tactic resembling a saturation patrol, with seat belt violations the principal focus, and making use of artificial lighting (i.e., light towers) where necessary. Very little, if any, improvement in nighttime belt use was measured.

Overall, the evidence suggests that Greenville’s program was less effective in improving belt use compared to programs in Asheville and Charleston.

Demonstration Program Awareness

Awareness surveys were conducted before and after each enforcement and media wave. Pre and post telephone surveys were planned for all program waves, but that did not happen. As stated earlier, delay in completing administrative procedures internal to the government precluded administration of a baseline telephone survey prior to Wave 1. Instead, a pen and paper awareness survey organized under short notice was conducted surrounding Wave 1 by local DMV DL branch offices. Pre and post telephone surveys were conducted starting with a post Wave 1 survey and continuing throughout the remainder of the project. Due to the close proximity of Waves 3 and 4 in Asheville, a single telephone survey wave served as both the post Wave 3 measure and pre Wave 4 measure.

Pre- intervention and post intervention survey data were compared for each intervention wave and tested for statistical significance using the chi-square test for significance.

Awareness of Special Seat Belt Effort

Respondents were asked if in the past 30 days they had seen or heard of any special effort by police to ticket drivers for seat belt violations. Statistically significant increases in awareness were measured in Asheville across Waves 1 and 2 (+16 and +10 percentage points, respectively) but not Waves 3 and 4. Survey data collected in Greenville also showed statistically significant increases across Waves 1 and 2 (+18 and +12 percentage points, respectively) but not in the subsequent waves.

Statistically significant increases were measured in Charleston for Wave 1 (+14 percentage points), Wave 2 (+25 percentage points), and Wave 4 (+14 percentage points) and a statistically significant decrease for Wave 3 (-7 percentage points). Paid media expenditures in Wave 3 were less than one-quarter of Wave 1

media expenditures, and less than one-third of Wave 4 media expenditures. A majority of what was spent for Wave 3 went towards radio.

Table 19. Aware of Special Seat Belt Effort in the Past 30 Days

		Wave 1			dif. (DL)	Wave 2 (CIOT)			dif.	Wave 3			dif.	Wave 4		
		Pre ¹ (DL)	Post ¹ (DL)	Post		Pre	Post	Pre		Post	Pre	Post		dif.		
Asheville	% (N)	37.6 (338)	53.6 (250)	42.4 (415)	+16^a	26.2 (420)	36.0 (419)	+10^a	33.7 (418)	34.4 (418)	+1	34.4 (418)	33.2 (416)	-1		
Greenville	% (N)	34.3 (108)	52.7 (220)	35.4 (418)	+18^a	27.9 (423)	40.4 (421)	+12^a	41.1 (416)	42.4 (420)	+1	40.3 (414)	42.5 (416)	+2		
Charleston	% (N)	32.2 (320)	46.6 (290)	35.6 (416)	+14^a	32.4 (414)	57.6 (415)	+25^a	43.6 (413)	36.5 (416)	-7^b	27.5 (411)	41.2 (417)	+14^a		

¹Surveys collected from motorists doing business in DMV DL Offices; all other awareness surveys conducted by telephone.

^aChi-Square Test; Statistically Significant at p<.01

^bChi-Square Test; Statistically Significant at p<.05

Perception of Enforcement

The telephone survey asked respondents if they agreed or not with the statement that police in the community were writing tickets for seat belt violations they see at night. The DMV DL survey asked a similar question, how strictly did they think the police were enforcing the seat belt law.

Some small pre-to-post increases in perceived enforcement activity were measured among Asheville respondents (Waves 1, 2 and 3), but none of these differences proved to be statistically significant. Positive increases were measured across all waves in Greenville. The differences in Waves 2 and 3 were statistically significant. Positive increases were measured for all waves in Charleston, but only differences measured in Wave 2 (+7 percentage points) and Wave 4 (+11 percentage points) were statistically significant. Perception of police stopping and ticketing for a belt violation was uniformly lower in Charleston (secondary enforcement law) compared to Asheville and Greenville (both primary enforcement law).

Table 20. "Strongly Agree" Police are Writing Seat Belt Tickets at Night

		Wave 1 ¹			dif. (DL)	Wave 2 (CIOT)			dif.	Wave 3			dif.	Wave 4		
		Pre ² (DL)	Post ² (DL)	Post		Pre	Post	Pre		Post	Pre	Post		dif.		
Asheville	% (N)	32.7 (355)	34.1 (261)	34.0 (415)	+1	32.9 (420)	37.0 (419)	+4	27.0 (418)	31.1 (418)	+4	31.1 (418)	29.6 (416)	-2		
Greenville	% (N)	24.8 (113)	33.3 (243)	32.3 (418)	+9	32.6 (423)	41.3 (421)	+9^a	29.6 (416)	36.4 (420)	+7^b	37.0 (414)	39.4 (416)	+2		
Charleston	% (N)	17.1 (362)	18.5 (329)	19.2 (416)	+1	21.7 (414)	28.4 (415)	+7^b	26.4 (413)	30.0 (416)	+4	16.3 (411)	27.6 (417)	+11^a		

¹DL office survey questionnaire included different question – Thinks the seat belt law is enforced "very strictly" at night.

²Surveys collected from motorists doing business in DMV DL Offices; all other awareness surveys conducted by telephone.

^aChi-Square Test; Statistically Significant at p<.01

^bChi-Square Test; Statistically Significant at p<.05

Telephone survey respondents were asked about the chances of being ticketed if a driver was not wearing a seat belt at all while driving over the next 6 months; a similar question was not asked in the DMV DL survey. As such, comparisons were made only for the waves in which pre and post telephone survey results could be compared (Waves 2, 3, and 4). No significant increases or decreases were found among

Asheville respondents who reported it was “very likely” to be ticketed if unbelted at night. No significant improvements were found in Greenville, but rather a statistically significant decrease (-8 percentage points) was measured immediately after Wave 3. Charleston posted the only statistically significant increase (+9 percentage points) and that was for Wave 2, around the time of the CIOT Mobilization.

Table 21. “Very Likely” to be Ticketed if Unbelted

		Wave 1			dif. (DL)	Wave 2 (CIOT)			dif.	Wave 3			dif.	Wave 4		
		Pre ¹ (DL)	Post ¹ (DL)	Post		Pre	Post	Pre		Post	Pre	Post		Post		
Asheville	% (N)	NA	NA	41.6 (370)	NA	44.9 (363)	45.8 (349)	+1	43.4 (362)	42.1 (368)	-1	42.1 (368)	38.8 (353)	-3		
Greenville	% (N)	NA	NA	55.2 (364)	NA	55.3 (365)	58.3 (357)	+3	56.7 (360)	48.3 (362)	-8^b	53.8 (368)	50.8 (364)	-3		
Charleston	% (N)	NA	NA	26.6 (357)	NA	31.5 (375)	40.2 (376)	+9^b	33.4 (353)	32.0 (356)	-1	33.9 (357)	29.1 (358)	-5		

¹DMV DL office survey questionnaire did not include this question

^aChi-Square Test; Statistically Significant at p<.01

^bChi-Square Test; Statistically Significant at p<.05

Telephone survey respondents were also asked if the chances of being stopped by police for drinking and driving had changed in the past month. Comparisons were made for waves in which pre and post telephone survey data were available (Waves 2, 3, and 4). Significant pre-to-post increases were measured in two of the three test communities at the end of Wave 4, Greenville (+11 percentage points) and Charleston (+14 percentage points).

Table 22. “More Likely” to be Stopped if Drinking and Driving

		Wave 1			Dif. (DL)	Wave 2 (CIOT)			Dif.	Wave 3			Dif.	Wave 4		
		Pre ¹ (DL)	Post ¹ (DL)	Post		Pre	Post	Pre		Post	Pre	Post		Post		
Asheville	% (N)	NA	NA	27.7 (415)	NA	21.9 (420)	26.3 (419)	+4	26.3 (419)	28.5 (418)	+2	28.5 (418)	29.6 (416)	+1		
Greenville	% (N)	NA	NA	33.5 (418)	NA	25.5 (423)	30.9 (421)	+5	37.0 (416)	33.6 (420)	-3	34.5 (414)	45.2 (416)	+11^a		
Charleston	% (N)	NA	NA	22.1 (416)	NA	24.2 (414)	29.6 (415)	+5	32.0 (413)	31.2 (416)	-1	24.8 (411)	39.1 (417)	+14^a		

¹DMV DL office survey questionnaire did not include this question

^aChi-Square Test; Statistically Significant at p<.01

^bChi-Square Test; Statistically Significant at p<.05

In summary, the survey results indicated that the largest increases in awareness of a special seat belt ticketing effort by law enforcement were achieved in Wave 1 and Wave 2 (CIOT Wave). In Asheville and Greenville, increases in awareness leveled off after Wave 2. In Charleston, a significant decrease in Wave 3 occurred. Wave 3 was designated as an intervention period where low cost media (cable and radio) were used. Network television was reinserted in Charleston’s Wave 4 purchase plan and awareness improved again. Perceived risk of a ticket for a belt violation did not improve in any regular fashion over the course of the demonstration program waves.

V. ALCOHOL-RELATED INFORMATION: ASHEVILLE, NC

This study addressed the question can a nighttime belt enforcement program also deter alcohol-impaired driving? To answer this question, two types of data were collected and analyzed. First, drivers were randomly sampled in Asheville and asked to submit to a blind, anonymous breath test (BAC) at roadside. The proportion of positive BAC drivers was determined and pre-to-post differences were estimated per wave. Chi-square analysis was used, where number of observations was sufficient, to determine if observed differences were statistically significant. Second, single vehicle crashes at night was used as a surrogate measure for alcohol-related crashes. State and local crash records usually are less than reliable for identifying if a crash incident was alcohol-related. Single vehicle nighttime crashes disproportionately involve alcohol. Therefore this type of crash is expected to increase or decrease as drinking driving increases or decreases, making it an acceptable surrogate for alcohol use. Counting crashes of this type by month added supplementary evidence for determining if the program in Asheville was associated with a decrease in alcohol-impaired driving.

Roadside BAC

BAC data were obtained from Asheville drivers in five intervals. Each interval consisted of a Thursday thru Saturday night period. Every night of each interval there was a four hour checkpoint (10:00 p.m.- 2:00 a.m.) used for BAC data collection. A different roadside location was used for BAC data collection each night. Days of week, time and location were held constant across all data collection intervals. In other words, the same checkpoint location, day of week, and time of day were used throughout the study.

BAC data collected at roadside in Asheville are summarized in Table 23. Note, post-Wave 3 and pre-Wave 4 results are one and the same due to timing of Waves 3 and 4 and availability of the law enforcement officers to assist data collection. Across all five intervals, breath tests were requested from 3,613 drivers; 3,139 provided a BAC sample (87%), 474 refused (13%). Participation rates ranged from 85 percent to 92 percent across waves.

Positive BACs decreased from 16 percent to 11 percent surrounding Wave 1, stayed level at 14 percent surrounding Wave 3; and decreased again from 14 percent to 10 percent surrounding Wave 4. The decreases surrounding Wave 1 and Wave 4 were statistically significant, both at $p < .05$.

BAC levels greater than .049 decreased from 6 percent to 4 percent surrounding Wave 1, and from 4 percent to 3 percent surrounding Wave 3 where it remained at 3 percent for the duration of the program period. BAC levels greater than .079 involved only 1 percent to 3 percent of the sample. Positive BACs below .05 accounted for most positive BACs, and most of the percentage decrease in Waves 1 and 4.

Table 23. Asheville: Driver BAC at Roadside

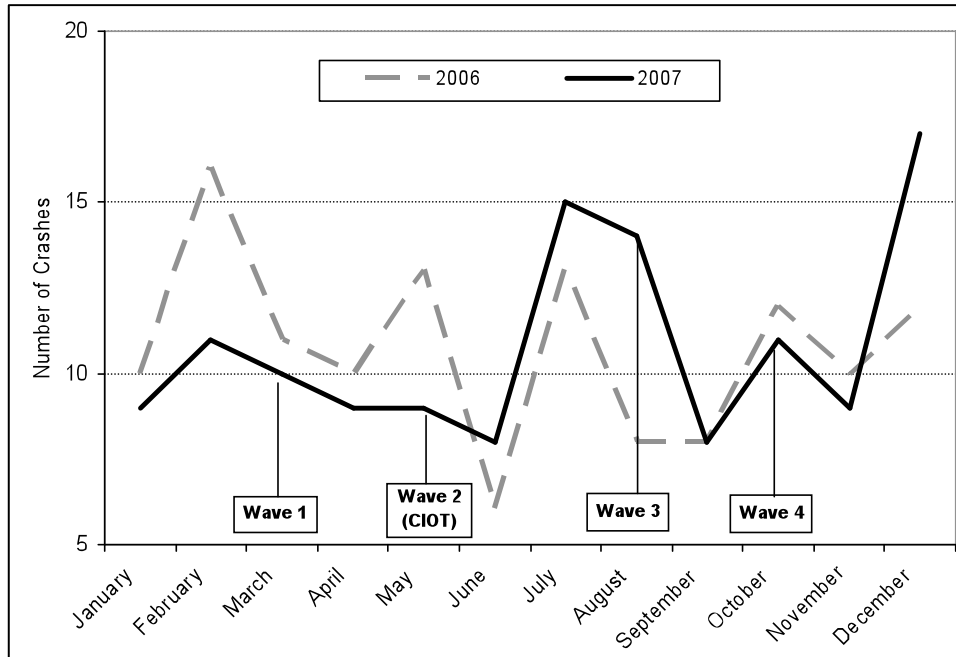
	Wave 1 Pre	Wave 1 Post	dif.	Wave 2 CIOT	Wave 3 Pre	Wave 3 Post	dif.	Wave 4 Pre	Wave 4 Post	dif.
Drivers Asked to Participate	537	756			849	767		767	704	
Number Tested	496	668			724	652		652	599	
BAC > .0	78	72			99	91		91	59	
BAC > .049	29	30			26	22		22	17	
BAC > .079	9	19			12	11		11	6	
Percent Tested	92%	88%			85%	85%		85%	85%	
Percent Refused	8%	12%			15%	15%		15%	15%	
Percent BAC > .0	16%	11%	-5 ^a		14%	14%	0	14%	10%	-4 ^a
Percent BAC > .049	6%	4%	-2		4%	3%	-1	3%	3%	0
Percent BAC > .079	2%	3%	+1		2%	2%	0	2%	1%	-1

^aChi-square Test; Statistically Significant at $p < .05$

Single Vehicle Crashes at Night

Only the city of Asheville, North Carolina provided crash data at the time of this report. Single vehicle crashes at night (12:00 a.m. to 5:00 a.m.) served as a surrogate measure for alcohol use. Late night single vehicle crashes appeared to decrease during the one month subsequent to each program wave. After that, decreases ceased until the next program wave. Statistical tests were not run due to the short time frame covered by the data and the small number of crashes.

Figure 4. Single Vehicle Crashes at Late Night Hours (12:00 a.m. to 5:00 a.m.): 2006 vs. 2007
Source: Asheville Police Department



In summary, the BAC test results showed a decrease in positive BACs corresponding with intervention Waves 1 and 4. The crash data, though based on very small numbers and using a surrogate measure for alcohol use, was also in the desired direction. These results suggest a dual positive outcome both for belts and for alcohol from the Asheville program.

VI. DISCUSSION

This study addressed a number of questions concerned with improving seat belt use at night. First and foremost, can seat belt use be improved using high visibility enforcement during nighttime hours? Three test sites demonstrated nighttime HVE approaches for improving belt use. All three test sites used enforcement and paid media. All three found that improvements in belt use can be made at night.

Observation survey results helped to answer a second study question; does type of enforcement tactic make a difference? The answer was yes. Positive improvements were found in both test sites that used checkpoint style enforcement. Asheville conducted seat belt checkpoints in a primary law environment. This effort improved overall belt use at night and appeared able to reach and change belt use behavior among the high risk occupants (males, pickup truck occupants, late night travelers). Improvements in belt use were also obtained in Charleston, where the enforcement tactic, safety enforcement zones, had to fit within the limitations of a secondary law for seat belts.

Greenville conducted a saturation patrol type of enforcement where portable light towers were used to help officers spot belt violators among passing occupants. There was only slight improvement in the night belt use rate.

A third question this study addressed was does a nighttime enforcement program also deter alcohol-impaired driving? Positive BACs decreased over the course of the intervention waves in Asheville, suggesting that the night belt program activities in Asheville also reduced drinking and driving in Asheville. That is, night belt use checkpoints can reduce drinking and driving (Asheville).

Even though night enforcement often resulted in additional law enforcement work, LEAs stuck to their intervention plan. Overtime and equipment grant incentives worked to keep LEA participation largely intact and focused throughout the entire program period. Although number of hours of enforcement officer participation lessened over the course of subsequent waves, that did not appear to affect the number of nightly enforcement events planned for this demonstration effort. LEA contacts reported that some officer burnout occurred and that the 10 day enforcement periods were longer than necessary for reaching motorists with an enforcement-centered message. All three locations suggested shorter and perhaps more frequent enforcement periods to prevent officer fatigue, especially at times of year when various program efforts are scheduled close in time to one another. Some LEA contacts believed that the program could be done with as few as five-nights of high visibility enforcement and still be effective. More efficient HVE models should be tested at night. Shorter programs may help to avoid officer fatigue and may also save both media and enforcement resources.

It is generally accepted that adequate paid media in support of real enforcement improves seat belt usage. The question remains how much paid media is necessary in support of the enforcement? The present study provides at best an imperfect test of media strength. Amounts of paid media were varied between waves. The greatest amount of dollars was spent on making a “big splash” for Wave 1. The smallest amount was spent for lower cost media in Wave 3. Results from this study showed little or no consistent relationship between amount of dollars spent on paid media and awareness, risk perception or change in belt use behavior. Perhaps, by the time of Wave 3, each of these communities had been sensitized to the fact that enforcement was being done and that it was intensive. Paid media never went to zero on any wave.

It is concluded that night belt use publicity and enforcement efforts can be effective both for increasing belt use and decreasing drinking and driving. NHTSA, the States, and local law enforcement agencies should consider supporting such programs.

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APPENDICES

Appendix A. Television Advertisement Storyboard

TITLE: Not Invisible

LENGTH: :30

REV: YES

CLEINT: NHAH

JOB NO.:NHAH-19862

DATE: February 20, 2007

THE TOMBRAS GROUP
STREET SMART ADVERTISING



video:

OPEN ON FOOTSTEPS TO A CAR PARKED IN A DRIVEWAY AT NIGHT.

A KEY OPENS THE CAR DOOR — BUT THERE IS NO ONE HOLDING IT. THE CAR DOOR OPENS AND CLOSES. THE KEY IS INSERTED INTO THE IGNITION.



THE CAR SHIFTS INTO DRIVE AND PULLS OUT WITH NO DRIVER.

THE CAR IS DRIVING ALONG AND IT COMES ON A TRAFFIC ROADBLOCK.



A COP APPROACHES THE CAR AND THE DRIVER MATERIALIZES BEFORE OUR EYES.



THE DRIVER BUCKLES UP AS THE POLICE OFFICER WRITES A TICKET.



CAMERA PULLS OUT TO SHOW SEVERAL SHOTS OF A ROADBLOCK SCENE.

audio:

SFX: FOOTSTEPS.
KEYS JINGLING.

SFX: MAGICAL SOUND

VO: YOU MIGHT THINK IT'S HARD FOR COPS TO SEE YOU AT NIGHT...

...BUT IF YOU DON'T BUCKLE UP, WE WILL FIND YOU.

COPS ARE CRACKING DOWN LIKE NEVER BEFORE.

PAGE 1

Appendix A. Television Advertisement Storyboard (Continued)

TITLE: Not Invisible

CLEINT: NHAH

LENGTH: :30

JOB NO.:NHAH-19862

REV: Original

DATE: February 14, 2007

THE TOMBRAS GROUP
STREET SMART ADVERTISING



video:

WIDE SHOT OF ROAD BLOCK
(OR TRAFFIC STOP POINT)



CUT TO CLICK IT OR TICKET LOGO
WITH LIGHT BEAM ACROSS IT AS IF
IT WERE NIGHT



audio:

BUCKLE UP DAY AND NIGHT...

OR PAY THE PRICE.

CLICK IT OR TICKET.

PAGE 2

Appendix A. Radio Script



Client: NHTSA

Job No.:

Campaign: Night Time CIOT

“They’re out there”

:30 radio

OPEN ON OMINOUS MUSIC AND NIGHTS SOUNDS.

They’re out there at night ... watching ... looking to make sure

TENSION BUILDS AND THEN – SILENCE AS HE READS THE PAYOFF.

... your seat belt is buckled.

TOUGH MUSIC KICKS IN.

Cops are cracking down on seat belt violations like never before. It doesn’t matter if it’s broad daylight or in the dark of night, they’re on the lookout. Buckle up every time you get into a vehicle or you will get a ticket.

CUT BACK TO OMINOUS MUSIC AND NIGHT SOUNDS.

Remember, they’re out there watching.

TOUGH MUSIC KICKS IN.

So buckle up day *and* night ... or pay the price. *Click It or Ticket.*

Brought to you by the U.S. Department of Transportation.

Appendix A. Earned Media Samples

ASHEVILLE NIGHTTIME PLANNER SAMPLE NEWS RELEASE

FOR IMMEDIATE RELEASE: Date

CONTACT: Name, Phone Number, E-mail address



Asheville Police Department Launches Nighttime Seat Belt Enforcement Blitz to Help Save Lives.

Special Safety Belt Checkpoints Begin Mid-March.

[City, State] – In a special effort to save more lives on local roadways, Asheville has been selected by the National Highway Traffic Safety Administration (NHTSA) as one of three cities in America to develop a special nighttime seat belt enforcement project—focused on getting all drivers and passengers to buckle up, day and night.

According to NHTSA, 53 percent of those killed in nighttime motor vehicle crashes in North Carolina in 2005 were not wearing their seat belts at the time of the crash. That percentage is considerably higher than the 39 percent of motorists who were unrestrained and killed during daytime hours.

That's why the Asheville Police Department announced today that they are joining together with NHTSA to launch a special national demonstration project to find ways to convince more drivers and passengers of the importance of always buckling up day and night. Starting March 14th, special safety belt checkpoints will be set up across the city at night to catch seat belt violators. Anyone who is caught not wearing a seat belt will be ticketed and fined—no excuses.

“Clearly more drivers at night than during the day are taking the attitude that it will never happen to me. But the risk of a fatal crash actually goes up at night,” Asheville Police Chief Bill Hogan said. “That’s why beginning this March and throughout the year, we’re buckling down to make sure that *all* passengers, in all vehicles, are buckled up—day and night.”

Chief Hogan said not only is wearing your seat belt at all times the law, but regular seat belt use is the single most effective way to protect people and reduce fatalities in motor vehicle crashes—seventy-five percent of passenger vehicle occupants in a serious crash that are buckled up, survive the crash.

But too many motorists at night ignore these facts. In 2005, 522 people killed in fatal motor vehicle crashes in North Carolina were not wearing their seat belts at the time of the crash. Of this total, 291 of the unbelted fatalities took place between the hours of 6:00 p.m.-5:59 a.m.

“Seat belts clearly save lives. But unfortunately, too many folks in our area still need a tough reminder, so we are going to be out in force buckling down on those who are not buckled up.” said Chief Hogan. “Wearing your seat belt costs you nothing, but the cost for not wearing it certainly will. So unless you want to risk a ticket, or worse - your life, please remember to buckle up day and night—*Click It or Ticket.*”

For more information, please visit www.buckleupamerica.org.

Appendix A. Earned Media Samples

ASHEVILLE NIGHTTIME PLANNER SAMPLE OpEd 439 WORDS

Asheville Police Department Launches Nighttime Seat Belt Enforcement Blitz to Help Save Lives.



In a special effort to save more lives on local roadways, Asheville has been selected by the National Highway Traffic Safety Administration (NHTSA) as one of three cities in America to develop a special nighttime seat belt enforcement project—focused on getting all drivers and passengers to buckle up, day and night.

According to NHTSA, 53 percent of those killed in nighttime motor vehicle crashes in North Carolina in 2005 were not wearing their seat belts at the time of the crash. That percentage is considerably higher than the 39 percent of motorists who were unrestrained and killed during daytime hours.

That's why the Asheville Police Department is joining together with NHTSA to launch a special national demonstration project to find ways to convince more drivers and passengers of the importance of always buckling up day and night. Starting March 14th, special safety belt checkpoints will be set up across the city at night to catch seat belt violators. Anyone who is caught not wearing a seat belt will be ticketed and fined—no excuses.

Clearly more drivers at night than during the day are taking the attitude that it will never happen to me. But the risk of a fatal crash actually goes up at night. That's why beginning this March and throughout the year, the Asheville PD will be buckling down to make sure that *all* passengers, in all vehicles, are buckled up—day and night.

Not only is wearing your seat belt at all times the law, but regular seat belt use is the single most effective way to protect people and reduce fatalities in motor vehicle crashes—seventy-five percent of passenger vehicle occupants in a serious crash that are buckled up, survive the crash.

But too many motorists at night ignore these facts. In 2005, 522 people killed in fatal motor vehicle crashes in North Carolina were not wearing their seat belts at the time of the crash. Of this total, 291 of the unbelted fatalities took place between the hours of 6:00 p.m.-5:59 a.m.

Seat belts clearly save lives. But unfortunately, too many folks in our area still need a tough reminder, so this March, police officers are going to be out in force buckling down on those who are not buckled up.

Wearing your seat belt costs you nothing, but the cost for not wearing it certainly will. So unless you want to risk a ticket, or worse - your life, please remember to buckle up day and night—“*Click It or Ticket.*”

For more information, please visit www.buckleupamerica.org.

Appendix A. Earned Media Samples

ASHEVILLE NIGHTTIME PLANNER SAMPLE LETTER TO THE EDITOR 324 WORDS



Dear Editor:

In a special effort to save more lives on local roadways, Asheville has been selected by the National Highway Traffic Safety Administration (NHTSA) as one of three cities in America to develop a special nighttime seat belt enforcement project—focused on getting all drivers and passengers to buckle up, day and night.

According to NHTSA, 53 percent of those killed in nighttime motor vehicle crashes in North Carolina in 2005 were not wearing their seat belts at the time of the crash. That percentage is considerably higher than the 39 percent of motorists who were unrestrained and killed during daytime hours.

That's why the Asheville Police Department is joining with NHTSA to launch a special national demonstration project to find ways to convince more drivers and their passengers of the importance of always buckling up day and night. Starting March 14th, special safety belt checkpoints will be set up across the city at night to catch seat belt violators. Anyone who is caught not wearing a seat belt will be ticketed and fined—no excuses.

Not only is wearing your seat belt at all times the law, regular seat belt use is the single most effective way to protect people and reduce fatalities in motor vehicle crashes—seventy-five percent of passenger vehicle occupants in a serious crash that are buckled up, survive the crash.

But too many motorists at night ignore these facts. In 2005, 522 people killed in fatal motor vehicle crashes in North Carolina were not wearing their seat belts at the time of the crash. Of this total, 291 of the fatalities took place between the hours of 6:00 p.m.-5:59 a.m. alone.

Wearing your seat belt costs you nothing, but the cost for not wearing it certainly will. So unless you want to risk a ticket, or worse - your life, please remember to buckle up day and night—“*Click It or Ticket.*”

For more information, please visit www.buckleupamerica.org.

Appendix A. Earned Media Samples

ASHEVILLE NIGHTTIME PLANNER SAMPLE FACT SHEET & TALKING POINTS



Asheville Intensifies Efforts to Boost Nighttime Seat Belt Use— And to Save Lives.

- In a special effort to save more lives on local roadways, Asheville has been selected by the National Highway Traffic Safety Administration (NHTSA) as one of three cities in America to develop a special nighttime seat belt enforcement project—focused on getting all drivers and passengers to buckle up, day and night.
- According to NHTSA, 53 percent of those killed in nighttime motor vehicle crashes in North Carolina in 2005 were not wearing their seat belts at the time of the crash. That percentage is considerably higher than the 39 percent of motorists who were unrestrained and killed during daytime hours.
- In 2005, 522 people killed in fatal motor vehicle crashes in North Carolina were not wearing their seat belts at the time of the crash. Of this total, 291 of the unbelted fatalities took place between the hours of 6:00 p.m.-5:59 a.m.
- Regular seat belt use is the single most effective way to protect people and reduce fatalities in motor vehicle crashes.
- Nationally in 2005, 77 percent of the passenger vehicle occupants who were in a fatal crash and who were buckled up, survived the crash.
- Yet nearly one in five Americans (19 percent nationally) still fail to regularly wear their seat belts when driving or riding in a motor vehicle.

Drivers at Night, Young Males, Pickup Truck Occupants and Rural Drivers Are Those Least Likely to Buckle Up and at Greatest Risk

- Men – especially younger men – are much less likely to buckle up. In 2005, 67 percent of male drivers and 74 percent of male passengers between the ages of 18 and 34 who were killed in crashes were NOT wearing their seat belts.
- According to NHTSA, pickup truck drivers and passengers, particularly among young males, consistently have the lowest seat belt usage rates of all motorists.
- In 2006, the observed seat belt use rate in pickup trucks was only 74 percent compared to 82 percent in passenger cars and 84 percent in vans and SUVs.
- This lack of seat belt use is deadly. In 2005, 68 percent of pickup truck drivers and 71 percent of pickup truck passengers who were killed in traffic crashes were not buckled up.
- One of the deadliest outcomes in any vehicle crash occurs when passengers get ejected from the vehicle – with most ejections coming from failure to wear seat belts.

Appendix A. Earned Media Samples

- In fact, 75 percent of passenger vehicle occupants who were totally ejected from their vehicle in 2005 were killed. But only 1 in 100 drivers and passengers in fatal crashes who were wearing their seat belts were totally ejected.
- The ejection rate for occupants of light trucks involved in fatal crashes is double the rate for passenger car occupants – because pickup trucks roll over twice as often as passenger cars.
- Motorists can increase the odds of survival in a rollover crash in a light truck by nearly 80 percent by wearing their seat belt.
- Americans driving or riding on rural roadways face a much greater risk of being injured or killed in traffic crashes than do those in urban or suburban areas, according to NHTSA.
- Seatbelt use in the Nation’s rural areas consistently trails the national average.
- Nationally, in 2006, only 78 percent of rural drivers and their passengers were observed wearing their seat belts compared to 79 percent for urban motorists and 84 percent among suburban motorists.

No More Excuses – “*Click It or Ticket*”

- Asheville is pleased to be one of three cities launching a special nighttime “*Click It or Ticket*” demonstration project to boost the city’s seat belt use and to reduce fatalities.
- Starting March 14th, special safety belt checkpoints will be set up across the city at night to catch seat belt violators. Anyone who is caught not wearing a seat belt will be ticketed and fined—no excuses.
- The goal is simple: to save more lives by convincing drivers and passengers to always buckle up—day and night.
- Wearing your seat belt costs you nothing, but the cost for not wearing it certainly will. So unless you want to risk a ticket, or worse - your life, please remember to buckle up day and night—“*Click It or Ticket*.”
- For more information, please visit www.BuckleUpAmerica.org.

Appendix B. Law Enforcement Agency – Topical Discussion Guide

DEPARTMENT CHARACTERISTICS

- What is the size of the Department? Is there a traffic unit? Is there a DUI squad? What are the sizes of these units? Are they completely exclusive?

TRAFFIC ENFORCEMENT

- How many times a year does your Department mobilize for specific types of traffic enforcement? What are the Mobilizations and when do they occur? NOTE -Ask about Belt, Alcohol, Speed, and Other types of Mobilizations.
- Overall, what is belt usage like in your community? What is the estimated belt use rate in your community?
- About how many seat belt tickets does your Department issue in a typical month? Are there months in which more or fewer are issued (if yes, ask what the yearly pattern is)?
- About how many DUI arrests does your Department make in a typical month? Are there months in which more or fewer arrests are made (if yes, ask what the yearly pattern is)?

NIGHT-TIME SEAT BELT USE ENFORCEMENT

1. Do officers in your Department issue tickets to motorist not using their seat belt **at night**?
2. Do they do this on a regular basis?
3. Among the total tickets issued for not wearing a seat belt, what is the estimated proportion issued at night?
4. Has your Department ever conducted stepped up enforcement focusing on seat belt use **at night**?

[MAKE DETERMINATION IF DEPARTMENT HAS PARTICIPATED IN NIGHT BELT ENFORCEMENT ACTIVITIES BEFORE.]

NOTE: If yes to bullets 1 and 2 then do MODULE [A]; if yes to bullet 4 then do MODULE [A].

Yes: Use Module [A]

No or in Process: Use Module [B]

Appendix B. Law Enforcement Agency – Topical Discussion Guide

MODULE [A]

- How did your Department’s night belt enforcement activities get started?
- How have officers in your Department gone about enforcing the seat belt use law at night? What worked well and what didn’t?
- Did officers receive any training or special instruction concerning enforcing the seat belt use law at night? If yes, did you consider it valuable? Would you recommend any improvements to the training or instruction?
- **Before** your Department started night-time enforcement of the belt law, were there any **concerns** about doing it? How were these concerns addressed? Did the concerns change over time?
- **Before** your Department started doing night-time enforcement of the belt law, what **challenges/obstacles** were expected? How were these handled? Did your perceptions of challenges/obstacles change after starting night-time enforcement of the belt law. How? Did any unforeseen challenges/obstacles arise?
- Having conducted night-time enforcement of the belt law, what would you say are important conditions for the development of a successful, night-time seat belt enforcement program? Which of the following conditions are important and why -
Physical Resources -
Monetary Resources -
Political Support -
Geography -
Population -
Type of laws -
WHAT ELSE -
- If the necessary conditions are present in a community, then what **program components** would you say are necessary for a **successful program**? [Ask about each]
Leadership –
Staffing –
Equipment –
PI&E –
WHAT ELSE –
- Has there been any reluctance among officers to enforce the seat belt law at night? Why? Any suggestions as to how reluctance can be overcome?
- Looking back on how your Department’s night-time belt activities came about, would you suggest doing anything differently in how your Department approaches night-time belt enforcement?
- What do you see are the benefits and drawbacks for having a night-time belt enforcement program?

BELTS AND ALCOHOL

- Has your Department ever coupled night-time seat belt with DWI enforcement efforts? If yes, how did your Department go about this? Was the combined approach effective? Did it work for both belts and alcohol? What made the combined approach effective or ineffective?

PUBLICITY

- Has your Department publicized night-time enforcement of the belt law? If yes, how so? Stand alone or in combination with something else? Was it effective publicity? Why or why not?
- Have you faced any challenges in publicizing your night-time efforts?

FUTURE

- Are there any future plans at your Department for night belt enforcement?

Appendix B. Law Enforcement Agency – Topical Discussion Guide

MODULE [B]

- Are there any **concerns** in your Department in regards to night-time belt enforcement? If yes, what are they? Have these concerns been addressed? How?
- What do you see as **challenges/obstacles** for conducting night-time belt enforcement? How might these be overcome?
- **[ONLY FOR DEPARTMENTS PLANNING TO CONDUCT NIGHT BELT ENFORCEMENT]** Has your perception of the challenges/obstacles changed since you began planning for the night-time belt enforcement?
- What would you say are the important **conditions** for the development of a successful night-time enforcement program? Which of the following conditions are important and why -
Physical Resources -
Monetary Resources -
Political Support -
Geography -
Population -
Type of laws -
WHAT ELSE -
- If the necessary conditions are present in a community, then what **program components** would you say are necessary for a successful program? Ask about each –
Leadership –
Staffing –
Equipment –
PI&E –
WHAT ELSE -
- Have officers been reluctant to enforce the seat belt law at night? Why? Any suggestions as to how reluctance can be overcome?
- What do you see are the benefits and drawbacks for having a night-time belt enforcement program?

BELTS AND ALCOHOL

- Has your Department ever coupled night-time seat belt with DWI enforcement efforts? If yes, how did your Department go about this? Was the combined approach effective? Did it work for both belts and alcohol? What made the combined approach effective or ineffective?

PUBLICITY

- If a Department is planning for night-time enforcement of the belt law, what do you recommend the Department do to effectively publicize activities?

FUTURE

- Are there any future plans at your Department for night-time belt enforcement?

Appendix C. Sample Law Enforcement Agency Activity Report Form

Nighttime Safety Belt Enforcement Campaign Activity Report

Reporting Location: _Asheville Intervention Period (dates): _October 17-28, 2007

List Participating Law Enforcement Agencies

1.
2.
3.
4.
5.
6.

Nighttime Enforcement Activity this Intervention Period

	Date month/day	Approximate number of officers involved	Approximate number of officer hours	Principle enforcement tactic (checkpoints, zones, spotters, etc.)	Number of checkpoints/zones (if applicable)	Number of safety belt citations issued	Number of DUI arrests	Number of speeding tickets issued
Night 1								
Night 2								
Night 3								
Night 4								
Night 5								
Night 6								
Night 7								
Night 8								
Night 9								
Night 10								
Additional Night(s)								
TOTAL								

Appendix C. Sample Law Enforcement Agency Activity Report Form (Continued)

Nighttime Safety Belt Enforcement Campaign Activity Report (continued)

Nighttime Enforcement Activity this Intervention Period

	Number of suspended licenses cited	Number of uninsured motorists cited	Number of stolen vehicles recovered	Number of fugitives apprehended	Number of drug arrests	Number of other traffic enforcement actions	Other Notables
Night 1							
Night 2							
Night 3							
Night 4							
Night 5							
Night 6							
Night 7							
Night 8							
Night 9							
Night 10							
Additional Night(s)							
TOTAL							

Approximate total* numbers of enforcement actions day and night taken during this reporting period (if number for a category is unknown, mark it "UNK"):

Safety Belt Citations	DWI arrests	Speeding tickets	Suspended licenses	Uninsured motorists	Felony arrests	Recovered stolen vehicles	Fugitives apprehended	Drug arrests	Total other

*This should include all enforcement actions taken, not just those taken at special enforcement operations.

Appendix C. Sample Law Enforcement Agency Activity Report Form (Continued)

Nighttime Safety Belt Enforcement Campaign Activity Report (continued)

Nighttime Safety Belt Enforcement Campaign Earned Media Activity Report

Nighttime Earned Media Activity this Period

of Press conferences citing to nighttime belt enforcement: _____

of TV news stories citing nighttime belt enforcement: _____

of Radio news stories citing nighttime belt enforcement: _____

of Print news stories citing nighttime belt enforcement: _____

Other earned media activity/events citing nighttime belt enforcement (please specify): Press release regarding final project numbers

Name of person submitting this report: _____

Phone: _____ **E-mail:** _____

Appendix D. Telephone Awareness Survey Questions

OMB # 2127-0646

Expiration Date: 6/30/08

DEMO PROJECT: NIGHT BELT ENFORCEMENT Sample for: Asheville, North Carolina

Date: _____ CATI ID: _____
Interviewer: _____
Time Start: _____ Time End: _____ TOTAL TIME: _____

INTRODUCTION

Hello, I'm __ calling for the U.S. Department of Transportation. This is not a sales call. We are conducting a national study of Americans' driving habits and attitudes. The interview is voluntary and the information you provide us will be used for statistical purposes only. We will not collect any personal information that would allow anyone to identify you. The interview takes about 10 minutes to complete. *[Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this information collection is 2127-XXXX]*

DUMMY QUESTION FOR BIRTHDAY QUESTIONS

Has had the most recent.....1
Will have the next.....2

- A. In order to select just one person to interview, could I speak to the person in your household, 18 or older, who (has had the most recent/will have the next) birthday?

Respondent is the person.....1 **SKIP TO Q1**
Other respondent comes to phone.....2
Respondent is not available.....3 **ARRANGE CALLBACK**
Refused.....4

- B. Hello, I'm __ calling for the U.S. Department of Transportation. This is not a sales call. We are conducting a national study of Americans' driving habits and attitudes. The interview is voluntary and the information you provide us will be used for statistical purposes only. We will not collect any personal information that would allow anyone to identify you. The interview takes about 10 minutes to complete. *[Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this information collection is 2127-0615].*

CONTINUE INTERVIEW.....1
Arrange Callback.....2
Refused.....3

- Q.1 How often do you drive a motor vehicle? Almost every day, a few days a week, a few days a month, a few days a year, or do you never drive?

Almost every day.....1
Few days a week.....2
Few days a month.....3
Few days a year.....4
Never.....5 **SKIP TO Q11**
Other (SPECIFY)6
(VOL) Don't know.....7
(VOL) Refused.....8

NHTSA1010

Appendix D. Telephone Awareness Survey Questions (Continued)

Q.2 How often do you drive a motor vehicle at night, after 9:00 pm? Do you drive at night almost every day, a few days a week, a few days a month, a few days a year, or do you never drive after 9:00 at night?

- Almost every day.....1
- Few days a week.....2
- Few days a month.....3
- Few days a year.....4
- Never.....10
- Other.....11
- (SPECIFY)_____
- (VOL) Don't know.....12
- (VOL) Refused.....13

Q.3 Is the vehicle you drive most often a car, van, motorcycle, sport utility vehicle, pickup truck, or other type of truck? (NOTE: IF RESPONDENT DRIVES MORE THAN ONE VEHICLE OFTEN, ASK:) "What kind of vehicle did you LAST drive?"

- Car.....1
- Van or minivan.....2
- Motorcycle.....3 **SKIP TO Q11**
- Pickup truck.....4
- Sport Utility Vehicle.....5
- Other.....10
- Other truck (SPECIFY)....11
- (VOL) Don't know.....12
- (VOL) Refused.....13

Q.4 For the next series of questions, please answer only for the (car/truck/van) you said you usually drive. Do the seat belts in the front seat of the (car/truck/van) go across your shoulder only, across your lap only, or across both your shoulder and lap?

INTERVIEWER INSTRUCTION: SEATBELT QUESTIONS REFER TO DRIVER SIDE BELTS.

- Across shoulder.....1
- Across lap.....2 **SKIP TO Q6**
- Across both.....3
- Vehicle has no belts.....4 **SKIP TO Q11**
- (VOL) Don't know.....5 **SKIP TO Q7**
- (VOL) Refused.....6 **SKIP TO Q7**

Q.5 When driving this (car/truck/van), how often do you wear your shoulder belt... (READ LIST)

- ALL OF THE TIME.....1
- MOST OF THE TIME.....2
- SOME OF THE TIME.....3
- RARELY OR.....4
- NEVER.....5
- (VOL) Don't know.....6
- (VOL) Refused.....7

Appendix D. Telephone Awareness Survey Questions (Continued)

IF Q4=1 SKIP TO Q7

- Q.6 When driving this (car/truck/van), how often do you wear your lap belt...(READ LIST)
- ALL OF THE TIME.....1
 - MOST OF THE TIME.....2
 - SOME OF THE TIME.....3
 - RARELY OR.....4
 - NEVER.....5
 - (VOL) Don't know.....6
 - (VOL) Refused.....7

Q.7 When was the last time you did NOT wear your seat belt when driving?

- Within the past day.....1
- Within the past week.....2
- Within the past month.....3
- Within the past year.....4
- A year or more ago/I always wear it.....5
- (VOL) Don't know.....6
- (VOL) Refused.....7

Q8 When driving **at night**, are you more likely, less likely, or just as likely to wear your seat belt compared to when driving during the day?

- More likely.....1
- Less likely.....2
- Just as likely.....3
- Don't drive at night.....4
- (VOL) Don't know.....5
- (VOL) Refused.....6

Q.9 In the past 30 days, has your use of seat belts when driving (vehicle driven most often) increased, decreased, or stayed the same?

- Increased.....1
- Decreased.....2
- Stayed the same.....3
- New driver.....4
- (VOL) Don't know.....5
- (VOL) Refused.....6

SKIP TO Q11

SKIP TO Q11
SKIP TO Q11
SKIP TO Q11
SKIP TO Q11

Q.10 What caused your use of seat belts to increase?
(DO NOT READ LIST - MULTIPLE RECORD)

- Increased awareness of safety.....1
- Seat belt law.....2
- Don't want to get a ticket.....3
- Was in a crash.....4
- New car with automatic belt.....5
- Influence/pressure from others.....6
- More long distance driving.....7
- Remember more/more in the habit.....8
- The weather.....9
- The holidays.....10
- Driving faster.....11
- Other (SPECIFY.....).....27
- (VOL) Don't know.....28
- (VOL) Refused.....29

Appendix D. Telephone Awareness Survey Questions (Continued)

Q.11 Does North Carolina have a law requiring seat belt use by adults?

- Yes.....1
- No.....2 **SKIP TO Q15**
- (VOL) Don't know.....3 **SKIP TO Q15**
- (VOL) Refused.....4 **SKIP TO Q15**

IF Q1=5 OR Q3= 3, SKIP TO Q13

Q.12 Assume that you do not use your seat belt AT ALL while driving over the next six months. How likely do you think you will be to receive a ticket for not wearing a seat belt? READ

- Very likely.....1
- Somewhat likely.....2
- Somewhat unlikely.....3
- Very unlikely.....4
- (VOL) Don't know.....5
- (VOL) Refused.....6

Q.13 According to your state law, can police stop a vehicle if they observe a seat belt violation or do they have to observe some other offense first in order to stop the vehicle?

- Can stop just for seat belt violation.....1
- Must observe another offense first.....2
- (VOL) Don't know.....3
- (VOL) Refused.....4

Q.14 In your opinion, SHOULD police be allowed to stop a vehicle if they observe a seat belt violation when no other traffic laws are being broken?

- Should be allowed to stop.....1
- Should not.....2
- (VOL) Don't know.....3
- (VOL) Refused.....4

Q.15 Please tell me whether you strongly agree, somewhat agree, somewhat disagree or strongly disagree with the following statements?

ROTATE

- a) Seat belts are just as likely to harm you as help you.
- b) If I was in an accident, I would want to have my seat belt on.
- c) Police in my community generally will not bother to write tickets for seat belt violations.
- d) Police in my community are writing tickets for seat belt violations they see **at night**.

Q16 Now I'm going to ask you a few questions about alcohol use. During the past 30 days have you had at least one drink of any alcoholic beverage, including liquor, beer, wine or wine coolers?

- Yes.....1
- No.....2 **SKIP TO Q22**
- (VOL) Don't Know.....3 **SKIP TO Q22**
- (VOL) Refused.....4 **SKIP TO Q22**

Appendix D. Telephone Awareness Survey Questions (Continued)

IF Q1 = 5, SKIP TO Q22

Q17. During the past 30 days, have you driven a motor vehicle within two hours after drinking any alcoholic beverages, even if you had only a little?

- Yes.....1
- No.....2 **SKIP TO Q21**
- (VOL) Don't Know.....3 **SKIP TO Q21**
- (VOL) Refused.....4 **SKIP TO Q21**

Q18. How many days out of the past 30 days did you drive within two hours after drinking any alcoholic beverages?

_____ (Range=01-30) DON'T KNOW =31 REFUSED=32

Q19. On the most recent occasion when you drove within two hours after drinking alcoholic beverages, how many drinks (of beer, wine, liquor) did you have?

- ENTER NUMBER of DRINKS _____ (01-90)
- Don't know.....98
- Refuse.....99

Q20. Compared to other months during the past year, would you say that the number of days you drove after drinking alcohol was lower than usual, higher than usual or the same as usual during the past 30 days?

- Higher Than Usual.....1
- Lower Than Usual.....2
- Same as Usual.....3
- (VOL) Don't Know.....4
- (VOL) Refused.....5

Q21. Suppose you drove a motor vehicle after drinking alcohol, and the amount of alcohol in your body was more than what the law allows for drivers. How likely is it that the police would stop you? Would the police be.....?

- Very Likely To Stop You,.....1
- Somewhat Likely To Stop You, or.....2
- Not Likely To Stop.....3
- (VOL) Don't Know.....4
- (VOL) Refused.....5

Q22. Do you think the chances of being stopped for driving after drinking have changed in the past month? That is, compared to a month ago, do you think a driver who had been drinking is more likely, less likely or about as likely to be stopped by the police?

- More likely.....1
- Less likely.....2
- About the same.....3
- (vol)Don't know.....4
- (vol)Refuse.....5

Appendix D. Telephone Awareness Survey Questions (Continued)

Q.23 Yes or No--in the past 30 days, have you seen or heard of any **special effort** by police to ticket drivers in your community for the following violations?

Did you see or hear in the past 30 days of a **special effort** by police to ticket drivers for..... [**READ LIST AND MULTIPLE RECORD**]

ROTATE PUNCHES

- 1. Not Wearing A Seat Belt
- 2. Driving Under The Influence or Drunk Driving
- 3. Speeding
- 4. Running Red Lights

[**FOR EACH YES IN Q23, ASK Q24**]

Q.24 Where did you see or hear about that special effort?
[**DO NOT READ--MULTIPLE RESPONSE**]

- TV.....1
- Radio.....2
- Friend/Relative.....3
- Newspaper.....4
- Personal observation/on the road....5
- Billboard/signs.....6
- Educational Program.....7
- I'm a police officer/judge.....8
- Direct contact by police officer...9
- Other (specify_____)..... 17
- Don't know.....18
- Refused.....19

ONLY ASK IF YES FOR CATEGORY 5 IN Q24, ELSE SKIP TO Q24B

Q24a What did you see (on the road/through personal observation)?

Specify _____

ONLY ASK IF YES FOR CATEGORY 6 IN Q24, ELSE SKIP TO Q25

Q24b What did the (billboard/sign) say?

Specify _____

Q25 Yes or No – in the past 30 days, have you seen or heard anything about the police setting up checkpoints where they will stop motor vehicles to check for violations?

- Yes.....1
- No.....2 **SKIP TO Q34**
- Don't know.....3 **SKIP TO Q34**
- Refused.....4 **SKIP TO Q34**

By checkpoint, we mean a systematic effort by police to stop vehicles for the purpose of checking for compliance with existing laws.

Q26 Let me just confirm, is this the type of checkpoint that you have seen or heard about in the past 30 days?

- Yes.....1
- No.....2 **SKIP TO Q34**
- Don't know.....3
- Refused.....4

Appendix D. Telephone Awareness Survey Questions (Continued)

Q27 To your knowledge, what violations were the police checking for at the checkpoints? **[Do Not Read]**
[Multiple Punch]

- Drunk/Alcohol Impaired Driving.....1
- Drugs/Drugged Driving.....2
- Non-Use of Seat Belts.....3
- Improper Vehicle Registration.....4
- Non Traffic-Related Violation.....5
- All Types of Violations.....6
- Other (Specify _____).....7
- Don't know.....8
- Refused.....9

Q28. Where did you see or hear about the police checkpoints?
[DO NOT READ--MULTIPLE RESPONSE]

- TV.....1
- Radio.....2
- Friend/Relative.....3 **SKIP to Q30** Newspaper.....4 **SKIP to Q30**
- Other.....5 **SKIP to Q30**
- Don't know.....6 **SKIP to Q30**
- Refused.....7 **SKIP to Q30**

Q29. Was the (tv/radio) message a commercial (or advertisement), was it part of a news program, or was it something else?
MULTIPLE RECORD

- Commercial / Advertisement/ Public Service Announcement.....1
- News story / news program.....2
- Something else (specify).....3
- Don't Know.....4
- Refused.....5

Q30. Did the message say that the checkpoint would be conducted during the day, or that it would be conducted at night, or that it would be conducted during both the day and night?

- Day.....1
- Night.....2
- Day and Night.....3
- Don't Know.....4
- Refused.....5

Q31. In the past 30 days, did you personally see any checkpoints where police were stopping motor vehicles to check for violations?

- Yes.....1
- No.....2 **SKIP TO Q34**
- Don't know.....3 **SKIP TO Q34**
- Refused.....4 **SKIP TO Q34**

Appendix D. Telephone Awareness Survey Questions (Continued)

Q32. Did you see the checkpoint during the day, during the night, or during both the day and night.

- Day.....1
- Night.....2
- Day and Night.....3
- Don't Know.....4
- Refused.....5

Q.33. Were you personally stopped by police at a checkpoint in the past 30 days?

- Yes.....1
- No.....2
- Don't know.....3
- Refused.....4

Q34 In the past 30 days, have you noticed any new or recently posted signs having traffic safety messages while traveling in Buncombe County? The signs could be about drinking and driving, speeding, seat belt use, running red lights, or any other traffic issue.

- Yes.....1
- No.....2 **SKIP TO Q36**
- Don't know.....3 **SKIP TO Q36**
- Refused.....4 **SKIP TO Q36**

Q35 What types of new or recently posted signs did you see? **[DO NOT READ]**

- a) Banners
- b) Posters
- c) Big green signs showing belt usage rates
- d) Variable message boards
- e) Decals on patrol cars
- f) Storefront/business signs
- g) Other (specify _)

FOR EACH YES IN Q35, ASK Q35a

Q35a) What did the sign(s) say?

Specify _____

Q36 Do you recall hearing or seeing the following slogans in the past 30 days? **READ LIST AND MULTIPLE RECORD YES**

ROTATE PUNCHES 1-70

- 1. Friends don't let friends drive drunk (PUNCH "1") (All)
- 2. *Click It or Ticket* (PUNCH "2") (All)
- 3. Buckle Up America (PUNCH "3") (All)
- 5. Drunk Driving. Over The Limit. Under Arrest. (PUNCH "5") (All)
- 71. (VOL) None of these
- 72. (VOL) Don't know
- 73. (VOL) Refused

ASK ALL

Now, I need to ask you some basic information about you and your household.

Q.37 What is your age? _____ AGE REFUSED=99

Appendix D. Telephone Awareness Survey Questions (Continued)

Q.38 Including yourself, how many persons, age 18 or older, are living in your household at least half of the time or consider it their primary residence?

_____ REFUSED=99

Q39 How many children age 17 or younger are living in your household at least half of the time or consider it their primary residence?

_____ NONE=0 REFUSED=99

Q.40 Do you consider yourself to be Hispanic or Latino?

Yes.....1
No.....2
(VOL) Not sure.....3
(VOL) Refused.....4

Q.41 Which of the following racial categories describes you? You may select more than one. **[READ LIST-- MULTIPLE RECORD]**

American Indian or Alaskan Native.....1
Asian.....2
Black or African American.....3
Native Hawaiian or other Pacific Islander.....4
White.....5
Other(VOL).....6

(VOL) Refused.....9

Q.42 What is the highest grade or year of school you completed?

8th grade or less.....9
9th grade.....10
10th grade.....11
11th grade.....12
12th grade/GED.....13
Some college.....14
College graduate or higher....15
(VOL) Refused.....16

Q.43 Do you have more than one telephone number in your household?

Yes.....1
No.....2 **SKIP TO Q45**
Don't know.....3 **SKIP TO Q45**
(VOL) Refused.....4 **SKIP TO Q45**

Q.44 Not including cells phones, and phones used primarily for fax or computer lines, how many different telephone numbers do you have in your household?

_____ 10 OR MORE=10 DON'T KNOW=11 REFUSED=12

Q.45 FROM OBSERVATION, ENTER SEX OF RESPONDENT

Male.....1
Female.....2

That completes the survey. Thank you very much for your time and cooperation.

Appendix D. DMV DL Awareness Survey Form

Several Driver Licensing Offices in the state are participating in a study about safety belt use. Your answers to the following questions are voluntary and anonymous.

1. **Your sex:** Male Female
2. **Your age:** Under 21 21-25 26-39 40-49 50-59 60 Plus
3. **Your race:** White Black Asian Native American Other
4. **Are you of Spanish/Hispanic origin?** Yes No
5. **Your Zip Code:** _____
6. **What type of vehicle do you drive most often?** Passenger car Pickup SUV Mini-van Full-van Other
7. **How often do you use seat belts when you drive or ride in a (answer for each of the following):**
..... **Car** Always..... Nearly always.. Sometimes .. Seldom.... Never Don't drive/ride in one
..... **Pickup** Always..... Nearly always.. Sometimes .. Seldom.... Never Don't drive/ride in one
..... **SUV/Van** Always..... Nearly always.. Sometimes .. Seldom.... Never Don't drive/ride in one
8. **Compared to daytime, how often do you wear your seat belts at night?**
 More often About the same Less often
9. **Do you think that it is important for police to enforce the seat belt law?**
 Yes No
10. **Assume that you do not use your seat belt AT ALL while driving over the next six months. How likely do you think you will be to receive a ticket for not wearing a seat belt?**
 Very Likely Somewhat Likely Somewhat Unlikely Very Unlikely Don't know Refused
11. **Do you think the seat belt law in North Carolina is enforced at night:**
 Very strictly Somewhat strictly Not very strictly Rarely Not at all
12. **Have you recently read, seen or heard anything about seat belts in North Carolina?**
 Yes No

If yes, where did you see or hear about it? (check all that apply):
 Newspaper Radio TV Billboards Brochure Police Enforcement Other

If yes, what did it say? _____
13. **Yes or No – in the past 30 days, have you seen or heard of any special effort by police to ticket drivers in your community for the following violations?**
 - a. Speeding? Yes No
 - b. Driving Under The Influence or Drunk Driving Yes No
 - c. Not Wearing A Seat Belt Yes No
 - d. Running Red Lights Yes No
14. **Do you know the name of any seat belt program(s) in North Carolina? (check all that apply):**
 Buckle Up North Carolina Buckle Up in Your Truck Click It or Ticket Operation Stay Alive

Appendix E. Observational Survey Data Collection Form (Front)

Circle: day or night ; Site # _____

TOWN: _____ LOCATION: _____
(Street) (Cross Street or other landmark)

DATE: _____ - _____ - _____ DAY OF WEEK: _____

WEATHER CONDITION:
 1 Clear/Sunny 4 Fog
 2 Light Rain 5 Clear But Wet
 3 Cloudy

START TIME: _____ END TIME: _____

	DRIVER			PASSENGER				DRIVER			PASSENGER		
	Veh. Type C=Car T=Truck S=SUV V=Van	Sex M=Male F=Female U=Unsure	Belt Use + = Yes - = No	Sex M=Male F=Female U=Unsure	Belt Use + = Yes - = No U=Unsure		Veh. Type C=Car T=Truck S=SUV V=Van	Sex M=Male F=Female U=Unsure	Belt Use + = Yes - = No	Sex M=Male F=Female U=Unsure	Belt Use + = Yes - = No U=Unsure		
1						26							
2						27							
3						28							
4						29							
5						30							
6						31							
7						32							
8						33							
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21						46							
22						47							
23						48							
24						49							
25						50							

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Appendix E. Observational Survey Data Collection Form (Back)

Site Notes:

Site Diagram:



DOT HS 811 189
August 2009



U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

