

**Developing Resources to Assist in Reducing Alcohol-
Impaired Driving Fatalities and Injuries in Latino Populations**

REPORT ON THE EL PUEBLO DEMONSTRATION PROJECT

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National Highway Traffic Safety Administration (NHTSA)
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September 12, 2012

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I. Executive Summary

In 2005, the National Highway Traffic Safety Administration (NHTSA) entered into a cooperative agreement with El Pueblo, Inc. to demonstrate and evaluate effective strategies for reducing traffic fatalities and injuries caused by driving while under the influence of alcohol among the Latino¹ population. The 2-year demonstration project focused on North Carolina, a state that has experienced both large increases in Latino immigration and disproportionate rates of alcohol-impaired driving crashes in the Latino community. NHTSA selected El Pueblo, Inc. — the largest agency in North Carolina providing support to the Latino community — for this project due to its unique knowledge of and access to the Latino population in North Carolina and for its prior work with conducting culturally appropriate campaigns to increase seatbelt and child car seat use among Latinos.

The project showed that the use of social marketing techniques is a promising practice in fighting alcohol-impaired driving among Latinos. The combination of social marketing and law enforcement also showed promise, though the data were ultimately inconclusive. Throughout the project it proved difficult to consistently capture the true success of the project quantitatively due to implementation and political issues external to the project.

All demonstration project materials were tested by a focus group. These materials will be available as part of a toolkit for other organizations interested in conducting similar work.

The purpose of this report, developed by PerformTech, a GP Strategies Company, is to evaluate the El Pueblo Demonstration Project. This includes summarizing El Pueblo's activities, identifying the project's successes as well as its shortfalls, and explaining why these efforts succeeded or were inconclusive. The goal is that other organizations might learn from what worked and what didn't on the El Pueblo Demonstration Project.

A. Project Need

The need for this project was both clear and compelling. El Pueblo, Inc. found that motor vehicle injuries were by far the leading cause of death for North Carolina Latinos. According to the North Carolina Center for Health Statistics, more than 20% of Latino deaths in 2002 were due to motor vehicle crashes, compared to only 2.2% for whites and 2.4% for African Americans.² A lack of knowledge among Latino drivers regarding North Carolina traffic laws and highway safety issues may have contributed to this disproportionately high number of traffic fatalities and injuries. This lack of knowledge was also compounded by linguistic and cultural barriers, including a lack of bilingual service providers and law enforcement officers.

¹ The terms "Hispanic" and "Latino" were both used in the original El Pueblo Final Technical Report. In this report, we have elected to use the term "Latino" globally, except for some places in the Appendices, where the term "Hispanic" was incorporated in various tables and graphics as they appeared in El Pueblo's materials.

² <http://www.schs.state.nc.us/SCHS/>

In addition, data compiled by the University of North Carolina (UNC) Highway Safety Research Center, shown in Table 7, reveal that that Latino drivers involved in crashes were far more likely to have been drinking than other ethnic groups. For example, in 2005, 2.7% of non-Latino drivers involved in crashes in North Carolina had been drinking, while 7.3% of Latino drivers involved in crashes in North Carolina had been drinking.

B. Project Goals

The goals of the demonstration project were to:

- Decrease alcohol-related fatalities among Latinos in the Triangle and Triad areas by 10% by December 2007;
- Decrease alcohol-related injuries among Latinos in the Triangle and Triad areas by 10% by December 2007; and
- Compare the results of a social marketing campaign with high-visibility enforcement to a social marketing campaign without high-visibility enforcement to determine the most effective methods of reducing alcohol-impaired crashes and fatalities in the Latino community.

C. Project Methodology

To address these goals, El Pueblo, Inc. developed a project methodology that involved implementing two intervention strategies and then comparing the results against a control group in order to evaluate their success. The intervention strategies included a social media campaign and high-visibility law enforcement activities.

The social media campaign included development of bumper stickers; posters; TV, radio, and newspaper ads; and *fotonovela* booklets (photograph-based narrative booklets divided into chapters). The messages in these media were developed in collaboration with members of the Latino community and stressed themes that resonated with the target audience, such as the effects of driving while intoxicated (DWI) on family. (Examples of the media are included in this report.)

The high-visibility law enforcement activities consisted of sobriety checkpoints where drivers were checked for DWI. A total of five checkpoints were conducted during the project in the target area. In addition, names of DWI arrestees were published in local Spanish-language newspapers.

Three geographical regions were chosen for the project: Triad, Triangle, and Southeast. The areas were chosen to include both urban and rural areas. In each of the three regions, a different intervention was implemented:

- In the Triad region (Winston-Salem, Greensboro, and High Point), El Pueblo, Inc. conducted a mass-media social marketing campaign aimed at reducing DWI.
- In the Triangle region (Raleigh, Durham, and Chapel Hill), El Pueblo, Inc. conducted a similar mass-media social campaign with messages about enhanced law enforcement added to the media. El Pueblo, Inc. worked with the North Carolina State Highway Patrol to implement high-visibility law enforcement activities. Finally, the names of those arrested for DWI and the results of the sobriety checkpoints were published in local Latino newspapers.
- The Southeast region was used as a control group and received neither intervention.

During the project, El Pueblo, Inc. worked in conjunction with three partner organizations:

- The University of North Carolina (UNC) Highway Safety Research Center, which provided highway crash data
- The North Carolina State Highway Patrol, which performed DWI sobriety checkpoints
- The *Nuestra Seguridad* Coalition Task Force, which is a group of community-based organizations that assisted with materials development and project surveys

D. Project Evaluation

To evaluate the success of these interventions, El Pueblo, Inc. collected data from three sources:

- Before and after data on alcohol-impaired crashes, injuries, and fatalities in the three project sites provided by the UNC Highway Safety Research Center
- Pre-, mid-, and post-campaign surveys administered by trained volunteers in each region to examine individual behavior and community knowledge, attitudes, and beliefs about alcohol use and driving laws. Approximately 300 of each of the 3 surveys were collected in each of the 3 project regions.
- Anecdotal information collected from the community during the implementation of the project

PerformTech also conducted a program evaluation of the El Pueblo, Inc. materials and interviewed project staff to obtain further insights into how to best replicate El Pueblo's Demonstration Project successfully.

E. Project Results

The El Pueblo, Inc. project was highly successful in developing and distributing anti-drunk-driving social marketing messages to the Latino community. While it is difficult to draw firm conclusions due to factors that are discussed later in this report, crash data showed promising trends. In addition, the community surveys showed that the project was definitely accessing the key population: young Latino males with limited English proficiency. Out of the almost 1,800 surveys performed mid- and post-project, most people surveyed (88.8%) rated themselves as having low or average English proficiency, and nearly a third (29.1%) had driven while intoxicated in the past 6 months. The average age of survey respondents was 28.

Other project results were sometimes promising and sometimes surprising. For example, crash data revealed that:

- From 2005 to 2007, the percent of crashes in which the driver had been drinking increased .61% statewide and .04% in the Triangle region for non-Latino drivers, but decreased .41% statewide and .36% in the Triangle region for Latino drivers.
- From 2005 to 2007, statewide DWI charges for Latino drivers decreased more (2.59%) than for non-Latino drivers (.54%). For Latino drivers, the decrease was more in the Triangle (media and law enforcement) region (2.91%) than in either the Triad (media only) region (1.99%) or the rest of the state (2.6%).

Community survey data revealed that:

- The number of survey respondents who reported driving while intoxicated decreased 6% over the course of the project in the Triad (media only) region while remaining essentially unchanged in the Triangle (media and law enforcement) region. However, the number decreased 12% in the Southeast (control) region.
- The percentage of respondents indicating that they “drove less after drinking now compared to 6 months ago” over the course of the project increased 7% in the Triad (media only) region, but dropped 28% in the Triangle (media and law enforcement) region. The rate increased 13% in the Southeast (control) region.
- The percentage of respondents who knew it was against the law to drive while intoxicated rose 12% in the Triad (media only) region, remained essentially unchanged in the Triangle (media and law enforcement) region, and decreased 19% in the Southeast (control) region.
- Anecdotal evidence pointed to the success of publishing the names of DWI arrestees in local Spanish-language newspapers; the number of names published decreased each week, but no data are available to evaluate this.

Overall, the data collected indicated that well-designed media messages can have an impact on DWI rates. The addition of law enforcement activities seemed to have a small positive impact, but this may have been due to implementation issues, such as the fact that funding issues allowed only five sobriety checkpoints to be performed in the target area during the 2-year project period.

In addition, the increases in desired behaviors in the control group, where no additional media or law enforcement efforts were undertaken, may have been due to larger immigration issues affecting Latinos during the project period. The Federal 287(g) immigration program, which deputized local officers to act as Federal immigration agents and whose implementation in North Carolina coincided with the project period, may have caused greater awareness of any behavior that might have led to interactions with law enforcement, such as drinking and driving, and could have been responsible for the drops in drunk-driving behavior seen in the control area during the project period. Further discussion of the data collected during the project can be found in the Key Findings section, and a complete report on the data and analysis can be found in Appendix D.

F. Lessons Learned

There are many important lessons from this demonstration project to be learned by others wishing to implement similar DWI-reduction programs for the Latino community. El Pueblo, Inc. developed excellent resources, particularly in the area of its social marketing materials and outreach techniques, and experienced a learning curve in other areas, such as in program evaluation techniques, that may benefit other programs. The list below combines and summarizes program highlights and areas for improvement:

- **Law Enforcement and Community Outreach:** Law enforcement was a key component of this project. However, the total number of sobriety checkpoints was low. While the data indicated a positive direction, the true impact was inconclusive. Anecdotal evidence suggests that to achieve maximum impact, police sobriety checkpoints need to be conducted frequently and be well publicized. In addition, a strong partnership with law enforcement is essential.
- **Community Surveys:** Ensure that community surveys are professionally designed and focus group tested before use. Train survey takers carefully and consider taking a longitudinal approach in which the same questions are asked of the same individuals pre-, mid-, and post-program to obtain the most valid quantitative results.
- **Media:** In order to use media and other social marketing materials to their fullest advantage, ensure that they truly reflect community values and are not simply translated versions of other English-language materials. The program poster in particular was found to be a good way of raising community awareness of alcohol-impaired driving. Be wary of bumper stickers, which could be perceived as a way of identifying Latino-owned vehicles to law enforcement. Television was an effective but expensive method of

delivering program messages; radio ads were found to be a more cost-effective way of reaching a wide audience. Consider using newspapers as a way of highlighting law enforcement efforts by publishing names of DWI violators.

- **Partnerships:** Ensure that organizations without a strong presence in a given community partner with those that do, in order to enhance the project's access and credibility.
- **Culture and Language:** Ensure linguistic appropriateness by focus-group testing all program materials before project implementation. Spanish speakers comprise a huge range of nationalities, immigration statuses, and education levels and are by no means a monolithic group. Never use computer-based translation programs.

II. Project Overview

As part of its mission, NHTSA works in conjunction with a number of organizations at the Federal, state, and local levels to develop and demonstrate program strategies and activities specifically designed to reduce drunk-driving crashes and related fatalities and injuries among vulnerable driving populations, including Latinos.

In 2005, NHTSA entered into an agreement with El Pueblo, Inc., North Carolina, to demonstrate and evaluate program strategies to reduce drunk-driving fatalities and injuries in selected sites in North Carolina. Sites selected for program interventions were the Triad area (Winston-Salem, Greensboro, and High Point, NC) and the Triangle area (Raleigh, Durham, and Chapel Hill, NC), while the Southeast part of the state was used as a control group and received no interventions. As part of this 30-month effort, El Pueblo, Inc. successfully conducted the project and provided NHTSA with reports on activities, results achieved, lessons learned, and promising practices, including a Final Technical Report submitted in 2008. Sharing these results and the project materials developed will help NHTSA and others address the drunk-driving problem by allowing them to consider replicating elements of this program in other states and localities.

In 2009, NHTSA awarded a contract to PerformTech to identify and document program strategies and initiatives across the country used to address alcohol-impaired fatalities and injuries within Latino populations, extract lessons learned, and then, based on those experiences, develop a toolkit that would be helpful to the highway safety community in addressing the impaired driving problem in Latino communities across the country. As part of these efforts, PerformTech was asked to review the El Pueblo, Inc. demonstration effort, including program materials used during the demonstration, and interview project staff to glean additional insights about best practices and lessons learned.

In 2010, NHTSA asked PerformTech to create a report that would combine the most important elements of the El Pueblo, Inc., demonstration project along with the results of PerformTech's review. This report is the result of these efforts and will be included as a component of the toolkit resource being developed by PerformTech. It documents:

- How the initial project was conceived, designed, and implemented
- The media and materials developed for the project
- The processes used to analyze data and the project results
- Recommendations and lessons learned for other organizations interested in implementing similar projects
- Appendices including samples of surveys used and materials used to train survey administrators

III. Project Description

A. Introduction

The Latino population in North Carolina increased significantly from 1996-2006, giving North Carolina one of the fastest growing Latino populations in the nation. Along with this population growth came an increase in the number of Latinos involved in DWI arrests. In 2002, when the Latino population was only 5.5% of the general population, Latinos accounted for over 13% of all DWI arrests in the state. This disproportionate number of arrests clearly indicated a problem that needed to be addressed.

In addition, traffic crashes, the majority of which involved alcohol, were the leading cause of death among Latinos in North Carolina. According to the North Carolina Center for Health Statistics, more than 20% of Latino deaths in 2002 were due to motor vehicle crashes, compared to only 2.2% for Caucasians and 2.4% for African Americans.

Although the Latino population of the project target areas was not as large as those of other metropolitan areas in other parts of the U.S., the exponential growth of this primarily immigrant community is unparalleled. Unlike Latinos in many regions of the United States, the North Carolina Latino population is composed mostly of first-generation immigrants, a large number of whom arrived in the state during the past decade. This rapid growth of the Latino immigrant community has presented unique challenges for law enforcement officers and human service providers in North Carolina, who have struggled to provide equal access to services. Due to a lack of bilingual personnel and Spanish-language materials, education about highway safety laws (such as seatbelt and child safety seat use) has been difficult and inconsistent throughout the state. Because North Carolina is an area of high immigration with few services available in Spanish, it was the ideal state for a demonstration project.

A major contributing factor to what appears to be a disproportionately high number of traffic fatalities and injuries is that Latino drivers who are recent immigrants typically have very little knowledge of North Carolina traffic laws and highway safety issues. This lack of knowledge is further compounded by linguistic and cultural barriers, including a lack of bilingual community service providers and law enforcement officers. El Pueblo, Inc.'s previous experience with highway safety messaging targeted at the Latino community, coupled with the agency's existing infrastructure (including a statewide network of Latino community service agencies), made El Pueblo, Inc. ideal for conducting a project regarding driving while intoxicated among North Carolina's Latino population.

In 2005, the National Highway Traffic Safety Administration (NHTSA) entered into a cooperative agreement with El Pueblo, Inc. to demonstrate and evaluate strategies for reducing alcohol-related fatalities and injuries among the Latino population. This project explored the

hypothesis that a media-based education campaign, combined with police intervention, would be effective in reducing the rate of DWI among North Carolina Latinos.

B. Project Goals and Objectives

The principal goal of the El Pueblo, Inc. project was to demonstrate practices aimed at decreasing the number of individuals driving while intoxicated or impaired among the immigrant Latino community. A second goal was to identify strategies and create materials that could be used by other communities facing similar challenges.

The principal objectives of the project were:

- To decrease alcohol-impaired fatalities among Latinos in targeted areas by 10%
- To decrease alcohol-impaired injuries among Latinos in targeted areas by 10%
- To compare the results of a campaign that used social marketing alone with those of a campaign that combined both social marketing and high-visibility law enforcement to determine the most effective methods of reducing alcohol-impaired crashes and fatalities in the Latino community

C. Project Methodology

1. Strategy

The project entailed the use of several approaches to reduce alcohol-impaired driving. These approaches included raising awareness of the issue through:

- Distribution of printed materials
- Radio advertisements
- Television advertisements
- Increased law enforcement

The impact of the project was measured in two ways: data collection and community surveys. The data collected over the course of the project included crash data, specifically crashes involving alcohol and crashes involving Latinos. The data were used to analyze changes in driving behaviors. The community surveys measured familiarity with DWI-related issues, familiarity with the El Pueblo, Inc. project, and changes in behaviors associated with DWI.

The impact of the project was evaluated in three regions: the Triad, Triangle, and Southeast regions of North Carolina. The three sites received different interventions to determine which intervention was the most effective in reducing drinking and driving in the Latino community. Two regions, the Triad (Winston-Salem, Greensboro, and High Point) and the Triangle (Raleigh, Durham, and Chapel Hill), received intervention strategies, while the Southeast region was used as a control region.



The El Pueblo, Inc. demonstration project focused on three areas of North Carolina.

El Pueblo, Inc. conducted a mass-media social marketing campaign aimed at DWI reduction in the Triad and Triangle regions. In both the Triad and Triangle regions, El Pueblo distributed written materials to Latinos and produced radio advertisements. In addition, in the Triangle region, law enforcement also conducted high-visibility enforcement activities. Data from the Southeast area were collected, but no intervention was performed so that it could serve as a control area for program evaluation purposes.

The population studied was primarily 18- to 26-year-old Latino males with limited English proficiency. To measure the effect of the DWI social marketing campaign, pre-, mid-, and post-campaign surveys were conducted by the *Nuestra Seguridad* Coalition Task Force in each of the three project locations. These surveys measured the attitudes toward and awareness of DWI-related issues in the Latino community.

As discussed below under [Project Evaluation](#), there were two principal kinds of data used: crash data and community survey data. Crash data was gathered from the North Carolina Administrative Office of the Course (AOC) database and analyzed by the University of North Carolina Highway Safety Research Center. Additional information on this crash data is provided in the “Data Gathering” section, below. Community outreach surveys were conducted at the beginning, mid-point, and following the conclusion of the media campaign. In regards to the crash data used, the small data set could potentially contribute to a larger variance than desired, leading to some concerns regarding the reliability of findings in this area; however, the research team used statistical techniques to attempt to account for this. In regards to the community surveys, variance in the language of the pre-campaign survey to the mid- and post-campaign surveys could lead to some concerns regarding the reliability of this data. These concerns, and recommendations for resolving such problems in future campaigns, are discussed below.

2. Partnerships

El Pueblo, Inc. worked in collaboration with three key organizations to ensure the success of the demonstration project:

- UNC Highway Safety Research Center
- The North Carolina (NC) State Highway Patrol
- *Nuestra Seguridad* Coalition Task Force

The UNC Highway Safety Research Center provided data on alcohol-impaired crashes, injuries, and fatalities in the three regions of the project site.

The NC State Highway Patrol provided critical services for the project. Troopers conducted sobriety checkpoints to provide high-visibility enforcement in one of the demonstration sites.

The *Nuestra Seguridad* Coalition Task Force ensured that culturally appropriate Spanish-language materials were developed and distributed to Latinos in the appropriate demonstration site areas. They also conducted pre-, mid-, and post-campaign surveys to evaluate behavioral changes among the Latino communities and measure awareness of the program's efforts.

3. Social Marketing Campaign

El Pueblo, Inc. believed that any effective social marketing campaign must convey messages that speak to the values of the target community. As a result, El Pueblo, Inc. staff began the social marketing campaign component of the project with informal conversations with members of the Latino community about what values were important to them. A number of themes arose, which were later incorporated into social messaging. These included:

- Fatalism, i.e., "If I'm going to die, I'm going to die."

Many traditional approaches to educating drivers about the dangers of DWI focus on the potential of serious injury or death. One reason these more traditional approaches may not have been effective in Latino communities is this more fatalistic viewpoint.

- *Machismo*

Machismo is a concept common in Latino communities, but it is interpreted in different ways. In some communities, *machismo* is an expression of the positive aspects of manliness. For example, "men take care of their families." In other communities, *machismo* has some negative connotations that reflect more negative stereotypes of male behavior. In developing materials, El Pueblo, Inc. adjusted the language to accommodate these differences.

- Importance of family

This was an extremely important value across all the Latinos involved in the informal discussions.

- Length of time in the United States

In conversations with El Pueblo, Inc. staff, local Latinos revealed a belief that more recent immigrants frequently drank more than those that had been in the United States for several years. However, they were not able to say if more recent immigrants drove under the influence more frequently than those who had been in the United States longer. In addition, more recent immigrants had very little knowledge of the laws regarding drinking.

- Cultural differences among Latinos in different communities

There are significant differences among Latino communities in terms of values, language, food, music, and other cultural aspects, depending on country of origin. Recognizing these differences, the El Pueblo, Inc. project staff was careful to craft messages that would resonate with all Spanish-speaking audiences in their communities.

- The number of generations that the family had lived in the United States

Not surprisingly, both conversations and surveys indicated that the longer a family had lived in the United States, the more familiar they were with laws regarding alcohol consumption and driving.

These informal conversations were a crucial component of the project. Responses clearly indicated that the most important value was family, followed by community and friends. These values became the core of the messages communicated in all the media-based components of the project.

The social marketing campaign, developed in collaboration with NHTSA, was completed by May 1, 2006. The campaign was divided into two phases.

During Phase I, television, radio, and newspaper ads were developed specifically targeting Latino audience on the effects of DWI on the family. These included:

- Two 30-second TV commercials
- Two radio ads
- Four newspaper ads

All advertisements included a number to call for help with a drinking problem.

All ads were reviewed by the *Nuestra Seguridad* Coalition Task Force for linguistic and cultural appropriateness.

This first series of ads was rotated weekly in target communities to keep the messages fresh. The TV ads were displayed on Univision TV and played for 3 weeks followed by 1 week off. The ads played a total of 60 times per month.

Print ads in newspapers were also rotated and displayed weekly. The ads ran in ¼ page color-print spaces. These were displayed in the Triad and Triangle regions, printed in *Que Pasa* and *La Conexión*, local Spanish newspapers.

Ads were also played on the radio in the same areas. Several Spanish-language radio stations, including *Que Pasa* Radio, *La Ley* Radio, *La Movidita* Radio, *La Regia* Radio, and others, agreed to play two additional ads for every paid ad, via a negotiated agreement.

Examples of Phase I ads can be found in the NHTSA Toolkit to Reduce Impaired Driving in Latino Communities. These ads can be used by other organizations.

In addition to the social marketing messages, El Pueblo, Inc. printed the names of Latino drivers who had been arrested for DWI throughout the Triangle area in the Latino newspapers. This was done to evaluate the impact public exposure of arrests would have on future DWI behavior.

El Pueblo, Inc. developed the second phase of the media campaign 1 year after the start of Phase I. Phase II focused on the social consequences of DWI on the Latino community and featured the theme, “What one does affects us all! If you drink, don’t drive.” These messages used the same delivery approach for newspaper, TV, and radio ads, rotating every week.

Examples of the Phase II ads can be found in the NHTSA Toolkit to Reduce Impaired Driving in Latino Communities. These ads can be used by other organizations.

4. Printed Materials

Printed materials were developed to enhance the education component of the project. Printed materials included:

- Posters
- Bumper stickers
- *Fotonovela* booklets



El Pueblo, Inc. worked closely with NHTSA and the *Nuestra Seguridad* Coalition Task Force to test the materials to ensure that they were linguistically and culturally appropriate.

As shown at left, one poster warned that “a Latino who drives drunk closes doors for all of us. What one does affects us all” (approximate translation). The poster also included a number to call for help with a drinking problem. Posters used in the Triangle region also included a warning that police would be looking to arrest drunk drivers.

Copies of the poster were placed at Spanish-speaking outlets throughout the Triangle region to highlight enforcement activities. In collaboration with the North Carolina Alcohol Beverage Commission (ABC), posters were also placed in ABC stores in the Triad and Triangle regions. Finally, they were posted in local Latino *tienda* and other stores where beer and wine are sold.

A bumper sticker was developed using a brainstorming process involving El Pueblo, Inc.’s staff, the *Nuestra Seguridad* Coalition Task Force, and NHTSA. The bumper sticker displayed the text: “¿Manejar Borracho? ¡No seas tonto muchacho!” (Driving drunk? Don’t be stupid, man!). Once designed and printed, it was mass distributed in combination with the *fotonovela* booklets throughout the project areas.

The *fotonovela* booklets are short stories featuring photographs and short text captions. They were developed to educate the Latino population about the dangers of DWI. To develop the *fotonovelas*, preliminary scripts were written that were then submitted to NHTSA for review. The scripts were also reviewed by several male Latino volunteers and by the *Nuestra Seguridad* Coalition Task Force to ensure the linguistic and cultural appropriateness of the text.

The *fotonovelas* comprised a series of three booklets, with a plot that continued from booklet to booklet. The first booklet featured a young Latino man telling his friend the story of being arrested for DWI at a sobriety checkpoint. In the second *fotonovela*, the story took the reader

through the process of arrest and trial. The third booklet detailed how the family was affected and the emotional and financial consequences that were placed on the family as a result of the DWI arrest.

Once designed and printed, the *fotonovelas* were distributed in collaboration with the *Nuestra Seguridad* Coalition Task Force throughout the Triangle and Triad areas.

Examples of all printed materials can be found in the NHTSA Toolkit to Reduce Impaired Driving in Latino Communities. These materials can be used by other organizations.

5. Community Outreach

To support distribution of the printed materials and help spread the key project messages, El Pueblo, Inc. participated in a variety of community events. These included several fairs and Latino festivals, including *La Fiesta del Pueblo*, held in Raleigh, with more than 25,000 attendees. This is the biggest Latino festival in the state, and presented a powerful opportunity to reach a large number of Latino residents.



El Pueblo conducted educational outreach at *La Fiesta del Pueblo*, which draws thousands of Latino North Carolina residents.

The festival included a Public Safety Fair at which local law enforcement agencies and member agencies of the *Nuestra Seguridad* Coalition Task Force conducted educational activities for the fair attendees.



Project slogans were prominent at the festival.

DWI prevention messages were widespread throughout the event. The most visible DWI prevention message was seen on the main stage, where a giant banner of the bumper sticker slogan hung, asking “¿Manejar Borracho? ¡No seas tonto muchacho!” (Driving drunk? Don’t be stupid, man!). This slogan also appeared elsewhere in the festival.

El Pueblo, Inc. also offered a drunk-driving simulation using Fatal Vision goggles and a golf cart to simulate the effects of alcohol on driving ability.

The simulation was fun and it tended to draw people. However, the impact of the simulation on drinking and driving behavior has not been proven.³

El Pueblo, Inc. also worked with Latino clubs at local high schools to deliver the DWI simulation and educational materials.

Finally, El Pueblo, Inc. hosted a statewide Latino conference every year. This event was attended by community leaders, Latino youth, and other Latino residents. During the 2006 conference, El Pueblo, Inc. conducted a DWI workshop that included a state trooper, a lawyer, and a DWI victim, each speaking about the issue of DWI from their respective points of view.



Fiesta participants explore the effects of driving while intoxicated using Fatal Vision goggles.

³ While a crowd- pleaser, there is also the possibility that people who do drink, and compare their experience to the Fatal Vision simulation, may believe that they aren't drunk because of the differences between the two experiences.

6. Law Enforcement

The law enforcement component of the project entailed the use of sobriety checkpoints. These were conducted in the Triangle area only so that results could be compared with the Triad area, where only educational approaches were applied. Collaboration with the North Carolina State Highway Patrol was essential to the success of the project. State troopers and local police departments conducted sobriety checkpoints to provide high-visibility enforcement in the Triangle area.

Law enforcement activities were publicized in the project media used in the Triangle region. As shown below, media used in the Triangle region included additional messages about law enforcement. A key to the success of the social marketing campaign was El Pueblo's relationship with the Spanish-language media of North Carolina. Primary outlets used for the campaign included Univision 40 television, La Ley 96.9 FM radio, Que Pasa Radio, La Regia radio, La Movidita radio and Que Pasa and La Conexión newspapers.



The results of the sobriety checkpoints and other arrests for DWI were published in Latino newspapers. In addition, the media used in the Triangle region included messages about enhanced law enforcement activities.

A total of five sobriety checkpoints were conducted between April 2006 and March 2007. As a result of these checkpoints, 61 people were arrested for DWI, of which 16 (26%) were Latino.

In addition to their value as a law enforcement technique, the sobriety checkpoints were a great opportunity to distribute the *fotonovelas* and bumper stickers.



A project sobriety checkpoint



Five checkpoints were conducted in the Triangle area as part of the project.

Names published in a local Latino newspaper

D. Project Evaluation

1. Crash Data

The UNC Highway Safety Research Center gathered North Carolina AOC data to show the trends in alcohol-impaired crashes and DWI charges among Latino drivers in North Carolina from 2002 through 2007. NHTSA’s Fatality Analysis Reporting System (FARS) data was not used.

Analyses were organized to present the most straightforward comparison of the two intervention communities:

Table A: Project Communities and Type of Intervention Performed

Community	Intervention
Southeast	None – control community
Triad	Media only
Triangle	Media plus law enforcement

The results showed that the regional DWI and crash data were both subject to substantial year-to-year variation. In order to make another, more stable comparison, data were aggregated from the remaining 93 North Carolina counties. Although the 3-region control data were presented in the final results, interpretations of trends were based on comparison with the 93-county data.

Information on AOC, the AOC database, the reliability of data in identifying Latinos is included, and sample data sets are included in Appendix E.

2. Community Surveys

To measure the effect of the DWI social marketing campaign, educational activities, and sobriety checkpoints, the project included pre-, mid-, and post-campaign surveys. The objective of the surveys was to measure the awareness levels of the Latino community regarding issues related to drinking and driving. These surveys were conducted by the *Nuestra Seguridad* Coalition Task Force and volunteers in each of the three project locations.

The *Nuestra Seguridad* Coalition Task Force members and volunteers that conducted the survey participated in training that included general information on the project, characteristics of the questionnaire, and general recommendations on how to conduct a survey.

An initial questionnaire, given in both English and Spanish, was developed for use during the pre-campaign. The pre-project campaign survey focused on knowledge and behaviors associated with DWI. The questions were submitted to NHTSA for input before implementation. A need to adjust survey questions was identified. As a result, revised questions were used for the mid- and post-campaign surveys.

A copy of the pre-campaign survey can be found in Appendix A.

Examples of questions from the pre-project survey include:

- *Do you know what “DWI” stands for?*
- *Do you know what the drinking and driving penalties are, if stopped or detained by a police officer?*
- *Have you ever driven after consuming alcohol?*
- *Have you had a motor vehicle crash because you had been drinking and driving?*

The survey was tested to determine the most effective way to collect data. The first pilot test was conducted over the telephone in Spring 2006. Of the 113 calls made, only 10 surveys were completed. The second pilot test was conducted in person at local Latino markets. Ten surveys were completed in much less time than with the phone surveys. As a result of the pilot test,

subsequent surveys were conducted by trained coalition members and volunteers in face-to-face exchanges with Latino residents.

A revised questionnaire was developed for the mid- and post-campaign surveys. Questions were added regarding the media campaign and the printed materials developed by the El Pueblo, Inc. project. These surveys also asked about alcohol-impaired behavior. The mid- and post-campaign surveys were also conducted in person by trained coalition members and volunteers.

Examples of questions from this survey include:

- *What is the legal alcohol limit for drivers in North Carolina?*
- *In the past 6 months, have you seen or heard any messages that encourage people to avoid driving after drinking?*
- *Do you think more people are being stopped by the police for driving after drinking now, compared to last year?*
- *Compared with 6 months ago, would you say you drive after drinking less now, about the same as before, or more than before?*

Three hundred surveys were conducted in each geographic region studied for the mid-campaign survey and the post-campaign survey. It is unclear how many pre-campaign surveys were conducted in each region.

The pre-campaign survey was used to establish a comparative baseline for results obtained in later surveys.

IV. Key Findings

While a full discussion of the quantitative data generated from the project is found in Appendix D (and all table numbers refer to tables in that section), the key findings from this project offer encouraging, but sometimes puzzling, information.

Crash data were used to evaluate the percentage of crashes in which the driver had been drinking. These data were evaluated for the years 2005-2007 for both Latino and non-Latino drivers and in each of the project regions. Because data in the Southeast (control) region were so volatile, the crash data were aggregated from all of the non-project counties in the state as well. A snapshot of partial results from this analysis showed the following:

Table B: Percent of Crashes in Which Driver Had Been Drinking

	Non-Latino			Latino		
	2005	2007	Change	2005	2007	Change

Triad (media)	2.37%	2.51%	+0.14%	6.55%	7.16%	+0.61%
Triangle (media and law enforcement)	1.7%	1.74%	+0.04%	5.75%	5.39%	-0.36%
Other NC Counties	2.91%	3.09%	+0.18%	7.67%	7.27%	-0.5%

Note: The El Pueblo Demonstration Project Technical Report did not specify what BAC level qualified for “driver had been drinking.”

Although it is difficult to draw conclusions without looking at a broader picture, the percentage of crashes involving Latino drivers who had been drinking declined in the Triangle (media and law enforcement) region by a greater percentage than for non-Latino drivers.⁴

During the same time period, 2005-2007, an analysis of DWI charges as a percentage of all traffic charges showed the following:

Table C: DWI Arrests for the Project Areas Among Non-Latinos and Latinos

	Non-Latino			Latino		
	2005	2007	Change	2005	2007	Change
Triad (media)	4.37%	3.82%	-0.55%	8.26%	6.27%	-1.99%
Triangle (media and law enforcement)	5.01%	4.15%	-0.86%	9.36%	6.45%	-2.91%
Other NC Counties	6.85%	6.25%	-0.6%	10.11%	7.61%	-2.5%

These data indicate that the percentage of DWI charges for Latino drivers decreased more than for non-Latino drivers, and more in the Triangle (media and law enforcement) region (2.91%) than in either the Triad (media) region (1.99%) or the rest of the state (2.5%). (Table 1) El Pueblo, Inc. did not collect data on enforcement efforts outside the scope of the project, so it is not known if the number of non-project related enforcement efforts changed over the course of the project.

The survey results were also revealing, and occasionally contradictory. For example, the percentage of respondents who indicated that they:

- Had driven while intoxicated in the past six months declined 6% in the Triad (media) region and 1% in the Triangle (media and law enforcement) region, but declined 12% in the Southeast (control) region (Table 2)

⁴ While showing a promising trend, this change was not identified as statistically significant in the El Pueblo report.
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- Had driven after drinking less frequently now than they did 6 months ago increased 7% in the Triad (media) region and 13% in the Southeast (control) region while decreasing 28% in the Triangle (media and law enforcement) region⁵ (Table 2)
- Knew that it is against the law to drive while intoxicated in North Carolina increased 22% in the Triad (media) region, but only 1% in the Triangle (media and law enforcement) region. The percentage decreased 19% in the Southeast (control) region. (Table 3)
- Had heard at least one of the slogans used in the campaign increased 23% in the Triad (media) region, but dropped 3% in the Triangle (media and law enforcement) region, and dropped 5% in the Southeast (control) region (Table 3)
- Believed more people were being stopped for DWI compared to last year increased 18% in the Triad (media) region, but decreased 2% and 9% respectively in the Triangle (media and law enforcement) and Southeast (control) regions (Table 4)
- Had read about Latinos being arrested for DWI increased 19% in the Triad (media) region, but declined 4% and 9% respectively in the Triangle (media and law enforcement) and Southeast (control) regions (Table 4)⁶
- Had heard about sobriety checkpoints in the area increased 29% in the Triad (media) region, but declined 19% in the Triangle (media and law enforcement) region and increased 3% in the Southeast (control) region (Table 4)⁷
- Believed local police strictly enforced DWI laws increased 5% in the Triad (media) region, but declined 18% and 11% respectively in the Triangle (media and law enforcement) and Southeast (control) regions (Table 4)

While there are some positive indications in these data, there are also some contradictory data, and it is difficult to draw firm conclusions. There also were a variety of complicating factors. For example:

- Although the mid- and post-campaign surveys measured self-reported behavioral changes, the pre-campaign survey asked different questions, making comparisons prior to the project impossible.

⁵ The El Pueblo Final Technical Report labeled these data “Respondent drives after drinking less now compared to 6 months ago.” However, the actual question in the questionnaire asked “Compared with 6 months ago, would you say you are driving after drinking: Less now, About the same as before, More than before.”

⁶ These data seem counterintuitive and may be the result of flaws in the data collection process. This is discussed further below.

⁷ These data seem counterintuitive and may be the result of flaws in the data collection process. This is discussed further below.

- Self-reported behavior data rely on individual memory and frequently are not accurate. One result of the education campaign might have been an increased awareness of personal drinking and driving behavior, so respondents may have reported more drinking or more drinking and driving behavior at the end of the project, not because they were engaging in more of the behavior, but because they were more *aware* of their behavior.
- The population of the Southeast region is quite small. As a result, relatively small changes can appear as more significant than they really are. For example, only 39 people responded to one of the post-campaign questions asking if “Respondent drives after drinking less now compared to 3 months ago.” This small sample makes it difficult to be confident in the result.
- The population in all three regions is growing rapidly. So it is possible that the post-campaign surveys included responses from people who had just recently moved to the area. Any questions about awareness of the project or comparisons of behavior to earlier periods would be meaningless for this population.
- Some of the survey questions were worded in ways that may have resulted in misleading data. For example, in the pre-campaign survey, respondents were asked if they knew what DWI and BAC stood for. However, there was no verification that they actually did know. For example, a respondent might have responded “yes” because he or she “knew” that BAC meant Bring an Alcohol Container.
- Law enforcement in North Carolina began to implement Section 287(g) of the Immigration and Nationality Act during the course of the project. The use of local law enforcement to enforce immigration laws may have discouraged Latinos in the country illegally from drinking and driving — or even from driving at all — for fear that they might be stopped and arrested. This may have had a significant impact in low population areas, such as the Southeast (control) region.
- While enhanced law enforcement was a component of the Triangle region intervention, only 5 operations were conducted over 11 months in an area with a population of approximately 721,000. This may have been too small of a level of law enforcement activity to raise public awareness of law enforcement or inhibit DWI.
- The mid- and post-campaign surveys both asked respondents if they had driven while intoxicated less than 6 months ago, a question that is dependent on the time of year the survey was administered. While the exact dates when the surveys were conducted are not available, if done in June, 6 months earlier would have been the holiday season, which is traditionally a time of increased alcohol consumption.
- Since the Latino population in the project areas was very dynamic, it is possible that people surveyed at the end of the campaign were new arrivals who had not been exposed

to project messaging or law enforcement efforts. The surveys did not collect data on how long respondents had resided in the area.

V. Lessons Learned and Recommendations

The lessons learned and recommendations in this section are based on or developed in conjunction with El Pueblo, Inc. project staff and others involved in efforts to reduce drunk-driving injuries and fatalities in the Latino community in North Carolina. They are organized to address the major components of the project and include both aspects of the project that things that went well and aspects that could be improved by other similar projects in the future. Since local cultural and political environments vary widely, all of these recommendations should be assessed for relevance to any other location.

A. Community Involvement

Recommendation: Work with professional research designers to develop a project design, data gathering instruments, and data analysis procedures before the project begins.

- Community involvement was a key part in obtaining feedback in this project. However, developing a sound evaluation research design prior to implementing a project is critical for two reasons. First, good design maximizes the potential for a successful intervention. Second, good design helps to ensure that the data collected will accurately assess the project's success. Third, a good design will help ascertain best data collection methods for a specific community.
- Survey questions need to be worded carefully. For example:
 - One of the questions in the pre-campaign survey was: "Do you know what 'BAC' stands for?" Response options were "Yes" or "No." If a respondent replied "Yes," there was no way to verify whether or not they actually knew what it stood for.
 - A later question in the same survey asked how many times the respondent had driven after consuming alcohol. This type of question relies on the respondent's memory for an answer. This is often not a reliable way to gather data because people's memories are frequently inaccurate, especially when recalling actions performed under the influence of alcohol.
 - Another question asked respondents if they thought any of several approaches used to reduce the number of Latino men that drink and drive would be effective. While useful for assessing opinions, this information is of little practical value because opinions of effectiveness may vary greatly from actual effectiveness.
 - After receiving some professional assistance from researchers at the University of North Carolina, El Pueblo, Inc. made adjustments to the pre-program survey

questions. However, this meant that the information collected in the pre-program surveys could not be compared accurately to those from mid- and post-program surveys because of the differences in wording.

- The potential impact of activities and events outside the project needs to be considered and evaluated when determining project effectiveness.

Recommendation: Carefully define the population to be surveyed and consider a longitudinal approach that follows the same population from the beginning of the project to the end.

- One variable not accounted for in the surveys was change in the population. Latinos in the target communities were surveyed three times. However, the survey wasn't truly random, as it was administered mainly in social service locations. Also, it was not representative of the entire Latino population, as the number of respondents was too small. Finally, since pre-campaign respondents were not necessarily interviewed mid- or post-campaign, it is impossible to assess the impact of the project on a consistent population.

Recommendation: Perform focus-group testing on survey questions to identify and correct easily misinterpreted questions before the survey process begins.

- Language is one of the major challenges to developing an effective survey, particularly for survey participants who do not speak English as their first language. To address this challenge, it is important to perform focus-group testing on the survey questions. This process involves working with a group of people representative of the target population. Trained interviewers ask each person what each of the survey questions means to him or her. This allows survey designers to identify questions that are frequently misinterpreted and correct the language on the survey before the survey is officially used.

Recommendation: Train survey administrators how to administer the survey properly. See Appendix C for a sample training plan handout.

- People delivering the pre-, mid-, and post-campaign surveys for the El Pueblo, Inc. project were trained in the proper techniques for administering surveys. This is a critical component of any project using survey-based data. If survey administrators are not properly trained, their behaviors can easily influence the results and invalidate the data, so having this training provided important quality control to the data collection process. Collecting survey data at events may cause a non-random sample.

B. Law Enforcement and Community Outreach

Recommendation: Establishing a strong partnership with law enforcement is critical. While the data indicate that enhanced law enforcement did produce positive results, the low number of

sobriety checkpoints may have limited the impact. In addition, publicizing both the occurrence of and results from the checkpoints is important.

- While the law enforcement sobriety checkpoints were a key component of the project design, the data, while indicating a positive impact, were inconclusive. The data do not indicate why this was the case, but timing, location, and frequency all may be contributing factors, as there were only a limited number of checkpoints that were done in conjunction with the project.
- In addition, while radio ads did announce that the sobriety checkpoints would be in operation, they did not specify where, so listeners may not have realized that the checkpoints were in their neighborhoods and therefore may not have been deterred from drinking and driving by the presence of the checkpoints.
- Listing the names of those arrested for DWI in newspapers provided anecdotal evidence of effectiveness in that the number of names listed declined over the course of the project. While data are not available, this seems like a promising approach.

Recommendation: Identify several types of events and locations frequented by the target population to increase the potential for a broadly based response to the survey. Provide incentives to encourage participation in the surveys.

- Surveys were conducted at community events and social service centers. Respondents received a bag containing educational materials and small gifts for participating. Reaching people through these types of community events was an effective way to engage people in the survey process and to distribute educational materials.

C. Media

Recommendation: Before creating any media, identify the key values of your target population and ensure they are addressed in your media. Use focus groups to test media ads and print materials prior to release.

- Prior to this project, NHTSA had translated existing drunk-driving materials into Spanish. These materials did not seem to be effective with the Latino community. One reason for this seemed to be that the messages in these materials did not resonate with Latinos. El Pueblo, Inc. worked with focus groups and individual volunteers to define those values that were important to the Latino community.

Recommendation: When creating printed media assets, to the extent possible, use visuals, not just words, to communicate. Create single-volume materials so participants don't inadvertently miss important information because they have to collect multiple documents to obtain all the information.

- El Pueblo, Inc. created *fotonovelas* that told a compelling story about a Latino man involved in a DWI incident. The story was told using photographs and a minimal number of words, in three parts, using three separate books. The *fotonovelas* were popular and accessible. However, this method proved to be problematic as people often failed to realize it was a three-part series and picked up only one book.

Recommendation: Modify radio ads to reflect significant changes in the target population or the political climate of your area as needed.

- The radio ads were considered a very effective method of getting messages to the Latino community. However, conditions in the target communities changed over the course of the project, and project staff suggested that the radio ads should have been modified to reflect those changes. For example, deportation of Latinos was not a major issue at the start of the project, but had become one by the end, so the knowledge that one could be stopped by police for alcohol-impaired driving could have been used as a key deterrent to end the problem behavior.

Recommendation: Negotiate with media companies for discounts on radio and TV spots. Radio may provide a better return on investment than television, which is expensive. In addition, don't run the same ads all year because the message can lose impact. Vary the ads, but keep the message consistent.

- Media stations, both TV and radio, frequently are willing to make deals on air time for social programs. For example, El Pueblo, Inc. was able to negotiate two free ads for every paid ad. This increased media distribution at no additional cost to the project.

Recommendation: Evaluate the potential for listing those arrested for DWI in local newspapers or publicizing their names in other ways.

- El Pueblo, Inc. printed the names of those arrested for DWI in Latino newspapers. Project staff participating in radio talk shows received many phone calls thanking them for doing this and reported seeing a drop in the number of arrestees as the publishing of arrestee names continued over time. This seemed to be a very effective strategy.

Recommendation: Watch for changes in the local environment that might impact perceptions of a project or project materials. Be prepared to modify materials if necessary.

- El Pueblo, Inc. produced a bumper sticker with the slogan “*¿Manejar Borracho? ¡No Seas Tonto Muchacho!*” (“Driving drunk? Don't be stupid, man!”) Initially, the bumper stickers were very popular. However, the perception soon grew that the bumper sticker identified the vehicle occupants as Latino and drew unwarranted attention from law enforcement. This may have been due, at least in part, to increased focus on immigration issues by law enforcement. Interest in the bumper stickers then dropped to near zero.

Recommendation: Latino communities may be unaccustomed to learning in certain formal ways and may prefer a less technical, more personal approach. Pay attention to the educational needs and abilities of your audience.

- El Pueblo, Inc. tried using PowerPoint to deliver presentations early in the project. They found that this type of presentation did not work well with Latino audiences. As one project staff member put it, “These were not well received. You have to speak from the heart.”

D. Partnerships

Recommendation: Organizations that do not have a strong presence in or credibility with the Latino community should partner with Latino community organizations to help get the message out and gain credibility.

- The staff of El Pueblo, Inc. is Latino, and the program has strong credibility with the Latino community. This was a key factor in the project and its ability to successfully reach out to the target population.

E. Culture and Language

Recommendation: Always test messages with members of your target audience to ensure that the language is appropriate.

- Many people who are not familiar with the Latino community assume that it is far more uniform than it is. There are significant cultural and language differences among Latino communities. For example, someone from Venezuela will refer to sobriety checkpoints as “*puntos de control*,” while someone from Mexico may refer to them as “*retenes*.” Another example surfaced in the design of the bumper sticker. Initially, the text was to say “*Soy macho y no manejo borracho*.” The word “*macho*,” which worked well with Mexicans, had negative connotations in other communities. After testing in focus groups, the language was changed to “*¿Manejar Borracho? ¡No Seas Tonto Muchacho!*” (“Driving drunk? Don’t be stupid, man!”)

Recommendation: Never use computer-based language translation programs to create materials.

- There are a variety of computer-based language translation options. These are not accurate enough for developing effective messages.

F. Other Approaches

Recommendation: Consider the use of tools, such as Fatal Vision goggles, to raise awareness of the impact of alcohol on driving.

- El Pueblo, Inc. used Fatal Vision goggles to demonstrate the impact of alcohol on driving ability. These demonstrations were entertaining and they drew a crowd. It is important to note, however, that while they can raise awareness and attract people who are then available to receive further educational materials, they can also create a false sense of confidence if someone drinks but does not experience the blurred vision created by the goggles. They should only be used as part of a broader program.

Recommendation: Carefully evaluate the effort required and potential return on using automated web-based advertising services.

- El Pueblo, Inc. followed the advice of an advertising agency and used Google to place banners in Spanish language websites. This did not result in increased web traffic to the El Pueblo site.

Appendix A: Pre-Campaign Survey Questionnaire

***Nuestra Seguridad* Hispanic (Latino) DWI Intervention Project**

Population to be studied:

“The population to be studied consists primarily of young (18-26 age range) Hispanic (Latino) males with limited English proficiency, residing in the Triad and Triangle areas and Mecklenburg County.”

Triangle Area:

Triad Area:

Mecklenburg County:

Introduction:

Good... (morning, afternoon, evening) we are conducting a survey for El Pueblo, a non-profit agency based in Raleigh, and currently they are conducting a project for the National Highway Traffic Safety Administration dealing with Hispanic (Latino) men that drive after having consumed alcohol. The purpose of this campaign is to lessen the crashes and deaths associated with drinking and driving among Hispanic (Latino) men.

Could I take a couple minutes of your time to conduct a survey for this project?

It is not obligatory to respond all of the questions that are asked.

It is not necessary to give any of your personal information; all of the information that you provide us will be confidential and represents no risk to you.

QUESTIONNAIRE

Part 1: Identification:

1. How old are you? _____
2. Marital Status? Single___ Married___

Part 2: Knowledge:

3. What do you consider your English proficiency level to be?
low___ average___ high___
4. Have you heard of organization "El Pueblo"? Yes ___ No___
5. Do you know anything about the "Nuestra Seguridad" program developed by "El Pueblo"? Yes ___ No___
6. Do you know of any laws related to drinking and driving? Yes ___ No___
7. Do you know what "DWI" stands for? Yes___ No___
8. Do you know what "BAC" stands for? Yes___ No___
9. Do you know what the drinking and driving penalties are, if stopped or detained by a police officer? Yes___ No___
10. There is a maximum percentage amount of alcohol concentration in the blood after which you could be penalized if the police stops you and performs a test on you to determine whether you are intoxicated. Do you know what value the maximum amount is for alcohol in your blood?
 - a) 0.25 _____
 - b) 0.08 _____
 - c) 0.02 _____
 - d) Don't know _____
11. Have you heard of the "designated driver" concept? Yes ___ No___
12. Are you aware that current law projects are being developed that would allow for deportation of undocumented persons who have been caught driving while intoxicated? Yes ___ No___

Part 3: Behavior:

Now I would like to ask a few questions about your knowledge of and experiences with drinking and driving.

13. How many alcoholic beverages do you think you can consume and still be able to drive? _____

If you respond with "I do not drink" proceed to question number 28

14. If you drink, where do you usually drink?

- | | | |
|---------------------------------|---------|--------|
| a) In a bar/ club | Yes ___ | No ___ |
| b) At a friend's house | Yes ___ | No ___ |
| c) On the street (public place) | Yes ___ | No ___ |
| d) At your home | Yes ___ | No ___ |

15. Have you ever driven after consuming alcohol? Yes ___ No ___

**If "No", Skip down to question 27*

16. How many times? _____

17. Of the _____ times that you have driven after consuming alcohol, how many drinks on average did you consume? Yes ___ No ___

18. Of those ___ times that you have driven after consuming alcohol, did you drive alone? Yes ___ No ___

19. Of those ___ times that you have driven after consuming alcohol, did you drive with friends in the car? Yes ___ No ___

20. Of those ___ times that you have driven after consuming alcohol, did you drive with your family in the car? Yes ___ No ___

21. When you have driven after consuming alcohol, have you ever worried about:

- | | | |
|----------------------------------|---------|--------|
| a) Having a motor vehicle crash? | Yes ___ | No ___ |
| b) Being stopped by police? | Yes ___ | No ___ |
| c) None of the above | Yes ___ | No ___ |

22. Have you ever been convicted for drinking and driving?

**If "No", Skip down to question 25* Yes ___ No ___

23. How many times? _____

24. After have been convicted, have you driven under the influence again?
Yes ___ No___
25. Have you had a motor vehicle crash because you had been drinking and driving?
Yes ___ No___
26. Have you abstained from driving after drinking? Yes ___ No___
27. Are you conscious, that drinking and driving is a big risk for you and your family?
Yes ___ No___
28. Do you know of someone Hispanic (Latino), who has had a motor vehicle crash due to drinking and driving? Yes___ No___
29. Have you ever been in a car driving with friends that had been drinking and driving? Yes ___ No___
30. Have you ever prevented a friend from driving after they have consumed alcohol? Yes ___ No___
31. In your country, is it common to drink and drive? Yes ___ No___
32. Do you think that it is normal to drink alcoholic beverages every day?
Yes ___ No___

**If "No", Skip down to question 34*

33. How many? 1 – 3 ___ 4 – 6 ___ 6 o more ___

This project would like to find out what be helpful in decreasing the number of Latino men that drink and drive.

34. Do you think it could be helpful if...?
- a) The amount of the fine is increased Yes ___ No___
 - b) The time under arrest is increased Yes ___ No___
 - c) The driver's license is suspended indefinitely Yes ___ No___

Do you think it could be helpful if...?

- a) Police increase check points Yes ___ No___
- b) Information about how many people have been killed or injured from motor vehicle crashes after drinking and driving Yes ___ No___

35. Do you think that Hispanic (Latino) men would avoid driving after consuming alcohol to avoid:

a) Crashes with injuries so severe that hinders one from working.

Yes ___ No___

b) Crashes with injuries so severe that makes one a burden to their family.

Yes ___ No___

c) Dying at the crash and leaving the family alone in this country.

Yes ___ No___

d) Dying at the crash and leaving the family without economical support.

Yes ___ No___

END OF THE QUESTIONNAIRE

Appendix B: Mid- and Post-Campaign Survey Questionnaires

***Nuestra Seguridad* Hispanic (Latino) DWI Intervention Project**

Population to be studied:

“The population to be studied consists primarily of young (18-26 age range) Hispanic (Latino) males with limited English proficiency, residing in the Triad, Triangle and Southeastern areas.”

Triangle Area:

Triad Area:

Southeastern Area:

Introduction:

Good... (morning, afternoon, evening) we/I are/am with El Pueblo, Inc., a non-profit agency based in Raleigh, and currently are conducting a project for the National Highway Traffic Safety Administration on traffic safety within Latino populations.

Could I take a couple minutes of your time to conduct a survey for this project?

I won't ask for any personal information and anything you tell me will be confidential.

9.- In the past six months, which of the following sayings have you heard or seen? Please check any you have seen or heard and check where you saw or heard:

- a. "You drink, you drive, you lose": Yes ___ No ___
- | | |
|--------------------------------------|---|
| <input type="checkbox"/> TV | <input type="checkbox"/> Brochure |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Friend/Relative |
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> At festivals, meetings, events |
| <input type="checkbox"/> Magazine | <input type="checkbox"/> On cars bumper stickers |
| <input type="checkbox"/> Fotonovelas | <input type="checkbox"/> Other, specify: _____ |
| <input type="checkbox"/> Poster | |

- b. "Friends don't let friends drive drunk": Yes ___ No ___
- | | |
|--------------------------------------|---|
| <input type="checkbox"/> TV | <input type="checkbox"/> Brochure |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Friend/Relative |
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> At festivals, meetings, events |
| <input type="checkbox"/> Magazine | <input type="checkbox"/> On cars bumper stickers |
| <input type="checkbox"/> Fotonovelas | <input type="checkbox"/> Other, specify: _____ |
| <input type="checkbox"/> Poster | |

- c. "¿Manejar Borracho? ¡No Seas Tonto Muchacho!": Yes ___ No ___
- | | |
|--------------------------------------|---|
| <input type="checkbox"/> TV | <input type="checkbox"/> Brochure |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Friend/Relative |
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> At festivals, meetings, events |
| <input type="checkbox"/> Magazine | <input type="checkbox"/> On cars bumper stickers |
| <input type="checkbox"/> Fotonovelas | <input type="checkbox"/> Other, specify: _____ |
| <input type="checkbox"/> Poster | |

- d. "Pasa las Llaves" (Pass the Keys)": Yes ___ No ___
- | | |
|--------------------------------------|---|
| <input type="checkbox"/> TV | <input type="checkbox"/> Brochure |
| <input type="checkbox"/> Radio | <input type="checkbox"/> Friend/Relative |
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> At festivals, meetings, events |
| <input type="checkbox"/> Magazine | <input type="checkbox"/> On cars bumper stickers |
| <input type="checkbox"/> Fotonovelas | <input type="checkbox"/> Other, specify: _____ |
| <input type="checkbox"/> Poster | |

10. Do you think that more people are being stopped by police for driving after drinking now, compared to last year? Yes ___ No___

11. Have you read anything in the news recently about Latinos being arrested for driving after drinking? Yes ___ No___

12. In the past six months, have you read or heard anything recently about police in this area doing roadblocks or checkpoints to catch drinking drivers? Yes ___ No___ (skip to #14)

13. Where do you read or heard anything recently about police in this area doing roadblocks or checkpoints to catch drinking drivers?

- TV
- Radio
- Newspapers
- Friend/Relative
- I saw it at the street
- I did past through DWI checkpoint
- Other, specify:_____

14. If you were to drive somewhere in this area after you had been drinking, how likely do you think it is that you would be stopped and arrested?

- Very likely
- Somewhat likely
- Not very likely
- Very unlikely

15. How strictly do you think local police enforce drinking and driving laws?

- Very strictly
- Somewhat strictly
- Not very strictly

Not at all strictly

Part 2: Behavior:

Now I would like to ask a few questions about your knowledge of and experiences with drinking and driving.

16. Do you ever use the public bus, taxis, or transportation other than a car?

Yes ___ No___

17. How often do you drive a motor vehicle (check one)?

- every day
- few days a week
- few days a month
- few days a year
- Never

18. Do you drink alcohol (even on special occasions)? Yes ___ No___ (skip to #28)

19. How many alcoholic beverages do you think you can consume and still be able to drive?

1 – 2 ___ 3 - 4 ___ 5 – 6___ 6 or more___

20. Where do you usually drink?

- In a bar/club
- At a friend's house
- On the street (public place)
- At your home

21. In the past six months do you drive after you have been drinking? Yes ___No___ (skip to #25)

22. How many alcoholic beverages did you have that last time that you drive after you have been drinking?

1 – 2 ___ 3 - 4 ___ 5 – 6___ 6 or more___

23. Compared with 6 months ago, would you say you are you drive after drinking:

- Less now
- About the same as before
- More than before

16. In the past six months, how many times have you driven within 2 hours after drinking?

- I haven't done this
- once or twice
- three or more
- I've done this but don't remember how many times

17. In the past six months, when you have driven after consuming alcohol, did you worry about?

- Having a motor vehicle crash?
- Being stopped by police?

18. Are you aware that drinking and driving is a big risk for you and your family? Yes ___ No___

19. Do you think it might hurt your family if you drive after drinking, even though they are not in the car with you? Yes ___ No___

20. In the past six months, have you been the driver in a car crash when you had been drinking? Yes ___ No___

21. In the past six months, have you been a passenger in a car crash where the driver had been drinking? Yes ___ No___

22. Have you ever prevented a friend from driving after they have consumed alcohol? Yes ___ No___

Part 3: Identification:

23. How old are you? _____

24. Are you married? Yes ___ No___

25. Does your family live here with you in North Carolina? Yes ___ No___

26. If you were not born in the US, how long have you been here? Yes ___ No___

27. What do you consider your English proficiency level to be? low___ average___ high___

Appendix C: DWI Survey Training Handout

Nuestra Seguridad Latino DWI Intervention Project

Training for Conducting Surveys

ABOUT THE PROJECT

- Proposal⁸:

Demonstration and evaluation of strategies for reducing deaths and injuries resulting from driving while intoxicated among the Latino population.

- Background⁹:

A large proportion of Latinos in the United States lose their lives on the highways and the number of traffic fatalities that result from Latinos driving while intoxicated is equal to the total number of fatalities resulting from the same reason in the entire United States.

In 2003, 3,167 people of Latino origin were fatally injured in motor vehicle crashes, in the entire United States, 48% of those deaths were related to individuals that were driving while intoxicated compared to a total of 40% of deaths, for the same reason, in the entire United States.

Additionally, according to the United States Census, the Latino population continues to grow, and it is growing at a faster rate than the total population in the United States. The Latino population has experienced a 60% growth since the 1990 Census, making it the largest minority group in the United States, expected to reach a 59 million population by 2030.

Recent actions to reduce the number of individuals that drive while intoxicated among the general population have focused primarily on efforts of high visibility to increase compliance of the law and have been supported by media advertising.

⁸ Taken from *Nuestra Seguridad* Latino DWI Intervention Project. NHTSA Cooperative Agreement. PROPOSAL.

⁹ Taken from UNITED STATES DEPARTMENT OF TRANSPORTATION. National Highway Traffic Safety Administration. Discretionary Cooperative Agreement to Support the Demonstration and Evaluation of Strategies to Reduce Impaired Driving Fatalities and Injuries within Latino Populations REQUEST FOR APPLICATIONS.

Studies have demonstrated that those efforts have the ability to reduce fatalities related to individuals driving while intoxicated by 20%. However, the effectiveness of high visibility efforts to increase compliance of the law among the Latino population has not been completely evaluated. Moreover, the implementation of efforts of high visibility to increase compliance of the law, supported by media advertising, have not been evaluated adequately to determine if this strategy is effective for this community, considering the cultural differences it possesses.

Facing this situation, half way through last year, the National Highway Traffic Safety Administration (NHTSA) made a discretionary call to establish a cooperative agreement to demonstrate and evaluate effective strategies to reduce deaths and injuries caused by driving while intoxicated among the Latino population.

El Pueblo, Inc. responded to this call and was selected jointly with the Arizona Governor's Office of Highway Safety as the two organizations that would conduct a project on a national level.

- Objectives¹⁰:

The principal objective of the campaign is to present Lessons Learned for decreasing DWI among the immigrant Latino community. Through the results of the research project, the overall goal of El Pueblo, Inc. is to create a toolkit of strategies that can be implemented in similar states and metropolitan areas that also face the challenge of providing services to the Spanish-speaking immigrant community while working with limited resources.

- Partners¹¹:

El Pueblo, Inc. will partner with three key organizations to ensure the success of the demonstration project. These partners are:

1. The UNC Highway Safety Research Center
2. The NC State Highway Patrol
3. Nuestra Seguridad Coalition Task Force

¹⁰ Taken from *Nuestra Seguridad* Latino DWI Intervention Project. NHTSA Cooperative Agreement. PROPOSAL.

¹¹ Taken from *Nuestra Seguridad* Latino DWI Intervention Project. NHTSA Cooperative Agreement. PROPOSAL.

The UNC Highway Safety Research Center will provide data on alcohol-impaired crashes, injuries, and fatalities in the three regions of the project site and will advise El Pueblo, Inc.'s Research Assistant to ensure that the project methods implemented are sound.

The NC State Highway Patrol is essential to the success of the project. Troopers will conduct 4 annual sobriety checkpoints in years one and two, and one in year three to provide high visibility enforcement in one of the demonstration sites. The Highway Patrol will also provide relevant DWI arrest data for the demonstration sites.

The Nuestra Seguridad Coalition Task Force will ensure that culturally appropriate Spanish-language materials are developed and distributed to Latinos in the appropriate demonstration site areas. They will also conduct pre, mid and post program surveys to evaluate learned behavior among the Latino communities.

- Methodology¹²:

El Pueblo, Inc. will select demonstration sites in Triangle and Triad areas, and will analyze data from the Southeast as a control site. Latinos in the Triad will benefit from distribution of written materials, audio/visual presentations, and radio, television, and newspaper announcements. Latinos in the Triangle area will receive those messages in addition to high-visibility law enforcement activities, with collaboration from the NC Highway Patrol. Data from the Southeast will be observed, but no intervention will be performed. In addition, all advertisements will have a number to call if they feel they have a drinking problem.

El Pueblo, Inc. believes that while highly visible law enforcement activities can complement a strong social marketing campaign, the addition of law enforcement activities will not create a significant difference in behavior change. Rather, a strong community-based campaign with culturally-appropriate messages utilizing existing resources relied upon by the Latino community can have an equal effect on reduction of alcohol-impaired fatalities and crashes among Latinos.

¹² Taken from *Nuestra Seguridad* Latino DWI Intervention Project. NHTSA Cooperative Agreement. PROPOSAL.

To measure the effect of the addition of law enforcement activities to a DWI campaign, El Pueblo, Inc. will conduct a social marketing campaign in both the Triangle and the Triad. The campaign in the Triad will focus primarily on social, family, and religious influences and will be delivered through community-based agencies as well as Spanish-language media.

In the Triangle, the social marketing campaign will be supplemented by announcements of enforcement activities in Spanish-language media outlets. The NC Highway Patrol will then conduct sobriety checkpoints to accompany these activities. El Pueblo, Inc. will also invite local law enforcement to participate in an annual Safety Fair specifically for the Latino community in the Triangle area as well as at presentations in churches and community centers to increase the visibility of law enforcement officers in the area in a positive environment.

▪ **Timeline¹³:**

2005 (3 months)	Project begins
2006	<ul style="list-style-type: none"> • The Coalition's existing safety materials are revised as necessary and new DWI materials developed at discretion of project staff. • UNC Highway Safety Research Data analyzes and reports alcohol-impaired fatality and crash data from prior year for Wake, Durham, and Mecklenburg Counties (October 2004-October 2005) to establish baseline. • NC Highway Patrol conducts one sobriety checkpoint in Wake County to provide baseline DWI arrest data. • Pre-campaign survey is conducted in Wake and Durham Counties about program name/awareness. • Media campaign is developed and implemented, presentations are conducted and written materials are distributed in the Triangle and Triad areas. • NC Highway Patrol conducts another three sobriety checkpoints.
2007	<ul style="list-style-type: none"> • UNC Highway Safety Research Data analyzes and reports alcohol-impaired fatality and crash data from prior year for Wake, Durham, and Mecklenburg Counties (October 2005-October 2006) to establish baseline. • NC Highway Patrol conducts another four sobriety checkpoints. • Media campaign is developed, presentations are conducted and written materials are distributed in the Triangle and Triad areas. • Mid-campaign and post-campaign surveys are conducted. <ul style="list-style-type: none"> • UNC Highway Safety Research Data analyzes and reports alcohol-impaired fatality and crash data from prior year for Wake, Durham, and Mecklenburg Counties (October 2006-October 2007) to establish baseline.
2008 (3 months)	Evaluation of findings, identification of Lessons Learned and drafting of final report.

¹³ Taken from *Nuestra Seguridad* Latino DWI Intervention Project. NHTSA Cooperative Agreement. PROPOSAL.

ABOUT THE QUESTIONNAIRE

- The first page includes:
 - Identification of the project population (Latino males between the ages of 18-26), for the purpose of serving as reference and reminder at the moment of conducting the surveys.
 - Areas where the project is being conducted (Triangle, Triad and Southeast), to match the places where the persons surveyed live.
 - Introduction: text to indicate to the surveyor about information he/she should inform the respondent before the survey is conducted.
- Survey of 34 questions, with three parts:
 - Part 1: Knowledge: questions to identify the level of knowledge of the respondent with respect to the theme of the project and to be able to analyze before and after the implementation of the informative campaign.
 - Part 2: Behavior: questions to identify the attitude of the respondents before drinking and driving and to know more about their personal experiences in this sense.
 - Part 3: Identification: questions to verify that the respondent fits within the project population.
- All the questions are rather simple; many have yes or no answers.

BASIC INSTRUCTIONS TO CONDUCT SURVEYS

- Select the respondents according to the characteristics indicated for the project population.
- When addressing the respondent, be polite and respectful.
- Identify yourself, explain what you are doing and reasons for the project, with the purpose of getting the respondent's consent for conducting the survey.
- If the person refuses to be surveyed, do not insist or look upset, just nicely walk away and select another person.
- Read the questions slowly and clearly, without modifications.

- Allow enough time for the respondent to think about his/her answer.
- If the respondent does not understand the question, repeat it slowly, without adding or changing the question.
- When asking do not place emphasis or make additional comments that would lead the respondent to think that you are indicating an answer.
- Do not judge or argue with the opinions submitted by the respondent, stay neutral.
- Do not give advice to the respondents, focus on conducting the survey.
- Be sensible when asking personal questions that could intimidate the respondent.
- Give each respondent an information packet provided and show appreciation for their collaboration.
- Never disclose information about a person obtained while conducting the survey.

LOGISTICS

- The pilot tests indicated that conducting the surveys in person is the most effective method for this project. We suggest contacting potential respondents in *centros*, Latino shops, community activities, or places within your area where Latinos are commonly found. If you are able to find a group of Latino males that you could give the survey to and have them fill it out, you may, as long as you give simple instructions as to how to fill it out.
- El Pueblo, Inc. will provide the surveys and packets to be given to the respondents.
- Fill out the surveys with pencil.
- The surveys must be conducted within one month.
- When finished, the surveys should be sent to El Pueblo, Inc. by mail.

Appendix D: Detailed Project Results

I. Project Results

This section recaps the Project Results section of the El Pueblo, Inc. Final Technical Report. Project results were presented in the final report in a series of tables and charts. These presented data on both the community surveys and the crash data as follows:

A. List of Community Survey Data

- Table 1: Descriptive Statistics for Variables Used in Logistic Regressions (Mid- and Post-Phase Surveys)
- Table 2: Percentage Comparisons for Drinking and Driving Behavioral Items (by Region and Survey Phase)
- Table 3: Percentage Comparisons for Knowledge Items (by Region and Survey Phase)
- Table 4: Percentage Comparisons for Police Enforcement Items (by Region and Survey Phase)
- Table 5: Logistic Regressions Predicting Log Odds of Driving While Intoxicated in Past 6 Months
- Figure 1: Graphical Representation of the Predicted Probability of Self-Report DWI Behavior in the Past 6 Months, by Survey Phase and Geographic Region, Net of Covariates (See Table 5)
- Table 6: Logistic Regressions Predicting Log Odds of Drinking and Driving Less Now Than 6 Months Ago
 - Figure 2: Graphical Representation of the Predicted Probability of Change in Self-Report DWI Behavior (Less Now Than 6 Months Ago) by Survey Phase and Geographic Region, Net of Covariates (See Table 6)

B. List of Alcohol-Impaired Crashes and DWI Charges Data

- Table 7: Percentage of crashes in which the driver had been drinking, categorized by year, driver ethnicity, and region
- Table 8: DWI charges as a percent of all traffic charges, categorized by year, driver ethnicity, and region
- Figure 2: Percentage of Latino driver crashes in which the driver had been drinking, categorized by year and region
- Figure 3: Ratio of Latino drinking-driver crashes compared to non-Latino drinking-driver crashes, categorized by year and region
- Figure 4: Percentage of Latino drinking-driver crashes in intervention communities compared to other NC counties, categorized by year
- Figure 5: Latino driver DWI charges as a percentage of all Latino driver traffic charges
- Figure 6: Comparison of Latino to non-Latino DWI charge rates, categorized by year and region
- Figure 7: Comparison of Latino vs. non-Latino DWI charge rate ratios in intervention communities compared to other NC counties, categorized by year

C. Community Surveys

The following tables and figures display results derived from analyses of the community surveys implemented in North Carolina's Triad, Triangle, and Southeast regions. While the pre-phase survey data are useful for general comparison purposes, only the mid- and post-phase survey data were analyzed and compared directly. Since an identical survey instrument was implemented across all three regions for both the mid- and post-phase, these data offer an opportunity to compare the results of the community outreach and police enforcement interventions described previously. However, care should be taken in interpreting this data as they rely on self-reported information. This type of information is frequently unreliable.

The data were transformed, recoded, and subsequently analyzed in a statistical software package (SPSS). The results of these analyses are displayed in six tables and two figures below. The first table (Table 1) provides descriptive information for the variables used in later analyses. This table is preceded by a brief discussion on interpretation and variable recoding.

The next three tables (Tables 2-4) compare respondents' drinking and driving behaviors, knowledge or information, and beliefs about police enforcement across both phases and all three geographic regions. Each table is preceded by a brief explanation of the analytic procedure and a discussion of the results.

The final two tables (Tables 5-6) and figures (Figures 1-2) examine the correlates or predictors of drinking and driving behaviors. Specifically, these tables explore the potential influence of geographic region and survey phase, population demographics, general risk or protective factors, drinking and driving knowledge or information, and perceived police enforcement on both the odds of recent drinking and driving behavior and the odds of recently reducing one's drinking and driving. Again, each table is preceded by a brief explanation of the analytic procedure and a discussion of the results.

Overall, the results of these analyses showed that differences in drinking and driving behaviors, and in changes in these behaviors, were difficult to detect across geographic region and survey phase. It is possible that non-random sampling and substantial differences in unmeasured characteristics within changing Latino populations may confound some of these results and likewise mask potential effects that the current intervention may have had on drinking and driving behaviors. Nonetheless, these results do highlight important risk and protective factors that are associated with drinking and driving behavior among Latinos. In addition, the social message campaign may have had some success in reducing drinking and driving behavior through its anti-DWI messages and publicizing of police enforcement activities. These results also indicate that future interventions may be able to increase levels of success by focusing on targeting DWI-related information (e.g., information on blood alcohol limit and police enforcement) to specific high-risk populations (e.g., those who usually drink away from home and who frequently drive motor vehicles).

1. Discussion of Table 1: Descriptive Statistics

Table 1 displays general descriptive information for all variables found in the subsequent analyses. Specifically, the table displays information for categorical variables (e.g., geographic region, marital status). This table includes frequencies and percentages of respondents for each answer category. For example, this table shows that approximately 29% of respondents report driving while intoxicated in the past 6 months, compared to 71% who report not driving while intoxicated in the past 6 months. For continuous variables (e.g., age, perceived deterrence), averages (means), standard deviations, and minimum/maximum values are reported here. For example, the average age for respondents in these data is about 28 years old, while respondents' ages range from 15 to 80 years old.

All blank or invalid survey responses were recorded as missing, and these cases are deleted in the analyses. The descriptive statistics reported in Table 1 were calculated using all valid responses for each variable. In addition, some variables were recoded for analytic purposes. For example, while there were a total of 1,797 potential respondents from the mid- and post-phase surveys, there were 1,790 valid cases for the "DWI in the past 6 months" item. As mentioned, 71% of these respondents report not driving while intoxicated. This response category has been recoded to include respondents who drink but have not driven while intoxicated, as well as those who do not drink at all (and therefore do not drink and drive either). In contrast, the "DWI less now than 6 months ago" item, which was coded to measure reductions in DWI behavior, has only 513 valid cases. This variable has substantially fewer valid cases because it includes only those respondents who initially reported drinking and driving at least once in the past 6 months. Table 1 shows that about 57% of respondents report drinking and driving less now than they did 6 months ago.

The "Seen or heard at least one slogan" variable indicates whether the respondent has seen or heard any one of the following four anti-DWI slogans from any source:

- "You drink, you drive, you lose"
- "Friends don't let friends drive drunk"
- "*¿Manejar Borracho? ¡No Seas Tonto Muchacho!*" (Driving drunk? Don't be stupid, man!)
- "*Pasa las Llaves*" (Pass the Keys)

Finally, the "Perceived deterrence scale" is a summated scale consisting of five items regarding respondents' perceptions of police enforcement and the likelihood of getting caught while drinking and driving (see Table 4). Higher values on this variable indicate that the respondent perceives a greater police presence and/or a higher likelihood of facing official sanctions for drinking and driving.

Table 1: Descriptive Statistics for Variables Used in Logistic Regressions (Mid- and Post-Phase Surveys)

Variable		Frequency (or Mean)	Percent (or min/max)
DWI less now than 6 months ago	No	222	43.3
	Yes	291	56.7
DWI in the past 6 months	No	1269	70.9
	Yes	521	29.1
Geographic region (survey phase)	*Triad (mid)	300	16.7
	Triad (post)	300	16.7
	Triangle (mid)	300	16.7
	Triangle (post)	300	16.7
	Southeast (mid)	297	16.5
	Southeast (post)	300	16.7
Marital status	*Single	869	49.6
	Married	884	50.4
Family live here with you in NC	*No	760	43.5
	Yes	988	56.5
English proficiency	Low	816	46.4
	*Average	744	42.3
	High	197	11.2
Where do you usually drink alcohol?	Never drink	682	38.6
	*Only mentions drinking at home	349	19.7
	Drinks at friends' homes	352	19.9
	Drinks in public setting	385	21.8
Ever use transportation other than car (e.g., bus, taxi)?	*No	1092	61.4
	Yes	687	38.6

How often do you drive a motor vehicle?***	Never	136	8.1
	A few days a year	60	3.6
	A few days a month	68	4.0
	A few days a week	233	13.9
	Every day	1183	70.4
Is it against the law to DWI in NC?	*No	441	24.5
	Yes	1356	75.5
What is the legal blood-alcohol limit?	0.08	213	11.9
	*Other; don't know	1582	88.1
Seen or heard at least one slogan	*No	555	31.1
	Yes	1227	68.9
Been a passenger in car crash where driver was DWI	*No	1627	93.3
	Yes	117	6.7
Age**	<i>Mean</i>	27.99	(min: 15) [†]
	<i>Standard deviation</i>	8.71	(max: 80)
Perceived deterrence scale**	<i>Mean</i>	3.47	(min: 0)
	<i>Standard deviation</i>	1.49	(max: 5)
* indicates category is used as baseline (reference category) in regression analyses. ** indicates variable is treated as continuous in regression analysis. † the variable "age" is recoded in analysis so that the baseline category is the average age (27.99).			

2. Discussion of Table 2: Drinking and Driving Behavioral Items

The analysis presented in Table 2 examines whether there were statistically significant differences in drinking and driving behaviors between mid-phase and post-phase surveys among respondents in each geographic region. Specifically, Z-tests were conducted, using a 95% confidence interval, to determine whether the mid- and post-phase percentages (or proportions) are actually different or likely due to chance. An asterisk (*) indicates a statistically significant difference between mid-phase and post-phase surveys in the proportion of respondents who answered "yes" to either drinking and driving question.

According to the results in Table 2, there was a significant reduction from mid- to post-phase in the proportion of respondents from the Southeast region who reported driving while intoxicated

in the past 6 months (from 25% to 13%). In other words, 25% of mid-phase Southeast respondents reported recently drinking and driving, compared to only 13% of post-phase Southeast respondents. While the proportion of respondents from the Triangle and Triad regions who reported drinking and driving in the past 6 months appears to have declined from mid- to post-phase, these differences are not statistically significant.

In addition, Table 2 shows a significant reduction from mid- to post-phase in the proportion of respondents from the Triangle region who reported driving after drinking less now compared to 6 months ago (from 83% to 55%). Although the proportions of respondents from the Southeast and Triad regions who have reduced their drinking and driving behaviors appear to have increased, these differences are not statistically significant.

Table 2: Percentage Comparisons for Drinking and Driving Behavioral Items (by Region and Survey Phase)

Area (Treatment)	Southeast (Control)		Triad (Message only)		Triangle (Message and police)		Total
	Mid	Post	Mid	Post	Mid	Post	
Mid- or Post-Intervention:							
Respondent has driven while intoxicated in past 6 months	25 (297)	13* (299)	45 (300)	39 (295)	27 (300)	26 (299)	29% (1790)
Respondent drives after drinking less now compared to 6 months ago	56 (75)	69 (39)	44 (131)	51 (113)	83 (80)	55* (75)	57% (513)

Note: Table entries are percentages (N of valid cases in parentheses). * indicates a statistically significant difference between mid- to post-intervention (at a 95% confidence level).

3. Discussion of Table 3: Knowledge Items

Table 3 reports whether there are differences between mid-phase and post-phase in respondents' knowledge regarding drinking and driving. As in Table 2, these results are separated by geographic region, and Z-tests were performed to determine whether differences were significant at a 95% confidence level.

This table shows an overall increase in DWI-related knowledge between mid- and post-phase among Triad residents only, with one exception: there is not a significant change in the proportion of Triad respondents who knew the legal limit for blood alcohol concentration (BAC). In fact, compared to the other knowledge and information items, relatively few

respondents across all three geographic regions knew the BAC limit.

In addition, the results reported in Table 3 indicate that there were significant reductions in some knowledge items within the Southeast and Triangle regions. These differences may be due to non-random sampling procedures or to substantial population changes between survey phases.

Table 3: Percentage Comparisons for Knowledge Items (by Region and Survey Phase)

Area (Treatment)	Southeast (Control)		Triad (Message only)		Triangle (Message and police)		Total
	Mid	Post	Mid	Post	Mid	Post	
Mid- or Post-Intervention:							
Respondent has heard of El Pueblo, Inc.	57 (297)	25* (297)	12 (300)	23* (299)	48 (300)	38* ¹⁴ (298)	34% (1791)
Respondent knows it is against the law to drive while intoxicated in NC	73 (297)	54* (300)	65 (300)	87* (300)	86 (300)	87 (300)	75% (1797)
Respondent knows the legal blood-alcohol limit is .08	3 (297)	3 (300)	17 (300)	18 (300)	29 (298)	3* (300)	12% (1795)
Respondent has seen or heard at least one of the four anti-DWI slogans	48 (297)	43 (297)	63 (300)	86* (288)	88 (300)	85 (300)	69% (1782)

Note: Table entries are percentages (N of valid cases in parentheses). * indicates a statistically significant difference between mid- to post-intervention (at a 95% confidence level).

¹⁴ This surprising reduction in awareness of El Pueblo may be due to issues with how the data were collected. For example, were respondents new to the area?

4. Discussion of Table 4: Police Enforcement Items

Table 4 reports whether there are mid-phase and post-phase differences in respondents' perceptions of DWI-related police enforcement. Again, these results are separated by geographic region, and Z-tests were performed to determine whether differences were significant at a 95% confidence level. Similar to Table 3, this table generally shows a significant increase from mid- to post-phase in information regarding DWI-related police enforcement among Triad residents only. However, these increases in information regarding stops, arrests, and roadblocks among Triad residents have not been accompanied by significant increases in respondents' perceived likelihood of being caught or perceptions of police enforcement as very strict. In addition, Table 4 shows significant decreases in some enforcement items among Southeast and Triangle residents. It is possible that mid- to post-phase increases in perceived enforcement among Triad respondents is due to the social marketing campaign's success in making DWI-related risks increasingly salient to these residents. On the other hand, the mid- to post-phase decreases in perceived enforcement among Triangle respondents may reflect residents' awareness of the increase (mid-phase) and subsequent decline (post-phase) in DWI roadblocks due to the experimental intervention in the Triangle region.

Table 4: Percentage Comparisons for Police Enforcement Items (by Region and Survey Phase)

Area (Treatment)	Southeast (Control)		Triad (Message only)		Triangle (Message and police)		Total
	Mid	Post	Mid	Post	Mid	Post	
Mid- or Post-Intervention:							
Respondent thinks more people are being stopped for DWI by police compared to last year	71 (282)	62* (289)	64 (295)	82* (292)	91 (290)	89 (290)	76% (1734)
Respondent has read recently about Latinos being arrested for DWI	68 (295)	59* (291)	70 (297)	89* (296)	94 (299)	90 (290)	79% (1768)
Respondent has heard about police DWI roadblocks or sobriety checkpoints in the area	44 (297)	47 (300)	42 (299)	71* (297)	78 (299)	59* (300)	57% (1792)
Respondent thinks he/she very likely would be stopped and arrested if DWI in the area	79 (297)	66* (297)	62 (300)	63 (300)	66 (300)	60 (300)	66% (1797)

Respondent thinks local police very strictly enforce DWI laws	77 (297)	66* (300)	60 (300)	65 (300)	72 (300)	54* (300)	66% (1797)
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Note: DWI = “driving while intoxicated” or “drinking and driving.” Table entries are percentages (N of valid cases in parentheses). * indicates a statistically significant difference between mid- to post-intervention (at a 95% confidence level).

5. Discussion of Table 5: Predicting the Odds of DWI

Table 5 provides the results of logistic regressions predicting the odds of a respondent reporting driving while intoxicated in the past 6 months. This analysis essentially examines the net effect of each predictor (or independent variable) on the odds of recent drinking and driving behavior (or dependent variable) while holding other variables constant (e.g., control, information, and deterrence variables). Model 1 examines only the effects of geographic region, survey wave, and control variables. Model 2 includes DWI-related information variables, and Model 3 adds deterrence variables. To aid interpretation of the effects of geographic region and survey phase on recent drinking and driving behavior, predicted probabilities were calculated for each region and phase and displayed graphically in Figure 1.

Statistically significant effects are marked with an asterisk (*) and are accompanied by an odds ratio (in parentheses) since the odds ratio offers a convenient way to interpret these predicted effects. For example, Model 3 indicates that respondents who usually drink in public settings (e.g., bars/clubs or on the street) are about four times as likely (4.033) to have driven while intoxicated in the past 6 months as compared to those who do not mention usually drinking in public settings, net of all other variables. According to Model 3, other factors that increase the odds of drinking and driving include drinking with friends and frequently driving a motor vehicle. As one would expect, holding the other variables constant, this model also suggests that people who drink are 99% ($1 - 0.014 = 0.986$) more likely to drive while intoxicated than those who do not drink at all. In addition, the odds of drinking and driving are higher among respondents who have seen or heard an anti-DWI slogan and lower among respondents with greater values on the perceived deterrence scale.

Table 5: Logistic Regressions Predicting Log Odds of Driving While Intoxicated in Past 6 Months

Variable	Model 1 (Controls)	Model 2 (Information)	Model 3 (Deterrence)
Geographic region and survey phase			
Post-phase (e.g., post-phase Triad)	-.902* (.406)	-.913* (.401)	-.827* (.438)
Triangle (i.e., mid-phase Triangle)	-.954* (.385)	-.940* (.391)	-.807* (.446)
Post-phase * Triangle (interaction)	.824* (2.279)	.795* (2.214)	.627
Southeast (i.e., mid-phase Southeast)	-.821* (.440)	-.764* (.466)	-.684* (.505)
Post-phase * Southeast (interaction)	.418	.435	.263
Controls			
Age (centered at mean)	-.005	-.004	-.003
Married	.084	.082	.083
Family in NC	.282	.266	.256
Low English proficiency	.288	.294	.228
High English proficiency	.050	.120	.103
Never drink	-4.292* (.014)	-4.244* (.014)	-4.245* (.014)
Drink at friends' houses	1.253* (3.500)	1.253* (3.502)	1.191* (3.291)
Drink in public settings	1.269* (3.558)	1.318* (3.737)	1.394* (4.033)
Use public transportation	-.057	-.047	-.086
Frequency of driving motor vehicle	.170* (1.185)	.172* (1.187)	.180* (1.198)
Information items			
Know it's against law to DWI in NC		-.278	-.306
Know legal blood-alcohol limit is .08		-.306	-.250
Seen or heard at least one slogan		.532* (1.702)	.704* (2.022)
Deterrence items			
Perceived deterrence scale			-.188* (.829)
Was passenger in car crash with DWI driver			.492

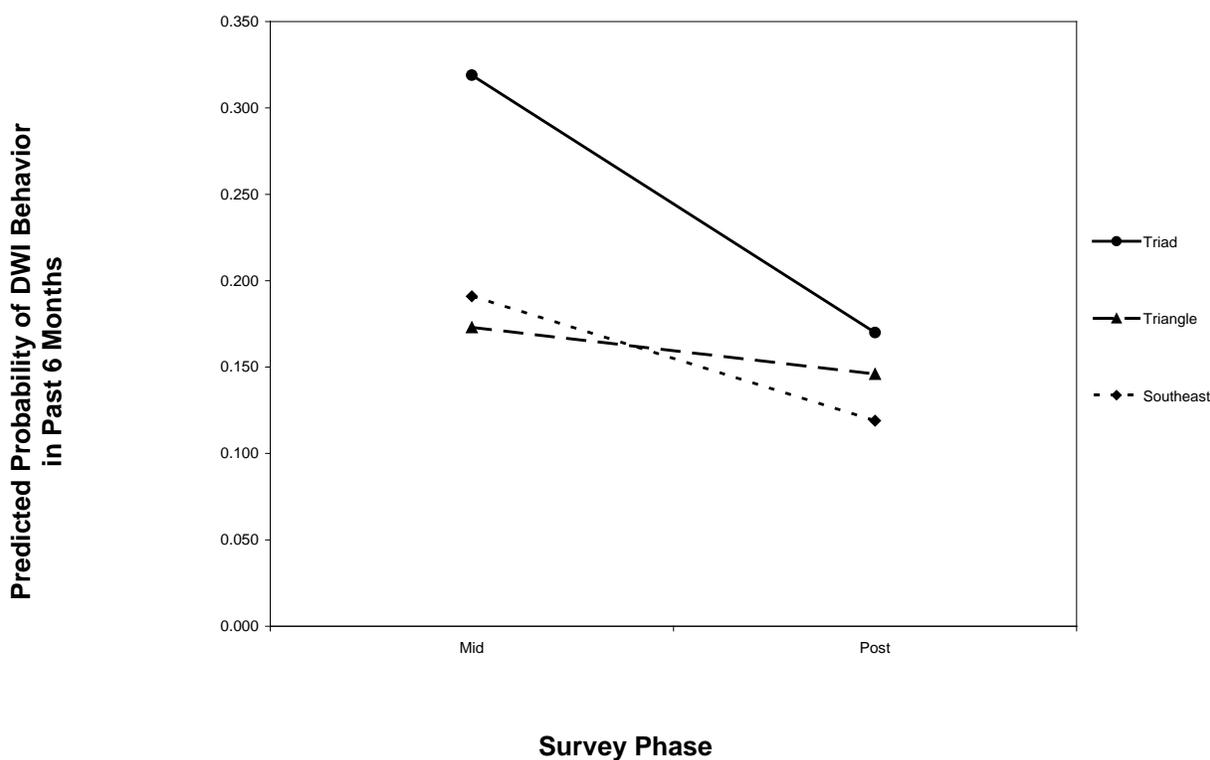
Model information			
Constant	-1.03*	-1.22*	-.758
-2 Log L	1210.15	1198.77	1184.49
Model χ^2 (comparison model in parentheses)	620.72* (null)	11.38* (Δ Model 1)	14.28* (Δ Model 2)
Nagelkerke pseudo-R ²	.484	.491	.499

Note: N=1471. * indicates p<.05. Table entries are log odds regression coefficients (odds ratio in parentheses).

6. Discussion of Figure 1: Self-Reported DWI Behavior

Figure 1 illustrates the effects of geographic region and survey phase on self-reported drinking and driving behavior in the past 6 months. The lines represent changes from mid- to post-phase in the predicted probability that a respondent from a given geographic region is in the “drove while intoxicated in past 6 months” category. The NC Highway Research Center’s analysis showed a statistically significant decrease from mid- to post-phase in the predicted probability of drinking and driving behavior among Triad region respondents (see “Post-phase” coefficient in Model 3 of Table 5). On the contrary, there was not a significant mid- to post-phase increase or decrease in recent drinking and driving behavior among the Southeast or Triangle region respondents.

Figure 1: Graphical Representation of the Predicted Probability of Self-Report DWI Behavior in the Past 6 Months, by Survey Phase and Geographic Region, Net of Covariates (See Table 5)



Note: Predicted probabilities calculated using logistic regression coefficients (Model 3, Table 5) for respondents at the mean or baseline for all other variables in the model.

7. Discussion of Table 6: Predicting Odds of Drinking and Driving Less

Models 1-3 in Table 6 are similar to those found in Table 5. Table 6 provides the results of logistic regressions predicting the odds of a respondent reporting drinking and driving less now compared to 3 months ago. To aid interpretation of the effects of geographic region and survey phase on changes in drinking and driving behavior, predicted probabilities were calculated for each region and phase and displayed graphically in Figure 2. According to Model 3 in Table 6, factors that decrease the odds of drinking and driving less now compared to 3 months ago include living with family in North Carolina, drinking at friends' houses, and drinking in public settings. On the other hand, respondents with greater values on the perceived deterrence scale are more likely to have reduced their drinking and driving behavior in the past 3 months. In addition, respondents who have seen or heard at least one anti-DWI slogan are nearly twice as likely to have reduced their drinking and driving behavior as compared to respondents who have not seen or heard any of these slogans. It is possible that respondents who have heard an anti-DWI slogan were more likely to admit driving while intoxicated in the past 6 months (see Table 5) and subsequently were also more likely to have reduced their drinking and driving behavior after learning DWI-related information (see Table 6).

Table 6: Logistic Regressions Predicting Log Odds of Drinking and Driving Less Now Than 6 Months Ago

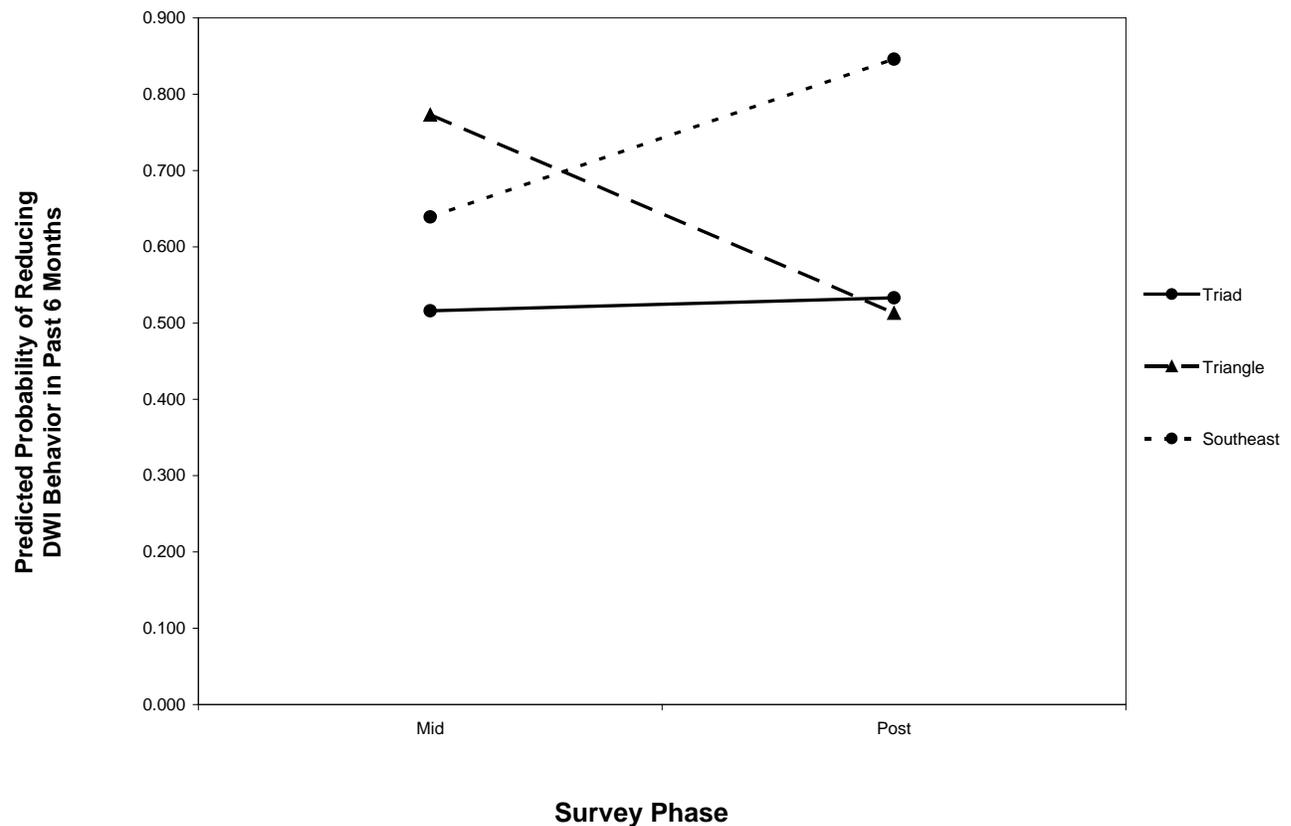
Variable	Model 1 (Controls)	Model 2 (Information)	Model 3 (Deterrence)
Geographic region and survey phase			
Post-phase (e.g., post-phase Triad)	.426	.102	.068
Triangle (i.e., mid-phase Triangle)	1.679* (5.360)	1.369* (3.932)	1.158* (3.184)
Post-phase * Triangle (interaction)	-1.825* (.161)	-1.424* (.241)	-1.237* (.290)
Southeast (i.e., mid-phase Southeast)	.445	.494	.505
Post-phase * Southeast (interaction)	.592	.994	1.062
Controls			
Age (centered at mean)	-.003	-.008	-.011
Married	.119	.180	.187
Family in NC	-.448* (.639)	-.560* (.571)	-.579* (.561)
Low English proficiency	-.630* (.533)	-.449	-.304

High English proficiency	.533	.380	.423
Drink at friends' houses	-1.226* (.294)	-1.288* (.276)	-1.258* (.284)
Drink in public settings	-.607	-.709* (.492)	-.891* (.410)
Use public transportation	-.411	-.255	-.228
Frequency of driving motor vehicle	-.156	-.201	-.215
Information items			
Know it's against law to DWI in NC		.552	.509
Know legal blood-alcohol limit is .08		.864* (2.373)	.723
Seen or heard at least one slogan		.795* (2.214)	.653* (1.921)
Deterrence items			
Perceived deterrence scale			.272* (1.312)
Was passenger in car crash with DWI driver			-.250
Model information			
Constant	1.622*	.716	.065
-2 Log L	559.36	536.90	525.66
Model χ^2	67.15*	22.46*	11.24*
(comparison model in parentheses)	(null)	(Δ Model 1)	(Δ Model 2)
Nagelkerke pseudo-R ²	.183	.238	.265
Note: N=458. * indicates p<.05. Table entries are log odds regression coefficients (odds ratio in parentheses).			

8. Discussion of Figure 2: Change in Self-Reported DWI Behavior

Figure 2 illustrates the effects of geographic region and survey phase on self-reported changes in drinking and driving behavior in the past 3 months. The lines represent changes from mid- to post-phase in the predicted probability that a respondent from a given geographic region is in the “drink and drive less now compared to 3 months ago” category. The NC Highway Research Center’s analysis figure illustrates a statistically significant decrease from mid- to post-phase in the predicted probability of reducing drinking and driving behavior among Triangle respondents (see “Post-phase * Triangle” coefficient in Model 3 of Table 6). On the contrary, there was not a significant mid- to post-phase increase or reduction in drinking and driving behavior among the Southeast or Triad respondents.

Figure 2: Graphical Representation of the Predicted Probability of Change in Self-Report DWI Behavior (Less Now Than 6 Months Ago) by Survey Phase and Geographic Region, Net of Covariates (See Table 6)



Note: Predicted probabilities calculated using logistic regression coefficients (Model 3, Table 6) for respondents at the mean or baseline for all other variables in the model

D. Alcohol-Impaired Crashes and DWI Charges

The following tables and figures show the trends in alcohol-impaired crashes and DWI charges among Latino drivers in North Carolina from 2002 through 2007.

Analyses were organized to present the most straightforward comparison of the two intervention communities – the Triad (Forsyth and Guilford counties) and the Triangle (Durham and Wake counties) – with a meaningful comparison or “control” region. The formally designated control community consists of three counties from eastern North Carolina – Duplin, Greene, and Onslow. These are largely rural counties with small populations and small Latino populations. The result is that both the DWI and crash data are subject to substantial year-to-year variation. In order to present a more stable comparison, data were aggregated from the remaining 93 counties. Although only the 3-region control data are shown, interpretations of trends are based on comparison with the 93-county data.

The results are shown in the two tables and six figures on the following pages. The two tables – one showing the percent of crash-involved drivers who had been drinking, the other showing DWI charges as a proportion of all traffic charges – provide the basic information in this report. Interpretation of the meaning of the basic tabular data is aided by three figures providing a visual representation of the data in each table. A brief explanation is provided for each figure.

Figures 3 and 6 provide the basic distributions for Latino drivers only. They show the temporal trends in alcohol-impaired crashes and DWI charges. To fully understand these trends, they need to be considered in the context of the trends among the driving population as a whole.

Figures 4 and 7 show the trends in Latino drinking-driver crashes and DWI charges. This was done by showing a ratio of Latino to non-Latino driver trends. Comparing these patterns for the intervention communities with those of the remaining 93 counties provides an indication of what effect the interventions had on drinking-driver crashes and DWI charges. Because it can be difficult to see relative changes in trend lines, a final set of figures is provided to aid in interpretation. Figures 5 and 8 show the yearly adjusted Latino drinking-driver and DWI rates for the two intervention communities divided by the rates in the 93 other counties. These figures ultimately provide the most direct and easily seen patterns of drinking-driver crashes and DWI charges for Latino drivers. Any intervention effects of the Triad and Triangle programs can be seen most clearly in these figures.

Table 7: Percentage of crashes in which the driver had been drinking, categorized by year, driver ethnicity, and region

	Non-Hispanic						Hispanic					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
Other NC counties	3.23%	2.73%	2.82%	2.91%	3.02%	3.09%	8.71%	7.75%	7.92%	7.67%	7.03%	7.27%
Control counties*	4.19%	3.55%	3.47%	3.83%	3.54%	4.46%	12.66%	11.29%	9.71%	11.06%	9.91%	8.51%
Triad	2.80%	2.15%	2.34%	2.37%	2.62%	2.51%	7.47%	7.81%	8.06%	6.55%	7.40%	7.16%
Triangle	2.06%	1.56%	1.66%	1.70%	1.66%	1.74%	8.14%	6.29%	6.51%	5.75%	5.81%	5.39%
State total	3.05%	2.53%	2.62%	2.71%	2.80%	2.87%	8.58%	7.57%	7.72%	7.28%	6.87%	6.87%

* Duplin, Greene, and Onslow

Table 8: DWI charges as a percent of all traffic charges, categorized by year, driver ethnicity, and region

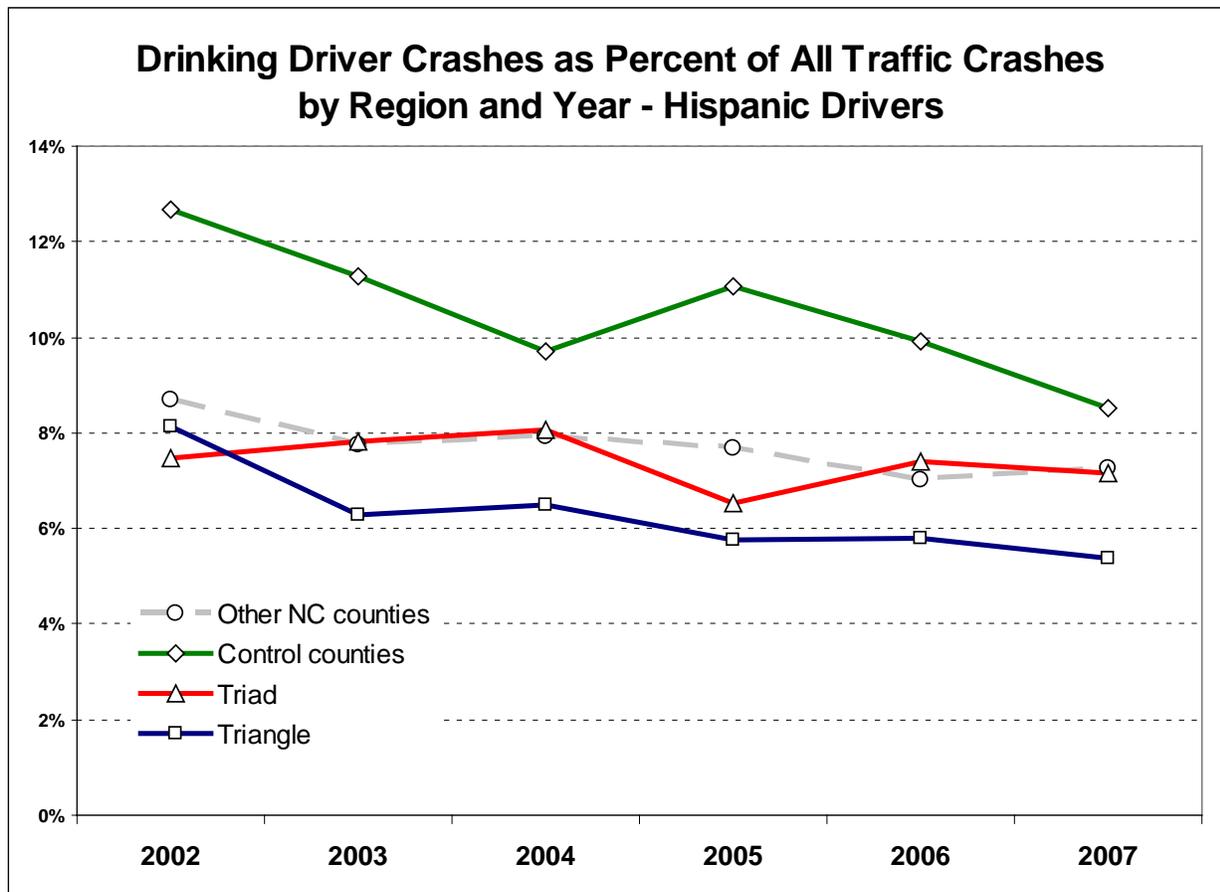
	Non-Hispanic						Hispanic					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
Other NC counties	8.39%	7.91%	7.26%	6.85%	6.37%	6.25%	13.47%	12.54%	11.71%	10.11%	8.59%	7.61%
Control counties*	9.20%	9.01%	7.80%	7.53%	6.57%	6.86%	16.26%	15.24%	13.61%	11.24%	6.98%	7.06%
Triad	6.14%	5.62%	5.05%	4.37%	4.38%	3.82%	11.47%	11.65%	10.02%	8.26%	7.64%	6.27%
Triangle	5.14%	4.65%	4.66%	5.01%	5.12%	4.15%	11.92%	10.65%	10.13%	9.36%	7.54%	6.45%
State total	7.87%	7.38%	6.80%	6.43%	6.04%	5.80%	13.15%	12.29%	11.41%	9.89%	8.31%	7.30%

* Duplin, Greene, and Onslow

1. Discussion of Figure 3: DWI Crashes for Hispanic Drivers

This figure shows that the percentage of crash-involved Latino drivers who had been drinking has generally declined, albeit slightly, since 2002. Whether this is unique to Latino drivers or represents a more general pattern in North Carolina requires comparing Latino to non-Latino drivers, as shown in Figure 4.

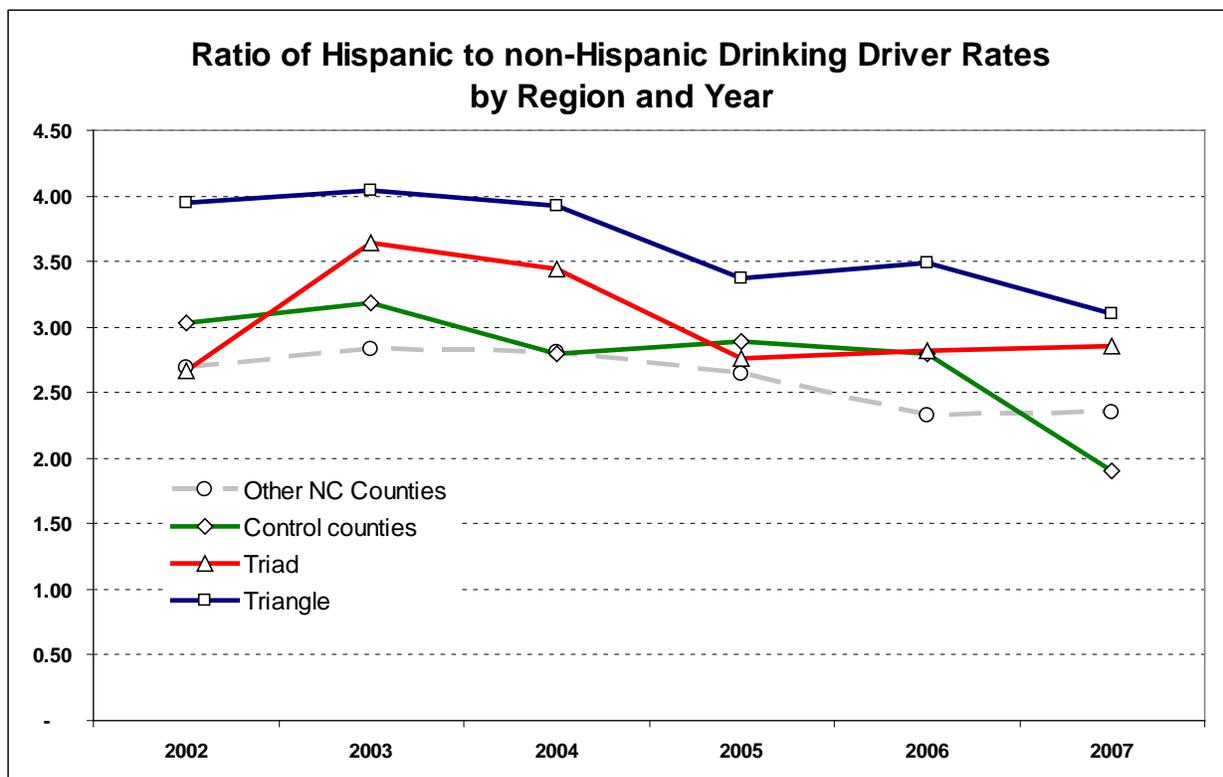
Figure 3: Percentage of Hispanic driver crashes in which the driver had been drinking, categorized by year and region



2. Discussion of Figure 4: Ratio of DWI Crashes for Hispanic Drivers

Figure 4 shows the ratios of the percentage of Latino crash-involved drivers who had been drinking to the percentage of non-Latino crash-involved drivers who had been drinking. For example, during 2002 in the Triangle counties, 8.14% of crash-involved Latino drivers had been drinking, whereas 2.06% of non-Latino crash-involved drivers had been drinking, resulting in a ratio of $3.95 = (8.14/2.06)$. Using this ratio helps to remove the effects of changes in factors that may have affected drinking while driving generally (e.g., congestion, inclement weather, general economic conditions), which provides a clearer picture of effects that might be attributable to the program itself. There has generally been a greater decline in Latino drinking-driver crashes than non-Latino drinking-driver crashes since 2004. This is seen in statewide numbers (excluding the three study regions) and in both the study intervention regions. There was no comparable decline in the control region until 2007; however, the pattern in the control region is difficult to interpret because the population is small.

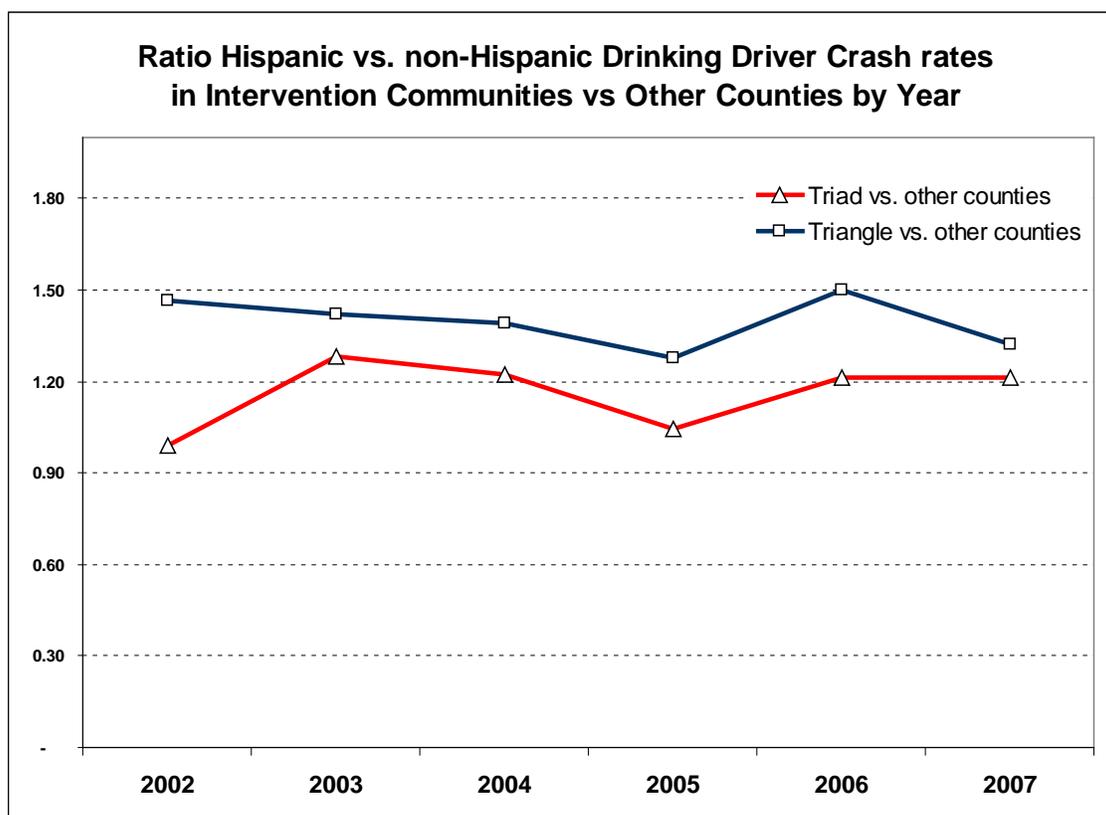
Figure 4: Ratio of Hispanic drinking-driver crashes, compared to non-Hispanic drinking-driver crashes, categorized by year and region



3. Discussion of Figure 5: Percentage of Hispanic DWI Crash Rates

This figure shows the ratio of Latino vs. non-Latino drinking-driver crash rates in the two intervention communities, relative to the rest of the state (the values shown for the Triad and Triangle in Figure 2 are divided by those for the remaining counties in the state). This is an effort to show visually the changes in Latino alcohol-impaired crashes in the two intervention communities adjusting for secular trends. That is, the fluctuations in the trends should be specific to factors at work among the Latino population of these communities rather than broader factors affecting all drivers or Latino drivers in other communities. This ratio declined somewhat from 2003 to 2005, and then reversed distinctly in 2006. For the Triad, this may simply reflect an atypically low year in 2005, within the context of a stable pattern from 2003 through 2007. The Triangle does appear to have had a continuing decline from 2002 through 2005, with a substantial reversal in 2006, then a drop in 2007.

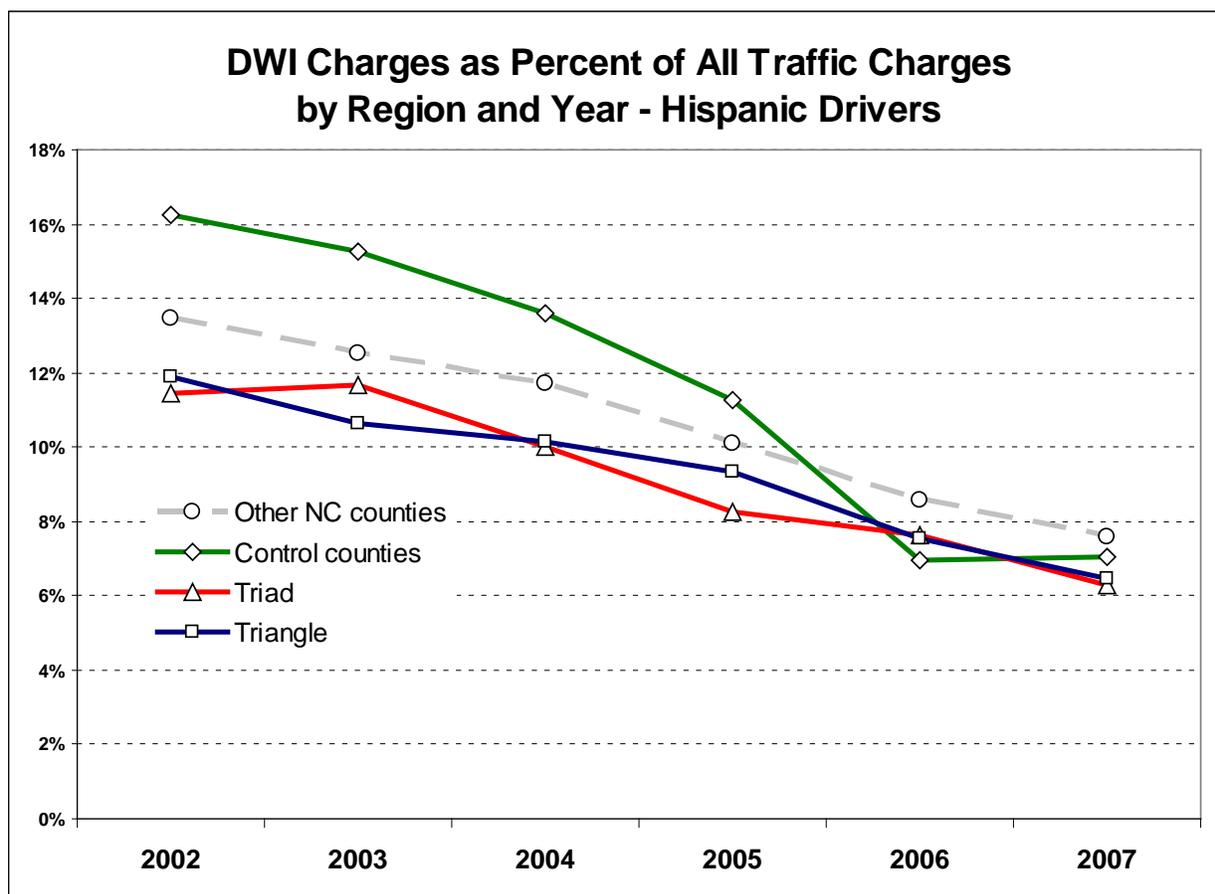
Figure 5: Percent of Hispanic drinking-driver crashes in intervention communities compared to other NC counties, categorized by year



4. Discussion of Figure 6: Percentage of Hispanic DWI Crashes

There was a clear, essentially linear decrease in the percent of Latino drivers charged with DWI from 2002 through 2007. The two intervention communities were consistently somewhat below the rate for the remainder of the state, but there was no difference in the trajectory among those communities and that in other areas. The sharper decline in the control counties cannot be clearly interpreted because of the small number of cases involved. Although this downward trend appears to be an encouraging indicator of a declining amount of drinking and driving with the Latino community, it may simply reflect changing DWI enforcement patterns over the time period. The following figure addresses that possibility.

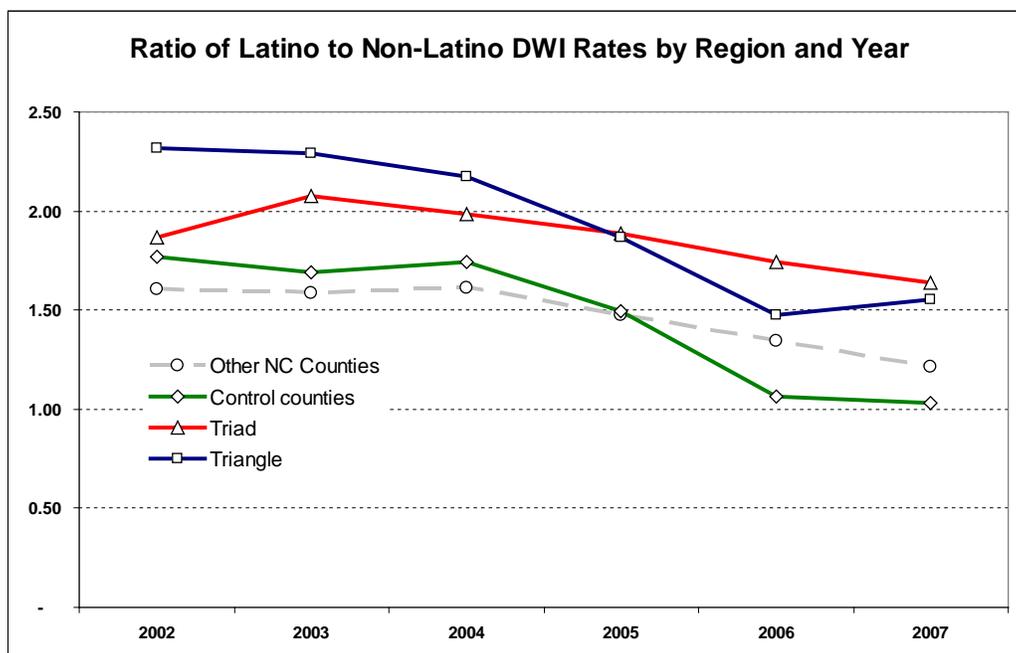
Figure 6: Hispanic driver DWI charges as a percentage of all Hispanic driver traffic charges



5. Discussion of Figure 7: Ratio of Latino to Non-Latino DWI Charges

Overall DWI enforcement declined from 2002 through 2007 in North Carolina for a variety of reasons, including reduced law enforcement personnel availability. The overall decline in DWI enforcement accounts for much of the trend seen in Figure 6. In an effort to adjust for this reduced level of enforcement, the proportion of all Latino driver traffic charges accounted for by DWI charges was divided by the percentage of non-Latino driver traffic charges represented by DWI charges. Figure 7 shows the trend in DWI charges among Latino drivers and is adjusted to account for the overall decline in DWI enforcement. This clearly shows that the decline in Latino driver DWI charges is not entirely due to reduced DWI enforcement; if that were the case, the trends would be flat in the Triad. Since 2003 there has been a linear decline in DWI charges as a proportion of all charges among Latino drivers as compared to non-Latino drivers. The decline in the Triangle began a year earlier and then accelerated rapidly from 2004 to 2006, reversing slightly in 2007. Overall, the pattern in the Triad region is nearly identical to that seen statewide, whereas from 2004 to 2006 there was a greater decrease in the Triangle region, with a clear reversal in 2007. It appears that rather than a reversal in trend, 2006 may have simply been an atypically low year for the Triangle region. If programs or activities were active during 2006, and ceased in 2007, this pattern could indicate the effect of programs and activities in the Triangle region.

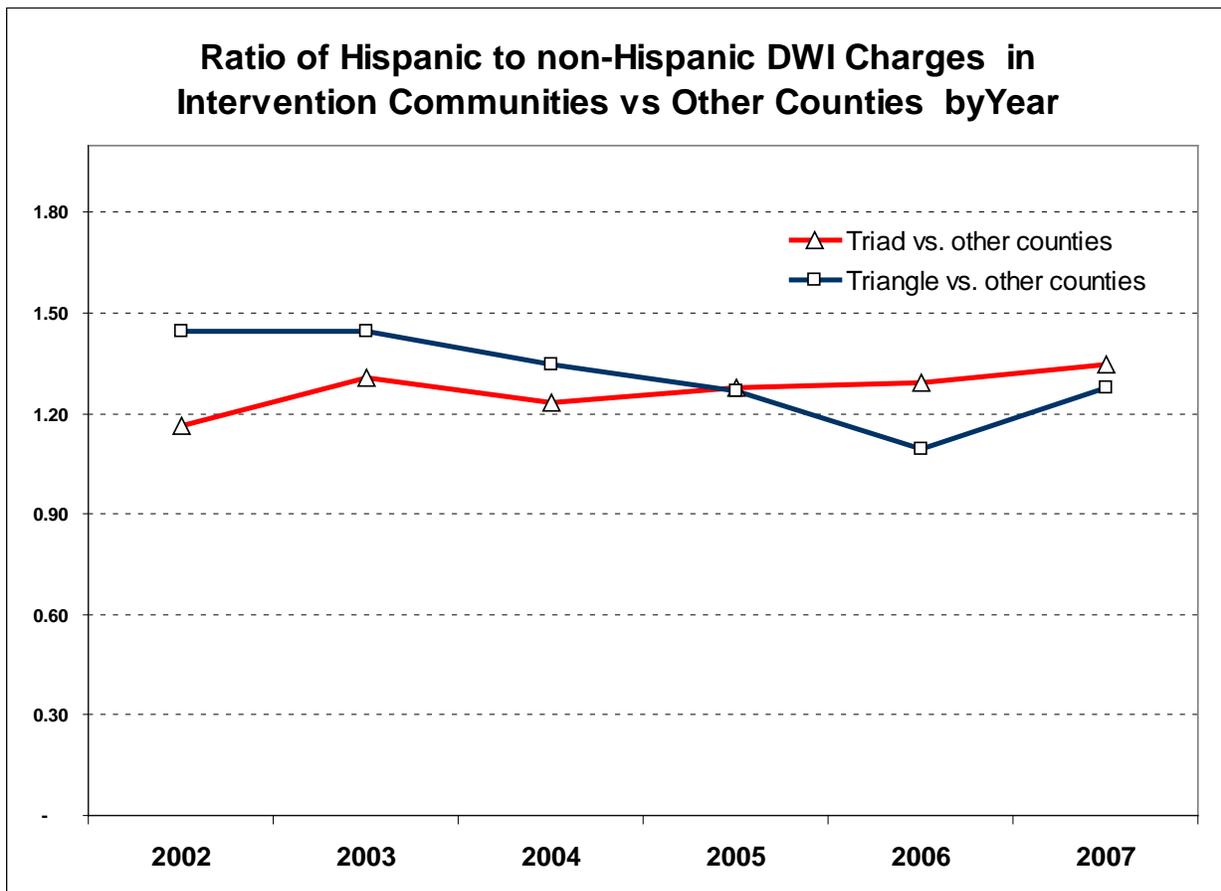
Figure 7: Comparison of Latino to non-Latino DWI charge rates, categorized by year and region



6. Discussion of Figure 8: Comparison of Hispanic to Non-Hispanic DWI Charges

This figure provides a clearer picture of how the Latino DWI charge rates (adjusted for general enforcement trends) in the intervention communities compare with those elsewhere in the state. There clearly was no change in the Triad, whereas there was a sustained decline in the Triangle beginning in 2003, somewhat accelerating from 2005 to 2006, and then dramatically reversing in 2007.

Figure 8: Comparison of Hispanic vs. non-Hispanic DWI charge rate ratios in intervention communities compared to other NC counties, categorized by year



Appendix E: AOC Data

Response to NHTSA Questions on El Pueblo Demonstration Project Amended Final Report

Question	Response
<p>What is AOC?</p>	<p>North Carolina Administrative Office of the Courts Mailing address: P.O. Box 2448, Raleigh, NC 27602-2448 Physical address: 901 Corporate Center Drive, Raleigh, NC 27607 919 890-1000</p> <p>The N.C. Administrative Office of the Courts (NCAOC) is the administrative agency for the Judicial Branch. The NCAOC provides statewide support services for the courts, including information, technology, personnel, financial, legal, research and purchasing services. In addition, the NCAOC prepares and administers the court system's over \$432 million budget and employs more than 400 people. The director of the NCAOC is appointed by the chief justice but has independent statutory responsibility for the administration of the court system. The assistant director is also appointed by the chief justice and serves as the administrative assistant to the chief justice.</p>
<p>What is the AOC database? Where does the data come from?</p>	<p>The AOC compiles "Impaired Driving and Implied Consent" data from data entered by the courts. Some data is also entered by law enforcement in counties that have access to the eCitations application. This data is then sent to the University of North Carolina where it is analyzed and a report is compiled. These reports are then published on the AOC website: http://www.nccourts.org/Citizens/SRPlanning/Statistics/ImpairedDriving.asp</p> <p>These reports provide data for:</p> <ul style="list-style-type: none"> • Type of charge filed by county • Charges filed and charges disposed, by county, by agency • Accident code by agency • Charges by month, day of week • Charges by race, sex • Charges by age, sex • Age of charge at disposition • Charges disposed, by agency, by charge convicted • Charges disposed, by original charge, by crime convicted <p>There are some significant limitations to this data. For example, data appears only if charges were filed. If the officer warned the offender or if there was a crash that did not result in charges, data on that incident would not appear. In addition, the Accident Code, which would indicate impaired driving, is not required.</p>

Was FARS data used?	No, data comes from court and local law enforcement.
Is the data reliable in identifying Hispanics?	There is a code in the report for race that includes "Hispanic". This data seems to be collected frequently. For example, in 2005-2006, a total of 74,675 charges were filed. Of these, 13,418 were listed as Hispanic and only 598 were either "other" or "unknown". The accuracy of the data can't be evaluated from the report, but the data does seem to be reported reliably.

AOC Analysis of FY2005/2006 Impaired Driving Charges

NC JUDICIAL DEPARTMENT--AOC COURT MANAGEMENT AND INFORMATION SERVICES
ANALYSIS OF FY2005/2006 IMPAIRED DRIVING CHARGES AND IMPLIED CONSENT
CHARGES FILED AND CHARGES DISPOSED, BY COUNTY, BY ORIGINAL CHARGE

		ORIGINAL CHARGE					
		IM AID AND		M DRIVE		M DWI	
		IMPAIRED	IMPAIRED	AFTER	WHILE	COMMERCIAL	
		DRIVING	DRIVING	CONSUMING	IMPAIRED	VEHICLE	
TOTALS							
NORTH	FILED	74,676	298	1,448	12,056	60,779	95
CAROLINA	DISPOSED	76,168	323	1,585	12,836	61,324	100
ALAMANCE	FILED	1,193	6	11	217	959	0
ALEXANDER	DISPOSED	1,462	7	13	262	1,180	0
ALEXANDER	FILED	215	0	1	39	174	1
ALEXANDER	DISPOSED	228	1	2	36	188	1
ALLEGHANY	FILED	110	4	2	20	84	0
ALLEGHANY	DISPOSED	119	1	3	21	94	0
ANSON	FILED	211	1	6	42	162	0
ANSON	DISPOSED	229	1	8	56	163	1
ASHE	FILED	181	1	5	27	148	0
ASHE	DISPOSED	147	1	3	22	121	0
AVERY	FILED	188	2	2	37	147	0
AVERY	DISPOSED	188	1	1	39	147	0
BEAUFORT	FILED	720	0	6	152	562	0
BEAUFORT	DISPOSED	718	0	7	167	544	0
BERTIE	FILED	172	4	3	25	140	0
BERTIE	DISPOSED	171	3	3	21	144	0
BLADEN	FILED	402	2	7	92	300	1
BLADEN	DISPOSED	405	1	7	84	312	1
BRUNSWICK	FILED	1,034	1	28	108	896	1
BRUNSWICK	DISPOSED	1,052	3	33	105	910	1
BUNCOMBE	FILED	2,002	10	34	368	1,590	0
BUNCOMBE	DISPOSED	2,111	22	40	394	1,650	5
BURKE	FILED	785	4	13	129	639	0
BURKE	DISPOSED	701	5	11	109	576	0
CABARRUS	FILED	2,117	10	12	439	1,656	0
CABARRUS	DISPOSED	2,126	5	23	421	1,676	1
CALDWELL	FILED	539	1	20	68	450	0
CALDWELL	DISPOSED	502	1	17	60	424	0
CAMDEN	FILED	169	0	3	22	144	0
CAMDEN	DISPOSED	149	0	0	18	131	0
CARTERET	FILED	1,759	11	50	292	1,406	0
CARTERET	DISPOSED	1,471	7	48	230	1,185	1
CASWELL	FILED	137	2	5	24	106	0
CASWELL	DISPOSED	122	2	3	15	102	0
CATAWBA	FILED	1,051	2	14	183	850	2
CATAWBA	DISPOSED	1,034	2	15	197	817	3
CHATHAM	FILED	301	0	2	34	264	1
CHATHAM	DISPOSED	316	1	2	43	270	0
CHEROKEE	FILED	215	0	4	35	176	0
CHEROKEE	DISPOSED	220	1	4	27	188	0
CHOWAN	FILED	109	0	2	25	82	0
CHOWAN	DISPOSED	123	0	4	22	97	0
CLAY	FILED	50	0	0	7	43	0
CLAY	DISPOSED	49	0	0	5	44	0
CLEVELAND	FILED	885	1	25	149	709	1
CLEVELAND	DISPOSED	862	2	22	141	697	0
COLUMBUS	FILED	386	0	7	42	336	1
COLUMBUS	DISPOSED	436	0	6	55	374	1
Craven	FILED	715	2	22	90	601	0
Craven	DISPOSED	649	5	22	85	537	0
CUMBERLAND	FILED	2,155	0	45	218	1,891	1
CUMBERLAND	DISPOSED	2,154	6	68	233	1,846	1
CURRITUCK	FILED	244	1	4	48	191	0
CURRITUCK	DISPOSED	239	1	3	43	192	0
DARE	FILED	1,108	4	13	271	820	0
DARE	DISPOSED	997	2	13	254	728	0
DAVIDSON	FILED	888	5	18	149	711	5
DAVIDSON	DISPOSED	908	5	11	188	702	2
DAVIE	FILED	345	1	11	78	253	2
DAVIE	DISPOSED	341	2	8	81	248	2
DUPLIN	FILED	680	6	21	89	561	3
DUPLIN	DISPOSED	806	5	27	110	662	2

(CONTINUED)

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Note - Double-click image to open full report.

AOC Analysis of FY2006/2007 Impaired Driving Charges

NC JUDICIAL DEPARTMENT--AOC COURT MANAGEMENT AND INFORMATION SERVICES
ANALYSIS OF FY2006-2007 IMPAIRED DRIVING CHARGES AND IMPLIED CONSENT
CHARGES FILED AND CHARGES DISPOSED, BY COUNTY, BY ORIGINAL CHARGE

		ORIGINAL CHARGE						
		IM AID AND		IM DRIVE	IM DRIVING	M DWI		
		IMPAIRED	IMPAIRED	AFTER	WHILE	COMMERCIAL		
TOTALS	DRIVING	DRIVING	CONSUMING	IMPAIRED	VEHICLE			
TOTAL	FILED	72,421	351	1,417	11,358	59,167	128	
	DISPOSED	74,016	326	1,418	12,108	60,034	130	
ALAMANCE	FILED	1,310	8	15	215	1,071	1	
	DISPOSED	1,317	7	15	224	1,070	1	
ALEXANDER	FILED	197	3	1	29	164	0	
	DISPOSED	216	1	2	41	171	1	
ALLEGHANY	FILED	83	0	0	13	70	0	
	DISPOSED	83	1	0	13	69	0	
ANSON	FILED	230	1	9	37	183	0	
	DISPOSED	227	0	4	42	181	0	
ASHE	FILED	229	2	4	29	194	0	
	DISPOSED	222	1	4	31	186	0	
AVERY	FILED	210	3	2	39	164	2	
	DISPOSED	191	1	1	38	151	0	
BEAUFORT	FILED	677	2	15	121	537	2	
	DISPOSED	585	0	9	111	465	0	
BERTIE	FILED	103	0	6	17	80	0	
	DISPOSED	125	1	6	20	98	0	
BILADEN	FILED	322	0	5	66	251	0	
	DISPOSED	393	0	8	89	296	0	
BRUNSWICK	FILED	971	1	22	108	838	2	
	DISPOSED	966	0	21	105	839	1	
BUNCOMBE	FILED	2,102	3	42	350	1,706	3	
	DISPOSED	2,168	10	44	385	1,728	1	
BURKE	FILED	782	0	16	121	643	2	
	DISPOSED	768	5	17	126	619	1	
CABARRUS	FILED	2,058	7	6	385	1,659	1	
	DISPOSED	2,096	10	14	430	1,641	1	
CALDWELL	FILED	553	1	15	74	462	1	
	DISPOSED	532	1	25	69	436	1	
CAMDEN	FILED	139	0	2	14	123	0	
	DISPOSED	134	0	4	15	115	0	
CARTERET	FILED	1,517	8	48	237	1,224	0	
	DISPOSED	1,766	10	51	288	1,417	0	
CASWELL	FILED	120	1	3	21	95	0	
	DISPOSED	154	4	6	31	113	0	
CATAMBA	FILED	967	2	15	157	788	5	
	DISPOSED	1,078	2	21	182	867	6	
CHATHAM	FILED	248	1	3	27	216	1	
	DISPOSED	315	2	2	35	274	2	
CHEROKEE	FILED	239	1	4	41	193	0	
	DISPOSED	243	0	6	45	192	0	
CHOWAN	FILED	100	1	0	21	78	0	
	DISPOSED	91	1	0	21	69	0	
CLAY	FILED	79	2	1	9	66	1	
	DISPOSED	68	1	1	9	56	1	
CLEVELAND	FILED	987	3	34	134	816	0	
	DISPOSED	818	2	30	135	650	1	
COLUMBUS	FILED	377	0	7	55	310	5	
	DISPOSED	382	0	6	50	323	3	
CRAVEN	FILED	734	2	29	78	623	2	
	DISPOSED	665	3	22	69	570	1	
CUMBERLAND	FILED	2,034	4	49	197	1,780	4	
	DISPOSED	2,181	3	44	223	1,910	1	
CURRITUCK	FILED	227	0	4	42	179	2	
	DISPOSED	201	0	3	36	161	1	
DARE	FILED	905	9	5	205	686	0	
	DISPOSED	909	5	3	218	683	0	
DAVIDSON	FILED	786	5	15	134	632	0	
	DISPOSED	867	3	19	134	706	5	
DAVIE	FILED	316	1	5	70	240	0	
	DISPOSED	331	2	12	71	245	1	
DOPLIN	FILED	634	7	18	98	508	3	
	DISPOSED	611	7	15	85	501	3	

(CONTINUED)

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Note - Double-click image to open full report.