



## **Bicycle and Pedestrian Safety, Education, and Enforcement Campaign: 2015 Program Summary**

**NCDOT Research Project No. RP 2015-41**

# **DRAFT FINAL REPORT**

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## Executive Summary

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### Overview

The Watch for Me NC program aims to empower communities to address pedestrian and bicycle crashes by supporting: (1) dissemination of safety messages through various outreach and education strategies; and (2) high-visibility enforcement of pedestrian, bicyclist, and motorist laws. The program began as a regional pilot test in 2012 and now has partner-driven efforts across the State. In 2015, nine prior communities and nine new communities were selected to participate. Many communities included one or more universities implementing the Watch for Me NC program at the campus level. The UNC Highway Safety Research Center (HSRC) supported NCDOT in program development, delivery, and evaluation through partner recruitment, technical assistance and training, and program evaluation. To learn more about the program and its history, visit: <http://watchformenc.org/>.

### 2015 Technical Assistance and Training

Participating communities received support and assistance from HSRC to implement their local programs. Support services included access to a partner listserv and contact list, direct technical assistance, a website of partner-specific resources, and facilitated meetings to discuss how to effectively deliver educational and enforcement components of the program. Meetings covered topics including: (1) Partners and Strategies to Make an Impact; (2) The Role of Law Enforcement and Strategies for Coordination; and (3) Successes and Challenges to Date, as well as a wrap-up meeting.

Additionally, HSRC offered nine one-day training courses to participating law enforcement agencies in summer 2015. Brian Massengill, a sergeant with the Durham Police Department, served as lead course instructor. The courses prepared officers to perform pedestrian and bicycle safety operations as part of the Watch for Me NC program. They involved classroom education on relevant laws and best practices in conducting enforcement, as well as field exercises in conducting targeted operations aimed at improving driver yielding at crosswalks. In total, 116 officers from 35 agencies participated in the trainings. Of these, 94 officers completed a pre- and post-training test designed to evaluate changes in officer knowledge of laws, plans regarding enforcement, and self-reported capacity to perform operations to improve pedestrian safety. Average test scores rose from 68% at pre-test to 78% at post-test and there was a statistically significant increase in officers reporting that they were familiar with the laws and could perform pedestrian operations.

### 2015 Program Monitoring and Evaluation

HSRC monitored program delivery by participating communities by collecting information through (1) web-based reporting forms, (2) community status reports, and (3) interviews with program staff. To understand program outcomes, HSRC examined (1) driver and pedestrian behaviors at selected sites, (2) law enforcement training participant surveys, (3) telephone surveys of the general public, and other sources of data.

### Program Delivery

#### Paid Media

Media was a key element in distributing pedestrian and bicycle safety messages to the general public. About \$300,000 was spent on media in at least 12 media markets across the state. Purchased media included Pandora radio ads (which received 33,000 clicks), 60 sidewalk stencils, two mobile billboards,

more than 12 traditional and digital billboards, and external/internal bus ads placed in 14 bus systems across the state. Paid media efforts also included “experimental” campaigns—using high-visibility balloons and print materials to engage visitors and local residents—in five areas. The media agency estimated that at least 51.5 million gross impressions—a measure of how many times an ad was seen—were delivered via purchased media. Additional funds were used to purchase print materials, with tens of thousands of rack cards, posters, banners, bumper stickers, and other safety materials delivered to and disseminated by community partners through local events and public engagement. Several communities also developed and purchased their own unique materials, including video PSAs, reflective bags, water bill inserts, t-shirts, and other supplemental items.

### Local Outreach and Earned Media

Participating communities performed extensive outreach, including distributing print materials and engaging with students, local businesses, community groups, and the general public at more than 120 local events. These included events such as 1) university and school open houses or student orientations, 2) National Night Out, 3) community meetings, and 4) festivals, fairs, and farmers markets. Partner communities also engaged with the media as a key strategy to help amplify the message to a broader audience. NCDOT and partner communities disseminated at least eight press releases, and more than 34 news stories (print, TV, and radio) covered local pedestrian and bicycle safety efforts.

### Law Enforcement Operations

From January 2015 to December 2015, 10 municipal police agencies and two university police departments reported conducting more than 97 operations targeting enforcement of pedestrian and/ or bicycle-related laws. These efforts involved 350+ officers spending 530+ hours in total, not including time spent doing routine enforcement patrols that incorporated pedestrian and bicycle safety surveillance. In large part, officers focused on issuing warnings to try to engage the public and raise awareness of the laws. Partners reported many positive outcomes, including improved road user awareness and behaviors, positive community response, and traffic citations upheld consistently in court. This year, many communities also took a “good ticket” approach, often partnering with local businesses to deliver “caught being good” tickets that provided local business discounts/free food to serve as positive reinforcement of safe behaviors observed.

Road User Violation	Citations Given	Warnings Given	Total Contacts
Drivers: failure to yield to pedestrians	148 (60%)	355 (27%)	896
Pedestrians: failure to use crosswalk	32 (13%)	725 (55%)	843
Bicyclists: failure to use signals	68 (27%)	236 (18%)	327
<b>Total</b>	<b>248</b>	<b>1,316</b>	<b>2,066</b>

## Program Outcomes

### Law Enforcement Officer Surveys

A total of 94 officers out of 116 who participated in the law enforcement training courses completed a survey before and after completing the course. The course training discussed common pedestrian and bicycle crashes, NC laws relating to motorist, bicyclist, and pedestrian behaviors, and effective practices for law enforcement to reinforce safe behaviors and implement tactical operations aimed at improving compliance with laws, including yielding to pedestrians in crosswalks. Survey results indicated an increase in officers’ knowledge of pedestrian and driver yielding requirements, and improved recognition of the legality of pedestrians crossing outside of a marked crosswalk and whether bicyclists

can be charged with impeding traffic. Officers reported significant increases in familiarity with the laws protecting pedestrians and cyclists, and capacity to perform a pedestrian crossing operation. Reported barriers to carrying out safety operations included the need for more officers, greater support from command staff, more public education materials, and more time during their shift to devote to pedestrian and bicyclist safety. The course content and, in some cases, the survey questions themselves may need to be modified for purposes of clarity in the future. Overall, participating officers reviewed the course overwhelmingly favorably.

### **Public Surveys**

HSRC contracted with the University of New Hampshire to administer a phone survey to a stratified random sample of 1,023 adults in 30 of North Carolina's counties. To help determine the effect the Watch for Me NC program has had, HSRC divided North Carolina's counties according to their level of WFM participation: Advanced, Beginning, and Nonparticipant communities. Across all counties, most respondents agreed that at least sometimes, drivers stop for pedestrians in crosswalks, and that roads in their communities were at least somewhat safe for walking, yet not very safe for bicycling. The majority of respondents also believed: that those who build roadways, police, and schools should all do more to make walking and bicycling safer in their communities; motorists should stop for pedestrians in crosswalks; bicyclists are required to use a front light when riding at night; and bicyclists are not allowed to proceed through stop signs without stopping as long as no cars are present. As predicted, more respondents living in "Advanced" and "Beginning" Watch For Me NC counties had heard of the Watch for Me NC safety campaign than respondents from Nonparticipating counties.

### **Behavioral Observations**

To measure the program's impact on motorist yielding rates, observational data were collected at a sampling of crosswalks. Field data were repeatedly collected by HSRC staff at 26 public street crossings in six cities from August 2015 to January 2016. At these sites, driver yielding rates fluctuated over the six-month time period of the 2015 campaign. Driver yielding rates in the early months of the campaign season (August and September) averaged 35% for staged crossings and 53% for naturalistic crossings. This rose slightly in October and November, when the peak number of enforcement operations and community-related events were conducted, and then dropped slightly in the final months of the program (December and January) when the campaign was winding down. The average net increase in driver yielding ranged from 2 to 7%, a small but statistically significant improvement similar in magnitude to the 2013 evaluation results. Driver yield rates at seven Triangle-area sites that were monitored in 2012, 2013, and 2015 were also compared in order to assess longer term changes. From 2012 to 2015, these sites saw a 27 to 32% average increase in driver yielding, providing evidence of potentially greater program impacts than can be measured in an annual evaluation and promising signs that areas that receive continued enforcement will continue to improve beyond what can be accomplished in one year.

### **Qualitative Outcomes**

HSRC conducted semi-structured interviews with 14 of the 18 Watch for Me NC community partners in November and early December 2015. From this interview process emerged seven key lessons learned regarding the communities' experiences with participating in the Watch for Me NC program: (1) All partners agreed partnerships were key to effectively implementing the Watch for Me NC program in their communities; (2) They reported significant changes in their agencies' "culture" in response to their communities' participation in Watch for Me NC, such as using positive reinforcement to reward pedestrians for safely crossing roadways; (3) Partners sensed the program helped raise their communities' awareness of pedestrian and bicyclist safety issues, as revealed in the rising number of residents reporting issues with pedestrian safety to law enforcement; (4) They documented significant

outcomes attributable to the program, such as increases in drivers yielding to pedestrians; (5) However, program implementation often involved such challenges as devoting sufficient staff time to program delivery, poor coordination among partners to monitor program activity, negative press coverage, and establishing and maintaining working relationships with other organizations and the media; (6) Thus, partners recommended future Watch for Me NC participants start small and gradually expand the program to incorporate larger areas and more diverse populations; (7) They also recommended considering ways of institutionalizing pedestrian and bicycle safety actions and priorities, such as incorporating Watch for Me NC messages and strategies into broader safety programs and policies.

## Conclusion

Overall, the 2015 program involved significant participation by partners in diverse communities across NC. The various measures used to evaluate the program provided evidence of opportunities and barriers to program delivery as well as its impact on pedestrian and bicycle safety in relation to several outcomes of interest. The program saw improvements in relation to law enforcement knowledge of laws, capacity to perform operations, and frequency and intensity of enforcement operations conducted across the state. Similarly, positive short and longer-term changes in driver yielding were seen at a number of sites where behaviors were observed. In 2015, we were able for the first time ever to document public perceptions and knowledge related to pedestrian and bicycle laws and safety behaviors and compare trends in communities that are active and not yet active with the Watch for Me NC program. Collectively, these measures, along with qualitative input provided by the participating communities, provided insights regarding the strengths and impact of the program and where opportunities for improvement exist. As the program continues to add communities across the state, it may be necessary to revisit and continue to evolve both the content and the format of the technical assistance delivery and the law enforcement training program. Similarly, the program evaluation approach may need to be adapted to accommodate the “scaling up” of the program across the state. It is recommended that future evaluations continue to make use of a combination of measures—including qualitative data, survey data, field observations, and perhaps even crash data—and use sophisticated techniques to account for additional factors in order to provide valid estimates of both short and longer-term program impacts.

## Background and Project Goals

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According to the latest data available from the National Highway Traffic Safety Administration<sup>1,2</sup>, in 2014, 4884 pedestrians and 726 bicyclists were killed in motor vehicle crashes in the US. An additional 65,000 pedestrians and 50,000 bicyclists were estimated to have been injured. In North Carolina, pedestrians and bicyclists represent approximately 15% of all motor vehicle crash fatalities, which is very similar to national proportions.

Pedestrian and bicycle safety is an important issue for the health, safety, finance, and transportation of North Carolinians. Statewide, in 2013 approximately 2,750 pedestrians and 900 bicyclists were hit by cars, with a large majority of these people sustaining injuries.<sup>3</sup>

Watch for Me NC was developed and subsequently pilot tested in the Triangle area. After a two year pilot program, Watch for Me NC opened up to the entire state in 2014. The full evaluation can be found at: [http://www.watchformenc.org/wp-content/themes/WatchForMeNC\\_Custom/documents/WFM\\_FinalReport\\_2014.pdf](http://www.watchformenc.org/wp-content/themes/WatchForMeNC_Custom/documents/WFM_FinalReport_2014.pdf).

The overall goal of this project was to assist partner communities across North Carolina in successfully implementing the Watch for Me NC program, and to monitor program delivery and measure outcomes to develop recommendations for future program expansion or improvements. To accomplish this goal, the project team from the University of North Carolina (UNC) Highway Safety Research Center (HSRC) sought to:

1. Recruit local partners with interest and ability to participate in the Watch for Me NC program
2. Provide technical assistance and training to support local and statewide program implementation
3. Coordinate with local agencies and NCDOT to collect, manage, and analyze data related to the program delivery
4. Evaluate the program delivery and present findings and lessons learned

This report documents methods and results related to the above activities.

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<sup>1</sup> National Highway Traffic Safety Administration. (2016a). *Traffic Safety Facts 2014 Data, Pedestrians* (Publication No. DOT HS 812270). National Center for Statistics and Analysis, National Highway Traffic Safety Administration, Washington, DC, 2016. Retrieved from <http://www-nrd.nhtsa.dot.gov/Pubs/812270.pdf>.

<sup>2</sup> National Highway Traffic Safety Administration. (2016b). *Traffic Safety Facts 2014 Data, Bicycles and Other Cyclists* (Publication No. DOT HS 812282). National Center for Statistics and Analysis, National Highway Traffic Safety Administration, Washington, DC, 2016. Retrieved from <http://www-nrd.nhtsa.dot.gov/Pubs/812282.pdf>.

<sup>3</sup> North Carolina Department of Transportation (NCDOT). (n.d.). *North Carolina pedestrian and bicycle crash data tool*. Retrieved from <http://www.pedbikeinfo.org/pbcat/index.cfm>.

## 2015 Partner Communities

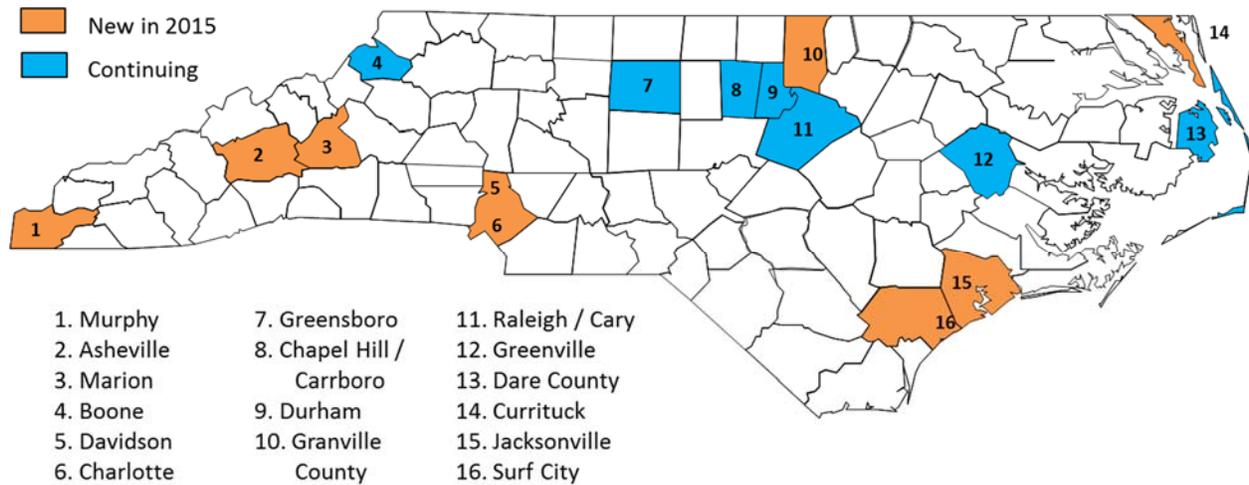
HSRC coordinated with NCDOT to develop an applicant selection process, which began in early 2015 with a call for applicants and an informational webinar to describe the process, benefits, and requirements of participation. Communities that submitted an application were screened to ascertain that they met basic eligibility requirements and then applications were reviewed by a selection committee, made up of representatives from HSRC, NCDOT, and the Watch for Me NC Steering Committee members. Applications were rated based on:

- Understanding: Does the agency demonstrate a clear understanding of what the Watch for Me NC program is, including its goals, partner responsibilities, timeline, and expected activities?
- Capacity: Does the agency demonstrate the capacity to participate in the program (including supporting both education/outreach and enforcement activities)?
- Focus/Approach: Does the agency have a clear focus on reaching the K-8 school population and a realistic and effective approach?

Additionally, the selection committee took into consideration the crash history and geographic representation of the applicant pool. A total of 18 communities were selected, including nine new communities and nine returning partners (see Table 1 and Figure 1). Many of the communities included one or more universities that sought to implement the Watch for Me NC program at the campus level. Overall, there was considerable variation in the community size, region, and agency leading the program delivery (Table 1).

**Table 1. 2015 Partner Communities and Lead Agency.**

Community (County)	County Population	Primary Point of Contact
Asheville (Buncombe)	250,539	Asheville Planning Dept
Boone (Watauga)	52,372	Boone Public Works
Carrboro (Orange)	140,352	Carrboro Planning Dept
Cary (Wake)	974,289	Cary Police Dept
Chapel Hill (Orange)	140,352	Chapel Hill Police Dept
Charlotte (Mecklenberg)	1,012,539	Charlotte Planning Dept
Corolla (Currituck)	24,976	Corolla Fire and Rescue
Davidson (Mecklenberg)	1,012,539	Davidson Police Dept
Durham (Durham)	288,133	Durham Planning Dept
Granville County	58,500	Granville County
Greensboro (Guilford)	506,610	Greensboro Planning Dept
Greenville (Pitt)	174,263	Greenville Police Dept
Jacksonville (Onslow)	187,589	Jacksonville Planning Dept
Marion (McDowell)	44,965	City of Marion
Murphy (Cherokee)	27,141	Murphy Police Dept
OBX (Dare)	35,019	KDH Police Dept
Raleigh (Wake)	974,289	Raleigh Planning Dept
Surf City (Onslow/Pender)	243,839	Surf City Police Dept.



**Figure 1. 2015 Watch for Me NC Partner Communities.**

## 2015 Technical Assistance and Partner Training

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### Technical Assistance

HSRC provided technical assistance to Watch for Me NC Partners and NCDOT. To guide and support the partners' campaign implementation, HSRC maintained a listserv just for partners; responded to questions from individual agencies; planned and facilitated web/phone meetings; and created a web page for partner-specific resources. The intent of the listserv was to foster information sharing among partners and provide an efficient way for HSRC to give answers to questions and share announcements and information.

Much of HSRC's technical assistance occurred during a kickoff meeting and four conference calls/webinars with Watch for Me NC partners. The meeting time always included a combination of presentation about a topic critical to campaign implementation and report out from each partner about current activities, successes, and challenges. Content-rich presentations served as the delivery mechanism for the technical assistance resources proposed in the original scope of work. Major topics addressed during the meetings included:

- May 21: Watch for Me NC Pedestrian and Bicycle Safety Program 2015 Kickoff
- June 15: Partners and Strategies to Make an Impact
- July 29: The Role of Law Enforcement and Strategies for Coordination
- September 24: Success and Challenges
- December 14: 2015 Wrap Up

HSRC also maintained a resource page for partners that included archived recordings and notes of all meetings as well as contact lists, example enforcement operations plans, law enforcement data

collection forms, public education resources (with an emphasis on supporting inclusion of K – 8 schools in Watch for Me NC), and a media toolkit.

### **Law Enforcement Training and Support**

Training was provided to 116 officers from 35 agencies in June and July 2015 to prepare them for performing pedestrian and bicycle safety operations as part of the Watch for Me NC campaign. Brian Massengill, a sergeant with the Durham Police Department, was sub-contracted to lead the one-day courses. The courses involved classroom education regarding relevant North Carolina laws and best practices in conducting enforcement, as well as field exercises in conducting targeted operations aimed at improving driver yielding at crosswalks.

In addition to receiving training, officers received copies of the rack card to hand out during routine or targeted enforcement operations, as well as a template operations plan to help them coordinate and perform consistent and safe operations. Sandwich boards purchased by NCDOT in previous years were provided. Finally, officers received bicycle light sets—headlight and taillight—and light-up bracelets to give to local residents when observed walking or bicycling at night without a light as a means of positive reinforcement (see images in Table 6). Changes in officer attitudes towards enforcing pedestrian and bicycle laws and sense of capacity to perform operations as a result of the training course are described in the “Law Enforcement Capacity Building” section.



**Figure 2. Media covering law enforcement operation in Durham.**

## 2015 Program Delivery

### Program Delivery Metrics

To comprehensively evaluate the delivery of the Watch for Me NC program across the state, the project team examined multiple measures, including media impact measures; website usage statistics; program implementation records; and self-reports by program partners. To collect such information, the project team developed web-based surveys and distributed these to community partners to help track and document activities. Data was regularly requested from partner groups during the program through direct emails, calls, and in-person meetings. To supplement data collected through surveys, HSRC conducted semi-structured interviews with the Watch for Me NC community partners in late Fall 2015. See Table 2 for a summary of the program delivery measures and data sources used.

**Table 2. Key 2015 Watch for Me NC program delivery measures.**

Domain	Program Delivery Measure	Data Source and Timeline
<b>Purchased Media</b>	<ul style="list-style-type: none"> <li>Number of print materials produced and disseminated by NCDOT and duration of exposure time</li> <li>Total cost of all printed materials and advertising space</li> <li>Number of times PSAs were aired on a set number of stations, population reach, frequency, number of impressions, and gross rating points</li> </ul>	Trone Brand Energy report provided in December 2015
<b>Earned Media</b>	<ul style="list-style-type: none"> <li>Press release dates</li> <li>Media coverage source and publication date</li> <li>Media coverage type, length, and slant</li> <li>Number of impressions (e.g., media circulation) per media coverage</li> <li>Ad equivalency (value of earned media) per media coverage</li> </ul>	Partner surveys, LexisNexis, and GoogleAlerts; surveys sent in Aug, Sept, and Nov 2015; other sources regularly monitored
<b>Website Usage</b>	<ul style="list-style-type: none"> <li>Website visits</li> <li>Unique website visitors</li> <li>Page views</li> <li>% new vs. returning visitors</li> <li>Visit frequency and duration</li> </ul>	Google Analytics; data collected continuously
<b>Law Enforcement Activities</b>	<ul style="list-style-type: none"> <li>Count of safety operations run by agency</li> <li>Count and type of warnings and citations administered per operation</li> <li>Count of enforcement officer hours spent per operation, by agency</li> <li>Count of safety materials disseminated, by agency</li> </ul>	Reported by agencies; regular requests made via listserv and calls to share data
<b>Community Engagement Activities</b>	<ul style="list-style-type: none"> <li>List of partner agencies</li> <li>Brief description of community engagement strategies used by partner agencies, including type of event, population reached, frequency, staff involvement, etc.</li> </ul>	Partner surveys sent in Aug, Sept, and Nov 2015

The findings regarding the program delivery are presented in the sections below.

## Program Delivery Summary

### Purchased Media

Purchased media includes radio ads, printed materials, and outdoor and indoor advertising space purchased. The purpose of this media was to deliver specific behavioral messages regarding pedestrian and bicycle safety to the general public in order to raise awareness of safety concerns and encourage road users to drive, bike, and walk more safely. Messages were disseminated through a variety of outlets, depending on the format of the media.

NCDOT and its media purchasing contractor, Trone Brand Energy, Inc., provided information regarding paid media contracting and printing services used from August to November 2015. A total of \$300,000 was spent on purchased media, including Pandora radio spots and outdoor advertising (e.g., transit ads, mobile billboards, balloon ads, sidewalk stencils, postcards, and mobile and traditional billboards). An additional \$95,000 was estimated to cover the costs of printing materials (see details in Table 6), not including the costs of in-house printing. Trone estimated that in total, 51,534,397 gross impressions were delivered via rated Pandora radio, billboards, and other experimental efforts. Gross impressions—a measure of how many times an ad was

It was estimated that Watch for Me NC ads were seen more than 51 million times across the state in the peak three months of the campaign.

seen—are a commonly used metric to describe the intensity of an advertising campaign. This figure does not include potential impressions from advertising in the four unrated media markets (i.e., media markets in which viewership estimates are not available) or impressions from the print materials and transit ads. A summary of the radio and outdoor media purchased, including the amounts, locations distributed, and timeframe of the ad placement is provided in the sections below.

### Radio

Fifteen-second Pandora radio ads with safety messages aimed at drivers were aired in all media markets surrounding partner communities. The spots aired on Pandora (see Figure 3) between August 10 and November 15 through most of the state and between July 6 and September 27 in the coastal communities. Table 3 provides various Pandora radio media indicators for each of the three Pandora delivery methods.

**Table 3. Pandora Media Indicators (Data Courtesy of Trone).**

Delivery Method	Impressions	Clicks	Click Through Rate
Audio	6,825,068	12,386	0.36%
Display	1,166,683	11,063	.95%
Mobile	870,647	9,914	1.14%



Figure 3. Ads were featured on Pandora radio, available on home computers and mobile devices.

**Traditional Billboards**

Several billboard ads ran for eight weeks beginning September 14 (Figure 4). The goal of the billboards was to reach drivers coming into a community, tourists in particular, to send a message that yielding to pedestrians and driving carefully around bicyclists is a normative behavior. These billboards produced more than 24 million impressions.



Figure 4. Ads were placed on traditional and digital billboards across the state.

**Mobile Billboards**

Mobile billboards (see Figure 5) were used for three months in Dare County to increase reach among summer beach goers. This method was selected due to the lack of traditional billboards in the area. Two trucks ran with different designs, delivering approximately 70,000 impressions per month.



Figure 5. Mobile Billboards Were Used in Regions Where Traditional Billboards Were Unavailable.

### Sidewalk Stencils

New in 2015 was the use of sidewalk stencils (See Figure 6) that used a pressure washer to imprint safety messages onto sidewalks. More than 60 stencils were installed in six cities. These stencils, which may last up to a year, offered more than 100,000 impressions per month.



Figure 6. Sidewalk Stencils Offered Safety Reminders to Pedestrians.

### Experimental Media

The campaign also tried new, experimental media options to broaden the program’s reach. This experimental media consisted of large balloons carried by individuals at public events and postcards featuring safety information handed out to the public (see Figure 7).



Figure 7. Experimental Media was Used to Engage Residents and Visitors in Key Locations.

The balloon campaign was conducted on 10 days in five cities, producing more than 28,800 impressions. This number is based on the assumption of 240 views per hour. Table 4 lists the dates of when and where balloon efforts were conducted.

Table 4. Locations and Dates for Balloon Campaign (Data Courtesy of Trone).

Location	Dates
Asheville	August 14-15
Greenville	August 29-30
Raleigh	September 19-20
Charlotte	October 17-18
Jacksonville	October 25-26

Postcards were also distributed from August through November in five cities and at eight universities, totaling 7,891 cards in the five cities, generating 15,781 impressions (two per card), and 6,130 cards at

the eight universities, producing a total impression of 24,520 (four per card). Table 5 lists the number of cards distributed at the eight universities.

**Table 5. Universities and Dates for Postcard Campaign (Data Courtesy of Trone).**

Location	Date	Total Distributed	Views per card
UNC-Chapel Hill	August 17	766	4
Duke University	August 17	793	4
UNC-Greensboro	September 14	753	4
NC A&T	September 14	798	4
NC Central University	October 12	765	4
NC State	October 12	787	4
Appalachian State	November 9	722	4
East Carolina University	November 9	746	4

### Transit Ads

Transit ads (see Figures 8 and 9) were placed on the interiors and exteriors of buses in 14 different transit systems, depending on the space available. This strategy originated in the pilot program, where a pedestrian crash analysis identified a strong spatial association between high pedestrian crash areas and high-use transit routes. Bus vendors estimate that 90% of its audience is “exposed” to transit advertising each month. Most ads ran from Mid-September to Mid-November, but a few transit agencies left ads on for the duration of the year.



**Figure 8. Internal Transit Ads Focused on Pedestrian and Bicycle Safety Tips.**



**Figure 9. External Transit Ads.**

## Print Materials and Giveaways

Print materials and other giveaways were provided to partner communities for local distribution (see Table 6). More on how communities distributed Watch for Me NC safety messages and materials is described in the “Community Engagement Efforts” section. Additionally, NCDOT sent large quantities of print materials to several statewide agencies and organizations for distribution through their networks. These included the Division of Motor Vehicles (DMV), State Highway Patrol (SHP), Active Routes to School (ARTS) coordinators, the Safe Kids North Carolina coalition, and each of the 14 NCDOT division offices.

**Table 6. Summary of Purchased Media Campaign Materials.**

Item Description	Distribution	Example
<p><b>Bumper Stickers</b></p> <p>Two standard-size bumper stickers with pedestrian and bicycle safety messages aimed at drivers.</p>	<p>100,000 of each pedestrian and bicycle bumper sticker were provided to the partner communities and statewide partners to distribute during their campaigns.</p>	
<p><b>Brochure/Rack Card</b></p> <p>Two-sided 3.75 inch by 8.5 inch document with laws and safety tips aimed at drivers, pedestrians, and bicyclists.</p>	<p>200,000 rack cards were printed in English and 20,000 were printed in Spanish. These were provided to all partners and law enforcement agencies and statewide partners for distribution through libraries, community centers, local businesses, and direct contact.</p>	 <p><b>SAFETY IS A SHARED RESPONSIBILITY</b></p> <p><i>When you're driving:</i></p> <ul style="list-style-type: none"> <li>• Yield to people in crosswalks.</li> <li>• Before making a turn, be sure the path is clear of people walking.</li> <li>• Look behind your vehicle for people before backing up.</li> <li>• Keep an eye out for people walking at night.</li> </ul> <p><i>When you're walking:</i></p> <ul style="list-style-type: none"> <li>• Look for cars in all directions—including those turning—before crossing the street.</li> <li>• Obey all pedestrian traffic signals.</li> <li>• At night, walk in well-lit areas, carry a flashlight, or wear something reflective to be more visible.</li> <li>• Watch for cars backing up in parking lots.</li> <li>• Cross the street where you have the best view of traffic. At bus stops, cross behind the bus or at the nearest crosswalk.</li> <li>• Always walk on the sidewalk; if there is no sidewalk, walk facing traffic and as far from the road as you can.</li> </ul>

Item Description	Distribution	Example
<p><b>Banners</b></p> <p>3 ft by 6 ft or 3 ft by 8 ft outdoor banners with messages aimed at drivers.</p>	<p>150 of each pedestrian and bicycle safety banners were distributed to the community partners.</p>	
<p><b>Posters</b></p> <p>11 by 17 inch posters with a series of four messages aimed at pedestrians and bicyclists.</p>	<p>20,000 English language posters and 4,000 Spanish language posters were sent to the communities and statewide partners for distribution in businesses, community centers, libraries, campuses, and other public locations throughout participating communities.</p>	

Item Description	Distribution	Example
<p><b>Bike Lights</b></p> <p>Front and tail lights with the Watch for Me NC logo, intended for bicyclists.</p>	<p>7,000 bike light sets were distributed primarily by police officers to bicyclists observed riding without lights during the Fall campaign months; these were also distributed through community events.</p>	
<p><b>Bracelets</b></p> <p>Bracelets/arm or leg straps with LED lights and the Watch for Me NC logo.</p>	<p>7,000 bracelets were distributed at community events during the Fall campaign months by the partners.</p>	

### Earned Media

Earned media consisted of TV, radio, and print news coverage of the program that was not purchased. The project team began tracking news articles in January 2015 and routinely searched Lexis-Nexis archives and Google News alerts throughout the year. The team also gathered information on media engagement through partner surveys and interviews. During the time period, NCDOT and program partners released several press releases and safety announcements. The releases ranged from announcing a community’s participation in the campaign, to safety announcements, to warnings about upcoming enforcement efforts. For example, both Asheville and Charlotte created online videos about the campaign and to let motorists, pedestrians, and bicyclists know the rules of the road. Greenville sent out a release announcing its efforts to reward drivers who yielded to pedestrians with coupons for free ice cream or hotdogs at local businesses. That effort generated news coverage from four media outlets.

Additionally, NCDOT held a press release in November 2015, at which time NCDOT’s Secretary Tennyson and the City of Durham’s Assistant Chief of Police, Captain Ed Sarvis, spoke about the program (Figure 10). The event was well attended by local city staff, advocacy members, and the general public and resulted in several news stories about the impact of the Watch for Me NC program.



**Figure 10. NCDOT Held a Press Conference in November 2015 on the Watch for Me NC Program.**

The campaign saw continued news coverage throughout the year. In 2015, the campaign generated more than 30 stories in media outlets across the state. As has been the case in past years, much of the coverage came from areas that were new to the campaign this year. Still, several communities that participated in the Watch for Me NC program in years past were able to promote media stories about the campaign through new efforts, notably Greenville police rewarding drivers for yielding to pedestrians. As in previous years, news and editorial coverage remained largely positive toward the effort. Newspaper articles and television reports primarily focused on crash statistics and road fatalities and how the campaign is working to reduce those figures through better education of drivers, pedestrians, and bicyclists, as well as through enhanced enforcement of existing pedestrian and bicycle safety laws. Information about Watch for Me NC was also distributed online.

In 2015, the Watch for Me NC campaign generated more than 30 stories in local news outlets and its website was viewed more than 32,000 times.

### **Website Usage**

To distribute information to partner communities, the public, and the media, the team continued to develop and maintain the Watch for Me NC website, <http://www.watchformenc.org> (see Figure 11). The site serves as a central information point for the campaign and a repository for campaign materials and media coverage.



**Figure 11. Watch for Me NC Project Website Home Page.**

Data regarding the Watch for Me NC website usage during the 2015 program year were extracted from Google Analytics. From January 1, 2015 to December 31, 2015, 2,824 unique visitors logged onto the site 32,322 times and viewed 50,551 pages. This is a significant increase in web usage from 2014, when 4,855 unique visitors came to the site 6,561 times and viewed 16,478 pages. Most of the site’s web traffic, 86.7%, came from individuals directly typing [www.watchformenc.org](http://www.watchformenc.org) into their web browser or searching for Watch for Me NC in Google or another search browser. The most commonly visited sub-pages were the Campaign Materials (2,334 page views), Safety Resources (1,816 page views), About (1,796 page views), and Participate (966 page views). The Partner Resource page, which was set up for exclusive use by participating communities, received 296 views.

Figure 12 shows the daily trends in web traffic monitored in 2015. Clearly, the bulk of the traffic to the site came after the campaign launched in July, a sign that individuals and members of the media were turning to the website to learn more about the campaign and pedestrian and bicycle safety. Site usage in 2015 peaked in August and September during the height of the campaign when many news stories covered the program as part of back to school efforts.



**Figure 12. Web Use Statistics in 2015.**

### Community Engagement Efforts

The Watch for Me NC community partners (n=19) that responded to the monthly surveys varied widely in the amount of time and effort that they reported was devoted to the campaign and community engagement. The average number of hours devoted to Watch for Me NC per month by the lead program manager was 12, the minimum was 1 (Kill Devil Hills, Raleigh), and the maximum was 67 hours

(Jacksonville). Communities that had been involved in the pilot program, such as Raleigh, may have required less time to participate due to pre-existing relationships and a more streamlined process in place.

In general, most partners reported engaging directly with community members as well as with larger organizations. Nearly all partners engaged individuals and organizations with Watch for Me NC messaging on at least one occasion per month. Two partners did not report any engagement with individuals or organizations—i.e., UNC Chapel Hill and Raleigh—and six partners engaged individuals and organizations on 10 or more occasions per month—i.e., Chapel Hill, Charlotte, Corolla, Durham, Greensboro and Greenville/Pitt County. On average, partners interacted with individuals and organizations regarding Watch for Me NC an average of 5.7 times per month.

Seventeen of the 19 municipal survey respondents and four of the eight university-based respondents distributed messages and engaged the community from August 2015 to the middle of November 2015. Tables 7 and 8 present a summary of the activities performed by Watch for Me NC partners as of December 2015 and what types of materials have been distributed. The total sample size of 19 reflects the participating municipalities and universities that had completed monthly progress reports pertaining to activities carried out in September through November 2015.

**Table 7. Reported Community Outreach Efforts.**

<b>Community outreach efforts conducted since August (N = 19 responses)</b>	<b>Percent</b>	<b>Count</b>
Directly engaged individuals and organizations with Watch for Me NC messaging	89.5%	17
Used other materials (e.g., from NHTSA, Safe Kids, etc.)	47.4%	9
Created unique materials that feature Watch for Me NC logos, facts, statistics, etc.	26.3%	5

**Table 8. Material Distribution and Use.**

<b>What type of materials did you distribute or use? (N = 19 responses)</b>	<b>Percent</b>	<b>Count</b>
Rack Cards/Brochures	78.9%	15
Bumper stickers	73.7%	14
Bike lights	73.7%	14
Posters	63.2%	12
Banners	57.9%	11
Bracelets	57.9%	11

In November 2015, partners received web-based surveys to solicit information on those outreach and educational activities they conducted as part of the Watch for Me NC campaign. Based on survey responses, at least 109 local events were attended or hosted by Watch for Me NC partners from August through mid-November 2015 in partner communities, which represents an average of six events per community. Many communities worked to engage the media at these events as well; these efforts are described in the earned media section above. Events that presented opportunities to distribute safety messages typically included:

- University open houses or student orientations
- New employee orientations

- Crossing guard trainings
- Adopt-A-Cop events
- National Night Out
- National Family Volunteer Day
- Bicycle/Pedestrian Advisory Commission (BPAC) meetings
- School events (“Back to School” nights; walk or bike to school events)
- Halloween-themed events
- Old Navy Safety Day
- Festivals, fairs, and farmers markets
- Distribution of materials at senior citizen centers
- Citizen academy meetings
- Distribution of materials at conventions, including the NC Bike Summit
- Neighborhood presentations

Additionally, materials were commonly distributed at city/town hall, local bike shops, bookstores, restaurants, university resident areas, and other campus locations. Materials were also distributed during police enforcement events (Figure 13), through faith-based groups, council meetings, and at Safe Kids/Safe Communities, MPO meetings, and transportation fairs.



**Figure 13. Examples of Community Engagement.**

It is worth noting that Greenville, UNC Chapel Hill, Town of Chapel Hill, Charlotte, and Corolla created materials that featured Watch for Me NC logos, facts, statistics, etc., such as a reflective Halloween bags (Figure 14), PSA videos, “good behavior tickets”, utility van wraps, and pressure washed sidewalks.



**Figure 14. Example of Additional Watch for Me NC Materials Created by Partners.**

### Law Enforcement Operations

Law enforcement activities were tracked through an online form completed by law enforcement agency staff (form available at [www.watchformenc.org/reporting](http://www.watchformenc.org/reporting)). From January 2015 to December 2015, 10 municipal police agencies and two university police departments reported conducting more than 97 operations targeting enforcement of pedestrian and/ or bicycle-related laws. These efforts involved 350+ officers spending 530+ hours in total, not including time spent doing routine enforcement patrols that incorporated pedestrian and bicycle safety surveillance. All efforts were performed without receiving any additional compensation from the Watch for Me NC program sponsor. The operations resulted in more than 1,300 warnings, 248 citations, and more than 2,000 direct contacts made with the public (Table 9). Additionally, large quantities of rack cards, bumper stickers, bike lights, and other materials were distributed during these events.

Watch for Me NC communities held more than 102 local events and 97 enforcement operations, directly reaching thousands of community members with safety messages in 2015.

Unlike previous years, enforcement operations took place not in a singular month but throughout the Fall campaign season, with some communities reporting year-round operations taking place. In large part, officers focused on issuing warnings to try to engage the public and raise awareness of the laws. Partners reported many positive outcomes, including improved road user awareness and behaviors,

positive community response, and traffic citations upheld consistently in court. This year, many communities also took a “good ticket” approach, often partnering with local businesses to deliver “caught being good” tickets that held local business discounts/free food to serve as positive reinforcement of safe behaviors observed.

**Table 9. Summary of 2015 Law Enforcement Citations.**

Road User Violation	Citations Given	Warnings Given	Total Contacts
Drivers: failure to yield to pedestrians	148 (60%)	355 (27%)	896
Pedestrians: failure to use crosswalk	32 (13%)	725 (55%)	843
Bicyclists: failure to use signals	68 (27%)	236 (18%)	327
<b>Total</b>	<b>248</b>	<b>1,316</b>	<b>2,066</b>

Table 10 provides a breakdown of the enforcement warnings and citations by partner agency. While most partners were responsive to requests for information, certain communities had multiple police departments working across a region, or multiple units within the same department performing operations, and not all activities were closely-coordinated or planned in advance. It is possible that staff may have under-reported the true amount of enforcement activities taking place within their respective jurisdictions. Additionally, several partner groups reported no specific law enforcement operations at all. These communities may have focused more on educational outreach or lacked the staff to collect and provide the report forms to share their enforcement efforts. Table 10 provides a summary of enforcement activities by partnering agency.

**Table 10. Enforcement Efforts by Partner Agency.**

Agency	Number of Events	Driver Warnings	Driver Citations	Ped Warnings	Ped Citations	Bicyclist Warnings	Bicyclist Citations	Other/ Total Contacts
<b>Universities</b>								
NCCU	1	3	2	0	0	0	0	5
UNCG	13	0	0	0	1	0	20	41
<b>Municipalities</b>								
Asheville	12	53	52	227	0	0	0	20
Carrboro	10	64	2	0	3	0	0	69
Cary	3	0	120	0	0	0	0	120
Chapel Hill	33	0	0	6	5	9	48	57
Charlotte-Mecklenburg	7	68	14	618	0	0	0	686
Creedmoor	2	0	8	0	0	0	0	400
Davidson	2	13	0	0	0	0	0	13
Durham	3	30	0	70	20	0	0	206
Greenville	9	83	2	31	3	3	0	149
Jacksonville	2	0	0	0	0	0	0	0
<b>Grand Total</b>	<b>97</b>	<b>355</b>	<b>148</b>	<b>725</b>	<b>32</b>	<b>236</b>	<b>68</b>	<b>2,066</b>

In 2015, NCDOT provided agencies with a notepad of pre-printed warning fliers that the police departments could use to aid in expeditiously distributing warnings at enforcement operations (see Figure 15). This was based upon a model that the City of Greenville had tried in 2014 and was well received by several agencies.

### CITATION WARNING

**YOU WERE OBSERVED VIOLATING NORTH CAROLINA PEDESTRIAN LAWS.**

MOTORIST FAILED TO YIELD TO PEDESTRIAN

PEDESTRIAN FAILED TO YIELD TO MOTORIST

**FAILURE TO COMPLY WITH THESE LAWS IN THE FUTURE COULD LEAD TO ACTUAL FINES.**

**THE LAW IS CLEAR:**

**G.S. 20-155(c) – Right-of-way to a Pedestrian Crossing Infraction, Court Appearance May be Waived**  
Failed to yield to pedestrians in a Clearly Marked Crosswalk or Regular Pedestrian Crossing  
 (c) The driver of any vehicle upon a highway within a business or residence district shall yield the right-of-way to a pedestrian crossing such highway within a marked crosswalk.  
 Or any regular pedestrian crossing included in the prolongation of the lateral boundary lines of the adjacent sidewalk at the end of a block, except at intersections where the movement of traffic is being regulated by traffic officers or traffic direction devices.

**G.S. 20-173(e) – Yield to Pedestrian Traffic Infraction, Court Appearance May be Waived**  
Without yielding the right of way to a Pedestrian in a Crosswalk which was clearly marked as a crosswalk or crossing at or near an intersection where no crosswalk marking exists.

**G.S. 20-174(a) – Pedestrian Yield Right of Way to Vehicles Infraction, Court Appearance May be Waived**  
Being a Pedestrian, Cross a Roadway, Other than Within a Marked Crosswalk or Within an Unmarked Crosswalk at an Intersection. Failed to yield Right of Way to All Vehicles.

**G.S. 20-174(c) – Pedestrian Crossing Street at Marked Crosswalk Infraction, Court Appearance May be Waived**  
Being a Pedestrian, crossed a roadway between adjacent intersections at which traffic-control signals are in operation.  
 NOTE: Pedestrians shall not cross at any place except in a marked crosswalk when adjacent intersections have traffic-control systems in operation.

We are trying to make our streets safer for everyone.  
 Help us by cooperating and encouraging others to do the same.



This warning was brought to you by the Watch For Me NC campaign and your local police department.

### Safety is a shared responsibility

Each year, more than 2,400 pedestrians and 960 bicyclists are hit by cars on North Carolina streets. The North Carolina Department of Transportation's **Watch for Me NC** campaign is working to reduce those numbers through better education and enforcement of pedestrian and bicycle laws.

**When you're driving:**

- Yield to people in crosswalks. (GS 20-173)
- Always look first for pedestrians and bicyclists before turning, backing up and when driving at night.
- Pass bicyclists only when it is safe to do so and be sure to give them plenty of room. (GS 20-149)
- Be prepared for bicyclists to take the whole lane – it's their right if they need it. (GS 20-148)

**When you're walking:**

- Look for cars in all directions – including those turning left or right or backing up – before crossing the street or parking lot.
- Obey all pedestrian traffic signals. (GS 20-172)
- At night, walk in well-lit areas, carry a flashlight, or wear something reflective to be more visible.
- Cross the street where you have the best view of traffic. At bus stops, cross behind the bus or at the nearest crosswalk.
- Always walk on the sidewalk; if there is not sidewalk, walk facing traffic and as far from the roadway as you can. (GS 20-174)

**When you're bicycling:**

- Wear a helmet. It could save your life. (GS 20-171.7)
- Obey all traffic signals and stop at "Stop" signs and red lights. (GS 20-158)
- Ride in the direction of traffic and as far to the right as practicable. (GS 20-146)
- Use front and rear lights and reflectors at night and be as visible as possible. (GS 20-129(e))
- Use hand signals to indicate when turning. (GS 20-154)

**Learn more about how you can improve pedestrian and bicycle safety at**  
[www.watchformenc.org](http://www.watchformenc.org)

**Figure 15. Pre-Written Warning Notepad.**

## 2015 Program Outcomes

The HSRC team used a mixed-methods approach to evaluate various outcomes related to the Watch for Me NC program. Table 11 provides a summary of the methods used, and the following sections detail the methods and results from each element of the evaluation.

**Table 11. Key 2015 Watch for Me NC Program Outcome Measures.**

Domain	Program Outcome Measure	Data Source and Timeframe
<b>Agency Capacity</b>	<ul style="list-style-type: none"> <li>• Change in law enforcement staff self-reported measures of knowledge, attitude, and sense of capacity</li> </ul>	Paper survey conducted before and after officers participated in a training course in July 2015
<b>Public Knowledge and Perception</b>	<ul style="list-style-type: none"> <li>• Perceptions of the safety of roadways</li> <li>• Perceptions of road users' behavior</li> <li>• Beliefs related to actions that should be taken to make walking and bicycling safer</li> <li>• Recognition of Watch for Me NC program elements</li> <li>• Baseline knowledge of key pedestrian and bicycle safety laws</li> </ul>	Phone survey conducted in October and November 2015
<b>Observable Behaviors</b>	<ul style="list-style-type: none"> <li>• Driver yielding to pedestrians at marked crosswalks</li> <li>• Pedestrian use of marked crosswalks</li> </ul>	Field data collected at selected crossing sites from August 2015 to January 2016
<b>Qualitative Outcomes</b>	<ul style="list-style-type: none"> <li>• Input on especially helpful partners</li> <li>• Change in enforcement agency's approach to ped/bike law enforcement</li> <li>• Change in policies, ordinances, or resolutions attributable to program</li> <li>• Coordination with Public Works or Engineering Departments to discuss safety issues with the physical environment</li> <li>• Partner's approach to working with schools</li> </ul>	Phone interview with agency points of contact in November and December 2015

### **Law Enforcement Self-Report Measures, Methods, and Results**

Officers from thirty five different police agencies across the state attended one of eight courses covering common pedestrian and bicycle crashes and causes, NC laws relating to motorist, bicyclist, and pedestrian behaviors, and effective practices for law enforcement to reinforce safe behaviors and implement tactical operations aimed at improving compliance with laws, including yielding to pedestrians in crosswalks.

Changes in course participant knowledge and attitudes were evaluated using a pre-test/post-test comparative design. A brief questionnaire was given to all officers before and after each workshop. The questionnaire was designed to evaluate changes in officer knowledge of laws, plans regarding participation in Watch for Me NC enforcement events, attitudes about pedestrians, and self-reported capacity to perform operations aimed at improving pedestrian safety (e.g., resources of the individual and support from his/her organization), as well as response efficacy (i.e., the sense that the work they perform will have value/effect).

### **Survey Participation**

The questionnaires were administered to 113 course participants. We received responses from 102 officers who completed both the before and after surveys (90%). Officers that filled out only one of the surveys ("before" or "after" but not both) were not included in the analysis. Of the 102 officers completing both surveys, 94 (92%) completed the entire survey. For each item in the survey, a matched

pair t-test (two-tailed, alpha =.05) was performed to assess the significance of the difference in individual scores from before and after the workshop.

Officers represented various types of police departments: municipalities (63%), universities/colleges (13%), counties (13%), and other or multiple agencies (4%), including the state government and a marine base. The majority of officers (86%) reported having no prior pedestrian/bicycle training before this workshop, 6% had some prior training (either from HSRC or another course), and 8% did not respond to the question.

### Changes in Officer Knowledge

Results indicate an increase in the number of correct responses regarding pedestrian and driver yielding requirements under different scenarios (e.g., at intersections and at midblock locations), and an improved recognition of North Carolina laws regarding pedestrians and bicyclists (see Table 12). Average test scores rose from 68% to 78%. The change in average test scores was not found to be statistically significant. However, changes in responses for several individual questions were statistically significant.

The greatest gains in knowledge were seen in questions 2 and 8, which dealt with the legality of pedestrians crossing outside of a marked crosswalk and whether bicyclists can be charged with impeding traffic, respectively. Surprisingly, the only other statistically significant change in scores was on question 3, about the illegality of pedestrians willfully impeding the regular flow of traffic. In this case, officer scores actually worsened (from 97% to 90%). This unexpected change may be due to misunderstanding of the survey question or the actual concept, and future courses should seek to provide greater clarity regarding this issue.

**Table 12. Officer Knowledge Scores Before and After Training.**

Question	Correct Response	Before Percent Correct	After Percent Correct	Percent Difference	P-value
1. A pedestrian in the crosswalk at a mid-block crossing or uncontrolled intersection always has the right of way	True	69%	73%	4.0%	0.50
2. It is illegal for a pedestrian to cross the street outside of a marked crosswalk at any time.	False	56%	76%	19.8%	<= 0.01
3. Pedestrians cannot impede the regular flow of traffic by willfully standing, sitting, or lying on the roadway.	True	97%	90%	-7.0%	<= 0.01
4. When a vehicle is stopped for a pedestrian, motorists approaching from the rear may overtake and pass the stopped vehicle if the adjacent lane is clear.	False	88%	93%	5.5%	0.19
5. Motorists must yield the right-of-way to pedestrians when making a right turn on red.	True	99%	98%	-0.6%	0.32
6. Lighted lamps on the front and reflex mirror or lamps on the rear of the bicycle	True	94%	99%	5.4%	0.08

Question	Correct Response	Before Percent Correct	After Percent Correct	Percent Difference	P-value
are required when a bicycle is used at night.					
7. Bicyclists must ride to the far right of the lane as possible at all times.	False	19%	22%	2.8%	0.13
8. Bicyclists can be charged with impeding traffic.	False	21%	79%	58.3%	<= 0.01

### Changes in Officer Attitude and Perceptions

Table 13 provides a summary of the findings from the questionnaire items assessing self-reported attitude and perceptions of resources/capacity and efficacy. On the whole, there was a significant increase (25%) in the number of officers reporting that they felt familiar with the laws protecting pedestrians/cyclists. There was a very small negative change in officers' responses about the seriousness of the threat of motorists who do not follow pedestrian/bicycle safety laws (-1%, question 10) which was found to be statistically significant. Additionally, we saw a modest (8%) and statistically significant increase in officers' perception that they could perform a pedestrian crossing operation. There was also a substantial decline in the number of officers reporting the sentiment that pedestrian laws are difficult to enforce (13%), although this was not found to be statistically significant.

**Table 13. Officer Attitudinal Responses Before and After Training.**

Question Number	Attitude/Belief Statement (1=Disagree Completely; 6=Agree Completely)	Before Avg.	After Avg.	Percent Change	P-value
9	I am familiar with the laws protecting pedestrian/bicycle safety in NC	4.11	5.12	25%	<= 0.01
10	Motorists who do not follow traffic laws pose a serious threat to pedestrian/bicycle safety	5.69	5.65	-1%	<= 0.01
11	Pedestrian/bicyclist laws are difficult to enforce	3.72	3.23	-13%	0.085
12	My department/unit could perform a pedestrian crossing operation	4.86	5.25	8%	<= 0.01
13	I can help prevent crashes by enforcing pedestrian/bicyclist/motorist laws	5.37	5.48	2%	0.06

When asked about the current pedestrian safety operations plans in their department or unit (Table 14), the most common response from officers from officers was that they did not know (32%), followed by those reporting plans to perform such operations in the next six months (17%). This question was asked only once in the "after" survey. The high rate of responses marked as "don't know or not applicable"

and the 8% no response rate on this question may simply indicate that many officers did not have time immediately following the training to find out about their department’s plans or make plans as a result of the training.

**Table 14. Current Pedestrian Safety Operation Plans for Department/Unit.**

Current Plans	Number of officers	Percent
Operations performed regularly for more than 6 months	12	12%
Operations performed regularly for less than 6 months	4	4%
Plan to perform operations in the next 6 months	17	17%
Plan to perform operations in the next year	14	14%
No plans to perform operations in the next 6 months	14	14%
Don't know or not applicable	33	32%
No response	8	8%

When asked if they had the support needed to perform pedestrian and bicycle safety operations following the workshop, the majority (78%) responded that they did. Only 2% responded that they did not, and another 20% did not respond to this question. Several officers, regardless of whether they responded yes or no, commented on barriers faced to performing such operations including the need for more officers, more support from command staff, more public education materials, and more time during their shift to devote to the issue.

Fifty one percent of all respondents offered additional feedback on the course. The feedback was overwhelmingly positive. A number of officers commented that they appreciated the course because it addresses topics that are seldom discussed. Many officers commented that the materials used were good and that they enjoyed the videos. Several officers praised the course instructors. Only one of the 52 officers responding had negative feedback on the course, stating that he felt the material was too repetitive. Some officers also offered additional comments. In general, these were suggestions such as inviting bicycle organization representatives to the class or statements of intent to introduce better enforcement of bicycle and pedestrian laws in their communities or to carry out public education on these issues. The following quotes reflect the general feedback received from course participants:

**116 officers from 35 agencies received training, which was shown to improve officer knowledge of pedestrian and bicycle laws and raise awareness among officers about their role in promoting pedestrian and bicyclist safety.**

1. “Very clear and informative. The information provided will help me enforce pedestrian and bicycle safety in my work area.”
2. “Good training. Lots of good information that would otherwise go unrepresented. I did not know most of this information prior to this class. Information was presented very well.”
3. “Never gave this topic much thought until today. It has always been a joke around the station, J-walking lol. After today's class I now see a need for education regarding these topics for both citizens and officers.”

4. “Great class, learned things I was not aware of and feel this program can make a positive impact.”
5. “Great information and course materials. I have never received this many course materials from a class in the past.”
6. “This class clarified different laws and brought attention to complications that may arise. My team will be doing operations often downtown.”

Based on both the quantitative and qualitative survey responses, there is evidence that the training had a positive impact raising awareness among officers about laws regarding pedestrians and bicyclists. The officers’ self-perceived understanding of these laws appears to have increased substantially due to the training. However, the course contents and, in some cases, the survey questions themselves may need to be modified moving forward to address some specific issues highlighted in this report.

### Public Phone Survey Measures, Methods, and Results

The overarching goals of the phone survey were to measure impacts of the Watch for Me NC program that are difficult to observe or report, and to establish a baseline with which to compare program impacts in the future. The survey, administered to a stratified random sample of 1,023 adults in 30 of North Carolina’s counties measured the following constructs:

- Perceptions of the safety of roadways;
- Perceptions of road users' behavior;
- Beliefs related to actions that should be taken to make walking and bicycling safer; and
- Recognition of the Watch for ME NC program.

HSRC researchers designed the survey questions to assess how these constructs informed respondents’ traffic safety-related behavior. Questionnaire items were also meant to acquire a sense of “baseline” social norms related to pedestrian and bicycle safety issues in North Carolina. Ideally, this baseline would be followed up with yearly updates on residents’ campaign-oriented perceptions, beliefs, and knowledge. Assessing changes over time would help discern differences between communities active and inactive in Watch for Me NC programming; inform changes made to the program and its messaging; and identify potential “spillover” effects that might occur as program messaging diffuses throughout the state. Such an evaluation would help practitioners and researchers in North Carolina and around the country develop an understanding of how comprehensive education and enforcement campaigns can impact road user safety.

To help determine the effect the Watch for Me NC program has had thus far, HSRC divided North Carolina’s counties according to their level of participation in the Watch for Me NC program. Program-related participation was delineated as follows:

- **Advanced WFM Communities (Advanced):** communities in these counties actively participated in Watch for Me NC for two or more years, or did so intensely for at least one year.
- **Beginning WFM Communities (Beginning):** communities in these counties are new to Watch for Me NC or have yet to administer the program consistently.
- **Non WFM Participant (Nonparticipant):** communities in these counties have yet to participate in Watch for Me NC (Table 15).

**Table 15. Counties Selected by Level of Participation in Watch for Me NC.**

<b>Advanced (n=302)</b>	<b>Beginning (n=329)</b>	<b>Nonparticipant (n=392)</b>	
Buncombe	Craven	Alamance	Lee
Durham	Guilford	Cabarrus	Lenoir
Orange	Mecklenburg	Catawba	Pasquotank
Pitt	New Hanover	Cleveland	Randolph
Watauga	Onslow	Cumberland	Robeson
	Wake	Davidson	Rowan
		Edgecombe	Union
		Forsyth	Wayne
		Gaston	Wilson
		Iredell	

**Survey Administration Procedures**

Interviewers with the University of New Hampshire (UNH) Survey Center administered a 35-item questionnaire to a sample of 1,023 randomly selected adults living in 30 counties in North Carolina that completed a telephone survey in October-November 2015. The selected counties were identified based on whether they contained one of the 50 most populous cities in North Carolina. Thus, the sample is not intended to be representative of all residents statewide but rather of those selected areas. HSRC developed the questionnaire in collaboration with UNH Survey Center.

A sample of households in each of the strata was selected by a procedure known as random digit dialing. First, through use of a computer program, analyst randomly selects cellular and land line phone number exchanges, with the result that each household in the area in which there is a telephone has an equally likely chance of being selected into the sample. UNH estimated the response rate for the NCDOT Pedestrian Safety Survey at 30%. This year the survey was limited to English speakers. In future years, HSRC recommends translating and offering the survey in Spanish as well.

**Demographics of Sample and Statewide Demographics**

In order to make generalizations about program-related beliefs, perceptions, and knowledge across North Carolina, HSRC examined the survey sample’s representativeness to the state adult population according to respondents’ level of education, household income, age, and race.

Among the 1,002 respondents who reported their education attainment, 49.9% reported to have earned a bachelor’s degree or higher, compared with 27.8% of North Carolina adults (n = 7,466,181) who have earned at least a bachelor’s degree,  $\chi^2 (1, N = 7,467,183) = 218.067, p <=0.01$ .

Given differences in how household income levels were categorized—e.g., the NCDOT Survey includes a \$30,000 to under \$45,000 category, whereas the American Community Survey maintained a \$25,000 to \$34,999 category—we collapsed household incomes into three broad categories as seen in Table 16. Likelihood Chi-square tests revealed that survey respondents tended to have significantly higher incomes than adults across North Carolina,  $\chi^2 (2, N = 3,053,248) = 218.353, p <=0.01$ . Otherwise, survey respondents closely resembled state residents in terms age and race (Tables 17 and 18).

**Table 16. Household-Level Income among Survey Respondents and Households in North Carolina.**

Household Income	Sample (n = 751)	State (n = 3,049,447)
Less than \$15,000	8.0%	6.3%
\$15,000 to \$74,999	52.8%	76.5%
\$75,000 or more	39.2%	17.3%

**Table 17. Phone Survey Respondents' Reported Age.**

Age Group	Sample (n = 749)	State (n = 7,466,181)
30 to 39	16.0%	17.0%
40 to 49	17.0%	18.3%
50 to 59	17.2%	17.6%
60 to 69	14.5%	13.7%
70 or older	9.8%	11.9%

**Table 18. Phone Survey Respondents' Reported Race.**

Reported Race	Sample (n = 1,003)	State (n = 7,466,181)
White	66.8%	69.6%
Black	22.5%	21.5%
Asian	3.1%	2.4%
Native American	0.7%	1.2%
Hispanic	3.9%	8.7%
Other	3.0%	3.4%

All survey results presented here proceeded in two steps:

1. Weighting individual responses by respondents' sex, age, race, and region of the state—i.e., program fidelity-related “region”—to match estimates from the 2013 American Community Survey (ACS) conducted by the US Census. This procedure helped control for sampling error that may have systematically differed across regions and types of respondents (e.g., older adults in Advanced regions may have been more likely to respond to the survey than older adults in Nonparticipating regions).
2. Calculating likelihood ratio chi-square tests to assess associations among respondents' region and their responses to classes of questions related to perceptions of the safety of roadways and road users' behavior; beliefs related to actions that should be taken to make walking and bicycling safer; and their recognition of the Watch for ME NC program in relation to a “dummy” program.

First, we assessed how respondents across regions typically travel, as differences in primary mode of transportation might influence the way people perceive and respond to questions about road user safety. Likelihood ratio chi-square tests revealed that how respondents residing in Advanced, Beginning, and Nonparticipating communities tended to get around did not differ significantly,  $\chi^2(10, N = 989) = 17.493, p = 0.064$ .

**Table 19. Responses to: “When you need to get somewhere, how do you USUALLY get there?”**

Typical Transportation	Advanced (n = 290)	Beginning (n = 315)	Nonparticipant (n = 389)
Drive	82.5%	88.2%	91.9%
Carpool	4.5%	2.2%	4.2%
Take the bus or train	6.1%	3.1%	0.5%
Walk	5.1%	5.2%	1.0%
Ride a bike	1.3%	0.5%	0.4%
Travel by some other way	0.5%	0.8%	2.0%

However, significantly more respondents living in Advanced communities reported seeing a lot of walking and in their communities—81% in Advanced communities vs. 72 and 63% in Beginning and Nonparticipating counties, respectively,  $\chi^2 (2, N = 1,015) = 28.673, p <=0.01$ . The same was true for the large proportions of respondents in Advanced counties reported seeing a lot of people bicycling in their town—75% of residents in Advanced counties reported seeing a lot of people bicycling in their town, compared with 61 and 41% of respondents living in Beginning and Nonparticipating counties, respectively,  $\chi^2 (2, N = 1,020) = 81.634, p = <=0.01$ .

Further, it seems that significantly more respondents living in Nonparticipating counties reported to have lived in “the country” or rural areas (32.6%) compared to respondents from Advanced and Beginning counties (20 and 12%, respectively),  $\chi^2 (2, N = 1,023) = 44.745, p <=0.01$ .

### Perceptions of the Safety of Roadways

Across regions, the majority of respondents—67 to 70%—reported that conditions in their towns were at least somewhat safe for walking. However, only 52 to 58%—depending on the region—considered their areas at least somewhat safe for bicycling, with nearly equal proportions thinking that the roads in their towns were at least somewhat unsafe for bicycling. Walking- and bicycling-related perceptions did not vary significantly according to regions’ level of involvement with the Watch for Me NC program (Table 20).

**Table 20. Respondents’ Perceptions of the Safety of Roadways for Walking and Bicycling.**

<i>In your opinion, how safe are the roads in [TOWN] for walking?</i>						
Region	Very Safe	Somewhat Safe	Somewhat Unsafe	Very Unsafe	n	p
Advanced	17.4%	51.9%	16.4%	14.4%	299	0.110
Beginning	26.1%	44.2%	19.3%	10.4%	318	
Nonparticipant	22.3%	48.2%	18.4%	11.2%	390	
<i>In your opinion, how safe are the roads in [TOWN] for bicycling?</i>						
Region	Very Safe	Somewhat Safe	Somewhat Unsafe	Very Unsafe	n	p
Advanced	9.6%	41.9%	32.0%	16.4%	300	0.314
Beginning	12.6%	41.6%	26.6%	19.1%	318	
Nonparticipant	14.4%	43.2%	27.5%	14.8%	387	

## Perceptions of Road Users' Behavior

The majority—about 80%—of respondents in Advanced, Beginning, and Nonparticipating communities reported that drivers stopped to let pedestrians cross the street at least sometimes.

Roughly two thirds—from 58% in Nonparticipating to 67% in Advanced communities—of respondents reported that pedestrians in their communities do dangerous things, like crossing the street without looking for cars at least sometimes. Significantly more respondents living in Advanced and Beginning counties perceived that pedestrians do dangerous at least sometimes than did respondents living in Beginning counties. Respondents from Beginning counties perceived that pedestrians often used electronic devices significantly more than did respondents from Advanced and Nonparticipating counties.

Respondents from Advanced and Beginning counties reported perceiving higher proportions of bicyclists wearing helmets—85% of respondents across Advanced and Beginning counties agreed bicyclists wore helmets at least sometimes—than did respondents from Nonparticipating counties—74% agreed that bicyclists wore helmets at least sometimes.

Respondents living in Advanced and Beginning counties were also more likely than residents in Nonparticipating counties to agree that drivers give extra room when passing bicyclists at least some of the time—93, 90 and 85% from Advanced, Beginning, and Nonparticipating counties, respectively. Further, respondents from Advanced and Beginning counties were more likely to report that bicyclists did dangerous things like going through a stop sign or a red light—51 and 48% of respondents, respectively—than did respondents from Nonparticipating counties, wherein only 40% shared that bicyclists did dangerous things at least sometimes (Table 21).

**Table 21. Respondents' Perceptions of Road users' Behavior in Their Communities.**

<i>In your opinion, how often do drivers In [TOWN] stop to let pedestrians cross the street?</i>						
Region	Most of the Time	Sometimes	Rarely	Never	n	p
Advanced	50.2%	29.7%	13.4%	6.8%	293	0.708
Beginning	50.2%	32.6%	12.8%	4.4%	316	
Nonparticipant	50.1%	28.3%	15.5%	6.2%	377	
<i>**In [TOWN], how often do pedestrians do dangerous things, like crossing the street without looking for cars?</i>						
	Most of the Time	Sometimes	Rarely	Never	n	p
Advanced	23.1%	44.2%	24.8%	7.8%	288	0.016
Beginning	24.4%	42.1%	29.9%	3.6%	302	
Nonparticipant	23.0%	34.8%	33.7%	8.4%	356	
<i>**How often do pedestrians use electronic devices like cell phones or music players?</i>						
	Most of the Time	Sometimes	Rarely	Never	n	p
Advanced	65.2%	26.1%	6.6%	2.1%	283	0.005
Beginning	79.2%	16.8%	2.4%	1.6%	300	
Nonparticipant	69.4%	22.2%	5.3%	3.2%	357	
<i>**In [TOWN], how often do adult bicyclists wear helmets?</i>						
Region	Most of the Time	Sometimes	Rarely	Never	n	p
Advanced	61.5%	23.1%	11.4%	4.0%	295	0.000

Beginning	64.3%	20.9%	12.2%	2.6%	316	
Nonparticipant	54.8%	19.4%	15.3%	10.5%	380	
<b>**In [TOWN], how often do drivers give extra room when passing a bicyclist?</b>						
	<b>Most of the Time</b>	<b>Sometimes</b>	<b>Rarely</b>	<b>Never</b>	<b>n</b>	<b>p</b>
Advanced	59.1%	34.0%	5.9%	1.0%	292	0.002
Beginning	59.7%	29.8%	8.9%	1.7%	312	
Nonparticipant	63.4%	21.6%	13.0%	2.0%	379	
<b>**In [TOWN], how often do bicyclists do dangerous things like going through a stop sign or a red light?</b>						
	<b>Most of the Time</b>	<b>Sometimes</b>	<b>Rarely</b>	<b>Never</b>	<b>n</b>	<b>p</b>
Advanced	14.2%	37.0%	35.7%	13.2%	276	0.005
Beginning	19.3%	28.8%	37.8%	14.2%	302	
Nonparticipant	14.9%	25.1%	38.5%	21.5%	352	

Note. \*\*indicates statistically significant differences among regions at  $p < 0.05$ .

### Beliefs Related to Actions that Should be Taken to Make Walking and Bicycling Safer

No matter the region, respondents generally thought that more should be done to make walking and bicycling safer where they live. In general, respondents maintained particularly strong convictions that schools should teach children how to be safe when walking and bicycling. This was especially true among respondents from Advanced counties as it relates to teaching children how to be safe pedestrians. Respondents seemed to feel less strongly about the roles that people who build roads and municipal police should play in making conditions for walking and bicycling safer in their communities (Table 22).

Across all regions, survey respondents generally thought that more should be done to make walking and bicycling safer.

**Table 22. Respondents' Beliefs About the Actions Professionals Should Take to Make Walking and Bicycling Safer.**

<b>People who build the roads in [TOWN] should do more to make walking safer.</b>						
<b>Region</b>	<b>Strongly Agree</b>	<b>Somewhat Agree</b>	<b>Somewhat Disagree</b>	<b>Strongly Disagree</b>	<b>n</b>	<b>p</b>
Advanced	70.1%	25.7%	3.1%	1.2%	294	0.061
Beginning	66.0%	26.1%	6.5%	1.4%	314	
Nonparticipant	62.8%	27.4%	6.0%	3.8%	382	
<b>Police in [TOWN] should do more to make walking safer</b>						
	<b>Strongly Agree</b>	<b>Somewhat Agree</b>	<b>Somewhat Disagree</b>	<b>Strongly Disagree</b>	<b>n</b>	<b>p</b>
Advanced	52.1%	37.7%	8.4%	1.8%	288	0.295
Beginning	48.1%	35.2%	13.0%	3.6%	311	
Nonparticipant	51.1%	35.2%	9.6%	4.1%	373	
<b>**Schools in [TOWN] should teach children how to be safe when walking</b>						

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	n	p
Advanced	90.2%	8.8%	0.3%	0.7%	296	0.032
Beginning	83.2%	14.7%	1.5%	0.7%	319	
Nonparticipant	88.0%	8.7%	1.5%	1.8%	391	
<b>People who build the roads in [TOWN] should do more to make bicycling safer</b>						
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	n	p
Advanced	70.3%	22.9%	3.9%	2.8%	295	0.719
Beginning	67.1%	23.8%	5.3%	3.9%	319	
Nonparticipant	69.2%	20.7%	5.4%	4.8%	380	
<b>Police in [TOWN] should do more to make bicycling safer</b>						
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	n	p
Advanced	52.6%	36.1%	7.8%	3.5%	289	0.949
Beginning	53.6%	32.5%	10.2%	3.7%	316	
Nonparticipant	53.2%	34.1%	8.8%	3.9%	377	
<b>Schools in [TOWN] should teach children how to be safe when bicycling</b>						
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	n	p
Advanced	80.9%	15.7%	2.7%	0.6%	297	0.085
Beginning	74.0%	19.9%	4.0%	2.1%	319	
Nonparticipant	81.5%	13.0%	3.2%	2.2%	386	

### Recognition of Watch for Me NC and Program-Relevant Perceptions

Significantly higher proportions of respondents from Advanced and Beginning counties claimed to have heard about a campaign called Watch for Me NC than did respondents from Nonparticipating counties. Across regions, a roughly equal proportion of respondents reported to have heard of a (dummy) program called *Heads Up for Safety* (Table 23). Implications of these are discussed later in the “Phone Survey Interpretation and Implications” section.

**Table 23. Respondents’ Recognition of Watch for ME NC vis a vis Another Campaign by Region.**

<b>In the past couple of months, have you heard anything about a safety campaign in [TOWN] called Heads Up for Safety?</b>						
Region	Yes	No	Don't know	n	p	
Advanced	14.1%	81.6%	4.3%	302	0.060	
Beginning	12.1%	85.0%	2.9%	325		
Nonparticipant	9.7%	87.9%	2.4%	396		
<b>**Have you heard anything about a safety campaign in [TOWN] called Watch for Me NC?</b>						
	Yes	No	Don't know	n	p	
Advanced	14.2%	83.2%	2.6%	302	0.004	
Beginning	11.5%	86.5%	2.0%	325		
Nonparticipant	8.0%	91.2%	0.9%	396		

A significantly higher proportion of respondents from Advanced counties relative to those in other counties reported recalling police activity related to enforcing laws to make walking safer.

Still, recall of police activity was quite low across regions (range: 14% in Advanced counties to 6% in Nonparticipating counties). Also, significantly more respondents from Nonparticipating counties perceived a greater likelihood of getting a ticket for failing to yield to a pedestrian in a crosswalk than respondents from either Advanced or Beginning counties (Table 24). It is unclear what implications this may have for the Watch for Me NC program given the cross-sectional nature of this baseline survey.

In counties with active Watch for Me NC programs, significantly more residents reported having heard about the campaign and seen police activities, compared to non-participating regions.

**Table 24. Recall of Police Activity and Perceptions of Likelihood of Getting a Ticket for Failing to Yield.**

<i>In the past couple of months, have you heard anything about police in [TOWN] enforcing laws to make walking safer?</i>						
Region	Yes	No	Don't know	n	<i>p</i>	
Advanced	14.1%	84.7%	1.2%	302	<=0.001	
Beginning	7.8%	90.0%	2.2%	325		
Nonparticipant	6.1%	93.2%	0.7%	396		
<i>In your opinion, if a driver in [TOWN] didn't stop for someone in a crosswalk who is waiting to cross the street, how likely is it that the driver would get a ticket?</i>						
	Very Likely	Somewhat Likely	Not Very Likely	Don't know	n	<i>p</i>
Advanced	19.6%	19.2%	58.4%	2.9%	302	0.038
Beginning	21.7%	18.1%	54.4%	5.7%	324	
Nonparticipant	26.1%	18.7%	48.0%	7.1%	395	

### Knowledge of Traffic Laws in North Carolina

Across Advanced, Beginning, and Nonparticipating regions, most respondents correctly thought that bicyclists are required to use a front light when riding at night, and that they are not allowed to proceed through stop signs without stopping as long as no cars are present. Significantly more respondents from Advanced and Beginning counties correctly answered this question. By and large, respondents correctly thought that pedestrians are required to walk facing traffic when no sidewalk is present. However, most survey respondents incorrectly thought that bicyclists are required to ride in the far right side of the road at all times (Table 25). Interestingly, there were large proportions of respondents —20% or more in some cases—that reported not knowing many of the laws.

**Table 25. Respondents' Knowledge of Pedestrian- and Bicycle-Related Traffic Laws in North Carolina.**

<b>**To the best of your knowledge, are drivers in North Carolina required to stop for pedestrians in crosswalks?</b>					
<b>Region</b>	<b>Yes</b>	<b>No</b>	<b>Don't know</b>	<b>n</b>	<b>p</b>
Advanced	94.1%	1.5%	4.4%	302	0.008
Beginning	92.4%	1.3%	6.3%	325	
Nonparticipant	86.4%	3.2%	10.4%	396	
<b>Are pedestrians walking along roads with no sidewalk required to walk facing traffic?</b>					
	<b>Yes</b>	<b>No</b>	<b>Don't know</b>	<b>n</b>	<b>p</b>
Advanced	64.7%	13.3%	21.9%	302	0.091
Beginning	61.3%	14.3%	24.4%	325	
Nonparticipant	66.4%	16.9%	16.6%	396	
<b>**Are bicyclists allowed to go through stop signs without stopping as long as no cars are present?</b>					
	<b>Yes</b>	<b>No</b>	<b>Don't know</b>	<b>n</b>	<b>p</b>
Advanced	11.7%	74.5%	13.8%	302	0.044
Beginning	8.2%	78.7%	13.1%	325	
Nonparticipant	12.6%	68.9%	18.5%	396	
<b>Are bicyclists required to use a front light when riding at night?</b>					
	<b>Yes</b>	<b>No</b>	<b>Don't know</b>	<b>n</b>	<b>p</b>
Advanced	76.2%	4.0%	19.8%	302	0.141
Beginning	70.7%	7.8%	21.5%	325	
Nonparticipant	72.0%	4.4%	23.5%	396	
<b>Are bicyclists required to ride in the far right side of the road at all times?</b>					
	<b>Yes</b>	<b>No</b>	<b>Don't know</b>	<b>n</b>	<b>p</b>
Advanced	63.4%	15.5%	21.1%	302	0.072
Beginning	68.4%	14.4%	17.2%	325	
Nonparticipant	69.0%	9.6%	21.4%	396	

### Phone Survey Interpretation and Implications

The results presented here derive from 1,023 adults living in 30 counties throughout North Carolina. The included sample was not designed to be representative of all adults in the state, but of communities that to some degree participated in the Watch for Me NC program in 2015. Survey respondents tended to have higher educations and incomes than the average adult in North Carolina.

Across respondents living in regions considered Advanced, Beginning, and Nonparticipating, a fair amount of agreement emerged in respondents' answers to various questions. For one, most respondents agreed that at least sometimes, drivers stop for pedestrians in crosswalks in their communities. Not only that, respondents generally agreed that roads in their communities were at least somewhat safe for walking, yet not very safe for bicycling. Most respondents also believed that those who build roadways, police, and schools should all do more to make walking and bicycling safer in their communities. The only difference here was that respondents living in counties with Advanced Watch for Me NC participation were more likely to think that schools should teach children pedestrian safety.

The role of schools in improving walking and bicycling loomed large. Though a moderate proportion of respondents—60 to 70%, depending on region type—believed that people who build roads should do more to make walking and bicycling safer, between 85 and 95% believe schools should teach children how to be safe walkers and bicyclists. People may have more strongly endorsed schools' responsibility as a matter of semantics. That is, respondents were asked whether road builders and police should *do more* to make walking and bicycling safer, whereas they were asked whether schools should *teach children how to be safe* when walking and bicycling. Respondents may largely agree that schools should contribute to children's learning about traffic safety, yet not as strongly agree that schools should *do more* to teach children how to be safe.

The fact that the majority of respondents agreed that motorists should stop for pedestrians in crosswalks may be attributable to social desirability bias—as a result of “priming” respondents to think of pedestrian issues—or a result of pervasive messaging. A central message of the Watch for Me NC program includes a bumper sticker that reads, “I break for people.” The people imagery arguably evokes “stopping” or “breaking” for them, rather than merely “yielding” the right-of-way to them. Further, HSRC developed the phone survey to ask respondents about whether drivers were required to “stop” rather than “yield” even though NC is a yield state. We used the term “stop” intentionally so as to adhere to a standard 8th grade reading level, and under the assumption that the target audience may not fully understand the concept of the “yield” term. Thus, we considered a “Yes” response as correct, which means that most respondents answered this question correctly.

Despite the agreement among respondents from different regions, several differences emerged. First, those in Advanced counties were significantly more likely to see a lot of people walking and bicycling in their communities. Perhaps because of seeing more pedestrian and bicyclists, respondents in these counties reported witnessing pedestrians and bicycling doing dangerous things, with respondents in Beginning counties reporting seeing more pedestrians using electronic devices than respondents in other regions. Even so, respondents in Advanced and Beginning regions were more likely to report seeing bicyclists wearing helmets while riding. As a result, relative to respondents from Nonparticipating counties, respondents from other regions may have been more attuned to road user behavior and to what might be done to improve walking and bicycling conditions. This greater “attunement” to conditions might also help explain the fact that fewer Advanced county respondents thought that a driver would get a ticket for failing to yield to a pedestrian, despite being more likely to witness police action to improve pedestrian safety. That is, respondents in Advanced communities may harbor a more “realistic” appraisal of what is being done to address road user safety and actual the consequences of violating the law.

Promisingly, significantly more respondents living in Advanced and Beginning counties have heard about Watch for Me NC safety campaign than respondents from Nonparticipating counties. That said, a roughly equivalent proportion of respondents heard of a “dummy” program called Heads Up for Safety, a finding that might be attributable to the proliferation of programs with a “Heads Up for Safety” tag line.

Regarding respondents' knowledge of North Carolina traffic law, across Advanced, Beginning, and Nonparticipating regions, most respondents correctly thought that bicyclists are required to use a front light when riding at night, and that they are not allowed to proceed through stop signs without stopping as long as no cars are present. Significantly more respondents from Advanced and Beginning counties correctly answered this question. One somewhat troubling finding was that respondents incorrectly

thought that bicyclists are required to ride in the far right side of the road at all times. This finding suggests that future iterations of Watch for Me NC should consider developing communications and other educational strategies to raise awareness about the rights of bicyclists.

Regardless of respondents' knowledge of law, their perception of social norms for drivers yielding to pedestrians in crosswalks—i.e., roughly half reported that drivers in their town yielded to pedestrians most of the time—suggests a high degree of discordance between knowledge of legal requirements and perceived customary behavior. As perception of norms are more predictive of behavior than knowledge of laws, the program should consider incorporating social norm messaging—i.e., messages stressing that safe behaviors such as drivers appropriately yielding to pedestrians in crosswalks and bicyclists wearing helmets are the community norm, in locations where this is true—in future program years.

### **Observational Behavior Data Collection Measures, Methods, and Results**

To measure the program's impact on motorist yielding rates and other behaviors, observational data were collected at a sampling of crosswalks across six of the participating cities: Asheville, Carrboro, Chapel Hill, Durham, Greenville, and Raleigh. In addition to the survey of knowledge and perception, these behavioral measures were considered to be an appropriate outcome measure for evaluating the effectiveness of the intervention in changing behaviors that can lead to crash prevention.

#### **Pedestrian and Driver Data Collection Approach**

Field data were repeatedly collected by HSRC staff at 26 public street crossings in these six cities from August 2015 to January 2016. The crosswalk sites were initially selected based on the following criteria:

1. Posted speed limit was at or below 35 MPH
2. Crossings were located at unsignalized intersections or midblock locations
3. A marked crosswalk was present (high visibility or continental style markings)
4. The site was considered a safe/secure place for data collectors
5. No construction was planned that would affect the infrastructure at the site
6. The site experienced adequate pedestrian traffic for conducting naturalistic observations

Once the initial group of sites was identified, HSRC staff worked with local contacts in these cities to narrow the list of sites and agree upon those to include in the evaluation. Many of the sites in the Triangle area had already been included in prior years' program evaluation. For consistency and to enhance the ability to compare longer-term trends, we continued gathering data at the same sites. However, in a few cases the conditions of the site had changed (e.g., stop sign installed or another device that significantly altered driver yielding behaviors) or past experiences showed that the site was unsafe for data collection or too inefficient to gather significant observations of pedestrians, and so the sites were dropped in favor of other locations that met the above criteria. Asheville and Greenville sites were included for the first time in 2015, so a series of conversations with agency staff and field reviews were used to finalize the most appropriate sites for enforcement and data collection. By July 2015, 26 sites were selected for data collection in Asheville (8 sites), Carrboro (2 sites), Chapel Hill (4 sites), Durham (5 sites), Greenville (4 sites), and Raleigh (4 sites).

Sites were initially grouped into "treatment" and "comparison" sites prior to any deployment of enforcement or other campaign activities, in consultation with the local law enforcement. However, during the course of the Watch for Me NC campaign, it became evident that many agencies diverged from the initial plan and were performing operations at or near some of the comparison sites, invalidating the study design. Moreover, all sites had the potential to be affected by spill-over as a result

of the media and outreach campaign or unreported enforcement, so there was no true “comparison” site that could be separated from treated sites. Thus, treatment and comparison groups were analyzed in aggregate. See Table 26 for a description of the site characteristics.

At each site, observed measures of driver yielding behavior were collected by two trained data collectors following specific, well-established protocols<sup>4</sup>. The protocols provided a standardized way to observe interactions with motor vehicles involving both naturalistic and “staged” pedestrians at the sites on dry-weather weekdays during day light hours. These same protocols were used in prior data collection efforts in 2012 and 2013. See the 2014 Watch for Me NC Report at [http://www.watchformenc.org/wp-content/themes/WatchForMeNC\\_Custom/documents/WFM\\_Final%20Report.pdf](http://www.watchformenc.org/wp-content/themes/WatchForMeNC_Custom/documents/WFM_Final%20Report.pdf) for these protocols.

Naturalistic crossings were observed where pedestrian activity was high in order to capture realistic pedestrian and driver interactions in an uncontrolled setting. To complement these, “staged” crossings were performed by the trained data collectors using a standardized crossing process in order to provide a consistent test of driver behavior under more controlled circumstances than naturalistic conditions could offer and to efficiently measure driver behavior at crossings with lower pedestrian volumes. Staged crossings were designed to control certain conditions, including pedestrian volumes and pre-crossing behaviors, and achieve a higher sampling of pedestrian-driver interactions given the time available for data collection. For both types of crossings, several quality assurance and control measures were put in place to ensure high quality and consistent data collection; these same trainings were used in 2012, 2013, and 2015. These included a three-part training program for the data collectors, including the provision of written protocols, in-class training with visual examples and crossing scenarios, and field-based practice at actual data collection sites. It also included routine, weekly checks on the data collector operations to confirm fidelity to protocols and review of the data to check for inaccuracies and inconsistencies in data coding. Although weather-dependent, the data collection schedule aimed for consistency in the time of day and the day of week that each site was visited to help control for environmental effects. Similarly, data collection in 2015 consistently used the same primary data collectors from August to January to limit confounding due to individual differences in data collection or crossing behaviors. Separate teams collected data in the three primary regions selected for data collection: Asheville, Greenville, and the Triangle area. These teams remained unchanged throughout the duration of the project in 2015.

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<sup>4</sup> Van Houten, R., Malenfant, L., Huitema, B., & Blomberg, R. (2013). The Effects of High Visibility Enforcement on Driver Compliance to Pedestrian Yield Right-of-Way Laws. *Transportation Research Record 2093: Journal of the Transportation Research Board*. Washington, DC: pp. 41-49.

**Table 26. Summary of Data Collection Site Characteristics.**

Site	Crossing Type	Crosswalk Markings	Posted Speed Limit	Total No. of Lanes	Direction of Traffic	Nearby Land Uses
A-Hilliard	Intersection	High Visibility	25 MPH	2	Two-way	Crossing between parking lot and park/tennis facility
A-ABTech	Midblock	High Visibility	20 MPH	2	Two-way	Community/technical college
A-UNCA	Midblock	High Visibility	20 MPH	2	Two-way	University campus
C-Greensboro	Midblock	High Visibility	20 MPH	2	Two-way	Restaurants, bars, government offices, library
CH-Rosemary	Intersection	High Visibility	25 MPH	2	Two-way	Apartments, restaurants and bars
D-Anderson	Intersection	High Visibility	25 MPH	2	Two-way	Duke campus, parking lots, and student housing
D-University	Intersection	High Visibility	35 MPH	3	Two-way	Duke campus and staff parking lot
G-Forest Hills	Intersection	High Visibility	35 MPH	3	Two-way	Residential neighborhood; church
R-Blount	Midblock	High Visibility	35 MPH	3	One-way	Transit hub and downtown CBD
R-Capitol	Midblock	High Visibility	35 MPH	3	One-way	Government offices and downtown CBD
R-Wilmington	Midblock	High Visibility	35 MPH	2	One-way	Transit hub and downtown CBD
A-College	Intersection	High Visibility	20 MPH	2	One-way	Downtown area; restaurants, bars and shopping
A-Brook	Intersection	High Visibility	20 MPH	2	Two-way	Shopping and restaurants
A-Haywood	Intersection	High Visibility	20 MPH	3	Two-way	Strip development; restaurants, grocery stores
A-Weaver	Intersection	High Visibility	20 MPH	3	Two-way	University buildings and greenway
C-Hillsborough	Intersection	High Visibility	35 MPH	2	Two-way	Residential, school, transit stops
CH-Franklin	Midblock	High Visibility	25 MPH	4	Two-way	Restaurants, bars, commercial, UNC campus
CH-Pittsboro	Midblock	High Visibility	25 MPH	2	One-way	Bank, UNC campus, transit stop
D-Fayetteville	Intersection	High Visibility	25 MPH	2	Two-way	NCCU campus and police station
D-Main	Midblock	High Visibility	25 MPH	3	Two-way	Commercial shopping district
D-Ninth	Midblock	High Visibility	25 MPH	2	Two-way	Restaurants, bars, commercial, Duke campus

Site	Crossing Type	Crosswalk Markings	Posted Speed Limit	Total No. of Lanes	Direction of Traffic	Nearby Land Uses
G-Bancroft	Midblock	Parallel Line	35 MPH	2	Two-way	Park and apartment buildings
G-Greenway	Midblock	High Visibility	35 MPH	2	Two-way	Park; multiuse path crossing
G-Jarvis	Intersection	High Visibility	25 MPH	2	Two-way	East Carolina University buildings and student apartments/housing
R-YMCA	Midblock	High Visibility	35 MPH	2	Two-way	Near NC State University and local YMCA

Note: (A) represents sites in Asheville, (C) represents sites in Carrboro, (CH) represents sites in Chapel Hill, (D) represents sites in Durham, (G) represents sites in Greenville, and (R) represents sites in Raleigh.

### Short-Term Changes in Driver Yielding

At the 26 sites, driver yielding rates fluctuated over the six-month time period (August to January) of the active campaign. Driver yielding rates in the early months of the campaign season (August and September) averaged 35% for staged crossings and 53% for naturalistic crossings (Table 27). This rose slightly in October and November, when the peak number of enforcement operations and community-related events were conducted, and then dropped slightly in the final months of the program (December and January) when the campaign was winding down. Depending on the crossing type, the difference in driver yielding rates from the beginning of the 2015 program to its end ranged between 2 and 7%. While the magnitude of the overall change was small, it was still statistically significant at the  $\alpha=.05$  level. These findings are similar to past evaluations of changes in driver yielding rates, which saw driver yield rates increase between 4 and 7% before and after the Watch for Me NC program was conducted in 2013.<sup>5</sup> Also, prior evaluations of the Watch for Me NC program and other enforcement programs that used staged and naturalistic crossing data to measure yielding rates saw similarities in that naturalistic crossings were associated with higher yielding rates than staged crossings. It is believed that “natural” pedestrians may be more assertive in indicating intent to cross the street (e.g., through hand gestures and/or stepping into the travel lane before the driver has begun to yield) than “staged” pedestrians, who were members of the research team following protocols that required a conservative crossing approach for safety reasons.

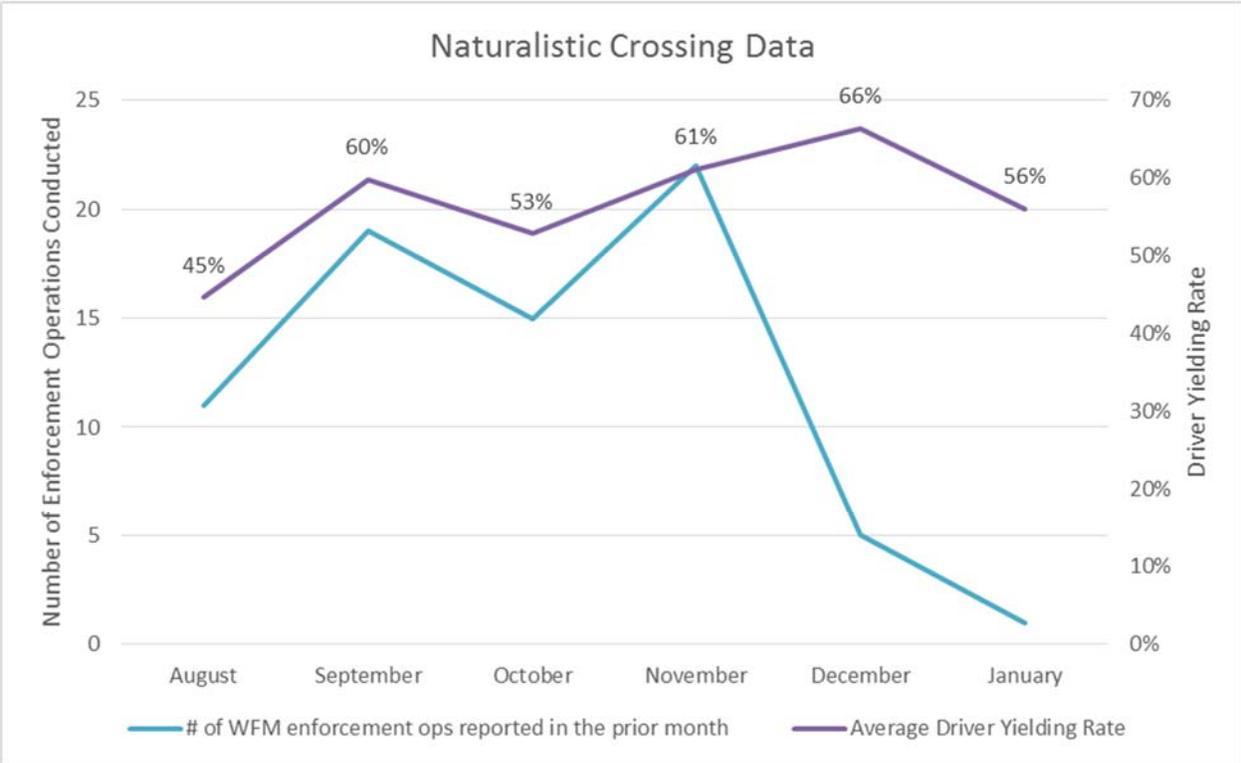
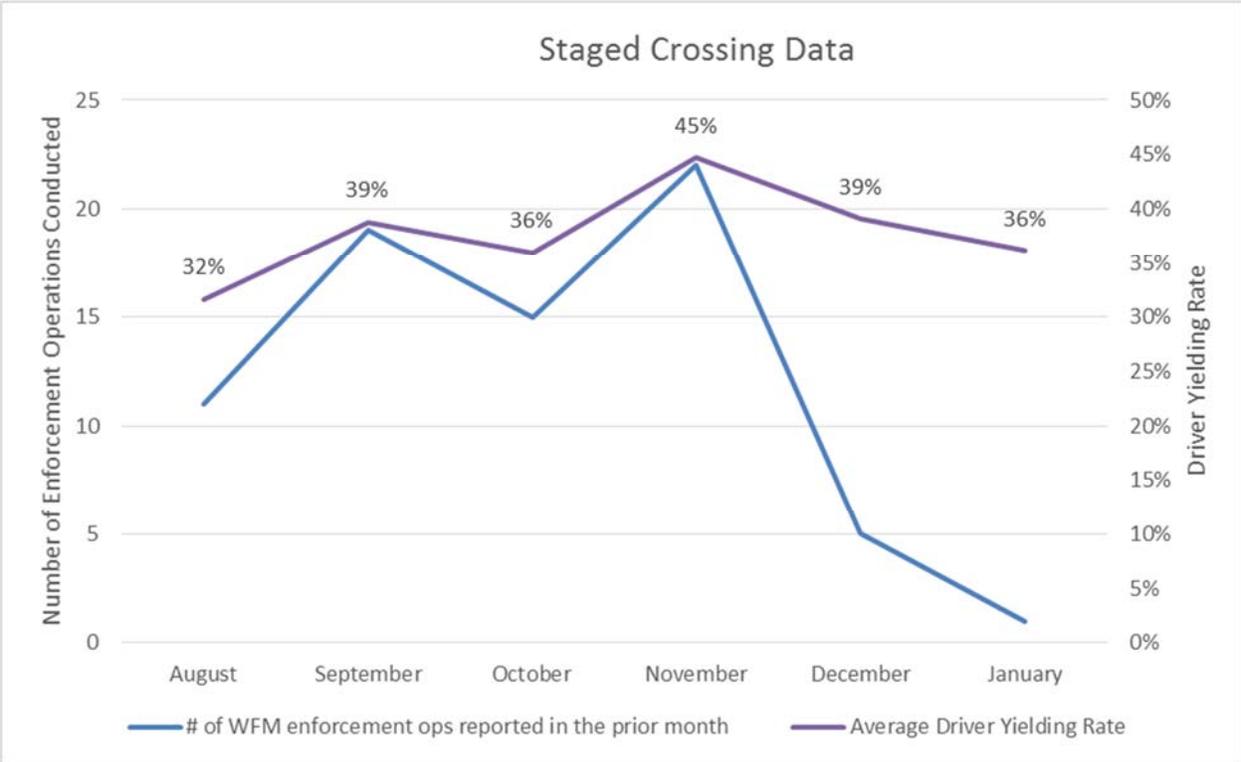
On average, driver yielding rates measured at 26 sites in five cities improved slightly during the course of the Watch for Me NC program. Yielding rates closely followed trends in law enforcement activities.

<sup>5</sup> Sandt, L., Marshall, S.W., Rodriguez, D., Evenson, K., Ennett, S.T., Robinson, W. (2016). Effect of a community-based pedestrian injury prevention program on driver yielding behavior at marked crosswalks. *Accident Analysis and Prevention*. pp. 169-178.

**Table 27. Average Driver Yielding Rates at 26 Crossings Over the Course of the 2015 Watch for Me NC Campaign.**

Data Type	Early Active			Peak Active			Post Active			Yield Rate Diff. (Early to Peak), and 2-tailed p value	Yield Rate Diff. (Peak to Post), and 2-tailed p value
	# Yielded	N	%	# Yielded	N	%	# Yielded	N	%		
Staged Crossings	4343	12248	35.5%	3226	8257	39.1%	2647	7099	37.3%	3.6% (<0.001)	1.8% (0.011)
Naturalistic Crossings	878	1642	53.5%	612	1098	55.7%	374	619	60.4%	2.3% (0.243)	6.9% (0.003)

Figure 16 shows the changes in driver yielding rates over time, plotted against the number of enforcement operations that were reportedly conducted in the previous month. The data trends show clear parallels, suggesting that there may be an association with law enforcement efforts to improve driver yielding and actual driver behaviors, though this does not reflect a causal relationship. Additional research is needed to better explore this potential relationship and account for other possible correlates.



**Figure 16. Driver Yielding Trends at 26 Selected Crossing Locations in Relation to Enforcement Operations, with Staged and Naturalistic Crossing Data Analyzed Separately.**

### Longer-Term Changes in Driver Yielding

Driver yield rates at seven Triangle-area sites that were monitored in 2012, 2013, and 2015 were also compared in order to assess longer term changes. From 2012 to 2013, there was a 14 to 18.0% increase in yielding (looking at staged and naturalistic crossing data, respectively), and from 2013 to 2015 there was an additional increase in driver yielding of 9 to 18%. This has resulted in a net increase in driver yielding of 27 to 32% since 2012 (Table 28). It is not clear how much of this improvement can be attributable to the Watch for Me

NC program. Other unmeasured factors, such as macro-trends in commuting and traffic volumes, pedestrian exposure, etc. may certainly have played a role in influencing how drivers and pedestrians interact over this time period. However, the results appear promising and—in combination with some of the other qualitative and quantitative measures described elsewhere in this report—provide some evidence that the Watch for Me NC program may be realizing its intended effect on changing the social “norm” of driver yielding.

From 2012 to 2015, seven sites regularly monitored in the Triangle area saw a 27 to 32% average increase in drivers yielding to staged and real pedestrians, respectively.

**Table 28. Longer Term Driver Yielding at Seven Triangle-Area Crossing Sites.**

Site	2012			2013			2015			Yield Rate Difference, 2012-2013 (p-value)	Yield Rate Difference, 2013-2015 (p-value)	Yield Rate Difference, 2012-2015 (p-value)
	Total Yielded	Total Observed	Yield Rate	Total Yielded	Total Observed	Yield Rate	Total Yielded	Total Observed	Yield Rate			
<b>Staged Crossings</b>												
Capitol (R)	78	2032	3.8%	269	1561	17.2%	237	972	24.4%	13.4% (<0.01)	7.2% (<0.01)	20.5% (<0.01)
Wilmington (R)	219	1782	12.3%	435	1063	40.9%	264	738	35.8%	28.6% (<0.01)	-5.1% (0.03)	23.5% (<0.01)
Anderson (D)	153	1668	9.2%	319	1238	25.8%	245	755	32.5%	16.6% (<0.01)	6.7% (<0.01)	23.3% (<0.01)
Blount (R)	191	2391	8.0%	342	1495	22.9%	347	1086	32.0%	14.9% (<0.01)	9.1% (<0.01)	24.0% (<0.01)
Fayetteville (D)	196	1938	10.1%	241	1096	22.0%	215	772	27.8%	11.9% (<0.01)	5.9% (<0.01)	17.7% (<0.01)
Brightleaf (D)	221	1346	16.4%	324	853	38.0%	267	543	49.2%	21.6% (<0.01)	11.2% (<0.01)	32.8% (<0.01)
University (D)	266	1132	23.5%	580	1415	41.0%	564	745	75.7%	17.5% (<0.01)	34.7% (<0.01)	52.2% (<0.01)
<b>Total</b>	<b>1324</b>	<b>12289</b>	<b>10.8%</b>	<b>2510</b>	<b>8721</b>	<b>28.8%</b>	<b>2139</b>	<b>5611</b>	<b>38.1%</b>	<b>18.0% (&lt;0.01)</b>	<b>9.3% (&lt;0.01)</b>	<b>27.3% (&lt;0.01)</b>
<b>Naturalistic Crossings</b>												
Capitol (R)	10	126	7.9%	50	241	20.7%	9	52	17.3%	12.8% (<0.01)	-3.4% (0.56)	9.4% (0.07)
Wilmington (R)	10	126	7.9%	281	612	45.9%	100	176	56.8%	38.0% (<0.01)	10.9% (0.01)	48.9% (<0.01)
Anderson (D)	132	349	37.8%	116	312	37.2%	34	72	47.2%	-0.6% (0.87)	10.0% (0.12)	9.4% (0.14)
Blount (R)	152	601	25.3%	216	718	30.1%	100	187	53.5%	4.8% (0.05)	23.4% (<0.01)	28.2% (<0.01)
Fayetteville (D)	65	303	21.5%	154	527	29.2%	91	237	38.4%	7.8% (0.02)	9.2% (0.01)	16.9% (<0.01)
Brightleaf (D)	50	117	42.7%	91	214	42.5%	14	25	56.0%	-0.2% (0.97)	13.5% (0.20)	13.3% (0.23)
University (D)	31	120	25.8%	388	592	65.5%	262	300	87.3%	39.7% (<0.01)	21.8% (<0.01)	61.5% (<0.01)
<b>Total</b>	<b>450</b>	<b>1742</b>	<b>25.8%</b>	<b>1296</b>	<b>3216</b>	<b>40.3%</b>	<b>610</b>	<b>1049</b>	<b>58.2%</b>	<b>14.5% (&lt;0.01)</b>	<b>17.9% (&lt;0.01)</b>	<b>32.3% (&lt;0.01)</b>

## Qualitative Outcomes

To supplement data collected through surveys, HSRC conducted semi-structured interviews with Watch for Me NC community partners in November and early December 2015. The interviews averaged 42 minutes in length, with the shortest lasting 16 minutes and longest lasting 91 minutes. The purpose of the interviews was to draw out those elements of communities' Watch for Me NC campaigns that were difficult to capture using the partner survey or group "share meeting" format.

Based on the reports from partnering communities through the monthly surveys and exit interviews, HSRC gleaned the following outcomes and lessons learned regarding the communities' challenges, successes, and processes experienced as a result of participating in the Watch for Me NC program. To see details regarding each individual community, read the 2015 Community Profiles at: <http://www.watchformenc.org/about/2015-partner-community-profiles/>.

**All partners agreed that partnerships were key to effectively implementing the Watch for Me NC program in their communities.** The majority of the campaigns were either headed by police departments (e.g., Jacksonville, Davidson, Greenville, Chapel Hill, Boone, Cary) or included a high degree of police involvement (e.g., Durham, Marion, Corolla, Carrboro). Member of law enforcement not only carried out enforcement operations, they also engaged with schools to conduct bicycle skills trainings, crossing guard trainings, and to distribute campaign materials. Another central partner included several Active Routes to School Regional Coordinators. Six of the 14 partners interviewed (i.e., Marion, Davidson, Boone, Durham, Greenville, and Cary) noted that the Active Routes Coordinators served as a liaison with the schools and helped spread safety messaging to a more regional school-aged audience. In other communities (i.e., Chapel Hill, Greensboro, Boone, and Greenville), area Universities served helpful roles in terms of distributing campaign materials and engaging intended audiences. Additional partners included MPOs, bicycle and pedestrian advisory groups, advocacy groups, parks and recreation departments and planning departments, schools, area businesses, and home owners associations.

**Several partners reported significant changes in their agencies' "culture" in response to their communities' participation in Watch for Me NC.** Representatives in Jacksonville stated that as a result of the city's participation with Watch for Me NC, for the first time, the police department taught classes to people with special needs on how to safely cross roadways using crosswalks. In Davidson, the police department set aside time to focus on pedestrian and bicyclist safety, working more with schools and community centers to carry out enforcement. Moreover, police departments in Davidson, Durham, Boone, and Greenville shifted toward using positive reinforcement to reward pedestrians to behaving safely (e.g., looking both ways before crossing and using high-visibility crosswalks when crossing). In Cary, the police department previously had not conducted crosswalk operations before participating in the Watch for Me NC program, and in Chapel Hill, law enforcement officers now consider the role of infrastructure in road users' behavior, working closely with town engineers and planners to implement spot safety improvements.

**In general, Watch for Me NC partners perceive that the program has raised their communities' awareness around pedestrian and bicyclist safety issues.** For example, the Watch for Me NC program inspired employers in Marion to talk about pedestrian and bicyclist issues more, as evidence by the high number of businesses that sought out campaign posters to convey their support for the program. In Greensboro, Chapel Hill, Corolla, and Cary, there was a sense that residents are communicating about pedestrian and bicycle safety more now, compared to before the towns' engagement with Watch for Me NC. And in Cary, police officers have noticed a rise in the number of residents approaching them to address pedestrian safety issue across town. The consensus was that there existed strong support for

Watch for Me NC from District Attorneys and elected officials, and that as of December 2015, no issued citations had been dismissed in court.

**Implementing Watch for Me NC was not without its challenges.** Commonly reported challenges involved establishing working relationships with other organizations, partners, and the media. A few law enforcement agencies described the substantial labor cost of participating in the campaign. A few lead contacts shared that it was often difficult to get coalition partners to report their activities and as a result, they frequently lost track of activities conducted. Asheville faced some negative press coverage during the initial stages of the program due to a misunderstanding that police were targeting pedestrians for jaywalking. Carrboro, Asheville, and Boone representatives stated that it would be helpful to establish regular in-person meetings to revisit the goals of the program and to get a sense that communities are not implementing the program in isolation.

**Some partners documented significant Watch for Me NC-related outcomes.** For example, Davidson Police, Planning and Public Works Departments worked with NCDOT engineers and the region's Active Routes to School Regional Coordinator to install pedestrian hybrid beacons (PHBs) on several median-divided roadways near schools. To evaluate the effectiveness of the improvements, engineers documented pedestrian and driver compliance before and after the installation of the beacons. The study, prepared by the NCDOT in 2015, documented a 40% increase in drivers yielding to pedestrians during activation of the pedestrian beacons. Moreover, attending the Active Routes to School conference—participation made possible through Davidson's Watch for Me NC involvement—inspired the town's police department to explore the possibility of establishing a walking school bus in several communities surrounding local schools. In December 2015, Asheville city staff reported a substantial reduction in pedestrian crashes in the past three months. They documented a citywide 27% reduction in pedestrian- and bicycle-related crashes relative to the same average time period from 2010 to 2014. In Asheville, the Watch for Me NC program was part of a broader set of initiatives to improve safety for all road users, which may also be partially responsible for the safety improvements observed.

**Partners' advice revolved around partnerships and communications.** Most communities recommended that future Watch for Me NC communities start small, deal with one or a small set of issues at first, and gradually expand the program to incorporate large areas and diverse populations. Partners also advise future leaders to learn from other partner communities. Greenville representatives found the campaign's "share calls" especially helpful, as they learned a lot hearing what other partners were doing. Relatedly, Jacksonville advises others to maintain positive partner communications, as momentum can wane without regular check-ins and status updates. Davidson officials recommended working with partners who can skillfully speak with school-based populations, whereas Kill Devil Hills representatives advocated for the development of resources to train younger people on walking and bicycling safety. Both Davidson and Kill Devil Hills recommend documenting how program activities are conducted and measuring results that spring forth from these activities, such as driver yielding rates and pedestrian crossing violations. Cary recommended a more direct experience approach: set a date, gather a group of law enforcement officers, planners, and engineers, and go observe a crosswalk examining for driver yielding violations.

**It is important to consider ways of institutionalizing pedestrian and bicycle safety actions and priorities.** These partners' approach to institutionalizing systemic pedestrian and bicycle safety education and enforcement provides valuable advice to all partners, particularly those in municipalities with a strong university presence (e.g., Chapel Hill, Carrboro, Boone, Greenville) or a robust tourist season (e.g., Kill Devil Hills, Corolla), as these communities have relatively transient populations that

may require recurring outreach and education. Asheville and Boone recommended building up partnerships before the program rolls out, and then asking for specific commitments from each partner to maintain accountability. Greensboro advised others to incorporate Watch for Me NC into an existing safety program to ensure the campaign's sustainability over time. Similarly, Carrboro recommended integrating Watch for Me NC into existing outreach work, something Corolla had done through its complementary "Corolla Fire and Rescue Cares" ("CFR Cares") initiative.

## **Conclusions and Recommendations**

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A growing body of literature suggests that multi-pronged education and enforcement initiatives such as Watch for Me NC have potential to improve pedestrian and bicycle safety. The various measures used to evaluate the 2015 statewide Watch for Me NC program provided evidence of opportunities and barriers to program delivery as well as its impact on pedestrian and bicycle safety in relation to several outcomes of interest.

Overall, the 2015 program involved significant participation by partners in diverse communities across NC. Participants reported strong collaborations between police, schools, planning, and other departments. They noted that strong partnerships, established action plans, and long-term commitment to the program and pedestrian/bicycle safety in general were keys to effectively implementing the Watch for Me NC program. Participating communities continue to evolve their plans to strengthen and achieve pedestrian and bicycle safety goals through a variety of ways.

The program also saw improvements in relation to a number of outcomes that were measured, including increases in law enforcement knowledge of laws, capacity to perform operations, and frequency and intensity of enforcement operations conducted across the state. Similarly, positive short and longer-term changes in driver yielding were observed at a number of sites where behaviors were observed. As we described in the public survey section, in 2015 we were able for the first time ever to document public perceptions and knowledge related to pedestrian and bicycle laws and safety behaviors and compare trends in communities that are active and not yet active with the Watch for Me NC program. These data will provide a critical baseline for monitoring knowledge and perception outcomes over time.

Following are some key takeaways and recommendations for enhancing the program delivery at the state and local level in future years.

### **Partner Recruitment and Training/Capacity-Building**

Consistent with the lessons from prior years, having stable, long-term community champions and strong coalitions are essential for success as the Watch for Me NC program continues to expand to new communities across the state. Municipal partners devoted significant in-kind support in the form of labor hours for project coordination meetings, enforcement operations, and community outreach. Unlike other programs, no funds were used to provide overtime pay or additional support enforcement. Limited resources and staff turnover in the partner communities' leadership was a concern for several of the communities in 2015. Continuing to use a competitive process to select high-interest partners with a demonstrated capacity to commit to the requirements of the program and a contingency plan for staff turnover, may help mitigate this issue in future years. While in the past we have encouraged applicants to form broader, regional partnerships, in future years we should carefully consider the benefits/drawbacks of a regional focus given the feedback provided by the communities regarding the logistical challenges this may present and the need to "start small." Additionally, the technical assistance

and resources offered to communities can help offset the costs of participation and address common concerns, such as developing strong, diverse coalitions to support program delivery, having a timeline to support program management and schedules, and institutionalizing plans and program resources.

At the state level, it is recommended to continue to form partnerships with State-level agencies and organizations—such as GHSP, DMV, Safe Kids, DPI, and others—that can support the program in various ways, including providing funding or resources (such as bike helmets) to the local communities and enhance message delivery or enforcement activities. Regular meetings of the steering committee can provide a structure for communications, ensure accountability, and provide continuity to program activities.

As the program continues to add communities across the state, it may also be necessary to revisit the format of the technical assistance delivery, both in regards to the agency capacity building efforts (currently in the form of regular conference-call based “share” meetings) and the law enforcement training program. With the number of share meeting participants now exceeding 20 on any given call, the opportunity for individual trouble-shooting diminishes, and many partners may be reluctant to speak to a large group of relatively anonymous meeting participants. Many partners also expressed an interest in in-person, locally-based training and capacity building meetings, where technical assistance could be more tailored to the needs of the specific community.

In terms of the content or focus of the training provided, agencies continue to request information on how to improve partnerships, communications, and long-term program sustainability. To this end, future training emphasis areas could include ways to integrate the program with other initiatives, such as SRTS programs, Safe Communities and Safe Kids programs, and broader transportation and/or highway safety programs, activities, or policies. Another continuing topic of interest is in how to equitably deliver Watch for Me NC resources and law enforcement operations as well as engage traditionally underserved communities through program outreach and partnership. Further, as indicated by the public knowledge survey, it appears that a large segment of the population is not familiar with certain pedestrian and bicycle laws, in particular the law protecting bicyclists’ right to ride in positions other than the farthest to the right as possible if safety conditions do not permit this. There may be opportunities to offer trainings on how participating communities can work with advocacy groups or other partners to dispel myths regarding bicycling laws and rights as well as promote safer behaviors as the social norm (described more in the next section as well).

While overall there was solid attendance at the law enforcement trainings, there may be a continued need to adapt the course offerings to accommodate the growing number of agencies that are already participating in the program and may be looking for more “advanced” or “continuing education” training materials and/or different formats for training delivery. These options may include half-day trainings, virtual/web-based trainings, roll-call training materials, and courses offered through existing law enforcement training academies. Further, there may be a need for a “train the trainer” type of program so that NCDOT/HSRC’s capacity to offer law enforcement training is not limited by the number of qualified instructors. We have already identified several possible candidates for such training, who have participated for a number of years in past courses.

### **Local and Statewide Outreach, Education, and Enforcement**

The Watch for Me NC program should continue to employ safety messages consistent with frequently occurring pedestrian and bicycle crash types in step with best practices. Regarding the Watch for Me NC’s outreach and education components in 2015, purchased media seem to have maximized available

resources to target a large portion of the population during peak times when pedestrian and bicycle crashes occur. Partners made good use of the print and safety materials supplied to them, and the materials worked in a variety of settings, including campuses and K-8 schools. Of all the materials provided, the bike lights remained the most popular material item, but banners, bumper stickers, sandwich boards for law enforcement, and the newly provided “warning ticket books” were all heavily used as well.

To complement the existing messages regarding safe behaviors, future iterations of Watch for Me NC should incorporate norms-based messaging. Among the many insights the public phone survey and behavioral observations revealed was the finding that knowledge of laws—which was quite high among survey respondents—has not readily translated into behavioral improvements. For example, depending of where respondents lived, between 86 and 94% of them said “Yes” when asked whether drivers in North Carolina are required to stop for pedestrians in crosswalks. Yet observational studies indicate that only about 40% of drivers have yielded to pedestrians in select crossing locations (Table 28). Moreover, approximately 50% of phone survey respondents reported that, where they live, drivers stop to let pedestrians cross the street most of the time (Table 21). As is evident, perceived norms about driver yielding behavior more closely adhere to observational findings than does knowledge about yielding-related laws. As driver yielding rates continue to improve over the years, and yielding to pedestrians becomes a more normative behavior, HSRC recommends that future Watch for Me NC campaigns feature more perceived social norms-informed interventions. More specifically, such interventions should be delivered through a narrative communication framework, whereby stories feature incidents of positive behavior change (e.g., a driver becoming aware of pedestrian safety after nearly getting hit while walking). Narrative communication approaches would likely enhance the believability of Watch for Me NC’s messages, suppress counterarguing among people receiving the messages, and improve road user behavior.<sup>6</sup>

Together with pedestrian and bicycle safety education, targeted, high-visibility enforcement can significantly enhance safety. In 2015, officers reported conducting more than 97 operations targeting enforcement of pedestrian and/or bicycle-related laws, a new record for the program. The ability for officers to report their efforts through the GHSP point system website undoubtedly provided some positive incentives for participating agencies to perform operations. Future program efforts should seek to further strengthen ties with GHSP to seek opportunities to promote the Watch for Me NC program, its trainings, and the consistent implementation and reporting of pedestrian and bicycle safety operations. The implementation of a new web-based reporting system received positive feedback and may have been helpful in getting agencies to submit reports, but—as in years past—getting all agencies to report activities consistently and in a timely manner remained a challenge and likely contributed to under-reporting of actual law enforcement efforts. Further, few agencies reported using high-visibility strategies, such as media engagement, in a routine way to supplement enforcement efforts and amplify the message to a broader audience. Thus, while the officer resource investment in conducting enforcement was large, the estimate of total persons impacted by the operations is likely low. In future years, enforcement agencies could be further encouraged or even required to include a public information officer/communications staff in their local coalition or invite such staff to the enforcement trainings and share meetings.

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<sup>6</sup> See: Moran, M. B., Murphy, S. T., Frank, L., & Baezconde-Garbanati, L. (2013). The Ability of Narrative Communication to Address Health-related Social Norms. *International Review of Social Research*, 3(2), 131–149.

## Program Evaluation

In 2015, no funds were available to evaluate injury-related program outcomes such as changes in crash rates. However, as the program now has more communities involved and years of active program delivery, a crash-based evaluation may be more feasible.

In the absence of crash-based studies, we recommend continued monitoring of public knowledge and perceptions through the use of randomized phone surveys. If repeated in the future using the same methodology, the 2015 survey data can serve as a baseline from which we can continue measurement of the impact of Watch for Me NC program on communities' knowledge of laws and perceptions of road user behaviors. However, in isolation, these results are limited in their ability to estimate the program's effectiveness and whether it has produced differential effects among Watch for Me-participating communities. Ideally, we would use this as a baseline from which to examine trends both within and between Watch for Me-engaged and non-participating regions over time. Further, if additional resources exist, we would recommend estimating mixed effects regression models to predict various outcomes of interest while accounting for other potential factors affecting responses. These mixed effects models would examine so-called "fixed effects," such as respondents' age and income, as well as the "random effects" of the towns respondents live in to control for differences among respondents based upon where they live—e.g., town-based "cultural effects."

Field observations of key behaviors, such as driver yielding, remain an important complement to crash-based and survey-based evaluation measures. However, as more communities participate year round, the opportunities for before-after study designs diminish and more sophisticated approaches may be needed. Further, as the program grows, HSRC's central management of the data collection process to monitor driver yielding changes becomes more challenging and resource-intensive. Additional technical support, such as training and the provision of surveys or tally sheets that could be used locally, could help motivate communities to take a more active role in local program evaluation. Having more data at the local level could also be helpful in evaluating the program Statewide and in providing evidence to support decision-making regarding future Watch for Me NC program needs, such as message development or refinement.

As more communities incorporate elements of the Watch for Me NC program into their suite of interventions, it would benefit everyone to understand what works, why it works, and under what conditions it is most likely to work. Evaluations like these, which consider people's travel-related behaviors, attitudes, beliefs, and perceptions will get us closer to such an understanding.

## Appendix A: Law Enforcement Workshop Evaluation Questionnaire

### Pre-Workshop Questionnaire

Please circle whether you think the following statements are in accordance with North Carolina law:

1. A pedestrian in the crosswalk at a mid-block crossing or uncontrolled intersection always has the right of way.	True	False	Don't know
2. It is illegal for a pedestrian to cross the street outside of a marked crosswalk at any time.	True	False	Don't know
3. Pedestrians cannot impede the regular flow of traffic by willfully standing, sitting, or lying on the roadway.	True	False	Don't know
4. When a vehicle is stopped for a pedestrian, motorists approaching from the rear may overtake and pass the stopped vehicle if the adjacent lane is clear.	True	False	Don't know
5. Motorists must yield the right-of-way to pedestrians when making a right turn on red.	True	False	Don't know
6. Lighted lamps on the front and reflex mirror or lamps on the rear of the bicycle are required when a bicycle is used at night.	True	False	Don't know
7. Bicyclists must ride to the far right of the lane as possible at all times.	True	False	Don't know
8. Bicyclists can be charged with impeding traffic.	True	False	Don't know

For questions 9-13, please state your level of agreement or disagreement with each statement by circling one of the numbers on the right, using the scale below.

Disagree Completely	Disagree Moderately	Disagree Slightly	Agree Slightly	Agree Moderately	Agree Completely
1	2	3	4	5	6

9. I am familiar with the laws protecting pedestrian/bicyclist safety in North Carolina.	1	2	3	4	5	6
10. Motorists who do not follow traffic laws pose a serious threat to pedestrian/bicyclist safety.	1	2	3	4	5	6
11. Pedestrian/bicyclist laws are difficult to enforce.	1	2	3	4	5	6
12. My department/unit could perform a pedestrian crossing operation.	1	2	3	4	5	6
13. I can help prevent crashes by enforcing pedestrian/bicyclist/motorist laws.	1	2	3	4	5	6

14. What best describes the current pedestrian safety operation plans in your department/unit? (circle one)  
 A. We have been performing pedestrian safety operations regularly for MORE than 6 months.

- B. We have been performing pedestrian safety operations regularly for LESS than 6 months.
- C. We intend to perform a pedestrian safety operation in the next 6 months.
- D. We intend to perform a pedestrian safety operation in the next year.
- E. We have no plans for conducting pedestrian safety operations in the next 6 months.
- F. I don't know or not applicable.

15. What setting do you work in? (circle one)

University/Campus

Municipality

County

Other (specify): \_\_\_\_\_

16. Have you ever received pedestrian/bicyclist-focused enforcement training other than today's workshop? (circle one)

No      Yes (specify course taken, when, and where): \_\_\_\_\_

## Post-Workshop Questionnaire

Please circle whether you think the following statements are in accordance with North Carolina law:

1. A pedestrian in the crosswalk at a mid-block crossing or uncontrolled intersection always has the right of way.	True	False	Don't know
2. It is illegal for a pedestrian to cross the street outside of a marked crosswalk at any time.	True	False	Don't know
3. Pedestrians cannot impede the regular flow of traffic by willfully standing, sitting, or lying on the roadway.	True	False	Don't know
4. When a vehicle is stopped for a pedestrian, motorists approaching from the rear may overtake and pass the stopped vehicle if the adjacent lane is clear.	True	False	Don't know
5. Motorists must yield the right-of-way to pedestrians when making a right turn on red.	True	False	Don't know
6. Lighted lamps on the front and reflex mirror or lamps on the rear of the bicycle are required when a bicycle is used at night.	True	False	Don't know
7. Bicyclists must ride to the far right of the lane as possible at all times.	True	False	Don't know
8. Bicyclists can be charged with impeding traffic.	True	False	Don't know

For questions 9-13, please state your level of agreement or disagreement with each statement by circling one of the numbers on the right, using the scale below.

<b>Disagree Completely</b>	<b>Disagree Moderately</b>	<b>Disagree Slightly</b>	<b>Agree Slightly</b>	<b>Agree Moderately</b>	<b>Agree Completely</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>

9. I am familiar with the laws protecting pedestrian/bicyclist safety in North Carolina.	1	2	3	4	5	6
10. Motorists who do not follow traffic laws pose a serious threat to pedestrian/bicyclist safety.	1	2	3	4	5	6
11. Pedestrian/bicyclist laws are difficult to enforce.	1	2	3	4	5	6
12. My department/unit could perform a pedestrian crossing operation.	1	2	3	4	5	6
13. I can help prevent crashes by enforcing pedestrian/bicyclist/motorist laws.	1	2	3	4	5	6

14. I have the support I need to perform pedestrian and bicycle safety operations. (circle one)

No      Yes

If no, what barriers do you face and/or what resources are needed to help you perform pedestrian and bicycle safety operations (e.g., not enough officers, support from command staff, materials, etc.)?

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15. Please provide any comments on the course materials, and whether any concepts were unclear or missing.

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16. Please provide any other comments or feedback regarding the course or your plans to conduct pedestrian/bicycle safety operations.

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**Thank you for your time in attending this training and completing this form!**