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Buckle Up Owensboro:

Implementation and Evaluation

Of the 2015-2016

Seat Belt Campaign in

Owensboro, Kentucky

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16. Abstract This report combines two separate reports on the implementation and evaluation of the <i>Buckle Up Owensboro</i> campaign. Part 1 is titled <i>Implementation of Buckle Up Owensboro</i> and describes how the program was implemented in Owensboro, Kentucky, from mid-October 2015 to mid-October 2016. The year-long program involved seat belt enforcement and activities by the Seat Belt Coalition. Seat belt enforcement included integrated patrols with 30 minutes of dedicated seat belt enforcement per day, monthly spotter and chaser patrols, and <i>Buckle Up for a Buck</i> events. The <i>Buckle Up Owensboro</i> program was rich with community outreach and media through local business partners and local high school involvement. Challenges and lessons learned are discussed. Part 2, <i>Evaluation of Buckle Up Owensboro</i> , evaluates the process, outcome, impact, and sustainability of the program. The evaluation found increased observed seat belt use associated with the 12-month program. All crash, injury, and fatality data for this evaluation had large inter-year variability, allowing for little confidence in the relationship between year-to-year changes in these measures and the program activity. To determine if the program could be sustained beyond the 12-month program period, the research team collected process, outcome, and impact data for the 6-to-12-month period following the program. The data showed a decline in observed seat belt use as program activity levels decreased. While the program was successful at increasing observed seat belt use, the evaluation suggests higher levels of program activity are needed to sustain the effects on observed seat belt use than were implemented in the post-program period.					
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Part 1

Implementation of *Buckle Up Owensboro*

Introduction

Owensboro, Kentucky, met key selection criteria for this project. It had a primary seat belt use law, available electronic citation and crash data, an independent media market, a designated public information officer (PIO), and it had participated in *Click It or Ticket* campaigns.

Owensboro, the fourth largest city by population in Kentucky, is the county seat of Daviess County and is located on U.S. Route 60 about 32 miles southeast of Evansville, Indiana. It is the principal city of the Owensboro Metropolitan Statistical Area and has a population of 57,265 (2010 U.S. Census), with a metropolitan population of 114,752. Owensboro is the second-largest city in the Tri-State Region of Illinois, Indiana, and Kentucky.

In 2015 the Owensboro Police Department (OPD) had 109 sworn officers, a number that remained relatively steady throughout the project. Prior to *Buckle Up Owensboro*, OPD installed computers in patrol vehicles, allowing electronic collection of traffic citations, written warnings, and traffic crash reports. For a number of years, OPD maintained a three-officer traffic squad and participated in Federally funded overtime enforcement programs administered through the Kentucky Office of Highway Safety. OPD general patrol officers were challenged to engage in traffic enforcement and high-visibility presence at high-frequency crash locations during their daily patrols.

Buckle Up Owensboro Strategy

The program included an enforcement plan with officer training, performance management, recognition, and data-driven seat belt enforcement. OPD implemented a strategic communications plan involving a program logo, media outreach, Seat Belt Coalition meetings and activities, outreach to high schools, businesses, and other stakeholders, and highly visible community events such as *Buckle Up for a Buck*. OPD Police Chief Arthur Ealum Jr. said that efforts to increase seat belt use should not rely solely on ticketing violators, but also include substantial education and outreach components including education within OPD itself, as ways to convey positive messages about seat belts to the community.

Law Enforcement Activity

Seat Belt Enforcement

OPD integrated 30 minutes of dedicated seat belt enforcement into daily patrols, conducted monthly spotter and chaser seat belt details, and conducted *Buckle Up for a Buck* events. Every patrol officer was assigned to spend 30 minutes per shift focused on seat belt enforcement. OPD conducted data-driven seat belt enforcement by selecting enforcement zones with lowest observed seat belt use and highest unrestrained fatalities based upon seat belt observations and crash data. Geolocation analysis was used to identify unrestrained fatality hotspots.

Training and Policy

Officer training covered the safety benefits of seat belts for the general public, at-risk groups, and for police officers. It included material from NHTSA and the national *Below 100* program, which seeks to bring law enforcement deaths from motor vehicle crashes below 100 each year. When OPD coached officers about their own safety and mortality, the value of seat belt use among police officers became the foundation for educating the public. The training also covered details of Kentucky's seat belt use law and technical aspects and strategies of seat belt enforcement. The training also identified the connection between traffic enforcement and crime prevention.

OPD emphasized law enforcement officer seat belt use. Chief Ealum believed it critically important to ensure 100 percent use of seat belts by officers. Command staff, including Chief Ealum himself, would occasionally observe officers entering and leaving the station parking lot and note individual seat belt use, ensuring that supervisors corrected deficiencies. Each OPD officer was given discretion to either issue a verbal warning, a written warning, or a citation for an observed seat belt violation. This policy reflected Chief Ealum's view that the campaign should not rely solely on punitive measures.

Roll Call Activities

OPD conducted 10- to 15-minute pre-shift briefings when shift supervisors met with officers prior to daily patrols. Commonly called "roll call" briefings, officers were given up-to-date information, bulletins, and training. The roll call briefing was instrumental in informing and educating officers about the seat belt enforcement program, as well as keeping the topic in the forefront of agency activities. With information about seat belt use, officers can better educate the public during enforcement encounters. OPD had the objective to present seat belt enforcement to officers every two weeks.

Roll calls included statistics, print material, publications, and videos. OPD developed 50 items for roll calls, such as unbelted crash statistics, officer unbelted crash injuries, and PSA-type videos available online. Officer recognition was also a component of roll calls. Supervisors and managers including Chief Ealum recognized officers for seat belt education and enforcement.

Performance Management

OPD tracked enforcement activities in the officer daily reporting system. Supervisors reviewed activity data and applied performance measures to keep seat belt enforcement an agency priority. Supervisors encouraged involvement in seat belt enforcement. Supervisors provided private and roll call commendation and rewards for officers performing at a high level.

Officer Recognition

OPD produced ribbons and challenge coins to recognize exceptional seat belt enforcement work, and presented recognition items to officers at roll call meetings in front of their peers. The coins featured the OPD logo on the front, and message variation of the campaign logo on the back.



Figure 1: Challenge coins given out by the OPD to meritorious officers

Media Activity

Custom Seat Belt Logo and Tagline

OPD developed a customized logo and tagline tailored for the program and adaptable for year-round use. The localized message presented Owensboro as a unique area of the State with its own demographics and characteristics. The logo features an image of a 3-point seat belt, the city seal of Owensboro, and the words “Buckle Up Owensboro – Seat Belts Save Lives!”

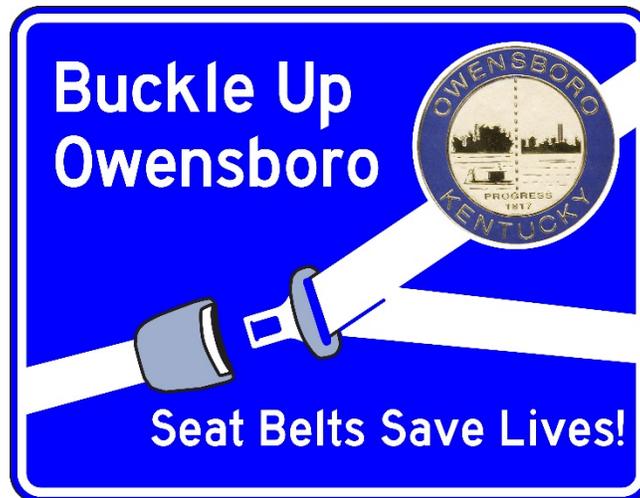


Figure 2: Owensboro seat belt logo used for traffic signs, banners, and decals

Strategic Communications Plan and Media Outreach

The Strategic Communications Plan built on opportunities and events, as well as relationships with the local media and community already in existence to promote *Buckle Up Owensboro*. The plan included social media, press releases, newspaper, radio, and television coverage.

The city's PIO briefed and updated the media every afternoon, opportunities for OPD to keep the program in the forefront of the local media. This also kept the community aware of the events and the importance of seat belts.

The Strategic Communications Plan began with a launch event on October 15, 2015, when OPD announced its program with a media advisory, press release, and a *Buckle Up for a Buck* event at a local McDonald's restaurant. *Buckle Up for a Buck* was a public education event that rewarded drivers for wearing their seat belts with a dollar and a McDonald's coupon for a free Big Mac. It reminded drivers who were not wearing their seat belt about the State law and why seat belt use is important. Officers handed out educational fact sheets about the importance of seat belt use. These *Buckle Up for a Buck* events also enhanced positive interaction with residents.

All the area's major television affiliates, ABC, NBC, CBS and FOX, covered the launch, ensuring that *Buckle Up Owensboro* reached as many viewers as possible across the entire Owensboro region. Radio, print, and online media including the largest daily newspaper, the *Messenger-Inquirer*, covered the kick-off. In addition to serving Owensboro and Daviess County, the *Messenger-Inquirer* has 25,000 subscribers throughout Western Kentucky in Hancock, McLean, Muhlenberg, and Ohio counties.

Branding and Messaging

OPD built and worked with an active network of local partners to share *Buckle Up Owensboro* educational messages and material. To insure consistency, these partners became invested in *Buckle Up Owensboro* and shared the material with their networks of employees and partners. The strategic branding and messaging material developed as part of the project are described below.

Aluminum Traffic Signs: Forty-six aluminum traffic signs were posted around Owensboro. Six large (24"x 6") signs were installed at entrances or "gateways" to Owensboro. Forty smaller (18"x24") signs were installed throughout Owensboro near businesses and organizations, typically in driveway entrances, parking areas, and building entrances of schools and businesses.



Figure 3: “Buckle Up Owensboro” sign installed at gateway

Vinyl Window Decals: OPD distributed two hundred 6”x8” *Buckle Up Owensboro* vinyl window decals to local businesses. These were displayed on the windows and public entry doors of local restaurants and other businesses.

Banners: Public outreach supported two large (3’x5’) vinyl banners featuring the *Buckle Up Owensboro* logo and the OPD patch. These banners were used at the *Buckle Up for a Buck* events as well as community events such as the June barbeque contest during OPD’s 2016 Police Awareness Day picnic. The banners were also displayed at events featuring a collision rollover simulator hosted by the family of Megan Miller, an eleventh grader at Daviess County High School who died while unbelted in a 2006 car crash.

Magnetic Decals for Patrol Cars: OPD commissioned the design and fabrication of 40 magnetic decals for use on patrol cars that featured the *Buckle Up Owensboro* message. These were attached to OPD traffic unit vehicles, as well as other marked patrol cars when participating in enforcement and other program activities. The Owensboro Fire Department used the magnetic decals as well, although fire trucks could not be used because they are principally made of aluminum.



Figure 4: Magnetic decal on patrol car

Electronic Message Boards: OPD acquired two electronic message boards for use with existing agency speed trailers. They were programmed with messages including *Buckle Up*. OPD already deployed speed trailers on area roads where OPD data identified speeding problems.



Figure 5: Electronic message board with *Buckle Up* message

Motorist Informational Handout Cards: OPD designed and printed 2,000 informational cards for motorists and passengers who were either part of traffic stops or at *Buckle Up for a Buck* events. The front of the card included Kentucky-specific traffic statistics for 2015 such as the number of people killed statewide including the number who were unbuckled. It was later updated and reprinted to include 2016 statistics when they came out. The cards also included key facts about Kentucky seat belt and child passenger safety laws. The back of the card included popular myths and facts about seat belt use (Appendix 1A). The cards were also displayed in the OPD's lobby and available to coalition members at meetings to share with their networks.

Social Media

OPD was active on social media – primarily Facebook and Twitter – for the program. OPD used its social media platforms to inform the public about local events, update the public on the program, and keep the campaign in the forefront. Facebook and Twitter were used to post information such as news coverage of the program and local crashes having unrestrained occupants. Additionally, OPD posted information and photos from the *Buckle Up for a Buck* events, the high school PSA contest, *Battle of the Belts* winners, “seat belt selfies” from the high school students, national and local seat belt statistics, and links to educational videos.

OPD regularly shared local and national statistics program information with all coalition members at coalition meetings and through e-mails, and encouraged members to use the information on their websites and social media platforms. Many coalition members – including the local high schools and Mischelle Miller of the *Buckle Up for Megan* program – regularly posted information on the importance of seat belt use.

Various coalition member organizations retweeted and shared OPD’s seat belt posts including the Kentucky Office of Highway Safety, the Daviess County Sheriff’s Office, Kentucky Wesleyan College, and local media outlets. Owensboro High School created the “seat belt selfie” program encouraging all students to tweet photos to the school’s Twitter account. Participating high schools also regularly used their social media accounts to share program content including seat belt selfies, the results of their seat belt checks, PSAs, and general safety information.

Seat Belt Coalition

The goal of the *Buckle Up Owensboro* Seat Belt Coalition was to focus the larger community on traffic safety as a public good, and in particular, the use of seat belts as a way to reduce injuries and deaths in motor vehicle crashes. OPD worked to recruit, engage, and retain members of the coalition from a cross-section of partners including local businesses and high school students.

OPD staff called to community partners to invite them to become members. OPD had preexisting community policing programs, including *Breakfast With a Cop* and the OPD Citizens Police Academy. Here’s a sample of the community partners who joined the *Buckle Up Owensboro* Seat Belt Coalition and attended meetings.

- High schools: Apollo High School, Daviess County High School, Owensboro Catholic High School, Owensboro High School, and Trinity High School
- Colleges: Brescia University and Kentucky Wesleyan College
- Government agencies: City of Owensboro, Owensboro Municipal Utilities, Owensboro Sanitation Department, Daviess County Coroner’s Office, and Daviess County School System

- Law enforcement and emergency services: Citizens Police Academy and its Alumni Association, Daviess County Fire Department, Daviess County Detention Center, Daviess County Sheriff's Office, Daviess Emergency Management, Owensboro Fire Department, Owensboro Police Department, and Yellow Ambulance
- Local corporations/businesses: AAA Insurance, Boardwalk Pipeline Partners, H.L. Neblett Community Center, Hunter Douglas, Independence Bank, Kenergy, Lowes, Owensboro Federal Credit Union, Owensboro Health, Owensboro Physical Therapy, Southern Star, State Farm Insurance, Unifirst Bank, Wal-Mart, and Western Kentucky Blood Center
- Media: *Messenger-Inquirer* newspaper
- Activists/victims: Mischelle Miller (*Buckle Up for Megan*), whose teenaged daughter Megan died in a car crash in Owensboro in 2006. Megan, the driver, was unbuckled and when the car swerved from the road and flipped several times she was thrown from the car and suffered fatal head injuries. Megan's younger sister, Morgan, had her seat belt on and suffered only minor injury.
- Churches: Wings Avenue Church

The Seat Belt Coalition was comprised of volunteers who were passionate safety leaders in the community, along with other partners who were new to traffic safety. Community events and activities were coordinated with coalition partners to foster participation and buy-in. OPD Deputy Chief Jeff Speed chaired the Seat Belt Coalition. Major Gordon Black played a large role in organizing the meetings, preparing meeting agendas, and compiling/distributing meeting minutes.

OPD organized and held five coalition meetings during the 12-month program period, with an average attendance of 20 partners per meeting. The agendas generally included OPD updates, plans, seat belt statistics, videos, guest speakers, and member updates. The meetings always concluded with open discussion about upcoming events and ideas for members to get more involved. Guest speakers included local car crash victim and survivor advocates, physical therapists, coroners, and medical trauma directors.

OPD regularly e-mailed coalition members to remind them of upcoming meetings and encourage them to invite others to attend. Coalition members conducted a variety of education and outreach activities such as:

- Posting signage at their locations including marquee signs (both static and electronic) and stickers in business windows with the *Buckle Up Owensboro* message;
- Distributing educational material to customers and employees, such as bracelets and T-shirts that were either already funded and created directly by their organization or sponsored and provided from other safety partners;
- Creating and using both "live" and video public service announcements in schools and at school and community events;

- Educating safety officers at local businesses about the *Buckle Up Owensboro* program and encouraging the use of the tagline, messaging, and educational material among their employees at safety trainings and briefings. Educational material that was provided came from a variety of sources. Some material was provided by OPD while others were provided by the businesses;
- Placing the *Buckle Up Owensboro* logo and traffic safety material on company, school, and organizational websites and sharing on their social media sites, such as Facebook and Instagram;
- Conducting week-long “Ghost Out” alcohol- and drug awareness programs in high schools. These programs traditionally focused on traffic issues such as impaired driving, but schools in Owensboro made sure to incorporate educational seat belt information in the year’s events;
- Conducting classes on how to properly install child safety seats and incorporating safety messages about seat belts, and bike and motorcycle helmets;
- Conducting seat belt use observations at busy intersections;
- Providing physical therapy patients with information on how to properly wear seat belts;
- Including mandatory seat belt use in their company’s formal policy positions; and
- Distributing and collecting internally created employee surveys about seat belt use and promoting results among the employees.

Outreach

Outreach to these stakeholders was a critical component of the external strategy approach for *Buckle Up Owensboro*. The project included the following outreach elements.

Eyes on Owensboro Link: OPD previously established *Eyes on Owensboro* to engage with 150 local businesses and other stakeholders, letting businesses and residents register their security cameras with OPD. This opportunity welcomes business owners and residents to become a part of the community’s crime prevention efforts. To build on this initiative, vinyl window decals bearing the *Buckle Up Owensboro* message were produced and distributed to business owners to place in their windows. OPD also tapped into the *Eyes on Owensboro* network to provide opportunities for businesses to support *Buckle Up for a Buck* events and donate trophies for high schools with high levels of seat belt use.

Marquee Sign Program: Independence Bank, Owensboro High School, and Owensboro Catholic High School were three community partners that volunteered their digital marquee signs for *Buckle Up Owensboro* messages. OPD found that the personal approach to a business with a marquee request was better than a broadcast form letter or e-mail. Owensboro Health and Owensboro Federal Credit Union agreed to use their websites instead of marquees.



Figure 6: Business sign with Buckle Up Owensboro message

Highly Visible Community Events: Buckle Up for a Buck

A key component of Owensboro’s approach involved planning and conducting highly visible community events, such as *Buckle Up for a Buck*. These recurring events were intended to increase awareness and emphasize the importance of seat belt use.

OPD joined with local restaurants to conduct *Buckle Up for a Buck*. OPD officers stood by the drive-through lanes of fast-food restaurants and observed restraint use of approaching drivers. As drivers stopped at the drive-through to order, OPD officers thanked drivers who were wearing seat belts and “rewarded” drivers with a one-dollar bill. For those drivers who were not buckled, OPD officers encouraged the drivers with friendly reminders and handed out literature about seat belts.

OPD received monetary support from a local financial institution through existing agency business contacts and relationships garnered through the Seat Belt Coalition. OPD found that many businesses and companies can support civic activities at a level of \$100 or \$200 as part of their corporate policies. In the case of the OPD, an officer who conducted a fraud investigation at a bank established a relationship with the bank manager that created opportunity for corporate sponsorship. OPD built relationships with the business community that supported crime prevention, substance abuse prevention education, and juvenile diversion programs through financial and in-kind donations.

A thank-you letter was sent from Chief Ealum to provide a record of the activity and ensure everyone was aware of the arrangement. The hosting fast-food restaurant complemented the one-dollar bill rewards with food coupons. Many drivers preferred the food coupons to the money, allowing the funds to be used for other drivers. OPD leveraged the events with earned and social media.

High School Events

Student leaders and teacher became active members of the Seat Belt Coalition, regularly attending the coalition meetings and encouraging students, friends, family members, and others to wear their seat belts. Five Owensboro high schools participated in two video contests and a *Battle of the Belts* competition.

For the video contest, students submitted videos to encourage peers to wear seat belts. Video submissions were judged by the Seat Belt Coalition and all the videos were posted on the OPD Facebook page. Apollo High School won the video contest that included a skit of students acting out an episode of *Law and Order* involving a car crash with an unbuckled teen. The 3-minute video ended with an image of the *Buckle Up Apollo* sign in front of the school.

For the *Battle of the Belts* competition, students from each of the schools conducted seat belt observations and competed to see which school had the highest seat belt use. Students and faculty measured seat belt use with observations in school parking lots several times over the course of the year. Two schools reported 100 percent seat belt use. Chief Ealum presented a trophy to Owensboro Catholic High School during the halftime show at a school basketball game. Trinity High School received a trophy the following day during its basketball game.

Program End Press Conference

To officially recognize the one-year anniversary of *Buckle Up Owensboro*, OPD held a press conference at its headquarters. Media outlets received media advisories issued prior to the event. Chief Ealum delivered an overview of the program including how OPD and its community partners worked to implement the *Buckle Up Owensboro* program.

The press conference was widely attended by coalition members and local media outlets. The local ABC and NBC television affiliates, *Messenger-Inquirer*, SurfKY.com NEWS, and Owensboro Living (a free online source for local news in Owensboro and Western Kentucky) aired and ran stories. A summary of program media coverage is provided in Appendix 1B and sample media material is in Appendix 1C.

Discussion

The Owensboro Police Department and Seat Belt Coalition implemented the year-long *Buckle Up Owensboro* program as planned. Chief Ealum's philosophy for *Buckle Up Owensboro* was to not solely rely on ticketing violators, but also include an education and outreach component. This conveyed a positive message about seat belts to the community, facilitating positive interaction with residents.

Although the Owensboro initiative was implemented relatively inexpensively, there were costs, some of which NHTSA offset. Funding included roll call training and branding/messaging. OPD did not rely solely on grant funds to develop and implement this initiative. All enforcement efforts, including patrol activities, supervision, internal training, data collection, and support for the seat belt coalition were funded by OPD. OPD was also resourceful in working with local businesses to obtain financial support for *Buckle Up for a Buck* events and the acquisition of trophies for high school seat belt competitions. The financial commitment demonstrated by OPD and support from local businesses are key elements required to sustain the *Buckle Up Owensboro* initiative. OPD's strategy required modest financial support from the community for high school challenge trophies, officer recognition items, and *Buckle Up for a Buck* incentives.

The *Buckle Up Owensboro* implementation experience revealed some challenges and lessons learned. Competing priorities were a challenge. Traffic enforcement is only one part of the daily patrol duties for police officers. Competing law enforcement priorities were a constant challenge for the agency and officers. Similarly, staffing presented a challenge with the *Buckle Up Owensboro* program. OPD adapted to personnel attrition, leave time for officers, training obligations, and other issues that reduce available staffing. Reducing available daily patrol personnel may increase the number of calls that the average officer handles.

Leadership investment and communication were essential – top down, bottom up, and lateral. OPD found that creating a team approach when encouraging officers helped with program implementation. Using enforcement statistics showed officer commitment, which along with supervisory review and personal follow-up, helped with officer involvement. “Resisting change” also appeared to be present in the program. OPD supervisors were candid in relating that some officers resisted change despite wide support among agency personnel. Over time, OPD reported that officers accepted the program as a change in agency philosophy, and most embraced seat belt use as part of their daily routine. Training and roll calls about seat belts are challenging to sustain, and run the risk of occurring too frequently. Providing seat belt information at roll call every other week proved to be too frequent due to depleted material for roll call and officer fatigue on the topic. OPD suggested that a better course of action might be to start with a bi-weekly format and then scale back to monthly after a couple of months.

Partnerships that create an engaged Seat Belt Coalition was a challenge to set up, grow, and maintain, but was well worth the effort. Personal contact was required for coalition members. OPD found emails were not as effective when communicating with partners. *Buckle Up Owensboro* was a prime example of the advantage of having police-led coalitions in bringing clear messages and sound leadership. The direct involvement and personal commitment from Chief Ealum also made a difference with the program. OPD found that keeping coalition meetings to one hour and including a variety of speakers helped keep the meetings interesting and well attended. The *Buckle Up Owensboro* program created the Seat Belt Coalition early in the process, which helped build a foundation for program development and progress from the start. OPD built strong and productive relationships with local schools. OPD found schools, particularly high schools, to be energized and creative. Stakeholders such as schools, employers, insurance companies, and health care providers were vital partners and played active roles. Achieving community buy-in and active participation was critical. The long-term viability and success of the coalition would benefit from other stakeholders providing leadership support, such as co-chairing committees and events with OPD to garner a sustainable commitment in the coalition.

Conclusion

The Owensboro Police Department and the members of the Owensboro Seat Belt Coalition implemented the *Buckle Up Owensboro* as planned. As expected, OPD faced challenges and gleaned new insights from it. Overall, a comprehensive approach was needed with a combination of strategies that reinforced each other and collectively supported seat belt use. See Part 2 for the evaluation report documenting the outcome of the program.

Appendix 1A: Motorist Informational Handout Card

Buckle Up Owensboro!



Did you know:

- Kentucky had **591 motor vehicle fatalities** in 2015.
- Of the 591 motor vehicle fatalities, **more than half were not buckled up.**
- **Lap/shoulder belts reduce the risk of death by 45%** and the risk of injury by 50%.
- Kentucky's seat belt law is a **primary law**, allowing law enforcement officers to stop a driver solely for an occupant restraint violation.
- All drivers and passengers must **wear a properly adjusted & fastened seat belt.** Drivers can be cited for anyone in the vehicle that is not buckled up.
- All children under the age of 8 and between 40 & 57 inches tall must be properly secured in a **child booster seat.**
- All children under 40 inches tall must be properly secured in a **child restraint system** meeting Federal motor vehicle safety standards.

For more info:



transportation.ky.gov/TowardZeroDeaths/Pages/Buckle-Up.aspx



www.owensboro.org/police

www.facebook.com/OwensboroPolice

Myths and Facts About Seat Belt Use

- ✗ **Myth** - "If I'm only driving a short distance, I don't need to buckle up."
- ✓ **Fact** - The majority of fatal crashes occur within a 25 mile radius from home at speeds less than 40 mph. **Buckle up on every trip!**
- ✗ **Myth** - "Wearing a seat belt is a personal decision that doesn't affect anyone else."
- ✓ **Fact** - Not wearing a seat belt can cause you to collide with other passengers in the vehicle, and can affect other motorists since **wearing a seat belt can help you avoid losing control** of your vehicle in a crash.
- ✗ **Myth** - "It is better to be thrown clear in a crash."
- ✓ **Fact** - A person is **four times more likely to be killed** when thrown from the vehicle instead of protected inside of the vehicle.
- ✗ **Myth** - "I could get trapped if my car catches on fire or is submerged in water."
- ✓ **Fact** - **Seat belts can keep you from being knocked unconscious**, improving your chances of escaping the vehicle. Fire or submersion occurs in less than 1% of all crashes – the greatest danger is with the impact before the fire or submersion in water.
- ✗ **Myth** - "I have an air bag to protect me, that's good enough."
- ✓ **Fact** - **Seat belts keep you in the proper position** and work in conjunction with an air bag. If you are not wearing a seat belt, you can be thrown into the air bag or ejected from the vehicle causing serious injuries or death.



**Buckle Up, Every Trip.
Every Time.**

Appendix 1B: Summary of Media Coverage



Buckle Up Owensboro: Seat Belts Save Lives!

Campaign Media Highlights
October 2015 - November 2016



**Year-long earned and
social media outreach**



Two Major Media Events:

Campaign Launch - Buckle Up for a Buck

October 15, 2015

One-Year Anniversary to Celebrate Successes

November 10, 2016



Stories on all local area television stations
reaching over **75,000 viewers**

Detailed **Articles & Photos** in
the *Messenger-Inquirer* - area's
largest daily newspaper reaching

25,000 plus readers

- Stories in *Owensboro Living Magazine*, on SurfKY News, sNEWSi Radio, and on WMSK Radio



Appendix 1C: Sample Media Material



Owensboro Police Department

Art Ealum
Chief of Police

222 E. 9th Street Owensboro, KY 42303

NEWS RELEASE

OFFICE: Public Information Office
DATE OF RELEASE: October 15, 2015
REPORT NUMBER: N/A
SUBJECT: Seatbelt Enforcement Campaign
RELEASED BY: Officer Michael Hathaway (270) 929-0873

FOR IMMEDIATE RELEASE

Owensboro Police Department Launches *Buckle Up Owensboro: Seat Belts Save Lives!* Campaign

All Community Members Encouraged to Help Achieve 100 Percent Seat Belt Use

Owensboro, KY., October 15, 2015 – Today the Owensboro Police Department (OPD) is launching its new community-wide traffic safety campaign “*Buckle Up Owensboro: Seat Belts Save Lives!*”

OPD has already been highly engaged in traffic safety educational and enforcement efforts such as the annual *Click-it-or-Ticket* campaign to increase seat belt use. However, the department is now greatly stepping up its efforts to develop and implement an on-going seat belt campaign to create a “seat belt community” in Owensboro that will serve as a role model for other counties, cities and states.

Motor vehicle crashes continue to be a leading cause of death for the citizens of Kentucky. There were 521 motor vehicle highway fatalities in the state during 2014. Of those 521 fatalities, 61 percent (319) were not wearing seat belts. Buckling up is the most effective way to reduce fatalities and serious injuries in a crash. Lap/shoulder seat belts, when used properly, reduce the risk of fatal injury by 45 percent and the risk of moderate-to-critical injury by 50 percent.)

While Kentucky’s seat belt usage rate improved from 67.2 percent to 86.1 percent with the passage of its primary seat belt law in 2006, more than one in

ten drivers still aren't buckling up and more than half of all motor vehicle deaths involved an unrestrained driver or passenger.

"Our goal with this campaign," said Chief Ealum, "is to achieve 100 percent seat belt and child restraint use. We need everyone to do their part by making a conscious decision to always buckle up, to always buckle their children in appropriate and properly secured child safety seats and to ensure all other passengers ride buckled up at all times of the day and night and in all seating positions in the vehicle."

A key *Buckle Up Owensboro: Seat Belts Save Lives!* campaign element is the formation of a "*Buckle Up Owensboro*" Seat Belt Coalition that will be chaired by Deputy Chief Jeff Speed of the OPD and consists of community leaders and interested citizens. Working together with OPD, coalition members will reach out to high schools and local businesses to share educational materials, host events, and conduct media outreach, including on social media, to create a long-lasting, healthy traffic safety culture in Owensboro.

Our patrol officers will continue enforcing Kentucky's primary seat belt, booster seat and car seat laws which are outlined below:

- Kentucky's "Primary Seat Belt Law" allows law enforcement officers to stop a vehicle solely for an occupant restraint violation and not to rely on another violation to initiate the traffic stop;
- Drivers can be cited for anyone in the vehicle who is not buckled up;
- All drivers and passengers must wear a properly adjusted and fastened seat belt;
- Any driver of a motor vehicle, when transporting a child of 40 inches in height or less shall have the child properly secured in a child restraint system meeting federal motor vehicle safety standards;
- Any driver of a motor vehicle, when transporting a child under the age of 8 years who is between 40 inches and 57 inches in height shall have the child properly secured in a child booster seat.

Those who are not properly restrained can face a fine of \$25.

For more information or if you are interested in joining the new Coalition, please contact Lt. Gordon Black at 270-687-8827.



Owensboro Police Department

**Art Ealum
Chief of Police**

222 E. 9th Street Owensboro, KY 42303

NEWS RELEASE

OFFICE: Public Information Office
DATE OF RELEASE: November 7, 2016
REPORT NUMBER: N/A
SUBJECT: Buckle Up Campaign Press Conference
RELEASED BY: Officer Michael Hathaway (270) 316-8575

FOR IMMEDIATE RELEASE

In October, 2015, the Owensboro Police Department began a partnership with the National Highway Traffic Safety Administration to initiate a national pilot program aimed at creating a sustainable seat belt use campaign. OPD enlisted the help of local businesses and community groups to help spread information about seat belt use. Seat belts have been statistically shown to save lives and our goal was to make Owensboro a seat belt community with 100% compliance.

After one year of work and dedication to this cause, the Owensboro Police Department is pleased to announce a noticeable increase in the amount of people using their seat belts. We have compiled data to show that this initiative has been successful and is sustainable; a program we hope to see used by other agencies nationwide.

Please join us for a scheduled press conference to announce the positive outcome of this campaign. OPD will be recognized by representatives from NHTSA and their partners, and you will hear from many community representatives that have helped to make this a successful and sustainable campaign.

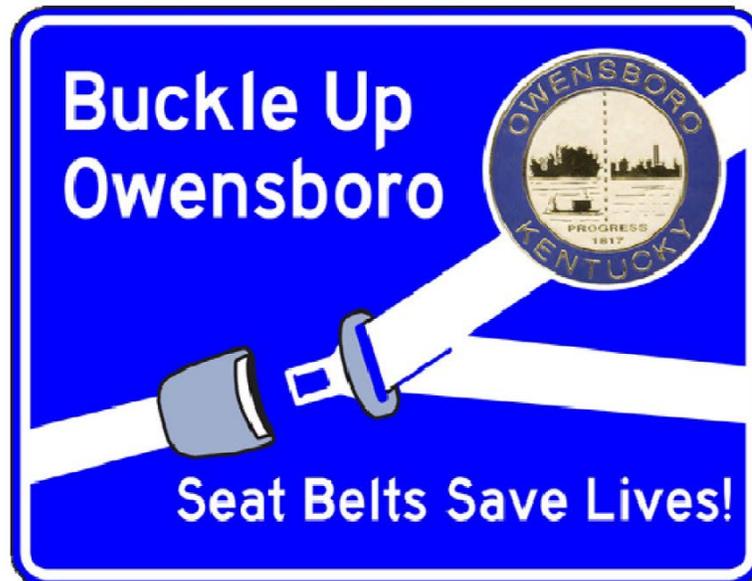
Informational flyers will be available at the press conference that highlights the pilot program. Statistics will be included that show the change in seat belt use throughout our community from the start of the program to today.

What: Press Conference – Buckle Up Owensboro. Seat Belts Save Lives Campaign

When: Thursday, November 10, 2016 at 10:30 a.m.

Where: Community Room - Owensboro Police Department, 222 E. 9th Street

Who: OPD Command Staff, NHTSA representatives, and Coalition members



Part 2

Evaluation of *Buckle Up Owensboro*

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Acknowledgements

Special thanks to the Owensboro Police Department (OPD) for its cooperation in providing crash and citation data and other information necessary to evaluate its *Buckle Up Owensboro* program. A thank you is also extended to the Bowling Green Police Department for providing enforcement data as a comparison site. Thanks also to Erin Lammers for conducting the seat belt observations in Owensboro and Bowling Green, Kentucky, and to Dennis Thomas (Dunlap and Associates) for developing the sampling plan for the seat belt observation locations. A final appreciation goes to Sam Schwartz, Inc., especially Richard Retting, principal investigator, Grady Carrick, and Kathy Gillen for providing program data and information for the evaluation.

Executive Summary

This was a process, outcome, and impact evaluation of the *Buckle Up Owensboro* seat belt program conducted by the Owensboro Police Department (OPD) in Owensboro, Kentucky, and the OPD Seat Belt Coalition from mid-October 2015 to mid-October 2016. NHTSA and OPD designed the program to integrate seat belt enforcement into routine patrols and spread awareness regarding the program using communications and Seat Belt Coalition activities. OPD conducted daily, 30-minute, dedicated seat belt enforcement patrols, *Buckle Up for a Buck* details, and monthly 2-hour spotter and chaser enforcement. Part 1 of this report documents the program.

The primary goal of the evaluation was to evaluate the implementation and effectiveness of the 12-month *Buckle Up Owensboro* program. The team collected enforcement, communications, and Seat Belt Coalition activity data to describe how the site implemented the program. To assess the outcome and impact of the program, the team collected seat belt observation data in Owensboro and in a control site and collected crash, injury, and fatality data. The secondary objective was to determine if the site could sustain the program beyond the 12-month period. To accomplish this goal, the team collected process, outcome, and impact data for 6-to-12-months following the program.

The process evaluation involved collecting and analyzing the communications and enforcement activities of the OPD and the Seat Belt Coalition. The research team collected enforcement activity data monthly that included citations and written warnings for seat belt, booster seat, and child restraint system law violations. The team collected data 3 years prior to the start of the program (baseline), the program year, and 6- and 12-months post-program. The research team obtained staff hours devoted to enforcement activities, and staff hours devoted to the coalition Partner meetings and public outreach activities. The team gathered qualitative information about the program through discussions with the OPD program coordinator during the program year.

The team observed seat belt use for more than 2,500 drivers and front-seat passengers at 15 sites in Owensboro and 15 sites in the control site, Bowling Green, at pre-, mid-, and immediate post-program, as well as 6-months post-program to measure sustainability. The team evaluated program impact using crash, injury, and fatality data.

The program was active in enforcement and public outreach. During the program period, OPD patrol officers spent 2,940 hours focusing on enforcement of occupant protection laws and made 2,914 direct enforcement contacts. They wrote 1,736 citations, a 2.7 percent increase over the average of the prior three year-period. However, their citation count during the 1-year post-program period represented a 21 percent decrease from the baseline count, and a 22.8 percent decrease from the program period. The Seat Belt Coalition was active during the program period with social media, poster and sign placement, school projects, and participation in quarterly meetings with OPD. During the 6-month post-program period, the number of active partners in the coalition and the earned media surrounding the program both decreased by more than 50 percent.

The seat belt use rate in Owensboro increased significantly from baseline (85.9%) to both the mid- and immediate post-program observations (to 91.2% and 90.7%, respectively). However, the increase was not sustained at the 6-month post-program observation (85.0%). In the control site (Bowling Green), seat belt use rates decreased significantly for drivers and front seat passengers from baseline to both mid- and immediate post-program and then did not substantially change from immediate to 6-month post-program. These findings suggest that the program was effective in increasing seat belt use, but this behavior was not sustained once the program was removed.

All crash, injury, and fatality data for this evaluation had large inter-year variability, allowing for little confidence in the relationship between year-to-year changes in these measures and the program activity. As found with small communities, yearly numbers of crashes, injuries, and fatalities are small and highly variable. This evaluation used observed seat belt use as a more reliable measure of change. Research indicates that increasing seat belt use saves lives (Kahane, 2015), which bridges the measured program outcomes (observed use) with progress towards NHTSA's mission to reduce traffic fatalities.

In summary, the program was effective in increasing observed seat belt use. OPD was instrumental to program success through commitment to enforcement, public outreach activities, and by leading an active Seat Belt Coalition with community partners. However, the increase in seat belt use was not sustained in the post-program period without sustained enforcement and public outreach efforts.

Introduction

While national observed daytime seat belt use was 89.7 percent in 2017, some 47 percent of those killed in crashes in that year were not wearing their seat belts (Enriquez & Pickrell, 2019; NCSA, 2019). The National Highway Traffic Safety Administration estimates that seat belts saved 14,955 people 5 and older in 2017 (NCSA, 2019). If everyone wore their seat belts, an additional 2,549 people could have been saved in 2017.

NHTSA's *Countermeasures That Work* report (Richard et al., 2018) states that sustained seat belt enforcement is a countermeasure that integrates seat belt enforcement into routine patrol. States that report engaging in sustained seat belt enforcement also record observed seat belt use above the national average; however, due to limited robust evaluations, sustained enforcement is not graded as having the highest level of evidence supporting effectiveness.

While there were early evaluations of sustained enforcement, they may be less applicable today because seat belt use is much higher than when they were conducted. Nichols and Ledingham (2007) summarized some of the early studies on sustained enforcement, including studies in 1986, 1988, and 1989. The 1986 Albany and Greece, New York, project compared sustained and blitz enforcement. The study found 13- and 17-point increases in seat belt use associated with blitz and sustained enforcement efforts, respectively. Two studies were conducted in 1988 involving Texas and Illinois, which both found increases in belt use associated with the sustained enforcement program. Last, the 1989 Michigan study found a 13-point increase associated with sustained seat belt enforcement conducted over one year.

Nichols and Ledingham (2007) concluded that sustained enforcement appeared to be just as effective as blitz enforcement in the setting of 1980s belt use but with an advantage because sustained enforcement seemed to have a longer lasting effect. They summarized research showing lasting gains in seat belt use two months following the sustained enforcement, with blitz enforcement seeing drop-offs by that time.

The purpose of the current study was to conduct a rigorous evaluation, including a process, outcome, and impact evaluation, of a sustained seat belt enforcement program in today's seat belt landscape. This evaluation of the *Buckle Up Owensboro* program provided an opportunity to build relevant evidence for sustained seat belt enforcement. In addition, this evaluation expanded on past research by seeing if any program effects last beyond the program period. Past research found lasting effects of sustained enforcement for two months beyond the program period, and this study expanded on that research by looking for lasting effects six to twelve months after the program.

Objectives

The primary objective of this project was to evaluate the process, outcome, and impact of the *Buckle Up Owensboro* sustained seat belt enforcement and community outreach program. The secondary objective of this project was to determine if the site could sustain the program activity and maintain any effects on observed seat belt use 6 months following the program period. The research team accomplished the second objective by collecting program activity data six to twelve months after the program and observing seat belt use 6 months after the program.

Methods

Design

The research team designed the evaluation to measure the effect of the program on observed seat belt use with a quasi-experimental control group design. The team conducted seat belt observations in Owensboro and the control site, Bowling Green, before the program activity started, at program mid-point, and at program end. The research team collected crash, injury, and fatality data from 3 years before up to 12 months post-program to determine the impact of the program on restraint use in crashes.

The research team evaluated program sustainability by collecting process data for 6 to 12 months after the formal implementation period ended and by conducting another round of seat belt observations 6-months after the program end date in both Owensboro and Bowling Green. Table 1 presents an overview of the project timeline and evaluation elements.

Table 1. Overview of Evaluation Elements and Timeline

Timeline	3 Years	12 Month Program Period			12 Month Post-Program Period	
Element	Pre-program	Program baseline	Mid-program at 6 months	Immediate post-program at 12 months	6-months post-program	12-months post-program
Process: Enforcement						
Program Site: Owensboro	X	X	X	X	X	X
Control Site: Bowling Green	X	X	X	X		
Process: Communications						
Program Site: Owensboro Public Outreach/ Earned Media		X	X	X	X	
Program Site: Owensboro Coalition Activity			X	X	X	
Outcome: Seat Belt Observations						
Program Site: Owensboro		X	X	X	X	
Control Site: Bowling Green		X	X	X	X	
Impact: Injuries, Fatalities						
Program Site: Owensboro	X	X	X	X	X	X

Site Selection

NHTSA collaborated with the OPD to demonstrate the seat belt program. Owensboro is a municipality in Daviess County, Kentucky. The research team selected Bowling Green as the control site for the evaluation. The research team selected this control site because it was a similar municipality in population, socio-demographics, and size of law enforcement agency (LEA) (see Table 2). The research team also considered media market boundaries to help ensure program media would not leak into the control area with potential influence on behavior. Bowling Green was in a different media market, which created conditions for the research team to minimize cross-over effects. Kentucky has a primary seat belt enforcement law with a \$25 maximum base fine for the first offense.

Table 2. Program and Control Site Characteristics

Characteristic	Owensboro, KY (Program Site)¹	Bowling Green, KY (Control Site)²
Population	59,404	67,067
Race & Hispanic Origin	White: 88% African-American: 7% Hispanic or Latino (any race): 3.6%	White: 73%, African-American: 14.6% Hispanic or Latino (any race): 6.7%
Households	24,628	23,595
Housing Units	26,072	25,908
City Size	20.4 square miles	35.4 square miles
Average Population Density (people per square mile)	2,999.1	1,536.9
Median Household Income	\$37,719	\$37,183
LEA Size	109 officers	90 officers

According to the OPD's 2015 Annual Report (Black, 2016), OPD had 109 sworn officers in 2015. OPD Deputy Chief Jeff Speed reported there were 59 full-time officers and 9 supervisors assigned to patrol, with 2 officers and 1 supervisor on the traffic unit. All 59 officers performed normal patrol or traffic duties and conducted traffic enforcement. Deputy Chief Speed also reported that prior to program implementation, officers routinely engaged in traffic safety education, enforcement efforts, and seat belt enforcement activities, especially during the annual *Click It or Ticket* campaign.

¹ www.census.gov/quickfacts/owensborocitykentucky

² www.census.gov/quickfacts/fact/table/bowlinggreencitykentucky/PST045217

Program Summary

NHTSA and OPD developed the *Buckle Up Owensboro* program to implement the components shown in Table 3 according to an established monthly schedule throughout a 1-year period (mid-October 2015 to mid-October 2016). There is a separate report documenting the program.

Table 3. *Buckle Up Owensboro Program Components*

Internal LEA Program Components	External Communications and Outreach Components	Monthly Program Schedule
<ul style="list-style-type: none"> • Training (driver safety, officer safety, technical and tactical belt enforcement) • Performance Management • Officer Recognition • Data Analysis • Enforcement Policies and Tactics (policy, tactical, nighttime seat belt issues) • Measure Belt Use and Provide Feedback to OPD on Results 	<ul style="list-style-type: none"> • Owensboro Seat Belt Logo and Message • Strategic Communication Plan • Road Signs at Gateway Entrances to the City • Owensboro Seat Belt Coalition/Task Force (Partnership) • Outreach to High Schools • Outreach to Business and Other Stakeholders 	<ul style="list-style-type: none"> • Enforcement Tactics • Meeting • Roll Call Training • Performance Management • Officer Recognition • Public Service Announcements • Social Media • Monthly 2-Hour Spotter and Chaser Seat Belt Enforcement • Daily 30-Minute Seat Belt Enforcement • Traffic Unit <i>Buckle Up for a Buck</i>³ Events

Process Evaluation

Research question. Was the *Buckle Up Owensboro* program implemented as planned? Did enforcement, outreach, and communications activity increase during the program period? Were these activities sustained in the post-program period?

Public outreach. The research team monitored the OPD initiatives and outreach by collecting data from the OPD program coordinator describing OPD staff time devoted to the Seat Belt Coalition Partner meetings and public outreach activities. Activities included use of signs, banners, posters, magnetic signs, stickers, and other educational material, as well as social media posts (i.e., Facebook and Twitter). The team also monitored the Seat Belt Coalition activities by attending coalition meetings, reviewing meeting minutes, and by following their social media posts.

³ As *Buckle Up for a Buck* details, officers conducted seat belt checks at fast-food restaurant drive-through window locations, and gave out one-dollar bills and coupons to restrained motorists, and educational material to unrestrained motorists.

The research team monitored public outreach and earned media activities by scanning internet and other media sources for TV, radio, newspaper, and regional magazine media related to the program activity. In addition, the team subscribed to regional online newspapers. The team identified newspaper circulation, TV station viewership, and social media follower counts to determine the potential reach of media stories and social media posts.

Enforcement. The evaluation team collected enforcement activity data from the OPD records manager for 3 years prior to the start of the program (baseline),⁴ monthly during the 12-month program period, and at 6- and 12-months post program. Specifically, the team collected citations and warnings for seat belt, booster seat, and child restraint system violations. The team also collected data related to distracted driving, driving under the influence (DUI), and speeding enforcement actions as well as staff hours devoted to enforcement activities.

The research team held discussions with the OPD program coordinator at the middle and end of the 12-month program. The team collected qualitative insights regarding the enforcement effort, including strengths and obstacles associated with the enforcement, ease of integrating seat belt enforcement into daily routines, and reasons for selecting enforcement tactics. In addition, the team discussed aspects of the Seat Belt Coalition and communications activity such as level of support from partners and apparent value of public outreach and social media.

Outcome Evaluation

Research question. Was the *Buckle Up Owensboro* program associated with increased observed seat belt use? How did observed belt use change from the beginning through the middle (i.e., 6-months) to the end of the 12-month program period in the program and control sites? Was any observed change in belt use sustained 6 months following the program?

Sample size and analysis approach. To determine the sample size for the seat belt observations, the research team conducted a power analysis to calculate the minimum sample size required to detect an effect of a given size. The research team looked at recent OPD reported seat belt use data for insight in determining magnitude of effect. OPD reported that seat belt use averaged 89.2 percent over the 3-year period prior to program implementation. In addition, a recent unpublished report for NHTSA by the research team evaluating rural seat belt enforcement programs showed seat belt use increases of less than 5 percent in three sites, 5 percent to 7.5 percent in five sites, and over 10 percent in two sites (Decina et al., 2015). Three sites had slight decreases in seat belt use in post-intervention periods. Assuming the baseline seat belt usage rate of 89.2 percent and a small effect size (using Cohen's *W* of .10 for a chi-square test/contingency table analysis), a sample size of 1,488 would be required if power of .90 is specified. The expected magnitude of change would be 2 to 3 percentage points in seat belt usage. The research team decided that a sample size of 2,000 would be adequate to determine significance at the 0.01 level in the analysis, as well as a buffer in case of obtaining lower totals due to weather or low traffic volume.

⁴ The team was unable to collect warnings with the 3-year historical baseline data, because they were not available in the OPD database.

The research team performed one-tailed chi-square analyses on the program site data to test the hypothesis that there would be increases in seat belt use in each of the three observation periods that followed the baseline period. The team performed additional one-tailed chi-square analyses to determine whether there were significant differences in seat belt use between the mid-program and immediate post-program periods. The researchers performed two-tailed chi-square analyses on the control site data, as the research plan included no hypotheses regarding a change in seat belt use for this group. Analyses compared and contrasted seat belt use by seating position (i.e., driver or front seat passenger) and observation period for the program and control sites. The research team conducted analyses for the full sample, and by gender, age group (i.e., < 24, 25-59, and 60+), and vehicle type (i.e., passenger car, SUV, vans, and pickup trucks).

Seat belt observation locations. The research team identified 18 seat belt observation locations for the program (Owensboro) and control (Bowling Green) sites. The team used annual average daily traffic (AADT) data from State maps available on the State website to select locations that provided relatively high volumes of traffic. The team created a spreadsheet that provided details for local observers for each selected observation location including:

- Street address/intersection—specified the location with respect to local roads.
- Latitude/Longitude—the latitude and longitude of the observation location for possible use in a GPS navigation system.
- Estimated Average Daily Traffic (ADT) (if available)—the best available indicator of traffic volume on the road to be observed.
- Enforcement—an indication of whether enforcement efforts were planned on the roadway (Yes/No/Unknown).
- Observer Positioning—the specific spot where the observer should stand to observe the selected stream of traffic.
- Direction of traffic observed—indicates which traffic stream the observer should be watching. All locations were selected to limit observations to vehicles coming from the left of the observer and in the lane closest to the observer. Observers never viewed traffic across the road. The observer may have been able to observe more than one lane in the same direction depending on travel speeds and sight lines.
- A hyperlink for a Google Maps pin map of the locations.

Data collection procedures. One independent observer conducted all seat belt observations, except for 8 hours of observations during the baseline period in Owensboro. In this one case, a second observer assisted in data collection due to scheduling constraints. The independent observer selected 15 of the 18 initial observation spots based on safety, good sight lines, anticipated sample size, and travel logistics and efficiencies. The research team conducted seat belt observations across four data collection periods including (1) pre-program, (2) 6-months mid-program, (3) immediate post-program, and (4) 6-months post-program.

The seat belt observers followed the *Uniform Criteria for State Observational Surveys of Seat Belt Use* (23 C.F.R. § 1340 2011). These criteria were followed for seat belt use observations and other data collected (i.e., four types of vehicles, gender, three age categories, and status of restraint use). The observers also recorded data collection date, times, and weather. The observers had extensive experience collecting seat belt use data for the annual statewide seat belt observations in Kentucky. The research team conducted teleconference training with the observers to review observation techniques and instructions. A research team member entered the seat belt observation data into a spreadsheet and verified accuracy of data entry by checking every 25th record.

Impact Evaluation

Research question. Did the *Buckle Up Owensboro* program have an impact on restraint use in crashes, unrestrained injury crashes, or unrestrained fatalities?

Crash, injury, and fatality data. The research team requested municipality crash data from the OPD's Records Manager. The team collected total crashes, fatal crashes, injury crashes, and property damage only crashes for each of the 3 pre-program years, the program year, and the 12-month post-program period. The team also collected counts of drivers and passengers in crashes during each period, by restraint status and injury level.

The research team collected vehicle miles traveled (VMT) data from the Kentucky Transportation Cabinet (KYTC) for the adjusted urban boundary of Daviess County, in which Owensboro comprises a large proportion. The research team also collected counts of licensed drivers residing in the four Owensboro ZIP Codes from the Kentucky Division of Driver Licensing. The research team used this data to calculate crash rates per VMT and licensed driver.

The researchers calculated the rate per 10,000 population using Owensboro-specific population data provided on the Census website.⁵ The research team could not obtain Owensboro-specific VMT as the KYTC data on VMT are at the County level. While KYTC could not provide Owensboro-specific data, historic spreadsheets permitted data extraction for Daviess County daily VMT by year (K. Dotson, Kentucky Transportation Cabinet, personal communication, October 26, 2017). By adding up the DVMT in each of the *urban* functional class roadways and multiplying by 1000, the researchers were able to approximate the Owensboro-specific VMT. Figure 1 presents a map of Owensboro city limits with the adjusted urban boundary in Daviess County overlaid, to show the mileage within the two boundaries. The hashed lines with dark black border designate the city of Owensboro, and the light green area is the adjusted urban area for which there are VMT data available. This map provides an idea of the mileage within the two boundaries. Upon the advice of KYTC, the research team used VMT within the urban boundary of Daviess County to represent Owensboro VMT.

⁵www.census.gov/quickfacts/fact/table/owensborocitykentucky,covingtoncitykentucky,bowlinggreencitykentucky,loisvillejeffersoncountybalancekentucky/PST045217

The researchers obtained counts of licensed drivers from the Kentucky Division of Driver Licensing for drivers residing in the four Owensboro ZIP Codes (42301, 42302, 42303, and 42304) (L. Woods, Resource Management Analyst III, Kentucky Division of Driver Licensing, personal communication, November 2, 2017). The Driver Licensing Resource Management Analyst provided counts of both licensed drivers and drivers with a permit.⁶ The researchers combined the counts for drivers and permitted drivers in the rate calculations.

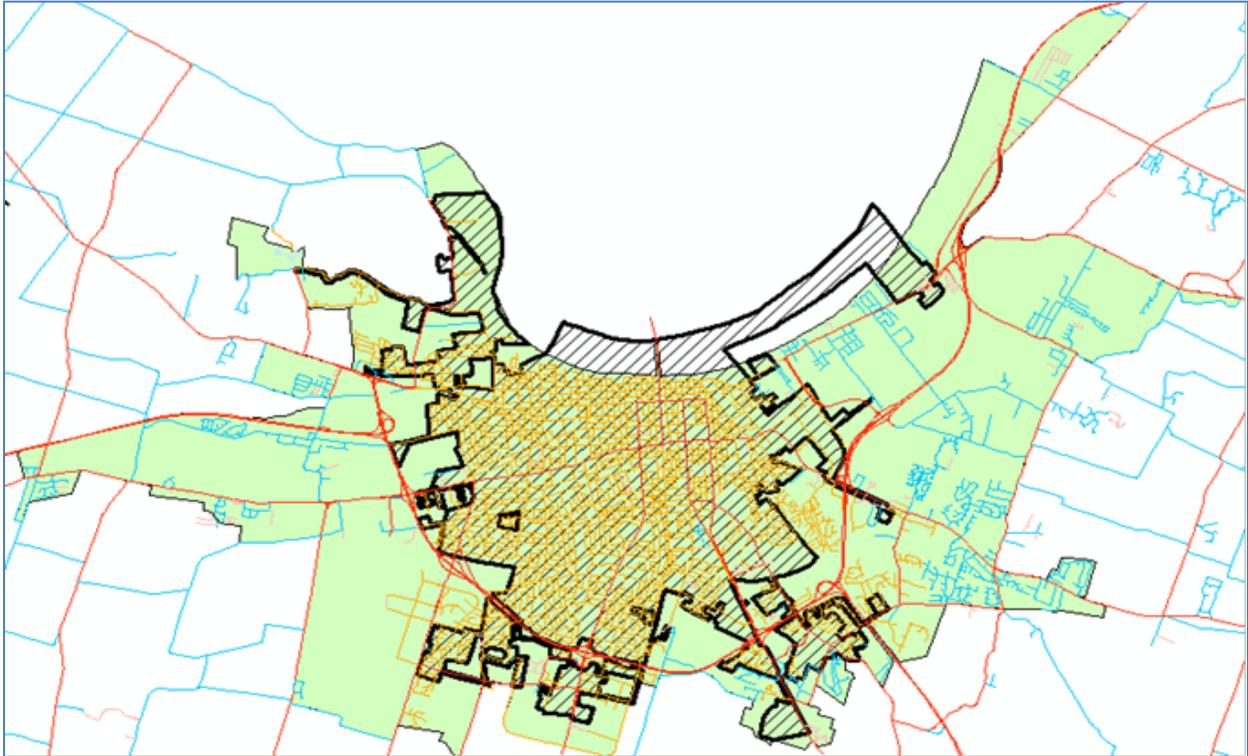


Figure 1. Map of Owensboro city limits (hashed black lines) overlaid onto urban Daviess County (green).

⁶Drivers with permits were permitted to drive alone, but restricted from driving between midnight and 6 a.m., and with only one unrelated passenger under age 20.

Results

Process Evaluation: Public Outreach Activities

Owensboro Police Department initiatives. The OPD public information officer mentioned newsworthy activities about the program (e.g., monthly 2-hour spotter and chaser seat belt enforcement, *Buckle Up for a Buck* events, and coalition meeting announcements) during daily weekday briefs with the media. However, the research team was unable to document the number of times the *Buckle Up Owensboro* program was mentioned during these briefings.

As shown in Table 4, the OPD staff reported 553 specific hours of public outreach activities for the *Buckle Up Owensboro* program (an average of 46 hours per month for the one-year period). Staff time included 24 supervisory hours and 120 hours devoted to seat belt observations in the community, Seat Belt Coalition meetings, and community and school events. In the post-program (6-month) period, OPD devoted 82 hours to the program (an average of 13 hours per month for the 6-month follow-up).

Table 4. Owensboro Public Outreach Time During the Program and Post-Program Periods

Element	12-month program	6-month post program
OPD Public Outreach Time	553 hours (46 hours/month average)	82 hours (13 hours/month average)

OPD participated in public outreach events and activities throughout the 12-month program period, including the kick-off meeting, four *Buckle Up for a Buck* events at fast-food restaurants, school sporting events, health and safety fairs, and other community events. OPD conducted the four *Buckle Up for a Buck* events during months 1, 3, 7, and 10 to generate awareness of belt use and earned media coverage (e.g., print, broadcast, online). OPD conducted one *Buckle Up for a Buck* event during the fifth month of the 6-month post-program period.

The *Buckle Up Owensboro* campaign was prominently featured in OPD's 2015 Annual Report including a photo on the cover (Black, 2016). The *Buckle Up Owensboro* logo remains featured on the OPD homepage (<https://police.owensboro.org/>). Clicking on the logo routes the visitor to a press release announcing the start of the campaign (Black, 2015). The final paragraph includes the contact information to learn more about the campaign and the Seat Belt Coalition. The website also provides the two-sided seat belt information card. The research team did not collect visitor counts or activity data for the website, therefore, the team does not know site visitation numbers or how many visitors clicked on the *Buckle Up* logo and/or viewed the press release. OPD held a press conference to mark the end of the 12-month program and shared program outcomes.

Signs and educational material. NHTSA provided funding to OPD for signs and other educational material to support their public outreach and enforcement efforts (see Table 5). The logo and slogan (*Buckle Up Owensboro*) was placed on all educational and outreach materials. OPD used the signage shown in Table 5.

Table 5. Signs and Educational Material Used in OPD’s Public Outreach and Enforcement Efforts

Type	Number	Use
Vinyl Banners (3 ft. x 5 ft.)	2	Kickoff, community events
Magnetic Decals	40	Placed on OPD traffic unit patrol vehicles
Window Clings	200	Displayed on store-front windows, community centers, utility companies
Aluminum Signs (18” x 24”)	40	Displayed by businesses, restaurants, community centers, utility companies
Aluminum Signs (24” x 36”)	6	Displayed at key gateway road entrances to the city. The combined average daily traffic count for the six locations was 106,057. This generated exposure (impressions) of the program message to motorists entering the city.
Electronic Message Boards (3” x 35.2”)	2	To promote <i>Buckle Up Owensboro</i> message on “speed trailers.” ⁷
Hand-Out Cards	2,000	Distributed at traffic stops and during program events including <i>Buckle Up for a Buck</i> (i.e., coupons, dollar bills, and handouts provided at drive-through lanes of fast-food restaurants) and school events (e.g., basketball games).

Seat Belt Coalition. OPD formed a *Buckle Up Owensboro* Seat Belt Coalition within the first month of the program. The Coalition’s goal was to “focus participants and the larger community on traffic safety as a public good, and in particular, the use of seat belts as a way to reduce injuries and deaths in motor vehicle crashes.” OPD encouraged the coalition members to “get the message out via signs, logo use, safety meetings, and other activities,” including distribution of a seat belt information card. During the program period, coalition attendance grew from 18 members representing 15 partners at the first meeting in November 2015, to 29 members representing 20 partners at the last meeting (see Table 7). The meetings had between 19 and 48 attendees including the law enforcement officers involved in the program. Over the six program period meetings, the number of partners averaged 15, and the number of attendees averaged 20. The first post-program meeting, conducted two months after the program ended, had similar partner representation (14 coalition partners and at least 14 coalition members). However, at the second post-program coalition meeting (6 months post-program), the number of partners represented declined by more than half.

The deputy chief of the OPD led all coalition Meetings. The major who served as program coordinator, the sergeant in charge of the traffic unit, and the records manager were also present at all meetings.

Table 6 presents the Seat Belt Coalition partners who participated during the 12-month program and the 6-month post-program periods.

⁷ Portable speed signs that flash the speed of an approaching motorist.

During the program period, coalition attendance grew from 18 members representing 15 partners at the first meeting in November 2015, to 29 members representing 20 partners at the last meeting (see Table 7). The meetings had between 19 and 48 attendees including the law enforcement officers involved in the program. Over the six program period meetings, the number of partners averaged 15, and the number of attendees averaged 20. The first post-program meeting, conducted two months after the program ended, had similar partner representation (14 coalition partners and at least 14 coalition members). However, at the second post-program coalition meeting (6 months post-program), the number of partners represented declined by more than half.

The deputy chief of the OPD led all coalition Meetings. The major who served as program coordinator, the sergeant in charge of the traffic unit, and the records manager were also present at all meetings.

Table 6. Seat Belt Coalition Partners

Partner type	12-month program period	6-month post-program period
Government Agencies	<ul style="list-style-type: none"> • City of Owensboro • Owensboro Municipal Utilities • Owensboro Sanitation Department • Daviess County Coroner’s Office • Daviess County School System • Owensboro Transit System 	<ul style="list-style-type: none"> • Owensboro Sanitation Department • Daviess County Coroner’s Office • Owensboro Transit System
Law Enforcement and Emergency Services	<ul style="list-style-type: none"> • Citizen’s Police Academy & Alumni Association • Daviess County Fire Department • Daviess County Detention Center • Daviess County Sheriff’s Office • Daviess Emergency Management • Owensboro Fire Department • OPD Yellow Ambulance 	<ul style="list-style-type: none"> • Daviess County Sheriff’s Office • Daviess County Fire Department • OPD Yellow Ambulance
Colleges	<ul style="list-style-type: none"> • Brescia University • Kentucky Wesleyan College 	<ul style="list-style-type: none"> • Brescia University
High Schools	<ul style="list-style-type: none"> • Owensboro High School • Apollo High School • Daviess County High School • Owensboro Catholic High School • Trinity High School • Whitesville High School 	<ul style="list-style-type: none"> • Owensboro High School • Owensboro Catholic High School • Trinity High School • Whitesville High School
Corporations/ Businesses	<ul style="list-style-type: none"> • AAA Insurance • Boardwalk Pipeline Partners • H.L. Neblett Community Center • Hunter Douglas • Independence Bank • Kenergy • Lowes • Owensboro Federal Credit Union 	<ul style="list-style-type: none"> • Lowes • Owensboro Health Regional Hospital • Southern Star

Partner type	12-month program period	6-month post-program period
	<ul style="list-style-type: none"> • Owensboro Health Regional Hospital • Owensboro Physical Therapy • Southern Star • State Farm Insurance • Unifirst Bank • Wal-Mart • Western Kentucky Blood Center 	
Churches	• Wings Avenue Church	None recorded
Media	• <i>Owensboro Messenger-Inquirer</i>	None recorded
Activists/Victims	• Mischelle Miller (Buckle up for Megan)	None recorded

Table 7. Seat Belt Coalition Meeting Attendance During the Program and Post-Program Periods

Meeting	Coalition Partner Groups Represented	Coalition Member Attendees*	Law Enforcement Attendees	Total Attendees
12-month program period				
November 2015	15	18	8	26
December 2015	10	13	6	19
February 2016	9	13	7	20
April 2016	13	20	14	34
August 2016	21	27	7	34
October 2016	20	29	19	48
6-month post-program period				
January 2017	14	14+	12	26+
April 2017	6	6+	15	21+

* Number of coalition member attendees was larger than the number of coalition partner groups represented due to multiple attendees from one partner group.

Coalition partner outreach during the program and post-program period is listed in Appendix 2A. During the program, many of the partners participated in posting the campaign slogan and message on their vehicles (e.g., utilities, fire department, and police) and properties (e.g., city gateway entrances, utility companies, fire departments, community center, schools, and businesses). The logo was also placed on partner websites. In addition to the OPD website, the *Buckle Up Owensboro* logo was placed on the Owensboro Health Regional Hospital and Federal Credit

Union websites and on approximately 25 other business sites including State Farm Insurance, Specialty Foods, Western Kentucky Regional Blood Center, and Kenergy Electric Corp.

The local schools were active in the program. Five high schools participated in the program, which had the potential to reach 5,000 students and 600 staff. School counselors and selected students attended coalition meetings to share their ideas with OPD and the other coalition partners. The schools displayed *Buckle Up Owensboro* signs on their properties.

Daviess County High School (1,730 students, 130 faculty/staff) used the school's electronic marquee to convey seat belt information and worked to have a *Buckle Up* logo loaded onto students' computers. Owensboro High School (OHS) (1,300 students, 121 faculty/staff) added a *Buckle Up* logo to the school's electronic marquee, conducted seat belt use observations of students and staff, and posted seat belt selfies on the school website. The schools encouraged students to take a seat belt pledge. OHS students also promoted the program in association with a *Friday After 5* event. This event was a free, award-winning, summer-long music festival and street fair along the riverfront. In addition, Apollo High School (1,300 students, 124 faculty/staff) placed a *Buckle Up Apollo* sign in front of the school and distributed buckle up flyers and magnets to students when they obtained their driver's license.

The schools were also involved with a contest to create a video promoting the program. The coalition committee voted on the winning video at one of the meetings. The schools also participated in a challenge to have the highest seat belt use rate by their students. State Farm Insurance provided a trophy, which the coalition initiated as a traveling trophy during the first coalition meeting to spark friendly competition. The coalition awarded the winning school with the trophy at a football game. The schools also participated in promoting the program message during homeroom announcements and hanging posters in the hallways.

OPD teamed with Kentucky Wesleyan College Student Activity Program Board and Brescia University (both schools are coalition members and have a combined enrollment of approximately 1,300 students) and the *Buckle Up for Megan* campaign in September 2016 to demonstrate the importance of seat belts. The family of Megan Miller, a student who was killed in a motor vehicle crash when unbuckled, brought its rollover simulator to both campuses to illustrate what happens when motor vehicle occupants are not properly restrained.

The post-program period showed a limited engagement of coalition partners and activities (see Appendix 2A). The fire department reminded employees to wear their seat belts, and their fire engines and trucks all had seat belt reminders. One of the utility companies sent email reminders to their employees to buckle up, and reminded them about the black boxes on their company-owned vehicles that measured speed, braking, and seat belt use. In this period, the *Buckle Up Owensboro* signs remained in place at gateway entrances into Owensboro.

Social media. The OPD used social media to promote the program and its message. The OPD's public information officer took advantage of Facebook and Twitter to announce the initial program kick-off at a press conference, encourage participation at coalition meetings, promote *Buckle Up for a Buck* events, and spread information about related school activities (see Appendix 2B for a full listing of social media activity). Table 8 presents OPD social media activity in the program and post-program periods.

Table 8. OPD Social Media Activity

OPD Activity Featuring <i>Buckle Up Owensboro</i>	12-Month Program Period	6-Month Post-Program Period
Facebook Posts	49	10
Facebook followers (end of period)	12,315	14,123
Twitter Posts	25	3
Twitter followers (end of period)	2,768	3,556

OPD was creative with social media. For example, OPD’s Facebook page featured a link to the video, *Why You Should Always Wear a Seat Belt*. OPD posted information toward the end of the 12-month program period about National Teen Driver Safety Week. This post included the *Buckle Up Owensboro* logo and a link to NHTSA’s *5 to Drive* campaign.

During the 6-month post-program period, the OPD used its Facebook and Twitter feeds to promote the importance of buckling up during the busy Thanksgiving travel period and New Year’s Eve (the latter was coupled with a designated driver message). Posts and tweets included photos of quarterly meetings held in January and April, and they congratulated Owensboro Catholic High School for receiving the traveling high school trophy for 100 percent seat belt compliance.

Coalition partners also used social media to promote the program. There were 21 posts and 12 web page articles mentioning OPD activities, Coalition activities, and the seat belt safety message. However, during the post-program period, Coalition partners used social media two times to deliver the seat belt message (see Appendix 2A).

Earned media. The program generated earned media, quantified by study period in Table 9, described in more detail in Appendix 2B, and summarized as follows. The initial kick-off event held on October 15, 2015 generated media coverage during the 12-month program period. WBKR Radio (FM, country music) ran a “teaser” 3 days prior to the press conference that provided background on the campaign and the date of the event, and they included a personal endorsement about the importance of seat belt use from the afternoon drive-time host.

Upon completion of the campaign, the OPD held a press conference in early November 2016. This event was covered by the *Messenger-Inquirer* newspaper (25,100 paid subscribers Mon-Sat) and resulted in an 11-paragraph story on the front page of the local section (and online) that carried the headlines, *Safety measure completes first year* and *Buckle Up campaign has increased seat belt usage, OPD officials say* (Mayse, 2016). The story highlighted the increase in seat belt use and the work of the coalition with a focus on the activities of the five high schools. The ABC and NBC affiliates covered the event showing 45- and 47-second stories with interviews during the evening newscasts. ABC and NBC posted these stories on the television stations' websites with photos. The Daviess County edition of *SurfkyNEWS* (a free online newspaper covering breaking news and sports across the State) ran a story with a photo the day after the event, while *Owensboro Living* (online daily, approximately 14,700 regular followers) ran a 7-paragraph story with a photo of coalition members in *The Buzz* on November 11. OPD used its social media channels to push out photos of the event as well as images of Yellow Ambulance (a coalition member) employees joining the effort to educate others about the importance of seat belts.

During the 6-month post-program period, the *Messenger-Inquirer* newspaper ran a front-page story (Jones, 2017) on the *Buckle Up Owensboro* campaign on April 16, 2017. It addressed the positive impact the campaign was having on seat belt use in Owensboro and pointed out Owensboro Catholic High School's seat belt compliance rate, calling it "staggering." The article also highlighted activities associated with the coalition, high school, and enforcement.

Also during the 6-month post-program period, OPD's monthly 2-hour spotter and chaser seat belt enforcement (February 8, 2017) was covered by WFIE's (NBC affiliate) 5 p.m. news broadcast, after being promoted on the station's Twitter feed (61,500 followers) by the reporter who filed the story.

Table 9. Earned Media Activity by Study Period

Media Type	12-Month Program Period	6-Month Post-Program Period
Radio	3	1
TV	7	2
Newspaper	4	3
Website	9	3

Process Evaluation: Enforcement Activity

OPD tracked their enforcement efforts for the *Buckle Up Owensboro* program. OPD also participated in discussions with the research team at mid and post program.

Law enforcement training and observations. All OPD staff participated in the *Below 100* program in February 2016. *Below 100* is a national training initiative to reduce the number of line-of-duty deaths that includes educating officers about seat belts, chest protectors, and reckless speeding.

OPD provided roll call training on seat belt use, seat belt enforcement, and the *Buckle Up Owensboro* program. OPD also conducted in-house seat belt observations at the police station to reinforce the training. OPD reported officer belt use increased from 91.2 percent in February 2016 to 96.6 percent in August 2016.

Program-specific citations and warnings. During the program period, each patrol officer focused specifically on enforcement of occupant protection laws for 30 minutes per shift. In addition, officers conducted monthly seat belt enforcement for two hours on the first Wednesday of each month using two officers, one as a spotter, the other as a chase vehicle. During the 12-month program period, patrol officers reported 2,940 hours focusing on enforcement of occupant protection laws and reported 2,914 direct enforcement contacts, which was nearly one contact per hour. During the 6-month post-program period, patrol officers reported 648 hours enforcing occupant protection laws (at a rate of 0.6 contacts per hour). Table 10 shows the outcomes of this program-specific enforcement activity.

Table 10. Program-Specific Enforcement Activity by OPD Officers During and After the Program Period

Citation or Warning Type	Program Period 10/21/2015 - 10/20/2016		6-Month Post Program Period 10/21/2016 - 4/20/2017	
	Number ¹	Per Hour Rate	Number ²	Per Hour Rate
Seat Belt Citation	1,067	0.36	157	0.24
Seat Belt Written Warning	1,323	0.45	124	0.19
Seat Belt Verbal Warning	484	0.16	101	0.16
Child Restraint Citation	10	0.0034	6	0.0093
Child Restraint Written Warning	0	0.0000	0	0.0000
Child Restraint Verbal Warning	1	0.0003	0	0.0000
Booster Seat Citation	24	0.0082	1	0.0015
Booster Seat Written Warning	4	0.0014	0	0.0000
Booster Seat Verbal Warning	1	0.0003	0	0.0000
Total Direct Enforcement Contacts	2,914	0.99	389	0.60

¹Program-Specific Citations and Warnings. Campaign Enforcement Data by month. October 21, 2015 – October 20, 2016. Source: Jim Greenland, Owensboro PD Records Unit Manager - Seat Restraint Campaign database sorted by Sector

²Seat Restraint Enforcement Citations, Speeding Enforcement Citations, Distracted Driving Enforcement Citations, DUI Enforcement Citations. Source: Kim Quinn, Owensboro PD Records Unit Manager - KyOps Extract (2017, July)

Overall enforcement activity (program and control sites). OPD Records Department tracked all enforcement activity during the program and post-program period for the project. This included the enforcement activity during the 30-minute seat belt patrols per shift, the 2-hour spotter and chaser enforcement patrols once a month (i.e., the program-specific activity), in addition to citations and warnings given outside of the specified patrols during the program and post-program periods. At the end of the program period, the researchers requested enforcement activity from the Bowling Green Police Department (control site) for comparison. Table 11 presents counts of occupant protection citations by type, and other designated types of citations by OPD officers in 3-year pre-program period, the program period, and the 12-month post-program period. Table 12 presents comparison data for Bowling Green Police Department (the control site) during the same periods. The counts reflect activity both within and outside of the program-specific enforcement activities.

These tables also present the percent change in occupant protection citations for the 12-month program period compared to the average of the 3 pre-program years, the percent change for the 12-month post-program period compared to the average of the 3 pre-program years, and the percent change between the post-program period and the 12-month program period.

As seen in Table 11, total occupant protection citations reported by OPD averaged 1,691 over the pre-program period. The program year total was 1,736 citations, representing a 2.7 percent increase. The 1-year post-program period count was 1,340 citations, representing a 20.7 percent decrease from pre-program period numbers.

As seen in Table 12, the Bowling Green Police Department reported an average of 1,135 occupant protection citations in the pre-program period. During OPD's program year, the Bowling Green PD reported 566 occupant protection citations, a 50 percent decrease from the prior 3-year average. During OPD's 12-month post-program period, Bowling Green Police Department reported 597 occupant protection citations (a 47.4% decrease from pre-program period numbers).⁸

Figure 2 through Figure 5 present the frequency data graphically, comparing sites and periods, for all occupant restraint citations (Figure 2), seat belt citations (Figure 3), child restraint citations (Figure 4), and booster seat citations (Figure 5).

⁸ The research team contacted the Bowling Green PD to uncover possible reasons for the large decrease in occupant protection citations; however, the BGPLD did not provide an explanation.

Table 11. Citations Written by Owensboro Officers Both Within and Outside of Program-Specific Enforcement Activities Before, During, and After the Program Period

Total Citations by Type and Year (Dates): Owensboro (Program Site)									
Citation Type	Pre-Program ¹				Program Period ²	12-Months Post-Program ^{3, 4}	% Change: Program Year Compared to Average of 3-Year Pre-Program ⁵	% Change: Post-Program Period Compared to Average of 3-Year Pre-Program ⁶	% Change: Post-Program Period Compared to Program Period ⁷
	10/21/2012-10/20/2013	10/21/2013-10/20/2014	10/21/2014-10/20/2015	3-Year Average	10/21/2015-10/20/2016	10/21/2016-10/20/2017			
Occupant Protection Total	1,277	1,545	2,250	1,690.7	1,736	1,340	2.7%	-20.7%	-22.8%
Seat Belt	1,229	1,461	2,133	1,607.7	1,664	1,267	3.5%	-21.2%	-23.9%
Child Restraint	30	46	36	37.3	29	36	-22.3%	-3.6%	24.1%
Booster Seat	18	38	81	45.7	43	37	-5.8%	-19.0%	-14.0%
Speeding	1,080	1,091	989	1,053.3	484	719	-54.1%	-31.7%	48.6%
Driving Under the Influence (DUI)	385	494	406	428.3	383	332	-10.6%	-22.5%	-13.3%
Distracted Driving	74	108	78	86.7	61	176	-29.6%	103.1%	188.5%
TOTAL	2,816	3,238	3,723	3,259.0	2,664	2,567	-18.3%	-21.2%	-3.6%

¹ Seat Restraint Enforcement Citations, Speeding Enforcement Citations, Distracted Driving Enforcement Citations, DUI Enforcement Citations. Source: Jim Greenland, Owensboro PD Records Unit Manager - KyOps Extract (2016, October)

² Program-Specific Citations and Warnings. Campaign Enforcement Data by month. October 21, 2015 – October 20, 2016. Source: Jim Greenland Owensboro PD Records Unit Manager - Seat Restraint Campaign database sorted by Sector. Includes citations both during routine restraint use enforcement and during 30-minute seat belt patrols per officer shift, and 2-hour spotter and chaser enforcement patrols once a month.

³ Seat Restraint Enforcement Citations, Speeding Enforcement Citations, Distracted Driving Enforcement Citations, DUI Enforcement Citations. Source: Kim Quinn, Owensboro PD Records Unit Manager - KyOps Extract (2017, July)

⁴ Seat Restraint Enforcement Citations, Speeding Enforcement Citations, Distracted Driving Enforcement Citations, DUI Enforcement Citations. Source: Kim Quinn, Owensboro PD Records Unit Manager - KyOps Extract (2017, October)

⁵ Percentage calculated as follows: $([\text{Program Year Value}] - [\text{3-Year Average Value}] / [\text{3-Year Average Value}] * 100$

⁶ Percentage calculated as follows: $([\text{Post-Program Year Value}] - [\text{3-Year Average Value}] / [\text{3-Year Average Value}] * 100$

⁷ Percentage calculated as follows: $([\text{Post-Program Year Value}] - [\text{Program Year Value}] / [\text{Program Year Value}] * 100$

Table 12. Citations Written by Officers in Bowling Green (the Control Site) Before, During, and After the Program Period

Total Citations by Type and Period (Dates): Bowling Green (Control Site) ¹									
Citation Type	Pre-Program				Program Period	12-Months Post-Program	% Change: Program to Average of 3-Year Pre-Program ²	% Change: Post-Program to Average of 3-Year Pre-Program	% Change: Program to Post-Program ⁴
	10/21/2012-10/20/2013	10/21/2013-10/20/2014	10/21/2014-10/20/2015	3-Year Average	10/21/2015-10/20/2016	10/21/2016-10/20/2017			
Occupant Protection Total	1,416	1,223	767	1,135.3	566	597	-49.9%	-47.4%	5.5%
Seat Belt	1,354	1,169	722	1,081.7	530	518	-2.3%	-52.1%	-2.3%
Child Restraint	38	38	33	36.3	27	32	18.5%	-11.9%	18.5%
Booster Seat	24	16	12	17.3	9	7	-22.2%	-59.6%	-22.2%

¹ Seat Restraint Enforcement Citations. Source: Jen Edwards, Records Management Coordinator – Bowling Green Police Department Extract (2017, November)

² Percentage calculated as follows: $([\text{Program Year Value}] - [\text{3-Year Average Value}] / [\text{3-Year Average Value}]) * 100$

³ Percentage calculated as follows: $([\text{Post-Program Year Value}] - [\text{3-Year Average Value}] / [\text{3-Year Average Value}]) * 100$

⁴ Percentage calculated as follows: $([\text{Post-Program Year Value}] - [\text{Program Year Value}] / [\text{Program Year Value}]) * 100$

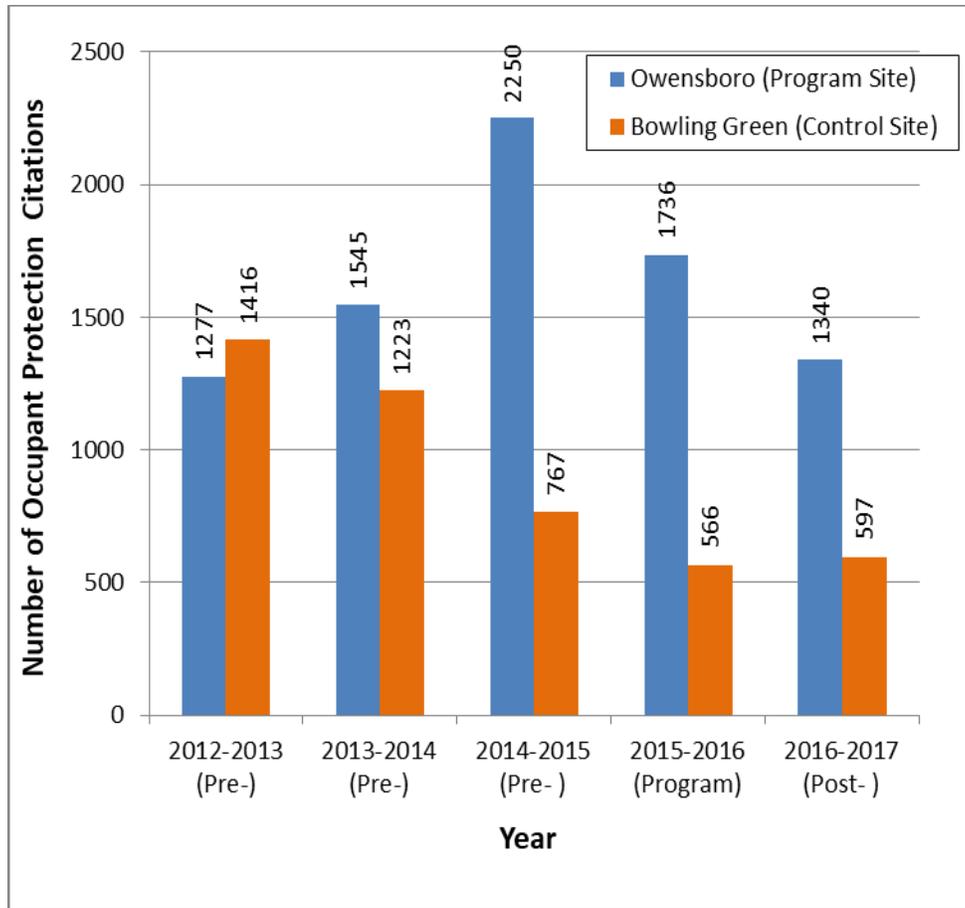


Figure 2. Total number of occupant protection citations, by year, written by officers in Owensboro and Bowling Green police departments. Includes seat belt, child restraint, and booster seat citations

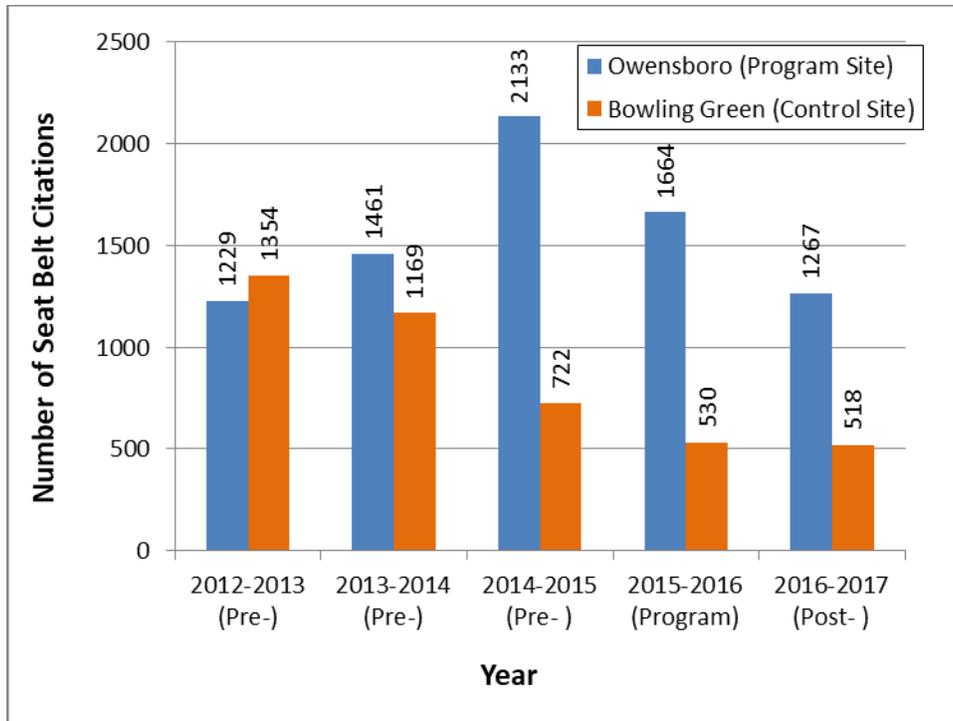


Figure 3. Number of seat belt citations, by year, written by officers in Owensboro and Bowling Green police departments.

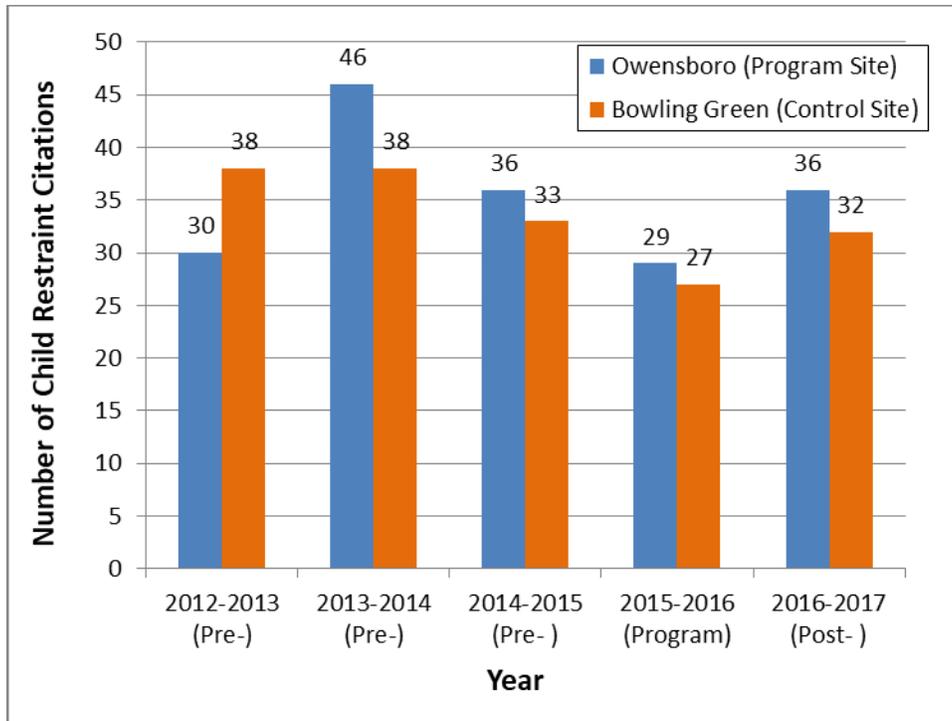


Figure 4. Number of child restraint citations, by year, written by officers in Owensboro and Bowling Green police departments

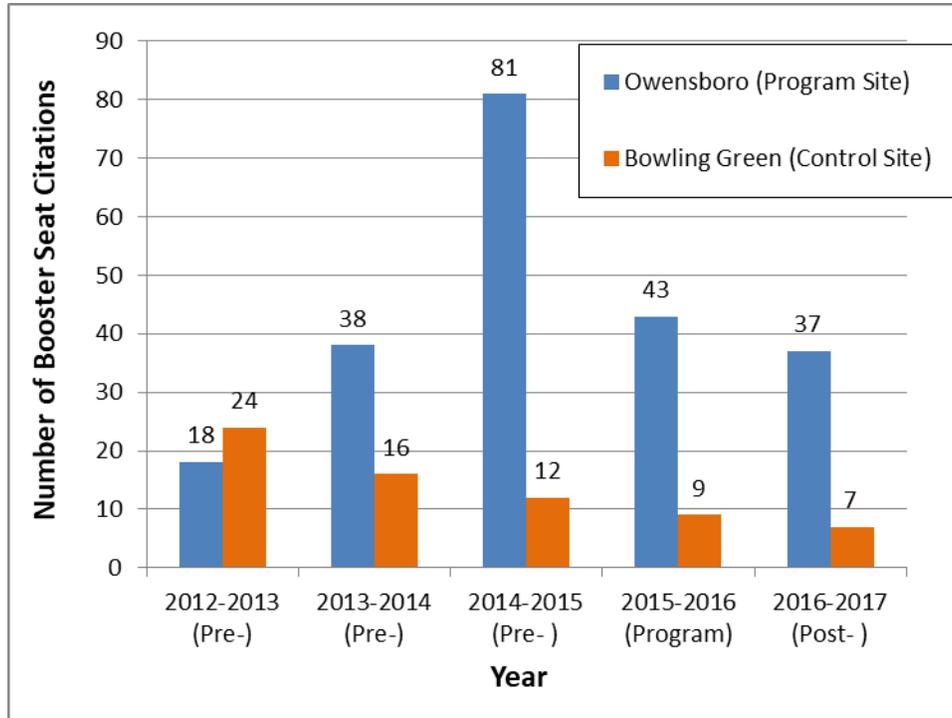


Figure 5. Number of booster seat citations, by year, written by officers in Owensboro and Bowling Green police departments

Outcome Evaluation

Seat belt use. Observers recorded seat belt use of more than 2,500⁹ drivers and front-seat passengers at the program (Owensboro) and control (Bowling Green) sites during each of four study phases. Appendix 2C presents the seat belt observation form. Appendix 2D presents counts of drivers and front seat passengers and their restraint status, by age group, gender, and vehicle type, in Owensboro and Bowling Green, respectively.

Figure 6 displays the change in seat belt use for Owensboro and Bowling Green across the four study periods, for the total sample of drivers and front-seat passengers (all ages, both genders, and all vehicle types combined). Across the full sample and for drivers and front-seat passengers separately, seat belt use at the program site showed a significant increase from baseline to both the mid- and immediate post-program observations ($X^2=41.20$, $df = 1$, $p<0.0001$; $X^2=34.03$, $df = 1$, $p<0.0001$). However, the research team did not measure a sustained increase at the 6-month post-program observation either for drivers or for front seat passengers.

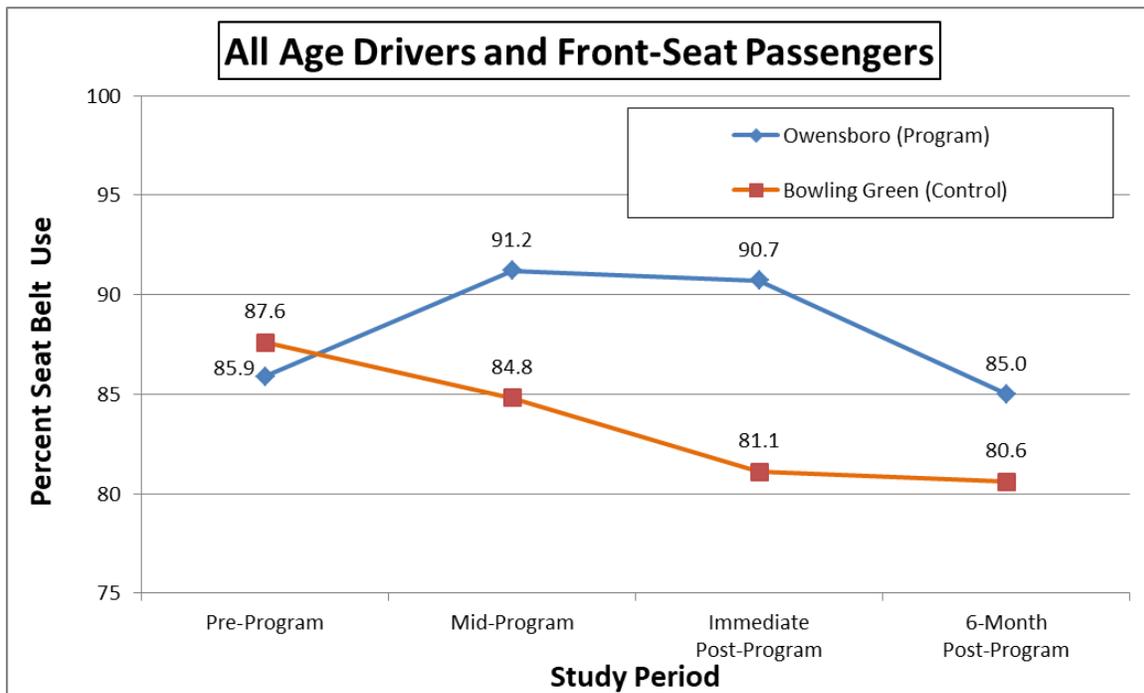


Figure 6. Percentage observed seat belt use, by study group and phase, for the total sample of drivers and front-seat passengers

⁹ The power analysis was conducted to calculate the *minimal* sample size to detect change. The research team collected more observations than required for the specified power of 0.90.

Analyses by occupant gender at the program site followed the same pattern of significant increases in seat belt use at mid- and immediate post-program observations but not sustained at 6-months post-program (see Figure 7). Specifically, for men the increase between baseline and mid-program was significant ($X^2=27.32$, $df = 1$, $p<0.0001$) as well as the increase from baseline to immediate post-program ($X^2=8.45$, $df = 1$, $p=0.002$). For women, seat belt use increased significantly from the pre- to the mid-program phase ($X^2=12.84$, $df = 1$, $p<0.0002$) as well as from the pre- to immediate post-program phase ($X^2=31.09$, $df = 1$, $p<0.0001$).

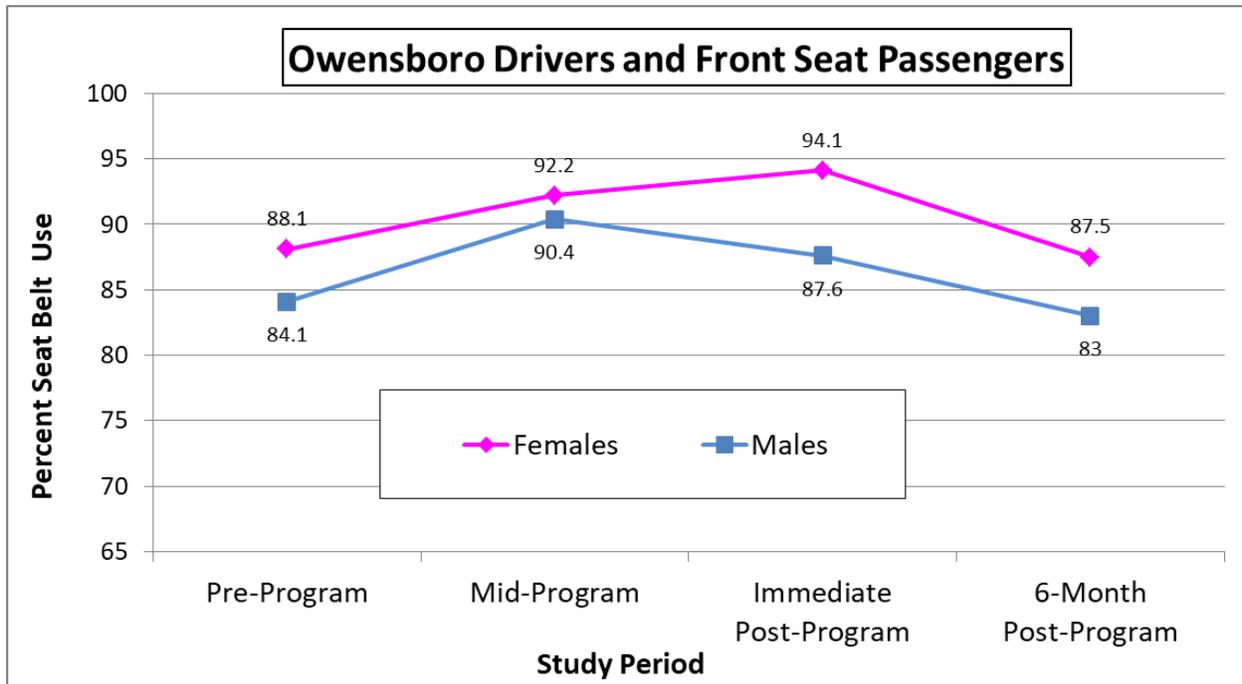


Figure 7. Percentage observed seat belt use by gender and study phase, for the total sample of Owensboro drivers and front-seat passengers

At the control site, seat belt use decreased significantly for men and women across the four study periods with only one comparison suggesting no change from baseline.

The research team also looked at the effect of the program on seat belt use by estimated age (see Figure 8). Occupants (drivers and front seat passengers combined) 25 to 59 years old showed significant improvements in seat belt use at both mid- and immediate post-program observations. Specifically, their observed seat belt use went from 85.0 percent at baseline to 91.6 percent at mid-program ($X^2=44.98$, $df = 1$, $p<0.0001$) and 90.9 percent at immediate post-program ($X^2=37.63$, $df = 1$, $p<0.0001$).

Drivers 16 to 24 years old showed no significant increases in seat belt use at any study phase. Passengers ages 16-24 showed a significant increase in usage from baseline to mid-program ($X^2=2.82$, $df = 1$, $p=0.047$), which was not sustained at the immediate post- or 6-months post-program observations. There were no significant increases in seat belt use for drivers or passengers age 60+ in the program site. No age group showed significant increases in seat belt use at the 6-month post-program observation. Drivers and front seat passengers in all three age groups at the control site showed either no change or a decrease in seat belt use across the four study phases.

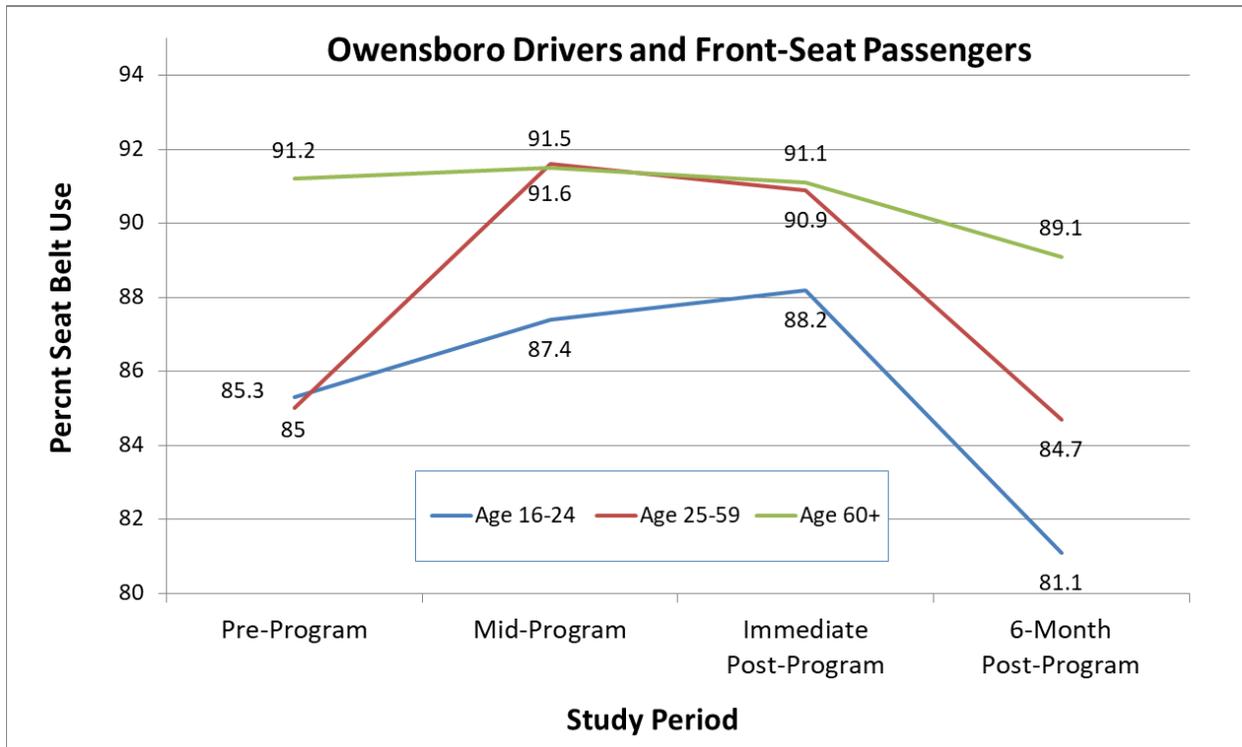


Figure 8. Percentage observed seat belt use by age and study phase, for the total sample of Owensboro drivers and front-seat passengers

Looking at vehicle type, Figure 9 shows that occupants of pickup trucks had the lowest observed seat belt use rate at baseline of the vehicle types observed at the program site. While occupants of passenger cars, vans, SUVs, and pickup trucks in the program site showed significant increases in observed seat belt use at mid-program and immediate post-program, only front seat passengers in pickup trucks maintained a significantly higher usage rate at 6-months post-program (84.3%) compared to baseline (75.0%). SUV drivers showed significant increases in observed seat belt use only at mid-program (92.1%, from 89.2% at baseline), and SUV front seat passengers only at immediate post-program (95.6%, from 89.5% at baseline). Front seat passengers of vans in the program site showed no significant change in observed seat belt use across the entire study period. There were no increases in seat belt use for occupants of any vehicle type at the control site.

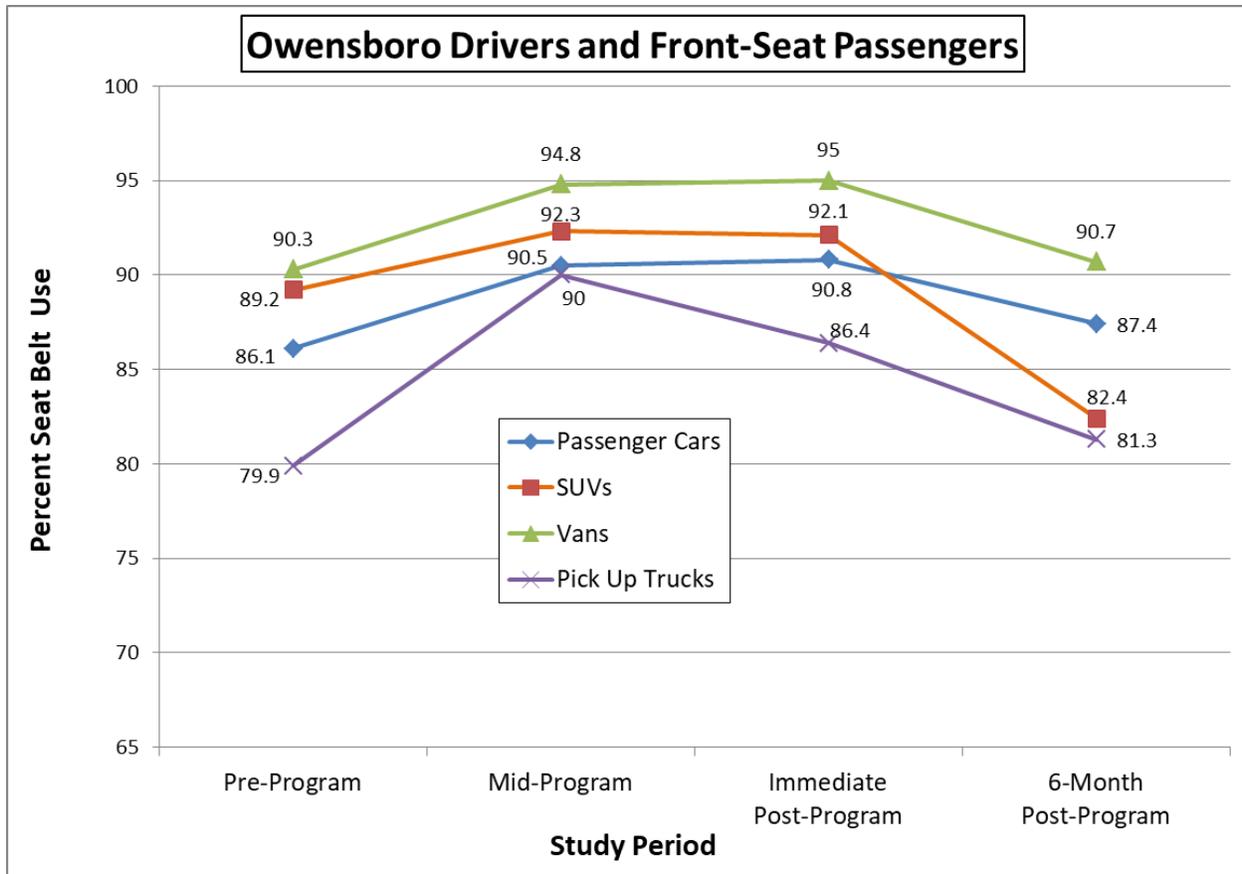


Figure 9. Percentage observed seat belt use by vehicle type and study phase, for the total sample of Owensboro drivers and front-seat passengers

Finally, the researchers analyzed differences in seat belt use by gender, age group, and vehicle type between the mid- and immediate post-program phase. At the program site, the only significant increase was observed for females ($\chi^2=3.62$, $df = 1$, $p<0.03$, for passengers and drivers combined). Significant *decreases* were observed for male drivers, male front seat passengers, and drivers of pickup trucks.

At the control site, the research team observed only significant *decreases* in seat belt use between the mid- and immediate post program phases. These decreases were found across the total sample of both drivers and front seat passengers, as well as for female drivers, drivers younger than 24 and those 25 to 59, and drivers of passenger cars.

Table 13 summarizes the chi-square test findings for the program site for seat belt use at pre-program compared to mid-, immediate-, and 6-months post-program, and also between the mid- and immediate post-program phases. It identifies where changes in seat belt usage rates were significant for drivers and front seat passengers at the program site, across the full sample, as well as by gender, age group and vehicle type.

Table 13. Summary of Differences in Observed Seat Belt Use by Study Phase for the Program Site

Program Group Occupant	Significant Changes, and Direction of Change in Observed Seat Belt Use for Program Site (Owensboro)			
	Pre-Program to Mid-Program	Pre-Program to Immediate Post-Program	Pre-Program to 6-Months Post-Program	Mid-Program to Immediate Post-Program
Total	increase	increase	n.s.*	n.s.
Driver	increase	increase	n.s.	n.s.
Front Seat Passenger	increase	increase	n.s.	n.s.
Female	increase	increase	n.s.	increase
Driver	increase	increase	n.s.	n.s.
Front Seat Passenger	increase	increase	n.s.	n.s.
Male	increase	increase	n.s.	decrease
Driver	increase	increase	n.s.	decrease
Front Seat Passenger	increase	increase	n.s.	decrease
Age ≤ 24	n.s.	n.s.	n.s.	n.s.
Driver	n.s.	n.s.	decrease	n.s.
Front Seat Passenger	increase	n.s.	n.s.	n.s.
Age 25-59	increase	increase	n.s.	n.s.
Driver	increase	increase	n.s.	n.s.
Front Seat Passenger	increase	increase	n.s.	n.s.
Age 60+	n.s.	n.s.	n.s.	n.s.
Driver	n.s.	n.s.	n.s.	n.s.
Front Seat Passenger	n.s.	n.s.	n.s.	n.s.
Passenger Car	increase	increase	n.s.	n.s.
Driver	increase	increase	n.s.	n.s.
Front Seat Passenger	increase	n.s.	n.s.	n.s.
SUV	increase	increase	decrease	n.s.
Driver	increase	n.s.	decrease	n.s.
Front Seat Passenger	n.s.	increase	decrease	n.s.
Van	increase	increase	n.s.	n.s.
Driver	increase	increase	n.s.	n.s.
Front Seat Passenger	n.s.	n.s.	n.s.	n.s.
Pickup Truck	increase	increase	n.s.	decrease
Driver	increase	increase	n.s.	decrease
Front Seat Passenger	increase	increase	increase	n.s.

* n.s. means “non-significant”

Impact Evaluation

Table 14 presents counts of OPD-reported crashes by study period. It includes crashes involving motorcyclists and bicyclists and their resulting deaths and injuries. The research team could not remove motorcyclist and bicyclist data from this dataset because OPD provided summary level data tables for crash types that did not distinguish helmet use from seat belt use within the “restraint use” category (helmet use was grouped together with “restraint” use, as opposed to a separate category, so motorcyclist, bicyclist, and motor vehicle occupants were not distinguishable). However, the team could remove counts of occupants restrained by helmets (i.e., the motorcyclists and bicyclists) for subsequent tables, as these were distinguished in the OPD occupant-level data files.

Table 14. Counts of OPD-Reported Crashes, by Study Period

Owensboro (Program Site)						
Period (Dates)	Total Crashes	Fatal Crashes	Injury Crashes	Property Damage Only	Number Killed	Number Injured
Pre-Program¹ 10/21/2012 – 10/20/2013	2,956	2	297	2,657	2	406
Pre-Program¹ 10/21/2013 – 10/20/2014	2,984	3	278	2,703	3	375
Pre-Program¹ 10/21/2014 –10/20/2015	3,457	3	355	3,099	3	477
Program¹ 10/21/2015 – 0/20/2016	3,602	5	374	3,223	5	542
12-Month Post- Program 10/21/2016 - 10/20/2017	3,608	2	333	3,273	2	453
1st 6-Month Post- Program² 10/21/2016 – 4/20/2017	1,739	1	158	1,581	1	209
2nd 6-Month Post- Program³ 4/21/2017 – 10/20/2017	1,869	1	175	1,692	1	244

¹ Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Jim Greenland, Owensboro PD Records Unit Manager - KyOps Canned Extract (2016, October)

² Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Kim Quinn, Owensboro PD Records Unit Manager – KyOps Canned Extract (2017, July)

³ Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Kim Quinn, Owensboro PD Records Unit Manager - KyOps Canned Extract (2017, October).

Occupant protection and injuries in crashes. Table 15 presents OPD-reported data, showing counts of crash-involved drivers by study period and their restraint status, as well as the number killed and injured by police-reported restraint status. The researchers excluded counts of motorcyclists and bicyclists as drivers and passengers in these crash-reported data, and their associated helmet use in the restraint counts. Table 16 presents counts of passengers involved in crashes by study period and their restraint status, as well as the number injured and killed by restraint status. Figure 10 compares proportions of crash-involved unrestrained drivers and passengers by study period.

The data in Table 15, Table 16, and Figure 10 show that the proportion of unrestrained, crash-involved drivers remained low (approximately 1%) and relatively constant during each study phase.¹⁰ The data show that the proportion of unrestrained, crash-involved passengers fluctuated across the study periods, ranging from approximately 5 percent during the program year to 10 percent in the years immediately preceding and following the program year. Of the eight fatalities during the 5-year period (driver and passenger combined), half were unrestrained. Looking at proportions of unrestrained, crash-involved occupants with injuries across the five years, there was little change for drivers (range 2.8% to 5.1%), but the proportion of unrestrained passengers dropped by about half for the program and post-program year, compared to the two earliest pre-program years.

¹⁰ Unrestrained rate in crash data is lower than the unrestrained rate in observation data due to many factors including possible underreporting of nonuse in crashes.

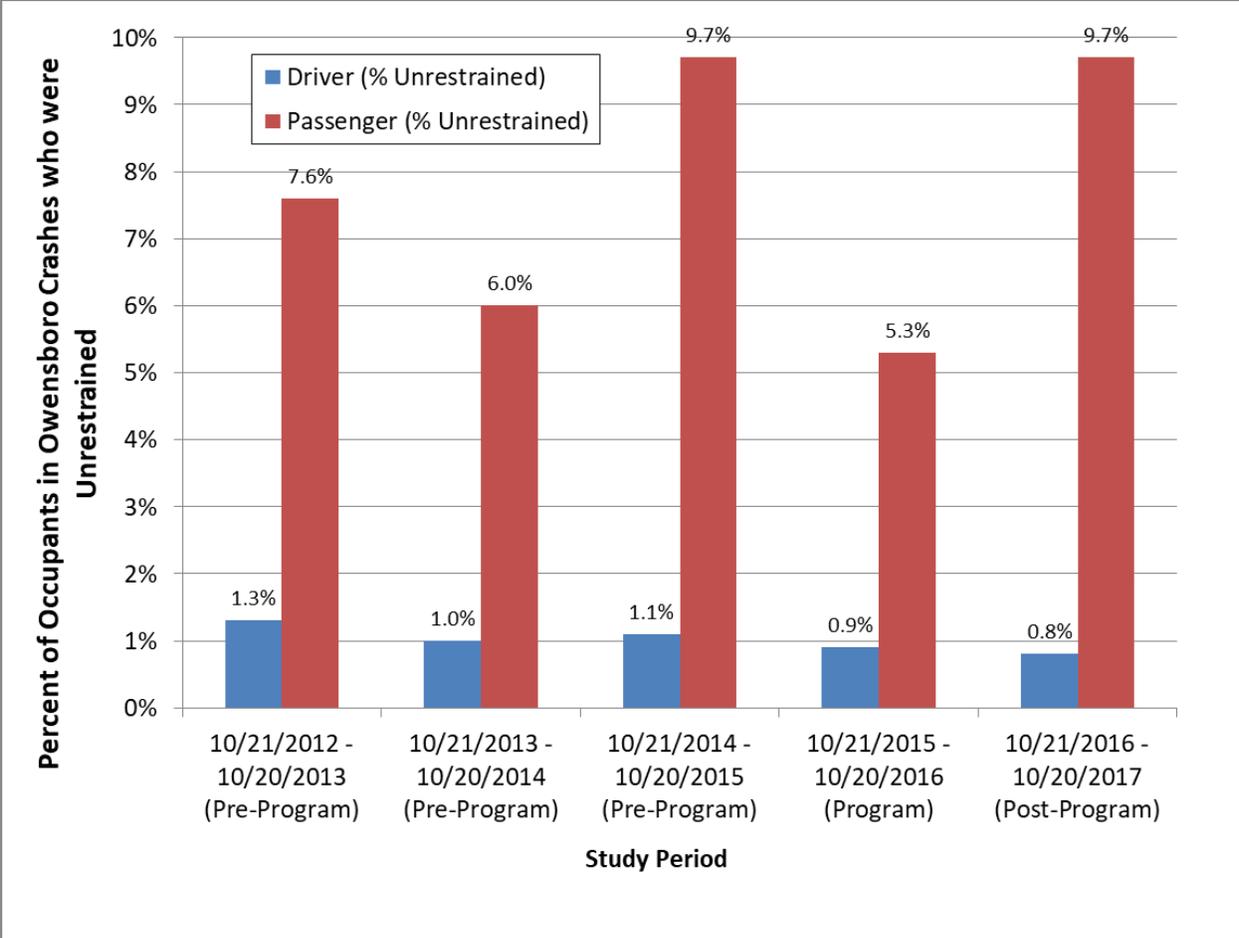


Figure 10. Proportions of crash-involved unrestrained drivers and passengers by study period

Table 15. Counts of Crash-Involved Drivers by Study Period in Owensboro, and Their OPD-Reported Restraint Status

Owensboro (Program Site)									
Period (Date)	Driver Information								
	Number Reported			Number Killed			Number Injured		
	Total	Restrained	Unrestrained	Total	Restrained	Unrestrained	Total	Restrained	Unrestrained
Pre-Program¹ 10/21/2012 – 10/20/2013	4,874	4,810 (98.7%)	64 (1.3%)	1	1 (100%)	0	221	210 (95%)	11 (5%)
Pre-Program¹ 10/21/2013 – 0/20/2014	4,966	4,920 (99%)	46 (1%)	2	1 (50%)	1 (50%)	207	197 (95%)	10 (5%)
Pre-Program¹ 10/21/2014 – 10/20/2015	5,532	5,473 (98.9%)	59 (1.1%)	1	0	1 (100%)	286	278 (97.2%)	8 (2.8%)
Program¹ 10/21/2015 – 10/20/2016	5,650	5,600 (99.1%)	50 (0.9%)	1	0	1 (100%)	306	292 (95.4%)	14 (4.6%)
12-Month Post- Program 10/21/2016 - 10/20/2017	5,579	5,534 (99.2%)	45 (0.8%)	1	1 (100%)	0	257	244 (94.9%)	13 (5.1%)
1st 6-Month Post- Program² 10/21/2016 – 4/20/2017	2,730	2,706 (99.1%)	24 (0.9%)	0	0	0	133	126 (94.7%)	7 (5.3%)
2nd 6-Month Post- Program² 4/21/2017 – 10/20/2017	2,849	2,828 (99.3%)	21 (0.7%)	1	1 (100%)	0	124	118 (95.2%)	6 (4.8%)

¹ Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Jim Greenland, Owensboro PD Records Unit Manager - KyOps Canned Extract (2016, October)

² Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Kim Quinn, Owensboro PD Records Unit Manager – KyOps Canned Extract (2017, July)

³ Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Kim Quinn, Owensboro PD Records Unit Manager - KyOps Canned Extract (2017, October)

Table 16. Counts of Crash-Involved Passengers by Study Period in Owensboro, and their OPD-Reported Restraint Status

Owensboro (Program Site)									
Period (Dates)	Passenger Information								
	Number Reported			Number Killed			Number Injured		
	Total	Restrained	Unrestrained	Total	Restrained	Unrestrained	Total	Restrained	Unrestrained
Pre- Program ¹ 10/21/2012 – 10/20/2013	2,415	2,231 (92.4%)	184 (7.6%)	1	1 (100%)	0	118	108 (91.5%)	10 (8.5%)
Pre- Program ¹ 10/21/2013 – 0/20/2014	2,314	2,183 (94%)	131 (6%)	0	0	0	114	104 (91%)	10 (9%)
Pre- Program ¹ 10/21/2014 – 10/20/2015	2,693	2,433 (90.3%)	260 (9.7%)	0	0	0	129	123 (95.3%)	6 (4.7%)
Program ¹ 10/21/2015 – 10/20/2016	2,674	2,531 (94.7%)	143 (5.3%)	1	0	1 (100%)	166	160 (96.4%)	6 (3.6%)
12-Month Post- Program 10/21/2016 - 10/20/2017	2,608	2,355 (90.3%)	253 (9.7%)	0	0	0	135	130 (96.3%)	5 (3.7%)
1 st 6-Month Post- Program ² 10/21/2016 – 4/20/2017	1,132	1,003 (88.6%)	129 (11.4%)	0	0	0	55	53 (96.4%)	2 (3.6%)
2 nd 6-Month Post- Program ³ 4/21/2017 – 10/20/2017	1,476	1,352 (91.6%)	124 (8.4%)	0	0	0	80	77 (96.3%)	3 (3.8%)

¹ Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Jim Greenland, Owensboro PD Records Unit Manager - KyOps Canned Extract (2016, October)

² Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Kim Quinn, Owensboro PD Records Unit Manager – KyOps Canned Extract (2017, July)

³ Total Crashes Extract, Driver Crashes and Factors Extract, Passenger Crashes and Factors Extract, Safety Factors Extract, and Human Factors Extract. Source: Kim Quinn, Owensboro PD Records Unit Manager - KyOps Canned Extract (2017, October)

Table 17 reports overall population, the population of licensed drivers, and annual VMT for each year from 2013 to 2017. This data was used to convert counts of non-restraint use of crash-involved drivers and passengers to rates (e.g., per 100 million miles of travel in urban Davies County, per 10,000 population in Owensboro, and per 10,000 licensed drivers in Owensboro) to account for population changes and changes in driving exposure influenced by the economy. Table 18 and Table 19 report non-restraint use of crash-involved drivers and passengers, respectively, and Table 20 and Table 21 report unrestrained fatalities and injuries, respectively, for drivers and passengers combined.

All crash, injury, and fatality data for this evaluation had large inter-year variability, allowing for little confidence in the relationship between year-to-year changes in these measures and the program activity. As often found in small communities, numbers of crashes, injuries, and fatalities are small and highly variable. In these circumstances, it is nearly impossible to look at the impact of a program on these outcomes. Suitably, this evaluation used observed seat belt use as a more reliable measure of change. Research tells us that increasing seat belt use saves lives (Kahane, 2015), which bridges the measured program outcomes (observed use) with progress towards NHTSA’s mission to reduce traffic fatalities.

Table 17. Trends in the Owensboro Population, Number of Licensed Drivers, and Annual Vehicle Miles Traveled Between 2013 and 2017

	Pre- Program			Program	Post- Program
	2013	2014	2015	2016	2017
Owensboro, KY Population¹	58,442	58,512	59,088	59,273	59,404
Owensboro, KY Licensed Drivers²	26,362	27,470	28,045	28,880	25,996
VMT: Urban Daviess County³	502,240,000	527,060,000	522,680,000	533,630,000	544,215,000

¹ U.S. Census Bureau statistics for Owensboro, KY www.census.gov/quickfacts/fact/table/owensborocitykentucky,covingtoncitykentucky,bowlinggreencitykentucky,loisvillejeffersoncountybalancekentucky/PST045217

² Obtained from Kentucky Division of Driver Licensing for the 4 Owensboro ZIP Codes in Daviess County (42301, 42302, 42303, 42304), and includes drivers restricted from driving midnight to 6 a.m. and with only 1 unrelated passenger under age 20. L. Woods, Resource Management Analyst III, Kentucky Division of Driver Licensing, personal communication, November 2, 2017.

Table 18. Owensboro Unrestrained Drivers in Crashes (Excludes Motorcyclists and Bicyclists)

	Pre- Program			Program	Post- Program
	10/21/12-10/20/13	10/21/13-10/20/14	10/20/14-10/20/15	10/21/15-10/20/16	10/21/16-10/20/17
Unrestrained Drivers in Crashes	64	46	59	50	45
VMT Rate¹	12.74	8.73	11.29	9.37	8.27
Pop Rate²	10.95	7.86	9.99	8.44	7.58
Licensed Driver Rate³	24.28	16.75	21.04	17.31	17.31
Percentage of Total Drivers in Crashes	1.31%	0.93%	1.07%	0.88%	0.81%
Observed Driver Seat Belt Use⁴	Unknown	Unknown	86.20%	90.60%	84.90%

1 Rate per 100 million miles of travel Urban Daviess County, KY

2 Rate per 10,000 population Owensboro, KY

3 Rate per 10,000 licensed drivers Owensboro, KY

4 Observations by project staff at intersections in Owensboro, KY

Table 19. Owensboro Unrestrained Passengers in Crashes (Excludes Motorcyclists and Bicyclists)

	Pre- Program			Program	Post- Program
	10/21/12-10/20/13	10/21/13-10/20/14	10/20/14-10/20/15	10/21/15-10/20/16	10/21/16-10/20/17
Unrestrained Passengers in Crashes	184	131	260	143	253
VMT Rate¹	36.64	24.85	49.74	26.80	46.49
Pop Rate²	31.48	22.39	44.00	24.13	42.59
Licensed Driver Rate³	69.80	47.69	92.71	49.52	97.32
Percentage of Total Passengers in Crashes	7.62%	5.66%	9.65%	5.35%	9.70%
Observed Passenger Seat Belt Use⁴	Unknown	Unknown	84.60%	91.50%	85.60%

¹ Rate per 100 million miles of travel Urban Daviess County, KY

² Rate per 10,000 population Owensboro, KY

³ Rate per 10,000 licensed drivers Owensboro, KY

⁴ Observations of front seat passengers by project staff at intersections in Owensboro, KY

Table 20. Owensboro Unrestrained Occupant Fatalities (Drivers and Passengers; Excludes Motorcyclists and Bicyclists)

	Pre- Program			Program	Post- Program
	10/21/12-10/20/13	10/21/13-10/20/14	10/20/14-10/20/15	10/21/15-10/20/16	10/21/16-10/20/17
Unrestrained Fatalities	0	1	1	2	0
VMT Rate¹	0	0.19	0.19	0.37	0.00
Pop. Rate²	0.00	0.17	0.17	0.34	0.00
Licensed Driver Rate³	0.00	0.36	0.36	0.69	0.00
Pct of Total Fatalities	0%	50%	100%	100%	0%

¹ Rate per 100 million miles of travel Urban Daviess County, KY

² Rate per 10,000 population Owensboro, KY³ Rate per 10,000 licensed drivers Owensboro, KY

Table 21. Owensboro Unrestrained Occupant Injuries (Drivers and Passengers; Excludes Motorcyclists and Bicyclists)

	Pre-Program			Program	Post-Program
	10/21/12-10/20/13	10/21/13-10/20/14	10/20/14-10/20/15	10/21/15-10/20/16	10/21/16-10/20/17
Unrestrained Injuries	21	20	14	20	18
VMT Rate¹	4.18	3.79	2.68	3.75	3.31
Pop. Rate²	3.59	3.42	2.37	3.37	3.03
Licensed Driver Rate³	7.97	7.28	4.99	6.93	6.92
Pct of Total Injuries	6.19%	6.23%	3.37%	4.24%	4.59%

¹ Rate per 100 million miles of travel Urban Daviess County, KY

² Rate per 10,000 population Owensboro, KY

³ Rate per 10,000 licensed drivers Owensboro, KY

Discussion

The purpose of the study was to evaluate the process, outcome, and sustainability of the *Buckle Up Owensboro* program. This included evaluating enforcement, communications, and coalition activity at baseline, during the 12-month program period, and for 6- to-12 months post program. In addition, this evaluation included seat belt observations in Owensboro and at the control site, Bowling Green, at the beginning, middle, end, and 6 months after the program to measure changes in seat belt use associated with the program activity. Last, the impact evaluation involved examining changes in crashes, injuries, and fatalities associated with the program.

Program Activities and Outcomes

The OPD conducted an effortful public outreach and enforcement program showing commitment to planned activities by organizing the Seat Belt Coalition, coordinating quarterly coalition meetings, and promoting the *Buckle Up Owensboro* program.

On the public outreach side, one of the keys to the program was the coordination and direction given by the OPD to the Seat Belt Coalition during the community partnership meetings. At these meetings, the coalition members showed engagement with the program's goals and objectives and the OPD's action plan, and they could carry out their outreach activities in the community and in the schools. The OPD conducted their public outreach program with a kickoff event, press releases, highly visible promotional events (e.g., *Buckle Up for a Buck*), sign and banner placements, distribution of educational material, an active social media presence, and a closing press conference about the program.

On the enforcement side, OPD engaged in more regular and consistent seat belt enforcement than they did prior to program implementation. OPD sustained enforcement involved daily 30-minute dedicated seat belt enforcement by each patrol officer over 12 months. In addition, the enforcement program involved monthly 2-hour patrols using two officers in a spotter and chaser detail over 12 months. OPD increased occupant protection citations by 2.7 percent in the program period, compared with the average of the 3 previous years.

The program was successful in increasing observed seat belt use in Owensboro. Occupants of passenger cars, vans, SUVs, and pickup trucks in Owensboro showed significant increases in seat belt use at mid-program and immediate post program. By comparison, observed seat belt use in the control site of Bowling Green decreased significantly at mid-program and immediate post program. All crash, injury, and fatality data for this evaluation had large inter-year variability, allowing for little confidence in the relationship between year-to-year changes in these measures and the program activity. Suitably, this evaluation used observed seat belt use as a more reliable measure of change. Research suggests that increasing seat belt use saves lives (Kahane, 2015), which bridges the measured program outcomes (observed use) with progress towards NHTSA's mission to reduce traffic fatalities.

Sustainability

In the 6-month post-program period, officers reduced their seat belt enforcement contacts per hour by approximately half and wrote 23 percent fewer occupant restraint citations compared to the number they wrote during the program year. OPD conducted one *Buckle Up for a Buck* event at a fast-food restaurant and held two Seat Belt Coalition meetings in the post-program period. The second post-program meeting had low attendance. While the schools appeared to continue activities in the post-program period, the remaining coalition members did not demonstrate the same level of public outreach activity as they did during the program year. Social media postings and earned media activity also dropped in the 6-month post-program period. As a possible consequence of reduced enforcement and public outreach, observed seat belt use in the 6-month post-program period dropped from the elevated mid-program and immediate post-program levels to the pre-program level; while in the control site, observed seat belt use did not change from immediate post-program to 6-month post-program. These results suggest that the program was not sustainable.

Research Questions (RQ) & Answers

RQ: Was the *Buckle Up Owensboro* program implemented as planned?

Yes

RQ: Did enforcement, outreach, and communications activity increase during the program period?

Yes

RQ: Were these activities sustained in the post-program period?

No

RQ: Was the *Buckle Up Owensboro* program associated with increased observed seat belt use?

Yes

RQ: How did observed belt use change from the beginning through the middle to the end of the 12-month program period in the program and control sites?

Owensboro Program Site: Significantly increased from baseline to both the mid- and immediate post-program observations.

Bowling Green Control Site: Significantly decreased across all measurement periods.

RQ: Was any observed change in belt use sustained 6 months following the program?

No, in almost all comparisons, observed seat belt use returned to baseline.

RQ: Did the *Buckle Up Owensboro* program have an impact on restraint use in crashes, unrestrained injuries, or unrestrained fatalities?

Large inter-year variability and small sample sizes do not allow for a meaningful comparison.

Conclusion

In summary, the program was effective in increasing observed seat belt use. The OPD was instrumental to ensuring program success through commitment to enforcement, public outreach activities, and by leading an active Seat Belt Coalition with community partners. However, the program activity levels decreased in the 6- to- 12-month period following the program. In addition, observed seat belt use returned to baseline 6 months after the program concluded. These results suggest *Buckle Up Owensboro* was a successful program during the 12-month program period. However, regarding program sustainability, this evaluation suggests a program needs a greater level of enforcement, communications, and coalition activity to maintain seat belt use than was implemented in the post-program period.

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Appendix 2A: Seat Belt Coalition Activities

Coalition Partner Outreach during the Program Period

- The municipality permanently installed *Buckle Up Owensboro* signs at six gateway entrances to the city (average daily traffic at the 6 locations was 106,057 vehicles).
- Owensboro fire department (97 staff) set up a large sign at the main station, and smaller signs inside the four other stations.
- Boardwalk Pipeline Partners (a natural gas company with 1,200 employees) posted *Buckle Up Owensboro* signs at its buildings in 119 locations, distributed the campaign seat belt card, and emailed information to employees.
- N. L. Neblett Community Center (offers childcare, recreational and community activities) posted one sign at the entrance and two signs on the building, and disseminated the seat belt card to parents.
- Wal-Mart, Lowe's (150 employees) and Hunter Douglas had *Buckle Up Owensboro* signs posted at their stores/facilities and distributed the seat belt information card to employees during their bi-weekly, monthly and daily safety meetings/trainings, respectively.
- Owensboro Health Regional Hospital added the *Buckle Up Owensboro* logo to its trauma services website and a traffic safety fact sheet to its general website, as well as hosted a ghost out¹¹ during prom season that included seat belt information. The hospital also conducted a 3-day child safety seat program and addressed the importance of seat belts during community events.
- Southern Star (natural gas supplier with 180 employees placed a sign at the entrance to their parking lot).
- Owensboro Municipal Utilities, with 240 employees, placed a sign at entrance to its parking lot, and placed smaller signs around the building.
- City of Owensboro Twitter Post 1 (3,448 followers) October 2015
- Kentucky Office of Highway Safety Facebook followers (8,000)
- Kentucky Office of Highway Safety Twitter followers (1,500)
- Owensboro Health webpage (campaign program on homepage) January 2016
- Mischelle Miller (*Buckle Up for Megan*) Twitter Posts 3 (216 followers)
- Owensboro Municipal Utility Twitter Post (campaign message)
- Kentucky Wesleyan College Twitter Post and Video of rollover simulator and *Buckle Up Owensboro* message City
- Trinity HS Facebook Posts 1
- Owensboro HS Twitter Posts 1 (763 followers)
- Owensboro HS Student (Digital Devil) Twitter Posts 1 (1,866 followers)
- Owensboro Catholic Facebook Posts 4
- Owensboro Catholic Twitter Posts 3

¹¹ A *ghost out* is a weeklong school-based alcohol and drug awareness program aimed at teens that culminates with a visit from the Grim Reaper and a school-wide assembly. The purpose is to call attention to teen car crashes and the consequences of driving impaired and unbelted.

https://transportation.ky.gov/DistrictThree/Documents/Drive%20Smart/desc_ghost_out_2008.pdf

- Owensboro Catholic (OCS) Webpage Posts 4
- Apollo HS/Bob Dych, Assistant Principal Twitter Posts 5 (490 followers)
- Daviess County Sheriff's Office (Daviess County High School) Facebook Posts 1

Coalition Partner Outreach during the Post-Program Period

- Owensboro Health – Gave a safety presentation to local Girl Scout troops about the importance of seat belts and bicycle helmets.
- Lowe's – Posted signs and stickers to remind employees to buckle up and now include seat belt safety in employee safety meetings.
- Owensboro High Schools (Trinity, Catholic, Owensboro, Whitesville) – Conducted seat belt checks, had signs in school buildings and made regular announcements about buckling up. Owensboro High School's Bluegrass Scholars were required to do a community service project and they were encouraged to select the Buckle Up Coalition.
- Owensboro Transit System, Sanitation and Yellow Ambulance Service (YAS) – Instituted policies requiring all drivers to be properly restrained. All seat belts in YAS vehicles are red for visibility.
- Daviess County Sheriff's Office – Completed *Below 100* training for all employees (national training initiative to reduce the number of police officer line of duty injuries and deaths).
- Daviess County Fire Department and Sanitation – Required seat belt use by all employees (the Fire Department reinforces this requirement by equipping all vehicles with an alarm that sounds when the seat belt is not used).
- Southern Star – All vehicles were equipped with a black box that tracks speed, seat belt usage and other behaviors and sends a report to supervisors.

Appendix 2B: Earned Media

Radio

Program Period

- Radio (WMSK) 1550 AM/ 101.3FM (400 listeners per hour) “Owensboro Police Department Launches Buckle Up Owensboro Seat Belts Save Lives Campaign” that covered program launch event (*PLE*) – October 15, 2015) and posted press release on website
- Radio WBKR FM “Owensboro Police Department Launches Seat Belt Initiatives,” covered program launch event October 2015 and posted on website.
- Radio WBIO (94.7) Facebook Post OPD press release *Buckle up Owensboro* reminder May 16, 2016

Post-Program Period

- Radio WBKR “Owensboro Police Department Reporting Solid Progress on National Seat Belt Initiatives” Website post November 7, 2016.

TV

Program Period

- WEHT (ABC) TV coverage (27,000 viewers) story ran on evening news (posted on Tri State website homepage) October 15, 2015
- WTVW (CW) TV coverage (14,000 viewers) story ran on evening news TwiABC and NBC affiliates) (4) – TV audience – October 15, 2015
- 44 News (CBS) and 14 News (NBC) TV coverage on *Buckle Up for a Buck (BUFB)* event March 16, 2016; Amanda Decker (44 News) Twitter Post on Seat Belt Award
- 14 News (NBC) TV coverage (37,000 viewers) on *BUFB* event March 16, 2016
- 14 News (NBC) TV coverage on *BUFB* event August 2016; also posted on website
- 14 News (NBC) TV coverage on *BUFB Buckle Up for Megan* September 2016
- WEVV CBS, “Owensboro Police Department Promotes Buckle Up, Seat Belts Save Lives Campaign,” 44 News

Post-Program Period

- WEHT (ABC), Coverage on end of program press conference, November 10, 2016
- WFIE (NBC), coverage on OPD seat belt enforcement, February 8, 2017.

Newspaper

Program Period

- *Messenger Inquirer* (Paid circulation 25,000) “OPD Rolls Out Seat Belt Campaign,” October 15, 2015 (online), October 16, 2015 (paper)
- *Messenger Inquirer* *Buckle Up for a Buck*, October 23, 2015 (online)
- *Messenger Inquirer* photo and coverage on Owensboro Catholic High School Students *Buckle Up Owensboro*, Contest, Community Section March 9, 2016 (paper)
- *Messenger Inquirer*, “Mother of Teen Behind *Buckle Up for Megan* Campaign Continuing to Advocate for Seat Belt Use.” April 14, 2016 (online)

Post-Program Period

- *Messenger Inquirer*, “Safety measure completes first year.” November 10, 2016
- *Messenger Inquirer*, “Buckle Up Campaign has increased seat belt usage, OPD officials say.” November 10, 2016
- *Messenger Inquirer*, “Buckle Up Owensboro Pilot Program Getting Results” April 16, 2017

Websites

Program Period

- SurfkyNEWS sNEWS! (online news aggregator) posted WAVE 3 (NBC) news story on PLE “Owensboro Police Launch New Seat Belt Campaign” October 15, 2015
- Tristate homepage.com website post “Law Enforcement Rewarding People for Buckling Up” October 15, 2015
- WAVE 3 News (NBC), “Owensboro Police Launch New Seat Belt Campaign,” October 15, 2015
- SurfkyNEWS, “OPD Launches *Buckle Up Owensboro*: Seat Belts Save Lives! Campaign” October 15, 2015
- *Owensboro Living*, (followers – 1,000). “*OPD Launches Seat Belt Campaign*” October 17, 2015
- TriState homepage.com, “Buckle Up for a Buck.” March 25, 2016
- SurfkyNEWS, “OPD to Join National *Click It or Ticket Campaign*,” (mentions *Buckle Up Owensboro* campaign. May 24, 2016
- SurfkyNEWS, “OPD Officer Recognized for Enforcement Efforts” (mentions *Buckle Up Owensboro* campaign), July 29, 2016

Post-Program Period

- Owensboro Living (followers – 1,000) “OPD’s Buckle Up Owensboro Campaign Seeing Positive Results.” November 11, 2016
- Tristate homepage.com, “Buckle Up Owensboro Campaign Increasing Seat Belt Use.” November 10, 2016
- SurfkyNEWS, “OPD Announces Successful Results of Seat Belt Campaign,” November 11, 2016.

Appendix 2D: Seat Belt Observation Counts for Program Site (Owensboro) and Control Site (Bowling Green)

Seat Belt Use Observation Counts for Program Site (Owensboro)

Pre-Intervention (Phase 1) Owensboro, KY (Program Site) September 13-17 and 19, 2015					Mid-Intervention (Phase 2) Owensboro, KY (Program Site) May 6-12, 2016					Immediate Post-Intervention (Phase 3) Owensboro, KY (Program Site) October 18-29, 2016					6-Months Post-Intervention (Phase 4) Owensboro, KY (Program Site) May 7-10, 2017				
Occupant	n	SB = Yes	SB = NO	% Restraint Use	Occupant	n	SB = Yes	SB = NO	% Restraint Use	Occupant	n	SB = Yes	SB = NO	% Restraint Use	Occupant	n	SB = Yes	SB = NO	% Restraint Use
Total	3676	3158	518	85.9%	Total	2581	2355	226	91.2%	Total	2779	2520	259	90.7%	Total	2875	2445	430	85.0%
Driver	3020	2603	417	86.2%	Driver	2256	2053	203	91.0%	Driver	2450	2219	231	90.6%	Driver	2445	2077	368	84.9%
Front Seat Passenger	656	555	101	84.6%	Front Seat Passenger	325	302	23	92.9%	Front Seat Passenger	329	301	28	91.5%	Front Seat Passenger	430	368	62	85.6%
Female	1646	1450	196	88.1%	Female	1238	1141	97	92.2%	Female	1315	1237	78	94.1%	Female	1313	1149	164	87.5%
Driver	1209	1063	146	87.9%	Driver	1026	943	83	91.9%	Driver	1129	1058	71	93.7%	Driver	1040	910	130	87.5%
Front Seat Passenger	437	387	50	88.6%	Front Seat Passenger	212	198	14	93.4%	Front Seat Passenger	186	179	7	96.2%	Front Seat Passenger	273	239	34	87.5%
Male	2030	1708	322	84.1%	Male	1343	1214	129	90.4%	Male	1464	1283	181	87.6%	Male	1562	1296	266	83.0%
Driver	1811	1540	271	85.0%	Driver	1230	1110	120	90.2%	Driver	1321	1161	160	87.9%	Driver	1405	1167	238	83.1%
Front Seat Passenger	219	168	51	76.7%	Front Seat Passenger	113	104	9	92.0%	Front Seat Passenger	143	122	21	85.3%	Front Seat Passenger	157	129	28	82.2%
Age < 24	368	314	54	85.3%	Age < 24	206	180	26	87.4%	Age < 24	272	240	32	88.2%	Age < 24	349	283	66	81.1%
Driver	263	224	39	85.2%	Driver	151	128	23	84.8%	Driver	205	180	25	87.8%	Driver	256	203	53	79.3%
Front Seat Passenger	105	90	15	85.7%	Front Seat Passenger	55	52	3	94.5%	Front Seat Passenger	67	60	7	89.6%	Front Seat Passenger	93	80	13	86.0%
Age 25-59	2785	2367	418	85.0%	Age 25-59	1858	1702	156	91.6%	Age 25-59	2035	1850	185	90.9%	Age 25-59	1994	1688	306	84.7%
Driver	2357	2015	342	85.5%	Driver	1661	1523	138	91.7%	Driver	1863	1693	170	90.9%	Driver	1780	1510	270	84.8%
Front Seat Passenger	428	352	76	82.2%	Front Seat Passenger	197	179	18	90.9%	Front Seat Passenger	172	157	15	91.3%	Front Seat Passenger	214	178	36	83.2%
Age 60+	521	475	46	91.2%	Age 60+	516	472	44	91.5%	Age 60+	472	430	42	91.1%	Age 60+	530	472	58	89.1%
Driver	398	362	36	91.0%	Driver	443	401	42	90.5%	Driver	382	346	36	90.6%	Driver	407	362	45	88.9%
Front Seat Passenger	123	113	10	91.9%	Front Seat Passenger	73	71	2	97.3%	Front Seat Passenger	90	84	6	93.3%	Front Seat Passenger	123	110	13	89.4%
Passenger Car	1646	1418	228	86.1%	Passenger Car	1110	1004	106	90.5%	Passenger Car	1106	1004	102	90.8%	Passenger Car	1136	993	143	87.4%
Driver	1375	1187	188	86.3%	Driver	988	888	100	89.9%	Driver	995	903	92	90.8%	Driver	980	857	123	87.4%
Front Seat Passenger	271	231	40	85.2%	Front Seat Passenger	122	116	6	95.1%	Front Seat Passenger	111	101	10	91.0%	Front Seat Passenger	156	136	20	87.2%
SUV	874	780	94	89.2%	SUV	699	645	54	92.3%	SUV	759	699	60	92.1%	SUV	765	630	135	82.4%
Driver	712	635	77	89.2%	Driver	596	549	47	92.1%	Driver	668	612	56	91.6%	Driver	646	534	112	82.7%
Front Seat Passenger	162	145	17	89.5%	Front Seat Passenger	103	96	7	93.2%	Front Seat Passenger	91	87	4	95.6%	Front Seat Passenger	119	96	23	80.7%
Van	349	315	34	90.3%	Van	232	220	12	94.8%	Van	318	302	16	95.0%	Van	323	293	30	90.7%
Driver	274	247	27	90.1%	Driver	199	190	9	95.5%	Driver	272	259	13	95.2%	Driver	257	232	25	90.3%
Front Seat Passenger	75	68	7	90.7%	Front Seat Passenger	33	30	3	90.9%	Front Seat Passenger	46	43	3	93.5%	Front Seat Passenger	66	61	5	92.4%
Pick-Up Truck	807	645	162	79.9%	Pick-Up Truck	540	486	54	90.0%	Pick-Up Truck	596	515	81	86.4%	Pick-Up Truck	651	529	122	81.3%
Driver	659	534	125	81.0%	Driver	473	426	47	90.1%	Driver	515	445	70	86.4%	Driver	562	454	108	80.8%
Front Seat Passenger	148	111	37	75.0%	Front Seat Passenger	67	60	7	89.6%	Front Seat Passenger	81	70	11	86.4%	Front Seat Passenger	89	75	14	84.3%
Unknown Vehicle Type	0	0	0		Unknown Vehicle Type	0	0	0		Unknown Vehicle Type	0	0	0		Unknown Vehicle Type	0	0	0	
Driver	0	0	0		Driver	0	0	0		Driver	0	0	0		Driver	0	0	0	
Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0	
Unknown Sex	0	0	0		Unknown Sex	0	0	0		Unknown Sex	0	0	0		Unknown Sex	0	0	0	
Driver	0	0	0		Driver	0	0	0		Driver	0	0	0		Driver	0	0	0	
Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0	
Unknown Age	2	2	0	100.0%	Unknown Age	1	1	0	100.0%	Unknown Age	0	0	0		Unknown Age	2	0	2	0.0%
Driver	2	2	0	100.0%	Driver	1	1	0	100.0%	Driver	1	1	0	100.0%	Driver	2	2	0	100.0%
Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0		Front Seat Passenger	0	0	0	

Seat Belt Use Observation Counts for Control Site (Bowling Green)

Pre-Intervention (Phase 1) Bowling Green, KY (Control Site) September 17-21, 2015					Mid-Intervention (Phase 2) Bowling Green, KY (Control Site) May 12-14, 2016					Immediate Post-Intervention (Phase 3) Bowling Green, KY (Control Site) November 2-6, 2016					6-Months Post-Intervention (Phase 4) Bowling Green, KY (Control Site) April 21-29, 2017				
Occupant	n	SB = Yes	SB = NO	% Restraint Use	Occupant	n	SB = Yes	SB = NO	% Restraint Use	Occupant	n	SB = Yes	SB = NO	% Restraint Use	Occupant	n	SB = Yes	SB = NO	% Restraint Use
Total	3316	2905	411	87.6%	Total	2784	2361	423	84.8%	Total	3326	2697	629	81.1%	Total	3321	2677	644	80.6%
Driver	2668	2316	352	86.8%	Driver	2379	2015	364	84.7%	Driver	2898	2357	541	81.3%	Driver	2801	2251	550	80.4%
Front Seat Passenger	648	589	59	90.9%	Front Seat Passenger	405	346	59	85.4%	Front Seat Passenger	428	340	88	79.4%	Front Seat Passenger	520	426	94	81.9%
Female	1538	1388	150	90.2%	Female	1234	1099	135	89.1%	Female	1489	1251	238	84.0%	Female	1489	1232	257	82.7%
Driver	1150	1032	118	89.7%	Driver	999	887	112	88.8%	Driver	1239	1038	201	83.8%	Driver	1171	957	214	81.7%
Front Seat Passenger	388	356	32	91.8%	Front Seat Passenger	235	212	23	90.2%	Front Seat Passenger	250	213	37	85.2%	Front Seat Passenger	318	275	43	86.5%
Male	1778	1517	261	85.3%	Male	1549	1261	288	81.4%	Male	1837	1446	391	78.7%	Male	1832	1445	387	78.9%
Driver	1518	1284	234	84.6%	Driver	1379	1127	252	81.7%	Driver	1659	1319	340	79.5%	Driver	1630	1294	336	79.4%
Front Seat Passenger	260	233	27	89.6%	Front Seat Passenger	170	134	36	78.8%	Front Seat Passenger	178	127	51	71.3%	Front Seat Passenger	202	151	51	74.8%
Age < 24	607	515	92	84.8%	Age < 24	457	366	91	80.1%	Age < 24	671	503	168	75.0%	Age < 24	629	492	137	78.2%
Driver	432	359	73	83.1%	Driver	364	289	75	79.4%	Driver	546	404	142	74.0%	Driver	484	380	104	78.5%
Front Seat Passenger	175	156	19	89.1%	Front Seat Passenger	93	77	16	82.8%	Front Seat Passenger	125	99	26	79.2%	Front Seat Passenger	145	112	33	77.2%
Age 25-59	2295	2024	271	88.2%	Age 25-59	1941	1657	284	85.4%	Age 25-59	2168	1777	391	82.0%	Age 25-59	2295	1844	451	80.3%
Driver	1919	1680	239	87.5%	Driver	1710	1462	248	85.5%	Driver	1937	1598	339	82.5%	Driver	1999	1599	400	80.0%
Front Seat Passenger	376	344	32	91.5%	Front Seat Passenger	231	195	36	84.4%	Front Seat Passenger	231	179	52	77.5%	Front Seat Passenger	296	245	51	82.8%
Age 60+	414	366	48	88.4%	Age 60+	386	338	48	87.6%	Age 60+	487	417	70	85.6%	Age 60+	397	341	56	85.9%
Driver	317	277	40	87.4%	Driver	305	264	41	86.6%	Driver	415	355	60	85.5%	Driver	318	272	46	85.5%
Front Seat Passenger	97	89	8	91.8%	Front Seat Passenger	81	74	7	91.4%	Front Seat Passenger	72	62	10	86.1%	Front Seat Passenger	79	69	10	87.3%
Passenger Car	1729	1519	210	87.9%	Passenger Car	1293	1131	162	87.5%	Passenger Car	1521	1254	267	82.4%	Passenger Car	1518	1267	251	83.5%
Driver	1391	1215	176	87.3%	Driver	1115	973	142	87.3%	Driver	1345	1104	241	82.1%	Driver	1306	1084	222	83.0%
Front Seat Passenger	338	304	34	89.9%	Front Seat Passenger	178	158	20	88.8%	Front Seat Passenger	176	150	26	85.2%	Front Seat Passenger	212	183	29	86.3%
SUV	788	694	94	88.1%	SUV	743	646	97	86.9%	SUV	876	746	130	85.2%	SUV	868	713	155	82.1%
Driver	640	560	80	87.5%	Driver	633	545	88	86.1%	Driver	750	638	112	85.1%	Driver	729	604	125	82.9%
Front Seat Passenger	148	134	14	90.5%	Front Seat Passenger	110	101	9	91.8%	Front Seat Passenger	126	108	18	85.7%	Front Seat Passenger	139	109	30	78.4%
Van	262	234	28	89.3%	Van	232	200	32	86.2%	Van	314	257	57	81.8%	Van	293	234	59	79.9%
Driver	196	174	22	88.8%	Driver	183	159	24	86.9%	Driver	261	219	42	83.9%	Driver	228	184	44	80.7%
Front Seat Passenger	66	60	6	90.9%	Front Seat Passenger	49	41	8	83.7%	Front Seat Passenger	53	38	15	71.7%	Front Seat Passenger	65	50	15	76.9%
Pick-Up Truck	537	458	79	85.3%	Pick-Up Truck	516	384	132	74.4%	Pick-Up Truck	615	440	175	71.5%	Pick-Up Truck	642	463	179	72.1%
Driver	441	367	74	83.2%	Driver	448	338	110	75.4%	Driver	542	396	146	73.1%	Driver	538	379	159	70.4%
Front Seat Passenger	96	91	5	94.8%	Front Seat Passenger	68	46	22	67.6%	Front Seat Passenger	73	44	29	60.3%	Front Seat Passenger	104	84	20	80.8%
Unknown Vehicle Type	0	0	0		Unknown Vehicle Type	0	0	0		Unknown Vehicle Type	0	0	0		Unknown Vehicle Type	0	0	0	
Driver					Driver					Driver					Driver				
Front Seat Passenger					Front Seat Passenger					Front Seat Passenger					Front Seat Passenger				
Unknown Sex	0	0	0		Unknown Sex	0	0	0		Unknown Sex	0	0	0		Unknown Sex	0	0	0	
Driver					Driver					Driver					Driver				
Front Seat Passenger					Front Seat Passenger					Front Seat Passenger					Front Seat Passenger				
Unknown Age	0	0	0		Unknown Age	1	1	0	100.0%	Unknown Age	0	0	0		Unknown Age	0	0	0	
Driver					Driver	1	1	0	100.0%	Driver	0	0	0		Driver	0	0	0	
Front Seat Passenger					Front Seat Passenger	0	0	0		Front Seat Passenger					Front Seat Passenger				

DOT HS 812 978
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