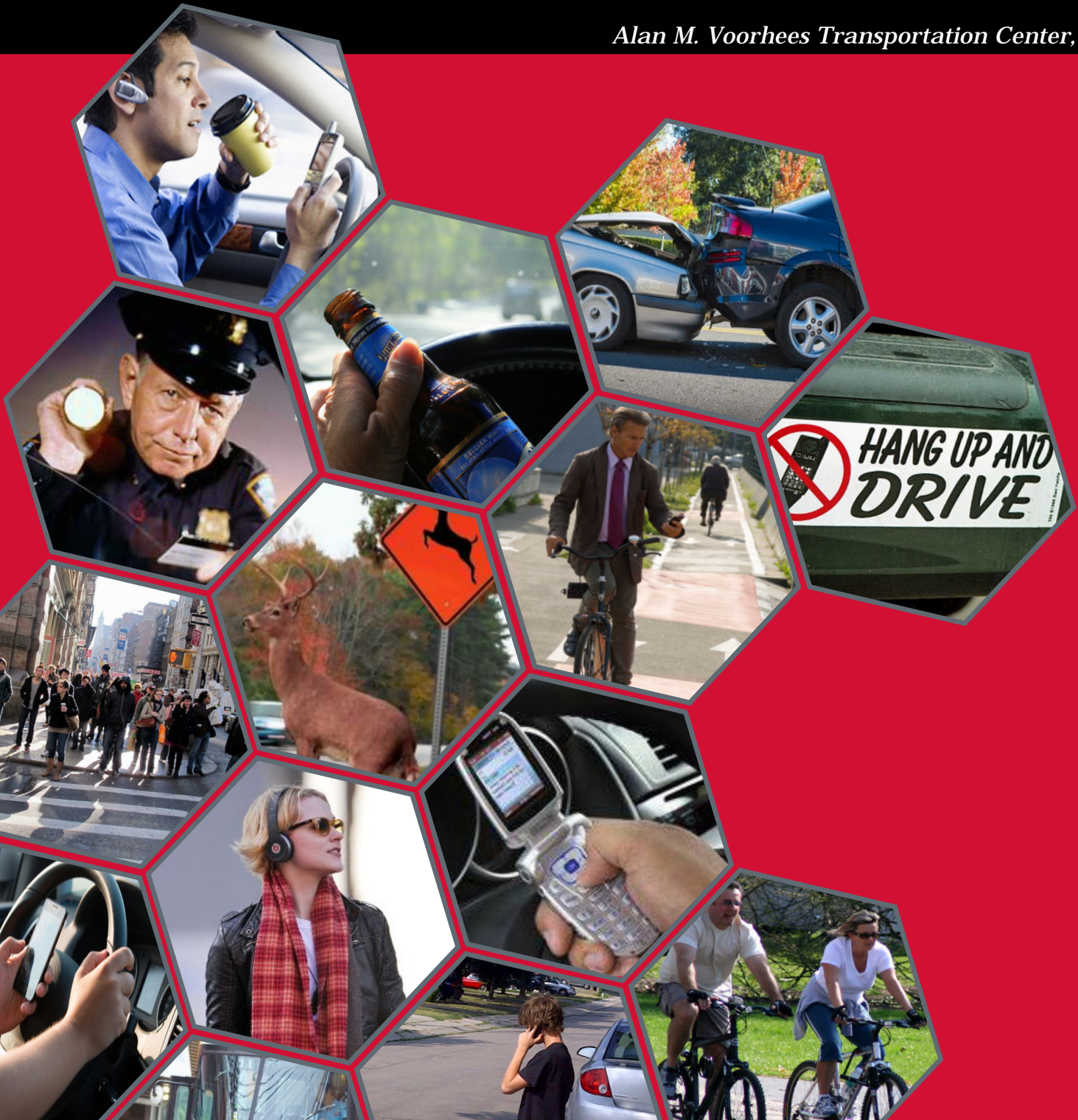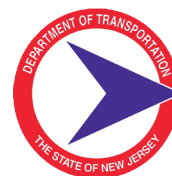# Potential Solutions to Address Distracted Driving and Walking in New Jersey

Alan M. Voorhees Transportation Center, 2014

RUTGERS

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CONTENTS

Table of Contents

Tables

Figures

EXECUTIVE SUMMARY

This report examines New Jersey residents' perceptions about distracted driving and walking in New Jersey as well as solutions to address such behavior. Distracted driving and walking have become increasingly serious concerns with the proliferation of information and communication technologies (ICT), especially with the growing popularity of cell phones and smart phones. Studies have shown that drivers require more reaction time and pedestrians become less attentive to their surroundings when distracted by ICT. The use of cell phones and smart phones for calling and texting has received the most attention from researchers, practitioners, and policy makers in the context of both distracted driving and walking. With regards to distracted driving, talking to passengers, eating and drinking, using navigational instruments, and tuning audio systems while driving have also received attention as other forms of distraction.

According to the U.S. National Highway Traffic Safety Administration, in 2012 alone over 425,000 crashes were caused by distracted driving, of which approximately 3,000 were fatal. New Jersey has experienced an increase in cell phone use by drivers at least since 2003. Although crashes in general and fatal crashes in particular have decreased in the state in recent years, crashes involving distracted drivers have increased. The State made using hand-held cell phones while driving a secondary offence in 2004 and further strengthened it to a primary offense in 2008. Even so, subsequent studies on the effect of the law showed only a limited reduction in hand-held cell phone use by drivers because of the perception that the law would not be strictly enforced.

"Driving Distracted." JERK. N.p., 30 Apr. 2012. Web. 17 Feb. 2015.

While distracted driving has attracted the attention of researchers and practitioners for a number of years, distracted walking has attracted attention only recently. Studies have indicated a growing number of injuries to pedestrians due to distractions caused by the use of hand-held phones for texting and calling as well as the use of headphones to listen to music while walking and crossing roads.

In view of the growing concerns about distracted driving and walking in New Jersey, this study provides insights into the perception of the severity and solutions to distracted driving and walking. To do so, the Alan M. Voorhees Transportation Center administered surveys to three groups: pedestrians in high pedestrian-vehicle crash locations, police officers, and urban planning professionals. A total of 788 pedestrians intercepted at various locations throughout the state responded to the survey, while 156 police officers and 209 planning professionals completed online surveys. The responses show that all three groups perceive distracted driving to be on the rise in New Jersey in recent years. Similarly, all three groups consider it to be a very serious or serious problem. Distracted walking is also perceived as more prevalent in recent years, but all three groups consider it to be a less serious problem than distracted driving. Among the different types of distractions while walking, texting while crossing streets are considered to be particularly unsafe.

All three groups were mostly in agreement with regards to solutions to distracted driving and walking. They all thought that the three most important solutions to distracted driving were: 1) mandatory education for new drivers, 2) stricter enforcement of existing laws, and 3) more severe legal penalties for drivers involved in crashes. A majority of all three groups also felt that drivers' phones should be checked after every vehicle crash to see if the driver was distracted at the time of the crash. Even larger proportions wanted drivers' phones checked after crashes involving higher levels of severity. Among the solutions to distracted walking, education at school was perceived to be the most important by all three groups, but support for police ticketing distracted pedestrians was low. These findings show that all three groups perceive distracted driving and walking to be serious problems in New Jersey and support stricter legal, educational, and enforcement interventions to reduce the dangers posed by distracted driving and walking.

"Police Launch Pedestrian Safety Blitz." Toronto Sun. N.p., n.d. Web. 17 Feb. 2015.

INTRODUCTION

The objective of this report is to examine the perception of the distracted driving and walking problems in New Jersey and to understand the extent of support for possible solutions. Distracted driving and walking have become more serious over the past decade, in some cases leading to crashes involving fatalities and injuries. In light of these emerging issues, the Alan M. Voorhees Transportation Center (VTC) undertook a study that examined perception of distracted driving and walking and their solutions amongst three different groups of people: pedestrians, police officers, and urban planning professionals.

Concerns about the dangers of distracted driving and walking have increased over the last few decades, particularly with advent of an increasing array of information and communications technologies (ICT), including cell phones, smart phones, navigational instruments, and digital music and video players. Studies have shown that distracted drivers require more reaction time than other drivers, with cell phone use shown to be more detrimental than other types of distractions. While research on distracted walking has been less common, existing studies suggest that pedestrians are less likely to cross roads safely (i.e., looking in both directions before crossing) and that they take longer to cross when they are distracted by the use of mobile phones or other electronic devices.

Because of the novelty of this field and the limited research on the effectiveness of current laws that regulate in particular the use of ICTs while driving, more research is needed. Most states have imposed restrictions on mobile phone use by drivers (such as talking or texting), but consensus on the best types of laws and their enforcement is still lacking. Further research is needed, especially in the light of the increased use of ICTs and their clear involvement in crash causation. Nationally, fatalities associated with distracted driving are substantial. The US National Highway Traffic Safety Administration estimated that in 2012 alone, about 425,000 crashes nationwide were due to distracted driving. In New Jersey, crashes

"Texting While Walking - Dangers, Hazards, Injuries and Deaths." HubPages. N.p., n.d. Web. 17 Feb. 2015.

in which the driver was using a cell phone at the time of the crash increased from 576 in 2003 to 2,713 in 2012 despite the state's declaration of drivers' hand-held cell phone use as a secondary offense in 2004 and as a primary offense in 2008. Citations for the offense, which increased immediately after 2008, decreased in subsequent years. Understanding the public perception of distracted driving and the challenges faced by public officials in finding and implementing solutions is therefore imperative in limiting the danger posed by distracted drivers on New Jersey roads.

Much of the effort by researchers during the past two decades has been geared towards understanding the consequences of distracted driving instead of finding solutions to such behavior. Since a majority of studies have already shown the detrimental effects of distracted

driving, it is now time to pay greater attention to identifying and implementing viable and effective solutions. For that reason, this research primarily focuses on identifying solutions to distracted driving. Given the increasing prevalence of distracted walking, this study also inquires about the solutions to distracted walking along with the solutions distracted driving. To achieve those goals, this study surveys pedestrians, police officers, and planning professionals about various types of solutions to distracted driving and walking, including education, campaigns, enforcement of existing laws, and enactment of new laws.

"Walking While Texting Reduces Ability." Guardian Liberty Voice. N.p., n.d. Web. 17 Feb. 2015.

This report contains five sections. The next section, the Background, provides data on distracted driving, summarizes recent studies on distracted driving and walking, and identifies laws that have been passed in New Jersey and throughout the country. The third section, the Survey Methodology, presents the process of data collection through three surveys. The fourth section, Data Analysis and Results, presents results from the analysis of data collected through the three surveys. Finally, the Conclusion summarizes the study's key findings and discusses some of the implications for law enforcement agencies, planners, and policy makers.

BACKGROUND

"Distracted Drivers." Nashville Distracted Driver Accident Attorney. N.p., n.d. Web. 17 Feb. 2015.

"Distracted Drivers Face New Fines - The Bowdoin Orient." The Bowdoin Orient. N.p., n.d. Web. 17 Feb. 2015.

"Distracted Driving Awareness 101: Top Four Tips for Safe Mobile Device Use - Cerebral-Overload." CerebralOverload. N.p., 10 Apr. 2014. Web. 17 Feb. 2015.

Distracted driving encompasses a wide variety of "behaviors that divert attention from driving, hampering awareness and performance and increasing risk" including eating while driving, listening to music, and talking to other passengers (Lerner 2011, p. 880). In recent years, public policy makers and researchers have largely focused their attention on distractions due to mobile information and communications technology (ICT), primarily in the form of smart phones and cell phones. However, while phone use is a significant cause of driver inattentiveness, most distracted drivers involved in crashes are distracted by something other than cell phones (Ranney 2008). The most common types of distractions are eating and drinking, distractions within the vehicle (reaching for something, adjusting the radio, using a cell phone), and distractions outside the vehicle (looking at something other than the road) (Stutts et al. 2005).

After decreasing from 1990 to 2005, fatalities associated with distracted driving have increased nationally through 2008 concurrent with an increase in the use of text messaging (Wilson and Stimpson 2010). The widespread adoption of personal mobile phones and other communication technology in the past thirty years has led to an increase in concerns about the negative effect on traveler safety due to distracted driving (National Highway Traffic Safety Administration 2012; Ferdinand and Menachemi 2014). In 2012, the US National Highway Traffic Safety Administration (NHTSA) estimated that 425,000 injuries and 3,360 fatalities from motor vehicles involved a distracted driver (National Highway Traffic Safety Administration 2014). In 2009, distracted driving was a factor in 16 percent of motor vehicle fatalities and 20 percent of injuries (U.S. Census Bureau 2012).

According to a recent report prepared by the New Jersey State Police, driver inattention is attributed to between 23 percent and 30 percent of all fatal crashes in the state every year between 2010 and 2013 (New Jersey State Police 2014). Although total fatal crashes in the state decreased from 572 to 555 between 2010 and 2013, fatal crashes attributed to driver inattention

increased from 130 to 164. Unfortunately, the report does not classify the data by different types of distractions and therefore it is not possible to determine how many of the crashes were due to the use of mobile devices by the drivers.

"Time For a PSA: Stop Distracted Walking." TechnoBuffalo. N.p., n.d. Web. 17 Feb. 2015.

The number of total crashes involving distracted drivers in New Jersey has also increased substantially during the past several years. New Jersey's Plan4Safety database, a vehicle crash database maintained by the Rutgers University's Center for Advanced Infrastructure and Transportation, contains a variety of crash data, including whether a cell phone was in use by the driver at the time of a crash. An analysis of the data from this source provides some important insights about the trend of crashes involving distracted drivers in the state. Between 2003 and 2012, 20,637 crashes occurred in which cell phones were being used by the driver, 0.7 percent of the 3,050,236 total crashes. Fifty-two of those were fatal (0.25%) and 6,066 caused injuries (29%). While in 2003, the total number crashes in which cell phones were being used by the driver was 576 (0.2% of all crashes), number of such crashes increased to 2,713 (1.0% of all crashes) in 2012, reflecting a 371 percent increase in nine years. Similarly, the number of vehicle-pedestrian crashes involving drivers using cell phones increased from six in 2003 to 42 in 2012, a 600 percent increase over nine years.

In the past five decades, approximately 80 percent of studies have found a negative relationship with driver distraction and driver performance (Ferdinand and Menachemi 2014). Compared with other types of distractions, studies have more often found that cell phone use is more detrimental than other types of distractions such as passengers, music, or in-vehicle systems (Ferdinand and Menachemi 2014). One of the most common results of distracted driving is that drivers require more time to react to events. Researchers found that cell phone use required drivers, on average, 0.25 seconds more time to react than other drivers (Caird et al. 2008). Researchers also found that there is no difference between hands-free and hand-held cell phone use; both negatively affect driving performance (Horrey and Wickens 2006).

Since 1992, states have increasingly adopted bans on the use of "mobile communication devices" while driving to discourage distracted driving (see Figure 1). The bans vary by target population, type of activity, type of technology, geographic scope, and type of enforcement. Some states only ban the use of hand-held cell phones by young people (typically under 18 years old) or novice drivers (with a learner's permit or within their first year of receiving a license), while others ban use by commercial drivers (e.g. school bus drivers) (Ibrahim et al. 2011). Some states ban the use of hand-held cell phones while driving, whereas others ban only texting while driving (Insurance Institute for Highway Safety 2014). While many early state laws focused on particular technologies

(e.g. "cell phones" or "mobile telephones"), more recent state laws attempt to cover a wider variety of electronic devices. Finally, some states only ban the use of mobile technology in certain locations (e.g. school zones or highway construction zones) (Ibrahim et al. 2011). Most, though not all, state laws empower police to stop drivers "solely for a violation of an MCD [mobile communications devices] provision", and three states require that police reports note if a cell phone was "in use at the time of the crash" (Ibrahim et al. 2011, p. 662).

Legend:

- ■ (red) Restrictions on hand-held use of MCDs by all drivers
- ■ (green) Restrictions on all use of MCDs by all drivers in specified areas
- ■ (purple) Restrictions on use of MCDs for texting only for all drivers
- ■ (light blue) Restrictions on hand-held and/or hands-free use of MCDs by school bus drivers
- ■ (yellow) Restrictions on hand-held and/or hands-free use of MCDs by novice drivers
- ■ (black) Restrictions on the use of two-sided MCD headsets

Year	States
1992	FL
1996	AZ
2001	NY, MA, IL, NJ
2002	NJ, RI, NJ
2003	AR, IL, TN
2004	DC, NJ, DC, DE, DC
2005	CT, TX, CA, DE, MD, MN, TN, IL, TX, CO
2006	CA, CT, ME, DE, MD, NC, RI, WV
2007	UT, KY, MN, NC, ME, MN, VA
2008	WA, AK, LA, MN, WA, VA, LA, CA, LA, NE, NE, NE, OR, TX
2009	AR, CA, CO, MD, NY, RI, TN, UT, VA, NC, IN, MS, MO, AR, TX
2010	OR, IA, IL, KY, MA, NH, MI, VT, WY, WI, MD, MA, MA, OK, VT, OK, NJ, MA, ME, KY, KS, IA, GA, AL, IL

Figure 1. Adoption of state bans on mobile communication devices (Ibrahim et al. 2011).

Texting bans are the most common among state regulations. Texting is banned in 44 states and in the District of Columbia (Insurance Institute for Highway Safety 2014). Figure 2 maps the bans on texting while driving for each state. Yet there is scant research on the effectiveness of such bans (McCartt et al. 2014) and detection and enforcement are more difficult than bans on the use of hand-held cell phones while driving. Among the few studies of the effectiveness of text message bans, some have found protective effects while others found limited positive impacts (Anyanwu 2012; Abouk and Adams 2013).
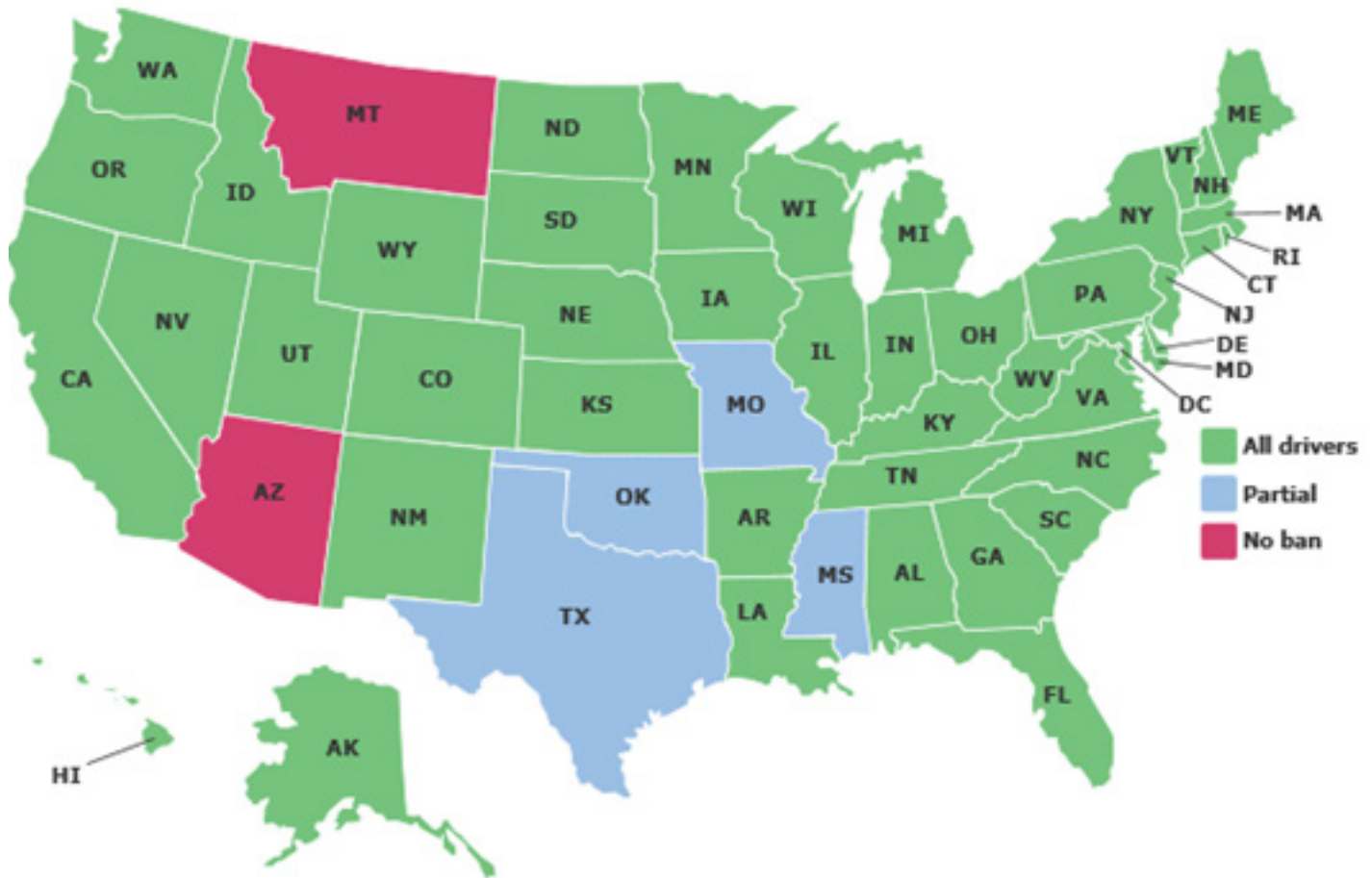
Figure 2. State bans on texting while driving as of July 2014 (Insurance Institute for Highway Safety 2014)

New Jersey is one of only 13 states that bans talking on a hand-held cell phone while driving (Figure 3) (Insurance Institute for Highway Safety 2014). However, the demonstrated effectiveness of such an approach to reduce crashes is mixed. Several studies using data from New York state found reductions in the number of crashes after the state's cell phone ban in 2001 (Jacobson et al. 2012; Sampaio 2010; Nikolaev et al. 2010). Statewide crashes declined more than in neighboring Pennsylvania, where there was no contemporaneous ban (Sampaio 2010). However, other studies have found no effect. A study examining collision claim frequency (how often insurance claims occur) in New York, Connecticut, the District of Columbia, and California before and after cell phone bans found no effect on the frequency of collision claims (Trempel et al. 2013).

One promising measure for reducing cell phone use while driving is high visibility enforcement (HVE) campaigns. HVE programs combine enforcement with publicity campaigns to create the public perception that violating cell phone laws will be punished. National Highway Traffic Safety Administration (NHTSA) applied the HVE strategy to cell phone laws in pilot programs in two states in 2010 and 2011. The programs, which took place in Hartford, Connecticut and Syracuse, New York, reduced cell phone use significantly. Cell phone use dropped by 57 percent in Hartford and 32 percent in Syracuse following the pilot HVE program. This strategy may be challenging due to the difficulty observing cell phone use by drivers and the high costs of media campaigns (Cosgrove et al. 2011).
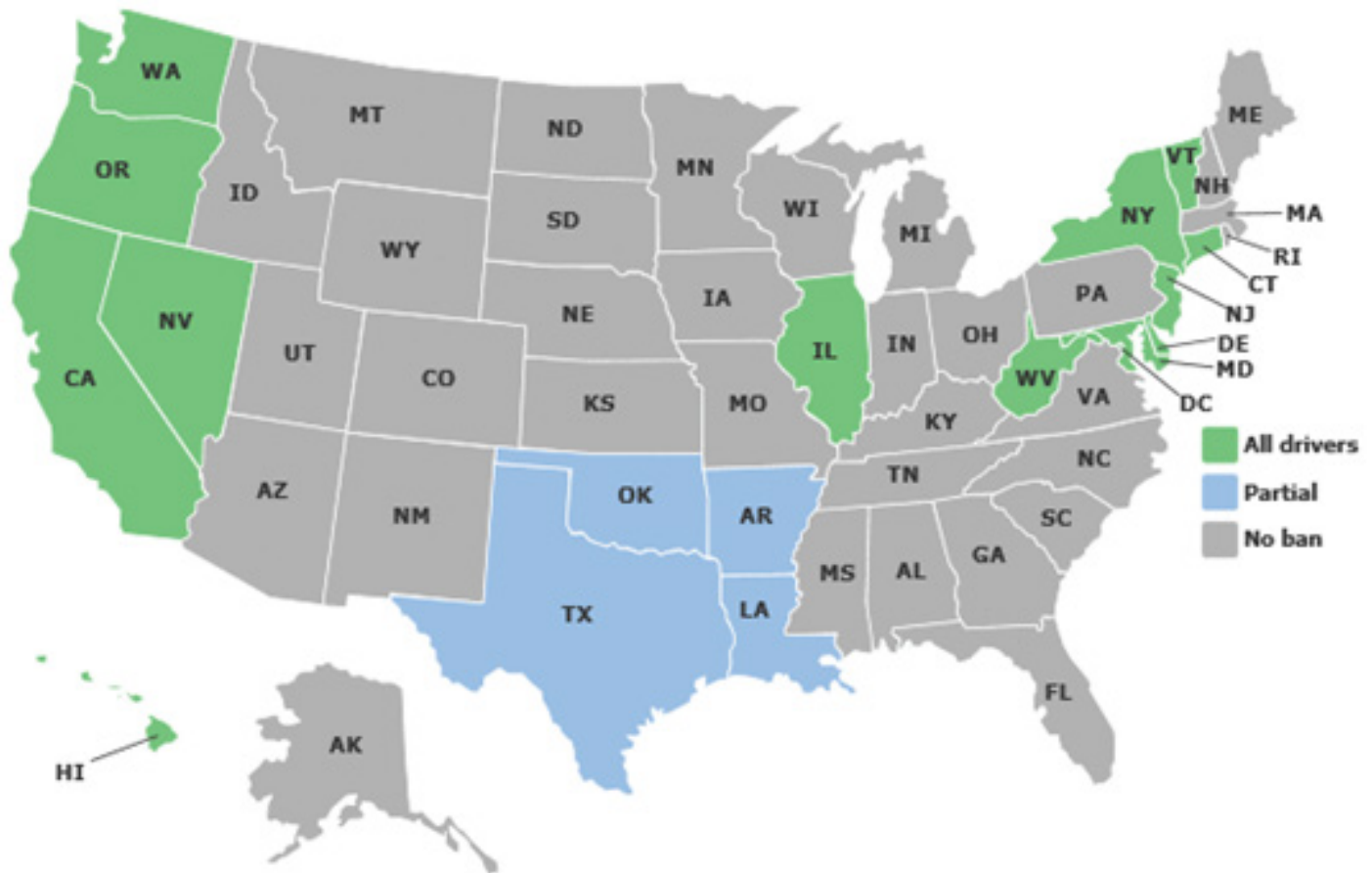
Figure 3. State bans on the use of hand-held cellphones while driving as of July 2014 (Insurance Institute for Highway Safety 2014)

New Jersey implemented a ban on using hand-held communications devices while driving in 2004. However, the law deemed cell phone use a secondary offense and did not assign any points to violators (Maher and Ott 2013). In 2008, legislation was approved to strengthen the ban and make hand-held phone use while driving a primary offense (State of New Jersey Motor Vehicle Commission 2014). A study by Rutgers University used data from crash reports to evaluate the effect of the state's cell phone law on crashes attributed to cell phone use (Maher and Ott 2013). The study found that since the 2008 cell phone law went into effect, the number of automobile crashes attributed to cell phone use has actually increased while the total number of crashes has decreased. The same study included a survey of New Jersey residents to determine the level of public awareness of the risks of distracted driving. The survey results indicate that the majority of residents are aware of the danger posed by cell phone use while driving and are familiar with the law banning it but continue to use phones while driving because they do not believe the law will be enforced. The number of citations issued in New Jersey for cell phone use while driving increased significantly in the year after the 2008 law went into effect but has declined in each subsequent year (Maher and Ott 2013). This evaluation supports the conclusion that New Jersey's attempt to curb the use of cell phones while driving through legislation has not been successful.

In addition to distracted driving, a small but growing body of research has addressed the safety consequences of distracted pedestrians. Between 2004 and 2010, the share of pedestrian fatalities due to mobile phone use has increased steadily from less than one percent to

3.6 percent (Nasar and Troyer 2013a). Recent studies in urban areas have found 25 to 30 percent of pedestrians were distracted by looking at their mobile device, talking on their device, or wearing headphones (Basch et al. 2014; Thompson et al. 2013).

Pedestrians who are distracted by cell phones exhibit riskier behavior than those who are not. Distracted pedestrians are less likely to cross intersections safely than pedestrians who are not visibly distracted (Hatfield and Murphy 2007; J. Nasar, Hecht, and Wener 2008; Basch et al. 2014) and pedestrians talking on the phone walked at a slower pace than pedestrians listening to music or not on the phone while crossing a public square (Hyman et al. 2010). Sending a text message while walking also slows pedestrians. A recent study found that pedestrians who were texting took 18 percent longer to cross the street than those not texting (Thompson et al. 2013). Pedestrians who were listening to music crossed the intersection quicker than those without any distraction but they were less likely to cross safely (Thompson et al. 2013). Researchers using a virtual crosswalk also found that pedestrians who were distracted by music or text messaging were more likely to be hit by cars (Schwebel et al. 2012).

Research on mitigating the safety consequences of distracted walking is limited. Some studies suggest increased education (Stavrinos et al. 2011) and infrastructure improvements such as pedestrian overpasses (Schwebel et al. 2012) or other approaches to physically separate pedestrians from vehicles (Thompson et al. 2013). While technically safer, pedestrians may not want to use overpasses and degrading the pedestrian environment by building overpasses might have the unintended consequence of decreasing walking. These infrastructure improvements aim to remove pedestrians rather than change either their behavior or that of drivers. Other proposals include cell phone software that make use of the camera on the back of smart phones to detect oncoming vehicles (Wang et al. 2012) or to use existing cell phone technology to block phone calls or text messages when the person (or phone) is moving and to read aloud incoming text messages (Nasar and Troyer 2013b).

SURVEY METHODOLOGY

Introduction

To better understand the increase in cell phone involved crashes in New Jersey, this report investigates through surveys the perception of distracted driving and walking, as well as potential solutions. One survey collected information from pedestrians, one collected information from police officers, and the third collected information from planning professionals. The pedestrian survey was distributed in ten municipalities throughout New Jersey by trained graduate students during peak commuting and lunch hours, starting on September 15, 2014 and ending October 10, 2014. The municipalities were chosen based on their high pedestrian volumes, high number of pedestrian-vehicle crashes, geographic diversity, and demographic diversity. The graduate students distributed the survey in downtown locations where pedestrian volumes were most likely to be high. The survey was available in both Spanish and English. The survey of police officials was conducted online. An email request to participate in the survey, along with an online link to the survey, was sent on September 15, 2014. The survey closed on October 30, 2014. The survey was available only in English. Finally, a link to the survey of urban planning professionals was sent along with a request to complete the survey on September 25, 2014; the survey closed on October 30, 2014. The survey was available only in English The surveys were conducted with the objective of examining the differences between the three groups regarding their perception of severity of distracted driving and walking and the solutions they support.

The Pedestrian Survey

The pedestrian survey was conducted through interception of individuals on sidewalks near street intersections in ten municipalities in New Jersey. The researchers intercepting the pedestrians were trained graduate students who were certified by the Institutional Review Board (IRB) of Rutgers University. The survey began on September 15, 2014, and ended on October 10, 2014. To maintain geographic diversity, the ten municipalities were chosen from different parts of the New Jersey (Figure 1). Although the selected municipalities are primarily urban, some of their salient characteristics are different from each other. Diversity of their characteristics was important to ensure that the respondents had living or working experience in different types of environments, such as beach communities, university towns, older cities, and suburban municipalities. In all ten places, people were expected to be generally familiar with distracted driving and walking.

Within each selected municipality, locations were chosen that had high volumes of pedestrians and also a history of pedestrian crashes. A high volume of pedestrians was essential to ensure that there were enough pedestrians to be intercepted within a given number of days. A high volume of pedestrian crashes ensured that the surveyed pedestrians were not totally unaware of the potential for crashes. The selected locations were primarily used by pedestrians walking for utilitarian or transportation purposes instead of walking for recreational or health purposes.
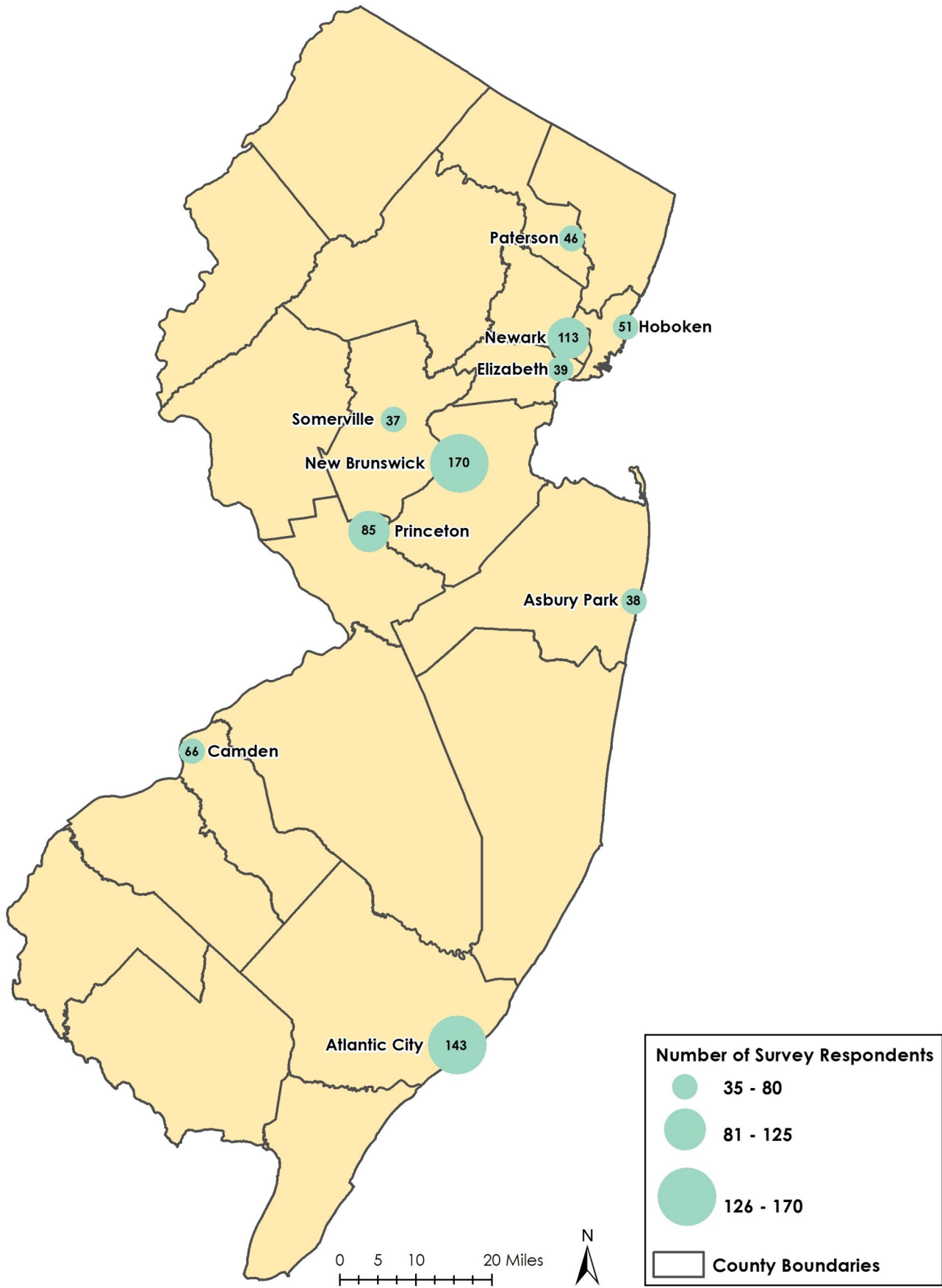
Figure 4. Municipalities in which the pedestrian intercept survey was conducted.

Number of Survey Respondents

35 - 80

81 - 125

126 - 170

County Boundaries

Table 1. Pedestrian Survey Respondents by Location of Survey		
Municipality	# of Respondents	% of Respondents
Asbury Park	38	4.8
Atlantic City	143	18.1
Camden	66	8.4
Elizabeth	39	4.9
Hoboken	51	6.5
New Brunswick	170	21.6
Newark	113	14.3
Paterson	46	5.8
Princeton	85	10.8
Somerville	37	4.7
Total	788	100

Table 1 shows the municipalities in which the pedestrian survey was conducted, along with the number and percentage of completed surveys in each municipality (see also Figure 4 for locations). Asbury Park is a shore community in Monmouth County known for its beach-related activities, Atlantic City is a gambling mecca with several casinos, Camden is an old urban center across the Delaware River from Philadelphia, and Elizabeth is an old industrial town with substantial port activities. Hoboken is a middle-class urban center across the Hudson River from New York City where many young professionals live, while New Brunswick is a college town where the main campus of Rutgers University is located. Newark is the largest urban center of New Jersey and also serves as a major transit hub. Paterson is an old industrial urban center. Princeton is an affluent university town where Princeton University is located and Somerville is a middle-class suburban community. Among the surveyed places, Princeton and Hoboken have median household incomes far exceeding the state's population. Somerville's median household income is similar to the state's overall population, but the remaining municipalities have significantly lower median household incomes.

The survey instrument for the pedestrian survey was prepared in both English and Spanish. The two versions of the survey contained identical questions arranged in the same order. Of the total of 788 completed surveys, 34 (or 4.3%) were completed in Spanish.

The Survey of Police Officers

The survey of police officers was conducted online with assistance from the New Jersey Division of Highway Traffic Safety (NJDHTS) and the Essex County College Police Academy (ECCPA). NJDHTS distributed a link to the survey via email to municipal police departments in each of the states' 21 counties. Similarly, ECCPA distributed a link to the survey to state, county, and municipal police officers throughout the state. Both email requests to participate in the survey were sent out to the officers on September 15, 2014. The survey began on the same day and concluded on October 30, 2014. The survey instrument was made available in English language only, and was distributed to approximately 600 police officers. A total of 156 officers completed the survey.

The Survey of Urban Planning Professionals

Like the survey of police officers, the survey of planning professionals was conducted online. The group included urban planning professionals and transportation planning professionals, as well as employees of non-profit agencies and elected officials familiar with urban planning and transportation issues. Email addresses of the professionals were obtained from a number of sources. A list was acquired that had been previously prepared by Together North Jersey (TNJ) for their extensive outreach efforts. The list, developed internally at TNJ, included a mix of elected officials, planners, engineers, and other professionals relevant to the scope of this project. To supplement those contacts, additional email addresses were obtained from lists kept by the Bicycle and Pedestrian Resource Center, including previous attendees of the quarterly Bicycle and Pedestrian Advisory Council meetings. This allowed for the addition of contacts at federal agencies and other officials from around the state. An email invitation to take the online survey was sent to all of these individuals on September 25, 2014 and become operational on the same day. Of the 886 email addresses, a small proportion was found to be invalid or out of date. The survey concluded on October 30, 2014. Like the police officer survey, this survey was conducted in English only. A total of 209 responses were received.

RESULTS FROM THE PEDESTRIAN SURVEY

The Nature of the Survey

The pedestrian survey instrument contained 19 questions, whereas the surveys of police officers and planning professionals included 24 questions. The questions in the police officer and planning professional surveys were identical. Because the pedestrian surveys were completed at the intercept site, they needed to be shorter than the others, which were completed online.

Several questions were identical amongst the three surveys. These pertained to the severity of distracted driving and walking as well as their potential solutions. However, the two online survey instruments differed from the intercept survey instrument in a few ways. First, the pedestrian survey included questions about demographic and socioeconomic characteristics of the respondents, but the online surveys for police officers and professionals included only two questions on age and gender but did not include questions on household income, level of education, or race and ethnicity. Second, the surveys of police officers and professionals included several questions about the perceived prevalence of different types of distracted driving and walking behavior, while the pedestrian survey did not include those questions. Third, the online surveys of police officers and planning professionals included several questions on perceived safety consequences of different types of distracted driving and walking behavior, but the pedestrian survey did not include those questions. Finally, the pedestrian survey included a question on strategies adopted by the respondents to avoid distracted driving. This question was not included in the surveys of police officers and professionals.

The questions common in all surveys enable comparisons between the three groups regarding each group's perception of severity of distracted driving and walking and their potential solutions. Because the questions in the surveys of police officers and planning professionals are identical, a comparison can also be made between the two groups regarding their perception of prevalence of different types of distracted behavior and the consequences of such behavior. Finally, the large dataset from the pedestrian survey allows a comparison between different socioeconomic groups regarding their perception of the severity of distracted driving and walking as well as potential solutions.

Demographic Characteristics of the Pedestrians Surveyed

Several questions were included in the pedestrian survey pertaining to the respondents' demographic characteristics. One of those questions was about the reason for being at the survey location where they were intercepted. Although the question was included with the intent of distinguishing between individuals who lived in the place, worked in the place, or were simply visiting the place for other reasons, it was possible to classify the visitors into more specific categories. The frequency of respondents by reasons for being at the survey location is shown in Table 2. Around 33 percent of the respondents were at the location because it was their hometown and 18.6 percent were at the location because it was their place of work. Another nine percent stated that the place was their hometown as well as place of work. It is not surprising that a large proportion

(21.2%) of the respondents were visiting for education purposes since two of the places are university towns, and the survey locations in some other places were in close proximity of educational institutions.

Table 2. Reason for the Respondent Being at the Survey Location			
Reason	# of Respondents	% of All Respondents	% of Those who Responded
Respondent's hometown	249	31.6	33.4
Respondent's place of work	139	17.6	18.6
Respondent's hometown and place of work	67	8.5	9.0
Respondent visiting for school/education	158	20.1	21.2
Respondent visiting for vacation/pleasure	47	6.0	6.3
Respondent visiting for social/family reason	26	3.3	3.5
Respondent visiting for work-related reason or errand	15	1.9	2.0
Visiting for other reason	45	5.7	6.0
Total with response	746	94.7	100
Non- response	42	5.3	
Total	788	100	

Of the surveyed pedestrians, 59 percent were male and 41 percent were female. In contrast, 49 percent of New Jersey's population is female and 51 percent is male, as is the population of the ten municipalities where the survey took place. Thus male respondents were over-represented and women respondents were under-represented. A part of the reason for this discrepancy could be that men walk more often than women or that men are more likely to accept a survey from a stranger.

As shown in Table 3, persons in the age group 18-24 constituted the largest share of the survey respondents (31.3%), followed by those in age group 25-34 (22.7%). These percentages are substantially larger than the percentage of New Jersey population in these age groups. For example, according to the 2012 American Community Survey persons between ages 18 and 24 constitute only 8.8 percent of the state's population and persons between ages 25 and 34 constitute only 12.7 percent.[1] Residents in the ten municipalities where the survey was distributed are younger than the state's population as a whole. For example, individuals in age group 25-34 constitute 8.5 percent of the population of the surveyed places and 6.7 percent of the 18-24 age group. Thus, the age distribution of the surveyed pedestrians differs significantly from the state's population as well as the overall population of the surveyed locations.

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1   http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml. Accessed on November 26, 2014.

Table 3. Age of Respondents			
Age	# of Respondents	% of All Respondents	% of Those who Responded
18-24	233	29.6	31.3
25-34	169	21.4	22.7
35-44	83	10.5	11.1
45-54	114	14.5	15.3
55-64	100	12.7	13.4
65 or Over	46	5.8	6.2
Total with Response	745	94.5	100
Non-response	43	5.5	
Total	788	100	

The pedestrian survey also included questions inquiring about the respondents' race/ethnicity, educational attainment, and household income. Table 4 shows the race/ethnicity of the respondents, Table 5 shows the educational attainment of the respondents, and Table 6 shows the distribution of the respondents by household income.

Among survey respondents, the proportion of Black respondents (28.5%) is significantly higher than the proportion in New Jersey as a whole, while the proportion of White respondents is lower (51.9%). Among New Jersey residents, Whites constitute 69.0 percent, while Blacks constitute only 13.7 percent.[2] However, the proportion of Black respondents in the ten cities where the survey was conducted is 46 percent. Thus, the survey respondents include a smaller proportion of Black respondents compared to the share of Black residents in the municipalities where the survey was conducted.

Table 4. Race and Ethnicity of Respondents			
Race/Ethnicity	# of Respondents	% of all Respondents	% of Those who Responded
White, not Hispanic	281	35.7	39.2
Black, not Hispanic	177	22.5	24.7
White Hispanic	91	11.5	12.7
Black Hispanic	27	3.4	3.8
Asian	77	9.8	10.7
Native American	4	0.5	0.6
Hawaiian/Pacific Islander	7	0.9	1.0
Other/Mixed	53	6.7	7.4
Total with Response	717	91	100
Non-response	71	9	
Total	788	100	

The proportions of Hispanic and Asian persons among the respondents (16.5% and 10.7%, respectively) are closer to the proportions of the two groups among New Jersey residents (17.7% and 8.3%, respectively). However, the proportion of Hispanic residents in the ten municipalities where the survey was conducted is 42 percent, indicating that Hispanic persons were under-represented amongst the survey respondents.

Overall, Black and Hispanic persons constitute a smaller proportion of the survey respondents than the residents of the ten places combined. However, the proportion of Black survey respondents is larger than their proportion of the state population. The proportion of Hispanic persons among the respondents is similar to the state's population, but significantly smaller than their proportion in the ten places combined.

Table 5. Educational Attainment of Respondents			
Educational Attainment	# of Respondents	% of All Respondents	% of Those who Responded
Less than High School	21	2.7	2.9
High School Graduate or Equivalent	270	34.3	37.6
Associates Degree/Vocational Certificate	106	13.5	14.7
Bachelor's Degree	183	23.2	25.5
Graduate or Professional Degree	139	17.6	19.3
Total with response	719	91.2	100
Non-response	69	8.8	
Total	788	100	

A comparison of educational attainment of the survey respondents age 18 and older shows that they have a higher level of education than New Jersey residents overall. For example, while the proportion of persons with less than high school diploma is 12.3 percent for the New Jersey population as a whole, only 2.9 percent of the survey respondents have that level of education. On the other hand, 32.9 percent of the New Jersey population age 18 and over have a bachelor's degree or higher level of education, but 44.8 percent of the survey respondents have that level of education. A reason for the higher proportion of survey respondents with a high level of education (and a lower proportion with low level of education) could be that the education level in these cities is greater than the state as a whole.

Table 6 shows that survey respondents are somewhat poorer than the New Jersey population as a whole. For example, the proportion of households with less than $15,000 annual income in the state is 9.1 percent and the proportion of households with income between $15,000 and $25,000 is 7.9 percent, but the proportions of survey respondents in these two income groups are 17.8 percent and 14.1 percent, respectively. On the other hand, 9.1 percent of the state's households have an income over $200,000, but only 5.6 percent of the survey respondents' households have that level of income. The difference in income between the two groups is not surprising since several of the places where the surveys were selected in part because they are low-income communities and the survey respondents, on average, are of younger age than the state's population.

Although the survey respondents have lower incomes relative to New Jersey's overall population, their income is fairly similar to the population of the ten places combined. The last column of Table 6 shows the income distribution of the ten places where the pedestrian survey was conducted. It is evident from a comparison of the last two columns of the table that the income distribution of the survey respondents is fairly similar to the residents of those places.

Table 6. Annual Household Income of Respondents				
Annual Household Income	# of Respondents	% of All Respondents	% of Those who Responded	% Households in the Surveyed Municipalities*
Less than $15,000	117	14.8	17.8	21.6
$15,000 to $24,999	93	11.8	14.1	12.6
$25,000 to $49,999	129	16.4	19.6	25.5
$50,000 to $74,999	108	13.7	16.4	15.5
$75,000 to $99,999	59	7.5	9.0	9.1
$100,000 to $149,000	79	10	12.0	9.0
$150,000 to $199,999	36	4.6	5.5	3.3
$200,000 or more	37	4.7	5.6	3.3
Total with Response	658	83.5	100	100
Non-response	130	16.5		
Total	788	100		

* Source: American Community Survey 2008-2012

The pedestrian survey asked whether the respondents had driver's licenses. Responses reveal that 78 percent of the respondents have a driver's license, while the remaining 22.0 percent do not. This proportion is somewhat lower than the proportion of persons with driver's licenses in New Jersey, but that is not surprising because of the nature of the places where the surveys were conducted. For example, according to the Statistical Abstract of the United States, of the 7.0 million residents of New Jersey who were 15 years or older in 2009-2010, approximately 5.9 million had driver's licenses. These figures seem to indicate that approximately 16.0 percent of New Jersey residents of driving age do not have a driver's license.[3]

On the whole, the survey respondents are not representative of the state's population. That is not surprising given that the primary criteria for the selection of places for the survey were geographic diversity and diversity of demographics characteristics. Additionally, the primary criteria for the selection of survey interception sites within the selected cities were their high pedestrian volumes and crash volumes. The survey respondents were far more similar to the population of the places surveyed than the state as a whole.

3   http://www.census.gov/compendia/statab/2012edition.html. Accessed on November 26, 2014

Pedestrians' Perception of the Occurrence and Seriousness of Distracted Driving

A question investigating how the respondents perceive the change in the prevalence of distracted driving over time was included in all three surveys. Specifically, the respondents were asked whether they thought distracted driving has become more common, less common, or remained the same in New Jersey during the past ten years. An overwhelming majority of 78.0 percent said the distracted driving has become more common, whereas only 3.2 percent said it has become less common and 7.2 percent said it has remained the same. Another 11.7 percent said they did not know whether distracted driving has increased or decreased during the past ten years. Overall, the results show that far more respondents think distracted driving has become more common than the respondents who think it has remained the same or decreased over time.

Another question was included in the pedestrian survey inquiring how the respondents perceive the seriousness of distracted driving in New Jersey. The responses to this question are summarized in Table 7. Half of the respondents consider distracted driving to be a very serious problem in the state and another 39 percent consider it to be a serious problem. In contrast, only three percent of respondents consider distracted driving not to be a serious or not at all serious. The survey results clearly show that the respondents believe distracted driving is a serious issue in the state.

Table 7. Pedestrians' Perception of the Seriousness of Distracted Driving			
Seriousness of Distracted Driving	# of Respondents	% of All Respondents	% of Those who Responded
Very Serious	390	49.5	49.9
Serious	306	38.8	39.1
Neither Serious nor not Serious	63	8.0	8.1
Not Serious	20	2.5	2.6
Not at All Serious	3	0.4	0.4
Total with Response	782	99.2	100
Non-response	6	0.8	
Total	788	100	

Pedestrians' Perceived Solutions to Distracted Driving

The pedestrian survey included a question asking the respondents how strongly they feel about some of the solutions to distracted driving. A total of nine solutions were listed in the survey and the respondents were asked to provide a score between 1 and 5 for each solution, with 1 being the least important and 5 being the most important. The mean and median scores are shown in Table 8.

Table 8. Pedestrians' Perception of Importance of Solutions to Distracted Driving		
Strategies	Median	Mean
Stricter new laws against distracted drivers	4	3.75
Stricter enforcement of existing laws	4	4.03
More severe legal penalty for all distracted drivers caught in the act	4	3.79
More severe legal penalty for distracted drivers involved in crashes	5	4.11
TV campaigns against distracted driving	4	3.76
Social media campaigns against distracted driving	4	3.89
Mandatory education for new drivers	5	4.19
Mandatory test upon driver's license renewal	4	3.50
Violent crash videos for teens and young adults to show the potential outcome of distracted driving	4	3.97

Both the median and mean scores in Table 8 indicate how important each solution is to the respondents. The median is the value of the midpoint when the scores are arranged in ascending or descending order. The mean is the arithmetic average obtained by dividing the sum of the scores given by all respondents by the total number of respondents. Higher median and mean values indicate a solution of greater importance and a lower value indicates one of less importance.

Several observations can be made from the figures in Table 8. First, since the lowest mean score of 3.5 and the lowest median score of 4 are both greater than 3 – the midpoint of the scale – it can be inferred that the respondents perceive all solutions to be important. Second, among the solutions presented to the respondents, mandatory education for new drivers received the highest mean and median scores. This indicates that the respondents think this solution is the most important. More serious legal penalties for distracted drivers involved in crashes received the second highest mean score, indicating that this solution is also viewed as highly important by the respondents. However, the respondents do not weigh more serious legal penalties for all distracted drivers equally: some respondents differentiate between distracted drivers involved in crashes and distracted drivers not involved in crashes.

Stricter enforcement of existing laws is considered to be the third most important solution and is thought to be more important than the enactment of stricter laws to address distracted driving. Fourth, mandatory testing of drivers at the time of license renewal received the least support among all solutions from the surveyed pedestrians. Fifth, TV and social media campaigns against distracted driving are considered to be slightly less important than campaigns through the showing of violent videos about the consequences of distracted driving.

Pedestrians' Perception of Police Role after Vehicle Crash

One of the controversial issues related to distracted driving is whether police should check the cell phones or smart phones of the drivers who are involved in crashes to see if they were using the phones at the time of the crash. On one hand, it can be argued that police can better determine the cause of crashes by checking the drivers' phones, but on the other hand, checking drivers' phones also raises issues relating to individuals' rights to privacy.

A question was included in the pedestrian survey inquiring about the circumstances in which police should check drivers' phones. Four different scenarios were given and the respondents were asked whether they agreed to police checking the drivers' phones in each scenario. The results are summarized in Table 9.

Table 9. Pedestrians' Views on Police Checking Drivers' Phones after Crashes					
Police should check drivers' phones...	Agree (%)	Disagree (%)	Neutral (%)	Don't Know (%)	Total (%)
After every vehicle crash	77.9	10.2	8.6	3.4	100
After crashes resulting in any injury	81.4	7.9	7.7	3.0	100
After crashes resulting in a serious injury	87.0	4.6	6.1	2.4	100
After crashes resulting in a fatality	90.1	3.9	3.3	2.7	100

More than three-quarters of the respondents think the drivers' phones to be checked after any vehicle crash. Only 10.2 percent of the respondents do not think police should check drivers' phones after any type of crash. Support for police checking drivers' phones increases with the severity of crashes. While 77.9 percent of the respondents agreed that police should check drivers' phones after any type of crash, 90.1 percent agreed that police should only check drivers' phones after crashes resulting in fatalities. This shows that people's tolerance for distracted driving decreases as the severity of crashes increases.

Pedestrians' Perception of the Occurrence and Seriousness of Distracted Walking

Like the question on distracted driving, a question was included in the pedestrian survey to investigate the respondents' perception of change in the prevalence of distracted walking in New Jersey over the past ten years. In response to the question, 68.5 percent of the respondents said distracted walking has become more common between 2004 and 2014, 4.8 percent said it has become less common, 12.8 percent said it has remained the same, and 13.9 percent said they do not know whether or how it has changed. Responses to this question show that respondents believe that distracted walking has become more prevalent in the state in recent years. However, a comparison of these responses with the responses to the question on the change in distracted driving shows that more respondents believe that distracted driving has increased. While 78.0 percent of the respondents think that distracted driving has increased, 68.5 percent think distracted walking has increased.

A question was also included in the pedestrian survey about the seriousness of distracted walking in New Jersey. The responses to the question are summarized in Table 10. More than three-quarters of the respondents think that distracted walking is a serious problem in New Jersey, while only eight percent of respondents think that it is not a serious problem. Although the respondents who think that distracted walking is a serious problem outnumber those who do not think it is a serious problem, a comparison of figures in Table 10 with the figures on the seriousness of distracted driving in Table 7 shows that respondents think distracted driving is a much more serious problem than distracted walking. For example, 89 percent of the respondents think distracted driving is a very serious or serious problem, yet 76 percent think distracted walking is a very serious or serious problem. Furthermore, while 50 percent of the respondents think distracted driving is a serious problem, only 32 percent think distracted walking is a serious problem.

Table 10. Pedestrians' Perception of the Seriousness of Distracted Walking in New Jersey			
Seriousness of Distracted Walking	# of Respondents	% of All Respondents	% of Those who Responded
Very Serious	250	31.7	32.3
Serious	335	42.5	43.3
Neither Serious nor not Serious	127	16.1	16.4
Not Serious	48	6.1	6.2
Not at all Serious	14	1.8	1.8
Total with Response	774	98.2	100
Non-response	14	1.8	
Total	788	100	

Pedestrians' Perceived Solutions to Distracted Walking

Similar to the question on solutions to distracted driving, a question was included in the pedestrian survey asking how pedestrians value different types of solutions to distracted walking in New Jersey. The respondents were provided a list of five potential solutions and asked to rate the solutions on a five-point scale, with 1 being the least important and 5 being the most important. The mean and median scores are presented in Table 11.

Table 11. Pedestrians' Perception of Importance of Solutions to Distracted Walking		
Solutions	Median	Mean
Police ticket persons who cross the road while wearing headphones	2	2.32
Police ticket persons who cross the road while texting	3	3.09
Mandatory education for new drivers on distracted walking	4	3.59
Schools provide education to students on distracted walking	5	3.86
Violent crash videos for teens and young adults to show the potential outcome of distracted walking	4	3.76

Among the measures to address distracted walking, education through schools was considered to be the most important, followed by the display of violent crash videos to demonstrate the consequences of distracted walking. Police issuing tickets to distracted walkers received the least support. Although the mean score for police ticketing pedestrians crossing roads while texting was higher than 3 – the midpoint of the scale – the low mean and median scores for police ticketing persons crossing roads while wearing headphones indicate that the respondents have little support for this solution. Overall, there is a greater support for education and campaigns to address distracted walking than police intervention.

A comparison of mean and median scores for distracted walking solutions in Table 11 with the scores for distracted driving solutions in Table 8 reveals that the solutions to distracted walking are generally considered less important than the solutions to distracted driving. For example, the mean score for five of the nine solutions to distracted driving is higher than the highest score for any solution for distracted walking. A reason for this discrepancy is rooted in the fact that distracted driving is considered by the respondents as a more serious problem than distracted walking, which is evident from a comparison of Table 7 and Table 10.

Strategies Adopted by the Respondents to Avoid Being Distracted While Driving

The pedestrian survey included a question asking which measures the respondents adopted to limit being distracted while driving. Since this question is irrelevant to those who do not drive, responses were sought from only those respondents who mentioned driving at least occasionally. This reduced the number of respondents from 788 to 572. These respondents were allowed to select multiple measures from a list of actions a driver could take to limit distraction. The results are summarized in Table 12.

Table 12. Strategies Adopted by Respondents to Limit Driving Distraction			
Strategy	Response	Percent	Respondents
I do not bring food or drink to car	117	20.5	572
I turn off phone manually while entering the car	94	16.4	572
I alert potential callers that I would be driving	111	19.4	572
I hand my phone to my passengers to talk/text	208	36.4	572
I stop at a safe area and call back	268	46.9	572
I only use my phone when stopped at traffic lights	154	26.9	572
I do not use any strategies	110	19.2	572
Other strategies	9	1.6	572

The most common measure adopted by the respondents is stopping at a safe area and calling back when they receive calls while driving. Giving the phone to passengers is also a common measure. Somewhat surprisingly, people who use phones at traffic lights as a measure to limit distraction is also quite high at almost 27 percent.

Perhaps most importantly, almost 20 percent of the respondents mentioned that they do not adopt any measure to limit distraction while driving. Further investigation revealed that the age distribution of those who do not adopt any measure to limit distraction is not very different from the age distribution of all drivers, except that the proportion of persons in the youngest age group (age 18-25) is larger among all drivers than the proportion of persons among those who mentioned not adopting any measure to limit distraction while driving (see Table 13). Thus, the survey results do not indicate that the youngest drivers are more likely not to use any measure to limit distracted driving than others. If anything, the results indicate that they are more likely to adopt measures than older drivers.

Table 13. Age Distribution of Drivers Who do not Adopt Any Measure to Limit Distracted Driving				
Age	All Drivers		Drivers not using any measure to limit distraction	
	# of Respondents	Percent	# of Respondents	Percent
18 – 25	177	31.1	22	22.4
25 – 34	129	22.6	26	26.5
35 – 44	61	10.7	12	12.2
45 – 54	86	15.1	20	20.4
55 – 64	82	14.4	10	10.2
65 or over	35	6.1	8	8.2
Total	570	100	98	100

RESULTS FROM THE POLICE AND PROFESSIONAL SURVEYS

Although the links to the surveys of police officers and professionals were distributed through different lists and the collected data were stored in two separate datasets, the results of the two surveys are presented together in this section since the questions in the two surveys are identical and arranged in the same order. In the following sections, results from the two surveys are presented, beginning with the characteristics of the agencies the respondents are employed at.

The Employers of the Surveyed Professionals and Police Officers

Table 14 shows the types of agencies the surveyed police officers and the planning professionals work at. The types of employers of the planning professionals are far more diverse than the employers of the police officers. Although municipalities account for the largest share for both groups, they account for less than 40 percent of the planning professionals but close to 94 percent of the police officers. A significantly larger proportion of the surveyed planning professionals are employed by counties than the police officers. While almost all the surveyed police officers work for municipalities, many of the professionals work at for-profit companies and non-profit organizations.

Table 14. Distribution of Surveyed Planning Professionals and Police Officers by Employer Type						
Employer Type	Professionals			Police Officers		
	# of Respondents	% of all Respondents	% of Those who Responded	# of Respondents	% of All Respondents	% of Those who Responded
Municipality	79	37.8	39.3	145	92.9	93.5
County	33	15.8	16.4	5	3.2	3.2
Private Firm/ Consultant	24	11.5	11.9	0	0.0	0.0
Non-profit/ Educational	46	22.0	22.9	0	0.0	0.0
State/MPO	12	5.7	6.0	0	0.0	0.1
Other	7	3.3	3.5	5	3.2	3.2
Total with Response	201	96.2	100	155	99.4	100
Non-response	8	3.8		1	0.6	
Total	209	100		156	100	

Characteristics of the Professionals and the Police Officers

In addition to the question about employers, other questions were included in the online survey about the demographic characteristics of the respondents. Answers to a question on gender revealed that 34 percent of the respondents among the planning professionals are female, but only four percent of the respondents among the police officers are female. The age distribution of the two groups, shown in Table 15, reveals that the surveyed police officers are generally younger than the planning professionals. Almost 84 percent of the surveyed police officers are between the ages of 25 and 44, but less than 27 percent of the surveyed planning professionals belong to that age group. The significant differences

Table 15. Age Distribution of Professionals and Police Officers						
Age Range	Professionals			Police Officers		
	Number of Respondents	% of all Respondents	% of Those who Responded	# of Respondents	% of all Respondents	% of Those who Responded
Below 25	5	2.4	2.4	6	3.8	3.9
25 – 34	24	11.5	11.7	64	41.0	41.6
35 – 44	30	14.4	14.6	65	41.7	42.2
45 – 54	63	30.1	30.7	19	12.2	12.3
55 – 64	61	29.2	29.8	6	3.8	3.9
65 or over	22	10.5	10.7	0	0.0	0.0
Total with Response	205	98.1	100	154	98.7	100
Non-response	4	1.9		2	1.3	
Total	209	100		156	100	

between the two groups in terms of gender and age suggests that their perceptions about the issues pertaining to distracted driving and walking could be somewhat affected by these differences alone.

Respondents were also asked whether their employers are directly associated with the enactment or enforcement of distracted driving laws. Seventy-six percent of the surveyed police officers said their employers are involved in such activities compared to only 28 percent of the planning professionals.

To summarize, the surveyed police officers are almost entirely male, while two-thirds of the surveyed professionals are male. The police officers are younger, almost entirely employed by municipalities, and more than three-quarters of them work for agencies involved in the enactment or enforcement of distracted driving laws. In contrast, the surveyed professionals are older, employed by diverse types of agencies, and only a little over a quarter of them work for agencies involved in the enactment or enforcement of distracted driving laws.

Perception of the Occurrence and Seriousness of Distracted Driving

The planning professionals and police officers were also asked whether and how distracted driving has changed over the past ten years. Among the professionals, 92.7 percent said it has increased, one percent said it has decreased, 2.9 percent said it has remained the same, and 3.4 percent said they do not know whether it increased or decreased between 2004 and 2014. In contrast, 98.1 percent of the surveyed police officers think distracted driving has increased, 1.3 percent think it has decreased, and 0.6 percent thinks it has remained the same. Thus, the perception of an increase in distracted driving is slightly more prevalent among the police officers than among the professionals. In contrast to 98.1 percent of the police officers and 92.7 percent of the planning professionals, only 78.0 percent of the surveyed pedestrians perceived an increase in distracted driving over the past ten years. Still, an overwhelming perception of increased distracted driving exists among all three groups.

Table 16 shows how serious the surveyed planning professionals and police officers believe distracted driving is. For the sake of comparison, the perception of pedestrians is also presented in the table. All three groups consider distracted driving to be a serious problem, but the proportion of those who think it is a very serious problem is higher among the planning professionals and police officers than the pedestrians. It is noteworthy that none of the respondents among the planning professionals and police officers surveyed think distracted driving is not a serious problem.

Table 16. Perceived Seriousness of Distracted Driving			
	Professionals (%)	Police Officers (%)	Pedestrians (%)
Very serious	63.5	61.7	49.9
Serious	34.6	37.7	39.1
Neither Serious nor not Serious	1.9	0.6	8.1
Not Serious	0.0	0.0	2.6
Not at All Serious	0.0	0.0	0.4
Total	100	100	100

Perceived Solutions to Distracted Driving Among Professionals and Police Officers

The online survey of planning professionals and police officers included a question to investigate how the respondents value different types of solutions to distracted driving. They were asked to indicate the importance of each solution by using a five-point scale, with 5 being most important and 1 being least important. The mean and median scores for the two groups are presented in Table 17. For the sake of comparison, the mean and median scores from the pedestrian survey are also replicated in the last two columns of the table.

Table 17. Mean and Median Scores for Solutions to Distracted Driving						
Solution	Professionals		Police Officers		Pedestrians	
	Median	Mean	Median	Mean	Median	Mean
Stricter new laws against distracted drivers	3	3.43	4	3.74	4	3.75
Stricter enforcement of existing laws	5	4.37	5	4.51	4	4.03
More severe legal penalty for all distracted drivers caught on the act	4	3.81	4	3.94	4	3.79
More severe legal penalty for distracted drivers involved in crashes	5	4.25	5	4.33	5	4.11
TV campaigns against distracted driving	4	3.85	4	3.85	4	3.76
Social media campaigns against distracted driving	4	3.92	4	3.89	4	3.89
Mandatory education for new drivers	5	4.43	5	4.51	5	4.19
Mandatory test upon license renewal	3	3.33	3	3.15	4	3.50
Violent crash videos for teens and young adults to show the potential outcome of distracted driving	4	3.71	4	4.07	4	3.97

The scores for the nine solutions in Table 17 show that the importance of each solution is fairly similar across the three groups. Mandatory education for new drivers, stricter enforcement of existing laws, and more severe legal penalties for drivers involved in crashes are considered to be the three most important solutions by all three groups. Similarly, mandatory testing of drivers at the time of license renewal received the least support from all three groups. One noticeable difference between the three groups is that stricter new laws received more support from the police officers and pedestrians than the planning professionals. Overall, however, the scores for the solutions were fairly consistent across all three groups.

Professionals' and Police Officers' Perception of Police Role after Vehicle Crash

Table 8 summarizes from a question asking the respondents whether they agreed or disagreed with police checking drivers' phones after crashes with four different levels of crash severity. The summary of responses from an identical question in the pedestrian survey is also replicated in the table for comparison.

Table 18. Views on Police Checking Drivers' Phones After Crashes					
Police should check cell or smart phone…	Agree	Disagree	Neutral	Don't Know	Total
After every vehicle crash					
Professionals	65.8	12.1	19.1	3.0	100
Police Officers	55.3	26.2	17.7	0.7	100
Pedestrians	77.9	10.2	8.6	3.4	100
After crashes resulting in any injury					
Professionals	82.9	5.5	9.5	2.0	100
Police Officers	75.4	12.0	12.0	0.7	100
Pedestrians	81.4	7.9	7.7	3.0	100
After crashes resulting in a serious injury					
Professionals	91.4	2.0	5.6	1.0	100
Police Officers	94.4	3.5	1.4	0.7	100
Pedestrians	87.0	4.6	6.1	2.4	100
After crashes resulting in a fatality					
Professionals	92.4	1.0	5.6	1.0	100
Police Officers	95.8	2.8	1.4	0.0	100
Pedestrians	90.1	3.9	3.3	2.7	100

A few important observations can be made from the results in Table 18. First, a majority of each group is in favor of police checking drivers' phones after any vehicle crash, irrespective of severity. Second, agreement with police checking drivers' phones increases with severity of crashes for all three groups. Third, police officers are least in favor of checking phones after every crash, but with crash severity, their agreement increases substantially. Almost 96 percent of the police officers believe that drivers' phones should be checked after crashes involving fatalities. On the other hand, pedestrians are most in favor of checking drivers' phones after every crash, but their views are less closely tied to crash severity than the other groups. Finally, planning professionals are less inclined to agree that police should check phones after every crash, but like the other two groups, they also become more supportive of the police checking phones as crash severity increases.

Figure 5 shows the proportion of respondents among the all survey respondents who agreed that police should check drivers' phones, along with different levels of crash severity.
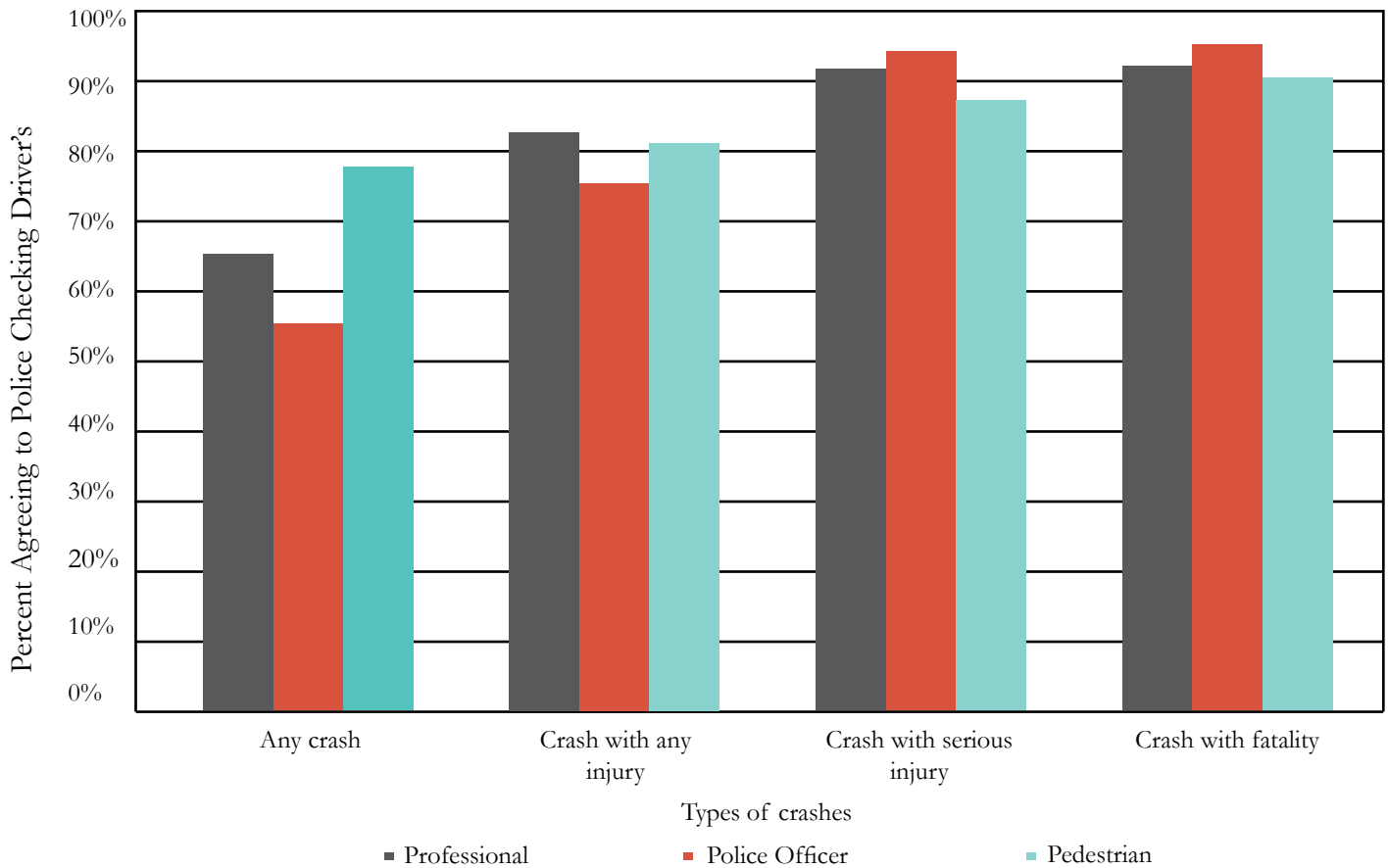
Figure 5. Percent of respondents agreeing that police should check drivers' cell phone after crashes.

Perception of the Prevalence of Different Types of Distracted Driving

The online survey of professionals and police officers included a question about the prevalence of different types of distracted driving in New Jersey. The question was not included in the pedestrian survey. The respondents of the survey were asked to rate 12 types of distracted driving behavior on a five-point scale, with 5 being the most common and 1 being the least common. The mean and median scores from the survey are summarized separately for planning professionals and police officers in Table 19.

"Distracted Pedestrians in Harm's Way." Distracted Pedestrians in Harm's Way. N.p., n.d. Web. 17 Feb. 2015.

"Parents Worried about Teens' Distracted Walking." Tmj4.com. N.p., n.d. Web. 17 Feb. 2015.

"Lawyerscope." The Dangers of Texting While...WALKING! N.p., n.d. Web. 17 Feb. 2015.

Table 19. Perceived Prevalence of Different Types of Distracted Driving Behavior				
Type of Distraction	Professionals		Police Officers	
	Median	Mean	Median	Mean
Making or receiving calls by hand-held cell phone or smart phone while driving	4	4.19	4	4.29
Making or receiving calls by hands-free cell phone or smart phone while driving	4	3.90	3	3.37
Using a built-in voice-activated vehicle phone to make calls	3	3.23	3	2.69
Texting while driving	4	3.77	4	4.11
Talking to passengers while driving	5	4.71	5	4.35
Eating or drinking while driving	4	4.20	4	3.79
Grooming while driving	3	3.04	3	2.97
Watching video while driving	2	1.88	2	1.92
Adjusting navigation (GPS) system while driving	4	3.54	3	3.15
Reading or checking maps while driving	3	2.71	2	2.30
Adjusting radio or audio system while driving	5	4.28	4	4.13
Using cell or smart phone for calling or texting while stopped at a traffic light	5	4.46	4	4.29

Table 19 shows that both professionals and police officers think that talking to passengers is the most common form of distraction for drivers. Using phones while stopped at traffic light, adjusting audio/radio, and using hand-held phone for making and receiving calls while driving are also considered to be among the most common forms of distraction by both groups. In contrast, watching videos and checking maps while driving are viewed as the least common forms of distraction by both groups. On the whole, the perception of prevalence of different types of distracted driving behavior is consistent between the two groups since both groups scored the different types of behavior similarly.

Perception of Safety of Different Types of Distracted Driving

The online survey also asked how respondents perceive the safety consequences of the various types of distracted driving behavior shown in Table 19. The respondents were asked to use a 5-point scale, with 1 being the least safe and 5 being the safest. The mean and median scores for professionals and police officers are summarized separately in Table 20. A lower mean and median value in the table is indicative of lower perceived safety, whereas a higher value is indicative of higher safety.

Table 20 shows that the perception of safety for the different types of distraction is very similar for the two groups. Texting while driving is seen as the least safe by both groups, followed by watching videos while driving and using hand-held phones while driving to make or receive calls, respectively. For both groups, talking to passengers, using built-in voice-activated phones, and adjusting audio/video are the three safest forms of distraction, although the actual sequence of the three types varies between the two groups.

Table 20. Perceived Safety of Different Types of Distracted Driving Behavior				
Distracted Driving Behavior	Professionals		Police Officers	
	Median	Mean	Median	Mean
Making or receiving calls by hand-held cell phone or smart phone while driving	1	1.49	1	1.44
Making or receiving calls by hands-free cell phone or smart phone while driving	3	2.72	3	2.56
Using a built-in voice-activated vehicle phone to make calls	3	3.32	3	3.38
Texting while driving	1	1.06	1	1.13
Talking to passengers while driving	4	3.55	3	3.33
Eating or drinking while driving	3	2.79	3	2.68
Grooming while driving	2	1.95	2	2.03
Watching video while driving	1	1.14	1	1.40
Adjusting navigation (GPS) system while driving	2	2.08	2	2.14
Reading or checking maps while driving	2	1.70	2	1.92
Adjusting radio or audio system while driving	3	3.15	3	3.01
Using cell or smart phone for calling or texting while stopped at a traffic light	3	2.93	3	2.65

Table 19 and Table 20 show how the surveyed professionals and police officers perceive the prevalence and safety consequences of different types of driving distractions. To provide a more comprehensive look at prevalence and safety consequences of driving distraction, Table 21 shows the percent of planning professionals and police officers that believe each type of distraction to be the most common and least safe. From the combined information in Table 21, it is possible to see which types of distractions are perceived to be most common and also least safe. For example, while talking to passengers is considered to be the most common form of distraction, both groups think is relatively safe. At the other end of the spectrum, while both groups considered watching videos to be very unsafe, they also considered to be a very uncommon form of distraction. However, texting while driving and using hand-held phones for calls while driving are considered by both groups to be very common and yet unsafe.

Figure 6 combines the information from Table 21 to graphically demonstrate the proportion of respondents who perceived each type of distracted driving behavior to be most common and least safe in the surveys of professionals and police officers. The horizontal axis of the figure shows distraction type and the respondent group, while the vertical axis shows the percentage of respondents that believe the distraction to be most common and least safe. The total length of a column in the chart provides an indication about the dangers posed by each type of distraction for each group of respondents.
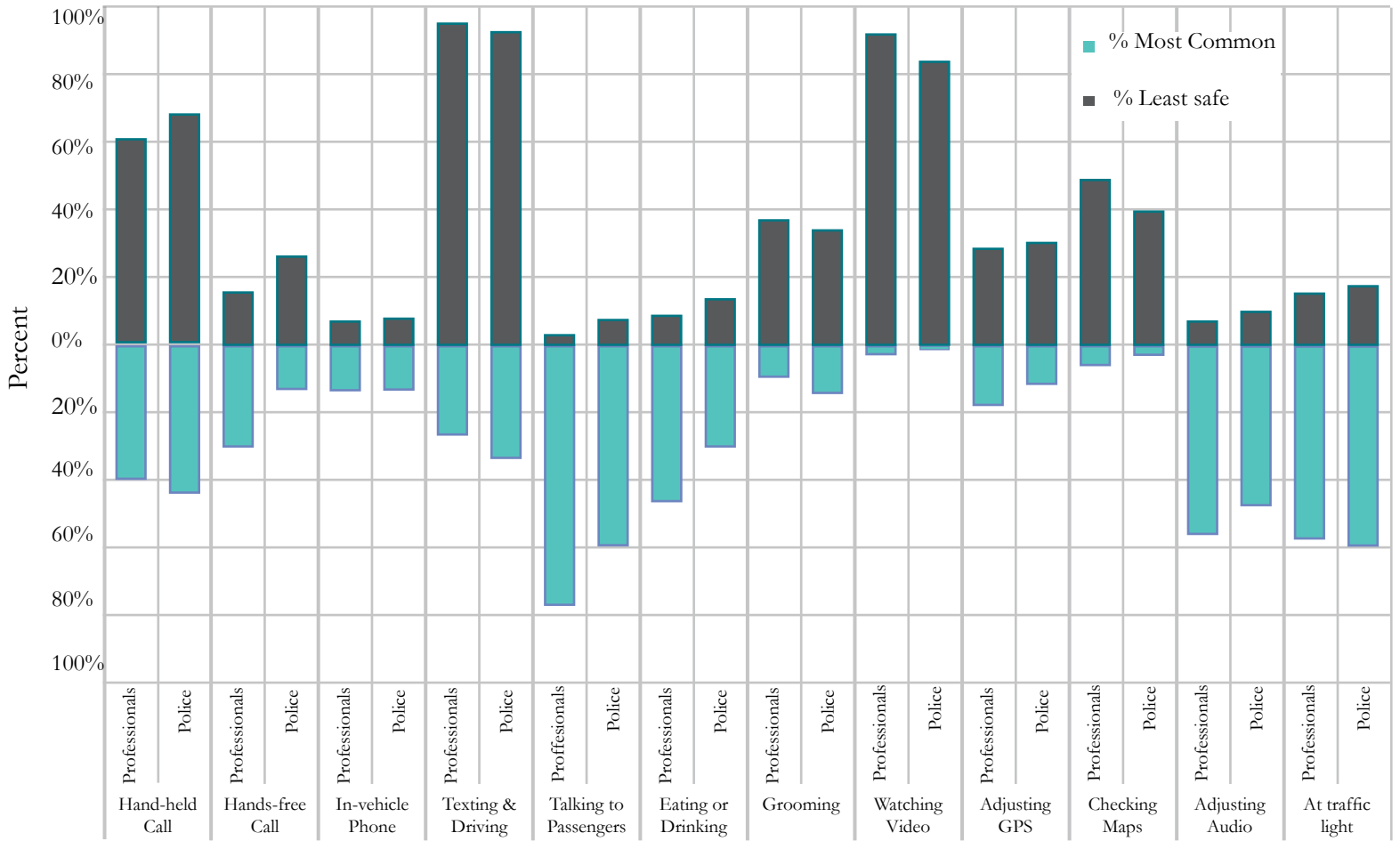
Figure 6. Percent respondents perceiving types of distracted driving behavior as most common and least safe.

Table 21. Percent of Respondents that Perceive Different Types of Distracted Driving as Most Common and Least Safe				
Type of Distraction	Professionals		Police Officers	
	% Most Common	% Least Safe	% Most Common	% Least Safe
Making or receiving calls by hand-held cell phone or smart phone while driving	40.2	60.9	44.2	66.7
Making or receiving calls by hands-free cell phone or smart phone while driving	31.1	17.0	12.8	24.5
Using a built-in voice-activated vehicle phone to make calls	13.7	6.3	13.0	7.1
Texting while driving	25.4	95.2	33.8	93.5
Talking to passengers while driving	78.2	2.4	59.4	6.4
Eating or drinking while driving	45.7	6.9	30.3	12.9
Grooming while driving	9.1	37.4	13.5	33.3
Watching video while driving	2.0	92.3	0.6	82.7
Adjusting navigation (GPS) system while driving	19.3	27.5	12.8	29.9
Reading or checking maps while driving	6.7	47.6	2.6	39.0
Adjusting radio or audio system while driving	57.0	5.9	47.4	11.0
Using cell or smart phone for calling or texting while stopped at a traffic light	57.5	15.5	59.0	16.7

Comparison of Distracted Driving with Other Driving Infractions

The planning professionals and police officers were also asked to compare distracted driving with different types of driving infractions. They were asked whether they agreed or disagreed with statements suggesting that distracted driving is less safe (or more dangerous) than the specified violations. The results are summarized in Table 22.

Table 22. Comparison of Distracted Driving Safety with Other Types of Violations						
Distracted driving is less safe than...	Professionals			Police Officers		
	Agree (%)	Disagree (%)	Neutral (%)	Agree (%)	Disagree (%)	Neutral (%)
Driving after drinking within the legal limit	87.3	12.7	205	90.7	9.3	150
Driving after drinking above the legal limit	44.2	55.8	206	34.2	65.8	149
Driving 10 mph over speed limit	90.7	9.3	205	92.0	8.0	150
Driving 20 mph over speed limit	81.6	18.4	206	80.1	19.9	151
Driving without wearing seat belt	76.2	23.8	205	79.5	20.5	151

The comparisons in Table 22 show that distracted driving is perceived to be less safe than all violations except driving after drinking alcohol above the legal limit, and even then, 44.2 percent of the planning professionals and 34.2 percent of the police officers perceived distracted driving to be less safe. Among the planning professionals and police officers, more than 80 percent believe distracted driving is less safe than driving above 20 miles per hour over the speed limit and more than 75 percent believe it is less safe than driving without wearing a seat belt. This provides a clear indication that distracted driving is generally considered to be highly unsafe. These results are consistent with the results in Table 16, which showed that a large majority of planning professionals and police officers consider distracted driving to be a very serious concern.

Desired Penalty for Distracted Drivers

The planning professionals and police officers were also asked through the survey which types of distraction deserves penalties. The respondents were asked to select one of five alternatives. The results are summarized in Table 23.

Table 23. Desired Penalty for Different Types of Driver Distraction		
	Professionals (%)	Police Officers (%)
Penalize all drivers who text, talk on hand-held phone, or talk on hands-free phone while driving	14.2	17.6
Penalize all drivers who talk or text on hand-held phone, but do not penalize those who use hands-free phone while driving	59.9	61.3
Penalize all drivers who text while driving, but do not penalize those who talk on any phone	12.2	4.2
Penalize all distracted drivers even if they are not texting or talking on their phones, including those who eat and drink while driving	8.1	16.2
Do not penalize any distracted driver because punishment will not solve the problem	5.6	0.7
Total with response	100	100

Both groups feel strongly about penalizing drivers who talk or text while driving, but they also feel strongly that drivers who only talk on hands-free phone should not be penalized. The difference between the first two alternatives in the table is that the first alternative does not allow the use of any phone while driving, while the second alternative does not allow calls or texting by hand-held phone, but allows calls by hands-free phones. While 14.2 percent of the planning professionals and 17.6 percent of the police officers support banning phone use altogether while driving, 59.9 percent of the planning professionals and 61.3 percent of the police officers support banning texting and calling with hand-held phones but permitting phone calls using hands-free phones.

Table 23 also shows that only a small proportion of planning professionals and police officers support penalizing all distracted drivers, including those who eat and drink while driving. The proportion of police officers who hold this view (16.2%) is almost double the proportion of planning

professionals (8.2%). Only a very small proportion of the two groups feel that distracted drivers should not be penalized at all.

The Seriousness of Distracted Walking

The survey of planning professionals and police officers inquired about the seriousness of distracted walking in New Jersey. The responses of the two groups are summarized in Table 24. The two groups' responses to the seriousness of distracted driving are also replicated in the table for convenient comparison.

The surveyed professionals and police officers have similar perceptions about the seriousness of distracted walking in New Jersey. Although the proportion of respondents in the two groups who believe distracted walking is very serious or serious is fairly similar (70% against 69%), the proportion of police officers who perceive distracted walking to be very serious is smaller than the proportion of planning professionals (20% against 26%).

Table 24 also shows that both planning professionals and police officers believe distracted driving is a far more serious problem for New Jersey than distracted walking. While more than 60 percent of the two groups believe distracted driving is very serious, only 20-25 percent of them believe distracted walking is very serious. Yet a majority of both groups believe distracted walking is either a serious or very serious problem in New Jersey.

Table 24. Perceived Seriousness of Distracted Walking Compared to Perceptions of the Seriousness of Distracted Driving				
Seriousness	Professionals		Police Officers	
	Distracted Walking (%)	Distracted Driving (%)	Distracted Walking (%)	Distracted Driving (%)
Very Serious	25.7	63.5	19.9	61.7
Serious	43.2	34.6	51.0	37.7
Neither Serious nor not Serious	24.8	1.9	19.9	0.6
Not Serious	6.3	0.0	8.6	0.0
Not at All Serious	0.0	0.0	0.7	0.0
Total	100	100	100	100

A comparison of Table 24 with Table 10 reveals that the surveyed pedestrians perceive distracted walking as a more serious problem than the planning professionals and police officers. For example, 32 percent of the pedestrians believe distracted walking is very serious, while 76 percent believe it is serious or very serious.

Perception of the Prevalence of Different Types of Distracted Walking

The planning professionals and police officers were also asked about the prevalence of different types of distracted walking behavior on New Jersey roads. They were provided a list of six types of distractions and asked to rate each on a five-point scale, with 1 being the least common and 5 being the most common. The mean and median scores for the two groups are shown in Table 25. A comparison of the scores of the two groups shows that their perception of prevalence of different types of distracted walking behavior is very similar. Each type of distraction is thought to be common, but talking on hand-held phones while crossing roads is thought to be the most prevalent by both groups.

Table 25. Perceived Prevalence of Different Types of Distracted Walking Behavior				
Distracted Walking Behavior	Professionals		Police Officers	
	Median	Mean	Median	Mean
Wearing headphones while crossing road	4	3.89	4	3.71
Wearing headphones while walking on road	4	3.71	4	3.69
Talking on hand-held phone while crossing road	4	4.14	4	4.10
Talking on hand-held phone while walking on road	4	3.90	4	3.91
Texting or reading from phone while crossing road	4	3.91	4	3.99
Texting or reading from phone while walking on road	4	3.80	4	3.93

Perception of Safety of Different Types of Distracted Walking Behavior

The planning professionals and police officers were asked about the safety consequences of the types of distracted behavior, shown in Table 25. They were asked to rate safety consequences of each by using a five-point scale, with 1 being the least safe and 5 being the safest. The mean and median scores of each type of behavior for the two groups are shown in Table 26. A smaller mean or median score in the table means that a behavior is less safe.

Table 26. Perceived Safety of Different Types of Distracted Walking Behavior				
Distracted Walking Behavior	Professionals		Police Officers	
	Median	Mean	Median	Mean
Wearing headphones while crossing road	2	2.06	2	2.20
Wearing headphones while walking on road	2	2.08	2	2.18
Talking on hand-held phone while crossing road	2	2.00	2	2.15
Talking on hand-held phone while walking on road	2	2.09	2	2.24
Texting or reading from phone while crossing road	1	1.51	1	1.70
Texting or reading from phone while walking on road	1	1.66	1	1.77

From the fact that all mean and median scores are smaller than 3 – the midpoint of the scale – one can conclude that all types of distracted walking behavior shown in Table 26 are considered to be unsafe by both groups. However, texting is considered to be less safe than wearing headphones and talking on hand-held phones. It is also evident from the mean scores in the table that planning professionals believe each type of distracted walking behavior is moderately less safe than the police officers.
To provide a comprehensive view of the perceived prevalence and safety consequences of different types of walking behavior, the proportion of respondents that perceived the types

of behavior as most prevalent and least safe is shown in Table 27. The difference between planning professionals and police officers about the prevalence of different types of distracted walking behavior is modest, but planning professionals are more likely than the police officers to rank these types of behavior as the least safe. However, the proportion of respondents in both groups who believe texting while walking or crossing roads is the least safe is greater than 50 percent.

Table 27. Percent of Respondents Perceptions of the Safety of Distracted Walking Behaviors				
Distracted Walking Behavior	Professionals		Police Officers	
	% Most Common	% Least Safe	% Most Common	% Least Safe
Wearing headphones while crossing road	34.5	41.7	27.3	31.8
Wearing headphones while walking on road	27.8	41.7	25.3	31.5
Talking on hand-held phone while crossing road	41.2	35.6	39.6	27.5
Talking on hand-held phone while walking on road	31.4	34.6	32.7	27.2
Texting or reading from phone while crossing road	34.3	67.6	34.2	61.5
Texting or reading from phone while walking on road	30.2	58.3	30.2	55.5

Solutions to Distracted Walking for Planning Professionals and Police Officers

The planning professionals and police officers were also asked about potential solutions to distracted walking in New Jersey. Specifically, they were asked to rate five solutions to distracted walking on a 5-point scale, with 1 being the least important and 5 being the most important. The mean and median scores obtained from the responses are shown in Table 28. The median score for each solution is identical in the two groups; the mean scores are very similar as well. Education at school about distracted walking is thought to be the most important solution by both groups. This is consistent with the pedestrian survey results. The higher scores for the last three solutions in Table 28 relative to the first two indicate that both groups think education is more important than enforcement to address distracted walking. This is also consistent with the results of the pedestrian survey, where respondents were more in favor of the last three solutions than the first two (see Table 11).

Table 28. Perception of the Importance of Solutions to Distracted Walking				
Solution	Professionals		Police Officers	
	Median	Mean	Median	Mean
Police ticket persons who cross the road while wearing headphones	2	2.37	2	2.39
Police ticket persons who cross the road while texting	3	2.98	3	3.00
Mandatory education for new drivers on distracted walking	4	3.67	4	3.91
Schools provide education to students on distracted walking	5	4.19	5	4.32
Violent crash videos for teens and young adults to show the potential outcome of distracted walking	4	3.55	4	3.99

CONCLUSIONS

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"Driver Safety Course at High School Is Moving on." Debra Schell Photography. N.p., 19 Apr. 2011. Web. 17 Feb. 2015.

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This report presented results from surveys of pedestrians, police officers, and planning professionals about distracted driving and walking in New Jersey. A total of 788 pedestrians participated in an intercept survey conducted in locations within ten different municipalities, while 209 professionals and 156 police officers participated in two online surveys with identical questions. While some questions were common in all three surveys, the pedestrian survey was shorter because it was an intercept survey. The following are some of the most important observations from the surveys:

1.   The surveys indicate that distracted driving in New Jersey is perceived to have increased in the past ten years by all three groups. The respondents who perceived this increase far outnumbered the respondents who perceived distracted driving to have decreased or remained the same in all three surveys.

2.   Distracted driving is considered to be a serious or very serious problem in New Jersey by a vast majority in the three groups surveyed. Ninety percent or more of each group considered distracted driving to be a serious or very serious problem.

3.   Like distracted driving, distracted walking is also perceived to have increased in New Jersey over the past ten years by the majority of the respondents. Distracted walking is also considered to be a serious or very serious problem by a majority of the respondents. However, all three groups believe distracted driving is a more serious problem than distracted walking.

4.   More than three-quarters of the professionals and police officers surveyed believe distracted driving is less safe than driving at 20 mph above the speed limit, drinking alcohol within legal limits, and driving without wearing a seatbelt. Even when a comparison was made with driving after drinking alcohol above legal limit, 44 percent of the professionals and 34 percent of

the police officers found distracted driving to be less safe.

5.   The surveys indicate that different solutions to distracted driving are viewed fairly similarly by the pedestrians, professionals, and police officers. Mandatory education for new drivers, stricter enforcement of existing laws, and more severe legal penalties for drivers involved in crashes are considered to be the three most important solutions by all three groups. One noticeable difference between the three groups is that stricter new laws were considered to be more important by the police officers and pedestrians than the planning professionals surveyed. Overall, however, the scores for the solutions were fairly consistent across all three groups.

6.   A majority of all three groups felt that drivers' phones should be checked by police after every vehicle crash to examine if he or she was distracted. However, the proportion of respondents who felt that drivers' phones should be checked increased significantly with the severity of crashes.

7.   Although all types of distracted walking behavior was considered to be unsafe by the planning professionals and police officers, among the various types of distracted walking behavior, texting while crossing roads was considered less safe than wearing headphones and talking on hand-held phones while crossing roads.

8.   Among the solutions to address distracted walking, education at school was considered to be the most important by both professionals and police officers. Overall, there was less support for police ticketing distracted pedestrians than educational campaigns.

"Parents: Talk to Your Teen about Safe Driving." WYMAN. N.p., n.d. Web. 17 Feb. 2015.

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