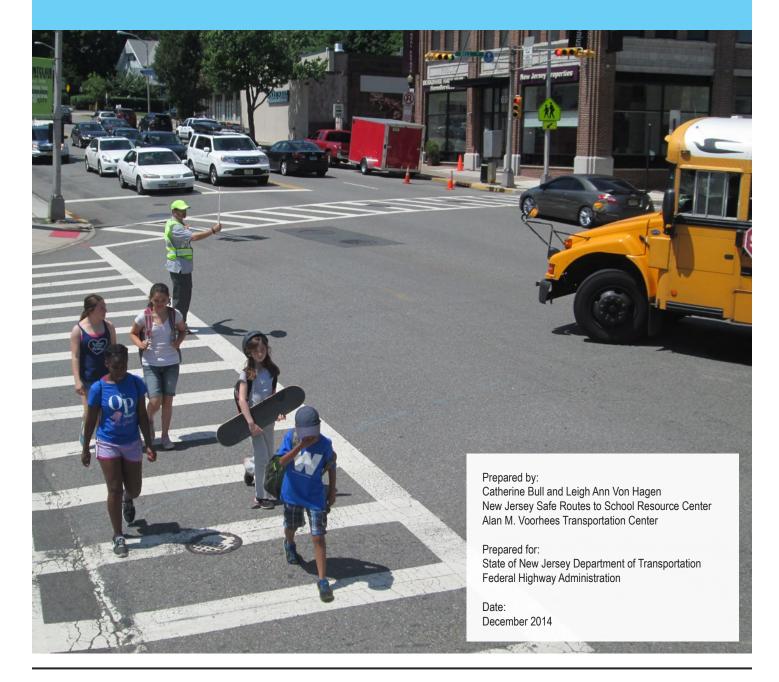
The Role of Crossing Guards and Child Pedestrian Safety in New Jersey



RUTGERS Edward J. Bloustein School of Planning and Public Policy







Introduction | 1



Introduction

Within the past decade, interest in improving children's rates of physical activity and reducing traffic congestion and motor vehicle emissions around schools has spurred the creation of Safe Routes to School programs and other initiatives to encourage active travel to school. Children who walk to and from school are more physically active, have lower body mass index scores, and are more likely to meet physical activity guidelines than children who use motorized forms of travel to school.¹ In addition, fewer cars on the road lead to safer conditions for pedestrian and bicycle travel.

However, real and perceived safety issues counter efforts to increase the numbers of children walking and biking to and from school. Although death and injury rates have declined dramatically for this group over the past four decades, this trend may reflect the decrease in the number of students walking to school.^{2, 3} In 1969, 48% of children aged 5 to 14 walked or biked to school, while in 2009 only 13% of students walked or biked to school. During that time period, the percentage of students being bused rose from 38% to 39%, while the percentage of students driven to school rose from 12% to 44%,⁴ showing the move away from active travel and towards personal vehicle travel to school.

All travel to school exposes children to vehicular crashes. In the United States during 2009, 1,314 children ages 14 years and younger died as occupants in motor vehicle crashes, and approximately 179,000 were injured.⁵ Nationwide, approximately 600 pedestrians and bicyclists under the age of 16 are killed each year in motor vehicle crashes and another 30,000 are seriously injured.⁶ In New Jersey during the period 2004-2008, 42% of children ages 0 to 14 who were involved in a motor vehicle fatality were pedestrians,⁷ demonstrating the need for improved safety for those using active travel.

Thus, school crossing guards are employed to assist children in safely navigating traffic situations in school zones. According to the U.S. Bureau of Labor Statistics, New Jersey has the highest employment level of crossing guard workers in the United States, and the fourth highest number of crossing guards. In 2011, an estimated 4,800 crossing guards were employed in the State of New Jersey assisting pedestrians "at such places as street crossings, schools, railroad crossings, and construction sites".8 New Jersey's high concentration of crossing guards corresponds to the State's sizable number of "walker" friendly neighborhood schools. State regulations require busing only if a student lives "remote from school," i.e. more than two miles from their elementary or middle school or two and a half miles from their high school (NJSA 18A:39-1) or as required under the federal Individuals with Disabilities Education Act enacted in 1990, leaving many communities without state-funded school busing.

The Municipal Excess Liability Joint Insurance Fund of New Jersey (NJMEL-JIF) reports that the role of school crossing guard has become one of the more dangerous occupations in municipal government. The insurance fund, which represents more than 60% of New Jersey's municipalities, reported a 65% increase in crashes involving crossing guards between 1996 and 2006.9 The New Jersey Fatality Assessment & Control Evaluation (NJFACE) project in the New Jersey Department of Health reports that 15 adult crossing guards in New Jersey were killed when struck by motor vehicles while at work in the period between 1993 and 2012. In 2011-2012, New Jersey crossing guards experienced 170 nonfatal occupational injuries and illnesses involving days away from work. These incidents included sprains, strains,

and fractures, resulting from slips, trips, and falls. Between 1993 and 2008, median days away from work for crossing guards almost always exceeded the statistic for all local government occupations combined,¹⁰ demonstrating the level of severity of nonfatal injuries and illnesses. Despite this report on safety, little else is known about the daily job experience of crossing guards.

One reason for the growing concern for crossing guard and child pedestrian safety is the number of distracted drivers on the roads. An estimated 30% of the time during which they are operating motor vehicles, drivers are distracted by activities such as cell phone use, texting, or eating. This lack of focus can lead to driving errors. Almost 80% of all crashes and 65% of near-crashes involve drivers who looked away from the forward roadway just prior to the crash.¹¹ In New Jersey, crash statistics from 2002 to 2010 show an upward trend in the relationship of cell phone use to crashes. In 2002, cell phone use was a contributing factor in 454 crashes, with 185 people injured. In 2010, hand-held cell phones were a factor in 1,833 crashes with a total of 838 injured and 3 fatalities, and hands-free cell phone use contributed to 1,518 crashes with 663 injured.¹²

Given the distracted driving statistics presented above, it follows that crossing guards are considered essential fixtures in many New Jersey communities to help keep school children safe. When children are walking and biking to school, they require assistance with crossing streets safely and learning appropriate street crossing behavior. In an effort to discover more about the daily job experience of crossing guards and the relationship of crossing guards to child pedestrian safety, research was conducted in the form of two focus groups to document direct accounts of the opinions and everyday experiences of practicing professional school crossing guards.

Literature Review

Crossing guards play an important role in communities because children are at an inherent disadvantage when dealing with traffic. Until the age of nine or ten, children's physical and cognitive limitations negatively affect their ability to successfully navigate traffic situations. Children have two-thirds of the field of vision of an adult, cannot determine the source of sounds, and are of smaller stature, which makes them less visible to drivers and less able to see around obstacles.^{13, 14} In addition, they cannot judge speed and distance. They are easily distracted, spontaneous, and tend to complete any motion they start.^{13, 14} They can overestimate their physical abilities and they pattern their actions after others without evaluating whether these actions are good or bad. A 2000 report found that children ages 5-6 years old perform extremely poorly when crossing streets by themselves. Many failed to stop before entering the roadway. They did not necessarily wait for a moving car to move away from them before crossing.15 Several studies also report that middle school children (10-14 years old) are more likely to be involved in a pedestrian-motor vehicle collision than children younger or older.6, 16, 17 Their vulnerability may result from walking more and farther from home with limited adult supervision and limited street crossing experience. Therefore, it is important for children to have assistance when crossing busy roads or intersections.

In addition to age, several risk factors for child pedestrian injury have been reported in the literature. Other demographic characteristics that contribute to injury and fatality include sex, race/ethnicity, social status, and community of residence.^{2, 13, 14} Children involved in traffic crashes are more likely to be male. The pedestrian death rate for male children is 57% higher than for females and almost two-thirds of pedestrian deaths involve male children.² African-American vehicle death rate has also been reported as double the rate for White children and the injury rate is also higher.^{2, 3} In the years 2000 to 2004, the death rate for African-American children was higher than for any other demographic group. Death rates for Hispanic and American Indian/Alaskan Native children are also higher than for White children.³ Therefore, it is important to consider not just age, but other demographic variables when examining child active travel safety.

In addition to demographics, social risk factors for child pedestrian injuries play an important role. Children living in urban, high-density, or low-income neighborhoods are at a higher risk of injury and fatality from crashes.^{2, 3, 14} In addition to geographic density, the specific location where crossing occurs is important. Seventy-five to 80% of crashes resulting in child pedestrian fatalities occur at mid-block locations and 25% occur at intersections.6 Time of day and time of year also play a part in crash rates. One study found that 55% of child pedestrian fatalities occur between 3 p.m. and 7 p.m.,³ and another study found that approximately 40% of fatalities for school-aged pedestrians occur between 3 p.m. and 8 p.m.² More crashes occur in May, September and October than during other months.3 Thus, crossing guards can play an important role in reducing child pedestrian injuries by assisting children in crossing busy roadways.

Crossing guards can also draw attention to important intersections and reduce vehicle speed in neighborhoods. Reducing vehicle speed is important as the risk of pedestrian injury and the severity of injuries escalates with increased vehicle speed.^{6, 18} At 15 mph most pedestrians survive a crash with minor injuries. At 20 mph most crashes will result in serious injuries. At 25 mph, almost all crashes result in serious

injuries and roughly half are fatal. At 40 mph, 90% of crashes result in fatalities. Vehicle speed also influences the likelihood of vehicle-pedestrian crash. Slower operational speed allows more time for motorists to respond to hazards or unexpected situations and requires less distance to stop the vehicle. In addition, motorists moving at slower speeds are more likely to yield to crossing pedestrians.⁶ Although speed limit postings and school zone signs may be standard around schools, these are commonly ignored, leaving children vulnerable when crossing streets, particularly at those crossings with high volumes and high speeds.

Improving Child Pedestrian Safety

Several approaches are commonly used to improve child pedestrian safety and fall into three broad categories: engineering, enforcement, and education. Engineering solutions such as traffic calming devices lower vehicle operating speeds and thereby contribute to the reduced incidence and severity of child pedestrian crashes.^{6, 19} Other changes such as increasing "walk" times at signals and providing "no turn on red" intersections may also have a positive impact on safety conditions.14 Enforcement efforts, such as increasing police presence at pedestrian crossings, are effective while the enforcement is in place, but appear to have little to no long-term effect on motorist behavior.⁶ Lastly, education efforts that combine classroom training with practical skills training result in improved judgment, timing of crossings, choice of route and crossing location on the part of children.^{2, 14, 20} In general, researchers suggest that a combination of these approaches in addition to the use of crossing guards to build awareness and improve education, will prove most effective in increasing child pedestrian safety.^{2, 14}

Crossing Guards as an Approach to Child Pedestrian Safety

Studies of crossing guards are rare. A 2007 review examining the ten most important safety countermeasures found no study that evaluated the effects of crossing guards on children's safety or behavior. These authors did report on a 1977 study that determined that crossing guards were more desirable than a full traffic signal from an operational perspective.⁶ However, no additional information on the role of crossing guards was provided. A 2010 review classified 480 variables from 42 studies that were commonly associated with active travel to school.²¹ Although many factors were found to influence children's active travel to and from school, the role of crossing guards was absent from the review.

Several studies report that crossing guards can be seen as a facilitator to active travel, and their absence a barrier,^{30, 31} as a crossing guard helps to create a more pleasant experience for children walking or biking to and from school, and parents are more comfortable knowing that the guard is supervising their children.²²A 2009 study referred to crossing guards as social facilitators because they are familiar people encountered on a daily basis who help students cross busy intersections.²⁶ A crossing guard not only provides assistance in crossing streets but also becomes part of a child's social network,²⁷ unlike other engineering approaches. In this way, crossing guards may alleviate additional parental concerns, such as bullying or kidnapping by providing eyes on the street.

A 2007 multisite case study reports on factors that influence active travel to school initiatives. The addition of crossing guards or crosswalks to increase safety was the most common change made among the schools studied. Crossing guards were valued for their relatively low cost and their role in maintaining traffic control, reassuring parents of their child's safety, and making children feel safer when walking. In addition, policies that either fund or place crossing guards were found to contribute to the success of active travel to school initiatives.²³ In a 2007 focus group study, immigrant parents who found street crossings in this country to be unsafe due to wide streets, and traffic volume and speed, identified the lack of crossing guards as a concern and included crossing guards among proposed safety improvements,²⁴ demonstrating the importance of crossing guards to many groups of parents and students.

The Federal Highway Administration's Manual on Uniform Traffic Control Devices (FHWA MUTCD) provides guidelines for the use of crossing guards. Crossing guards are present to provide gaps in traffic at school crossings and thereby provide for schoolchildren to safely and efficiently cross streets. Along with information on uniforms, equipment, and operating procedures, the MUTCD details selection criteria for crossing guards given the critical nature of their job. New Jersey State law (40A:9-154.1) addresses crossing guard appointment, term, qualifications, supervision and direction, uniform, posts, and post time periods. Requirements regarding crossing guard training are limited to the number of hours for classroom and practical instruction. Some New Jersey county police academies have provided training for crossing guards, but largely, municipal traffic safety officers have assembled training for their own guards. Trainings are inconsistent throughout the State. By speaking directly with crossing guards about their perceptions of their environment, their training, and overall daily job experience, we may gain insight into how to further improve the role of those who hold this important job to keep our children safe and keep all of those who participate in active travel safer in the future.

Methods

In November of 2011, two focus groups were conducted involving a total of 23 crossing guards, one in a suburban community in south central New Jersey (N=15), and the other in an urban disadvantaged or lower income community in northern New Jersey (N=9). For consistency, the same researcher led both focus groups. Focus group participants were recruited using printed fliers distributed by the crossing guard supervisors in both municipalities. Participation in the focus groups was confidential and voluntary. Participants received a \$50 incentive. The focus group protocol was designed to elicit comments relating to crossing guard job experiences and performance and the effect of municipal crossing guard policies on crossing guard performance. The focus group method was selected to encourage exchange of ideas and opinions in an interactive group setting.

For both sessions, crossing guards completed a pre-focus group questionnaire that included questions on demographics and basic aspects of their employment, such as post arrival and departure times and uniforms. A semi-structured interview protocol, approved by the New Jersey Department of Transportation and Rutgers University Institutional Review Board, guided the remainder of the focus group. The protocol included five question domains: job conditions, job safety, training, employer policies, and performance review. Participants were provided an opportunity to discuss other issues at the end of the question session. In addition, the groups were shown a series of photographs of crossing guards at their posts and were asked to identify positive and negative elements of the image captured, not only regarding crossing guard behavior, but also the crossing guard post environment. Each focus group lasted approximately two hours. Field notes were taken by two separate researchers and thematic analysis was used to determine emergent themes.

Results

Overall the focus group crossing guard population included older individuals with low educational achievement and low household income. Approximately two-thirds of participants were female and one-third were male. In both focus groups, crossing guards are municipal employees hired by the police department. All of the participants were provided with equipment including the mandatory safety vest and STOP paddle. The urban group is represented by a union that provides the crossing guard uniforms. For the suburban group, the municipality provides a stipend for guards to purchase their own uniforms. In both communities, the uniform includes at a minimum pants, a shirt, a hat, and a jacket.

Most of the crossing guards reported driving to their posts, and most were assigned to a particular post with only two participants floating from post to post as needed. Crossing guard morning and afternoon shifts varied from 1/2 hour up to 11/4 hour. In general, crossing guards in the suburban community crossed kindergarteners through middle school students. Crossing guards in the urban community crossed children from pre-kindergarten through high school. All crossing guards crossed, or offered to cross, adults whether they were connected to the school or not, and in particular noted that they commonly crossed senior citizens.

Three primary themes emerged from the two focus groups. These themes emerged in both groups and were brought up by multiple participants in each. They were: job satisfaction; lack of safety in the environment; and training, communications, and policies.

Job Satisfaction

All focus group participants in both groups stated that they were satisfied or very satisfied with their job, and reported that the best part of the job is the children. They took pride in being part of the children's lives and keeping them safe.

I like the kids and I like dealing with different types of people. The kids confide in me, they know me, and ask for me when I am missing.

Talking to the children is wonderful.

I just like the kids, and most of the parents are nice...that makes me go to work every morning.

I like to be part of the kids' lives.

Aside from liking to be with the children, the attraction of the crossing guard position included getting out of the house, working with a schedule suited to a stay-at-home parent, and keeping active:

I am recently retired and I got this job because I wanted to get out of bed. It keeps you going. This is the best paying part-time job.

I like the morning air to get you going.



I like the fact that I can be a stay-at-home mom. I like meeting the kids, getting out, and getting out my frustration by yelling at the drivers.

Although the guards enjoyed working with the children and getting to be outdoors, which led to their high job satisfaction, guards felt improvements could be made in two areas to improve their job satisfaction even more: safety in the environment and communication/job training.

Lack of Safety in the Environment

Crossing guards in both groups reported lack of safety in the environment from both the physical environment itself and from the social environment, where inattentive parents contributed to a lack of safety for children.

Crossing guards are responsible for inspection of the area around their post for hazards including broken pavement, missing signs, and obstructed walkways. Crossing guards said that, in the winter, often municipal plows had not cleared streets at school crossing locations in time for early morning shifts. Sidewalks were not shoveled, leaving few options for walking paths for children. Eleven of the 23 crossing guards reported carrying shovels to clear their own crosswalks and corners and several carried ice melt. One crossing guard said, "plows put the snow back on the sidewalk. I walk to make footprints for the kids, and call the traffic safety office to report the problem," while another said, "I scope the corner for slush and puddles and tell the kids the best place to get around it."

Guards report receiving help in winter from various sources: a police officer brought his own snow blower to clear a post; parents shoveled and put out rock salt; residents on the street cleared the corner and the street crossing. In icy conditions, a guard reported that a police officer arrived to cross the children and instructed the guard to wait for Department of Public Works (DPW) to arrive, and another crossing guard called the security guard at the school for assistance. One guard reported that snow removal was needed on the sidewalk in front of a vacant house: "I called the township to take care of it and they finally did...the township will get to it...eventually."

Crossing guards recounted numerous slips and falls in wet, snowy and icy conditions, and many have seen kids fall in the winter.

I have my own shovel for the sidewalk to protect the kids and myself from slipping. I'm too old to hit the deck.

I've fallen many times. They [the town] don't clear the streets. Nothing is done by 7:30.

Ice is not only a slipping hazard for pedestrians but also causes drivers to lose control of their vehicles: *I grabbed a child to keep him from getting hit by a car [in winter conditions]*

Other maintenance concerns included potholes, drainage problems, and leaves blown into the street. In general, crossing guard maintenance complaints did not receive priority status. Instead of going through their supervisors, some guards contacted municipal departments directly in an attempt to expedite repairs. One crossing guard noted that it was difficult to receive a response from the DPW and so she flagged down a patrol car to report an issue. One guard noted that he reported a drainage problem to DPW three or four times over the course of a year before it was fixed:

A drainage grate caved in and people were falling in it. It was bad, I took a photo with a digital camera and finally brought it to the county engineer.

Others had similar stories about poor maintenance:

There are cracks in the crosswalks. Two children fell and a grandfather twisted his ankle picking up one of the children. The issue is simply the fact that you are walking into little craters in the road. The guards are looking down and not at the cars when they try to avoid the holes.

A mother broke her ankle. They have patched the hole I don't know how many times. I have tripped over it myself.

We had a former crossing guard fall in a pothole and break her kneecap. I spoke to the officer coming through on patrol... and the next day they filled it [the pothole] in.

I had a street with potholes, it was horrible. I told the City Hall, the police, and I told the school principal. It was finally fixed.

Signs and crosswalk indicators, curb cuts, and

crosswalk striping were also topics of conversation. Clear delineation of the crosswalk was appreciated but the zebra-style striping was noted as slippery when wet.

Guards reported that county roads presented an additional challenge. One crossing guard stated that she had three crosswalks at her fourway intersection. The municipality painted the fourth crosswalk, but the county removed the crosswalk markings. Other guards noted that maintenance or vehicle speed issues around schools did not appear to be a priority for the county, which was frustrating for the crossing guards trying to keep pedestrians safe.

Distracted Driving

In addition to poor maintenance causing hazardous situations, crossing guards in both focus groups reported that the most significant daily challenge was distracted drivers. The crossing guards stated that they and the children they crossed are in danger every day as a result of driver carelessness. They witnessed frequent instances of drivers talking on cell phones, texting, drinking coffee, speeding, running red lights, listening to loud music (preventing them from hearing crossing guard directions), and otherwise behaving as if they were unaware



of, or choosing to ignore, the crossing guards. For example, a driver who did not like to be detained at an intersection proceed through it despite the presence of a crossing guard with a raised STOP paddle. Several crossing guards reported near misses when cars failed to respond appropriately while the crossing guard was in the street. Crossing guards reported placing themselves in the way of oncoming traffic to attempt to get motorists to stop. Although not a common occurrence, guards appear to have reacted instinctually when the need arose.

Parents dropping off and picking up their children at school contribute to dangerous conditions by speeding and by stopping or parking too close to the crosswalk or within the crosswalk. Guards noted that frequently parents were rushing in the mornings to get their children to school and then to get to work. The morning shift was referred to as "chaos," "a nightmare," and "an accident waiting to happen." Guards also complained that parents jaywalk and walk in the middle of the street with their kids in tow, setting a bad example both as a motorist and pedestrian ignoring the crossing guard and then expecting their children to listen. Crossing guards consistently reported the dangers inherent to the job with inattentive motorists:

I have a whistle and STOP sign. I was almost hit by a car today. They [the drivers] know you're there. They come through every day. It's not like they're strangers.

I'm at the middle school. You have to watch the people dropping kids off. You have to watch the crosswalk. They [the drivers] are looking at the kids and then they pull away. They are not paying attention. Then you have the ones going by at 50 mph on a cell phone.

I stepped out in front of a car. The lady had to step on the brakes so she didn't hit me. Next time [she drove past my post]she stopped for me. I was told not to help out [by using my body to stop cars], but I would rather it be me than the kids.



I ask drivers: What are you doing? All this bright color and you can't see me? They are distracted on the phone, arguing.

50(mph) is the new 30(mph) so I help people cross the street.

I have a stop light and a long street. People speed up to beat the light.

Can we make the suggestion to the teachers, when they pull out of the driveway when they're done with work, that they not be on their cell phones in front of the kids?

While many parents reportedly ignored the crossing guards, some guards noted that some parents had been appreciative.

Crossing guards also reported that pedestrians engage in unsafe crossing behaviors to varying degrees. In a discussion of whether children and others are respectful of crossing guard authority, crossing guards in the suburban community reported that generally children listened to instructions, although some guards noted that seventh graders were the least respectful. Many younger children reportedly depended on the crossing guards. Guards in the urban community noted that children up to high school age are generally respectful, but high school students chose to cross themselves and most often disregarded the crossing guard. Guards reported that children listening to music or talking on cell phones cannot hear instructions given by the crossing guards.

Crossing guards pointed to possible additional in school or after school education coupled with information sent home to parents as possible ways to increase parent and child rule following and improve safety for all active travel users.

Training, Communications, and Policies

Overall, the crossing guards felt that the training and communication they received was subpar. Crossing guards discussed the initial classroom training, field training, and annual retraining, which for both groups occurred only in the classroom. In the initial classroom training, crossing guards in the suburban group described watching the same video each year and reported that "the videos do not review enough scenarios," and "it's the same one every time, boring." One crossing guard stated:

I have seen three or four different videos in 26 years. They are totally outdated, they do not apply to our situations or corners. My sister had to watch the video without sound. The videos are useless.

While another said:

The video here is from AAA and the 1980s.

Crossing guards reported wanting new material that is updated and more relevant to their current situations. Although the urban community found the classroom training a bit more helpful, as it included both videos and a discussion of photographs of everyday situations, they still felt more could be covered to make the training more effective and useful to the daily scenarios they encounter. One crossing guard said:

I pretty much trained myself, they just told me where to go, I knew what to do, I just pay attention.

Participants from both municipalities felt that they learned more from the field training than the classroom training. Crossing guards in the suburban group had two weeks of individual field training with an experienced crossing guard. The urban group reported having a few days of training with an experienced crossing guard. Retraining in both communities is limited to classroom review and discussion and does not include field retraining, which the crossing guards thought might be helpful. One crossing guard stated:

All the real training is from when we first started, we have not had field training since then.

Thus changes to the training curriculum and materials, specifically the classroom training and retraining could be considered to improve the skills and knowledge of crossing guards to ensure both they and the children they cross remain safe.

Crossing guards also reported needing better training and communication on how to report incidents such as non-emergency issues such as traffic problems. Guards mentioned being confused as to where complaints should be directed, such as a maintenance issue involving a county road. In regard to reporting traffic violations, one guard explained that it is difficult to get the plate number of the car, watch the street, and cross the children at the same time. Additional clarity on how and to whom to report incidents would be beneficial during training and re-training.

Policies

Crossing guards expressed that their posts were their responsibility and that, in a sense, they "own" their corners. This sense of responsibility or connection leads crossing guards to make independent decisions that can place crossing guard behavior in conflict with established departmental policies and procedures. For example, one participant noted that positioning himself in the middle of his four-way intersection allowed him better control of the intersection, although training specifies that only police officers should place themselves in this location. The sense of responsibility extends to the relationships established between crossing guards and students, parents, and other community members. Participants in both focus groups mentioned that they believe the kids come to rely on the crossing guards. Thus, several guards reported arriving early to their posts because "kids will be there" and staying at their posts after the official end of the shift, despite policies deterring them from doing so. In general, crossing guards reported delayed their departure because children were late or parents were late to pick up their children:

If you see a child coming you have to wait.

I have a bus of middle school kids that get dropped off across the street and cross my intersection. If I'm not out there, the cars are not paying attention.

Buses arrive after my shift ends, but I like to make sure the kids get home safe.

They [parents and students] expect you to cross them at all times of the day even when you are off duty. I do it because they like it.

One guard pointed out that crossing guards should not stay after their shift ends as it creates an insurance liability issue, while in contrast another responded that they "always stay late for the kids, hanging out, getting to know the people."

Crossing guards also reported keeping parent phone numbers in their phones, giving their phones to students to contact their parents, and giving their phone numbers to parents, despite policies prohibiting this behavior. A crossing guard stated, "I do it out of concern and welfare of the child. If they come to you, what I am supposed to do? Turn my back?" Another crossing guard stated they intervene although they are not supposed to:

Results | 12

The kids that are bullied run to me and I call the parents.

In addition to prohibiting students from using their phones, crossing guards are instructed by supervisors to refrain from touching students. Again, despite this policy, some crossing guards allow the kids to hold their hands while crossing. Several reported combing the children's hair, buttoning their coats, or putting lotion on their faces in cold weather.

I've got lotion, paper towels, and a comb to fix them up before they get to school so they don't get teased and to prevent fights. I can't send a kid to school looking nasty. I feel it. I would not want my kids going to school like that.

Performance Review

Crossing guards from both groups reported that neither municipality has a formal performance review that assesses a crossing guard's skills and understanding of the job and provides feedback on his or her performance. Despite this, the suburban municipality gives an award for "crossing guard of the year" and patrol cars frequently check posts in both communities, but there is no feedback given to the crossing guard from this activity. Focus group participants made the assumption that police officers are ensuring that the guard is at the post and in uniform, but is not checking for much more than that.

Although the supervisors do not provide formal performance review, guards receive acknowledgment from people in the community:

The police come by and tell you you're doing a good job.

I've gotten hot chocolate, coffee, and soda from strangers.



All my people are nice to me and give me gifts.

People thank me in the supermarket on the weekend and at church. One little kid touched my heart saying 'What can I do to show you I appreciate you?' He's 7 or 8 years old. I told him 'just be obedient, that's enough.' It makes you feel good.

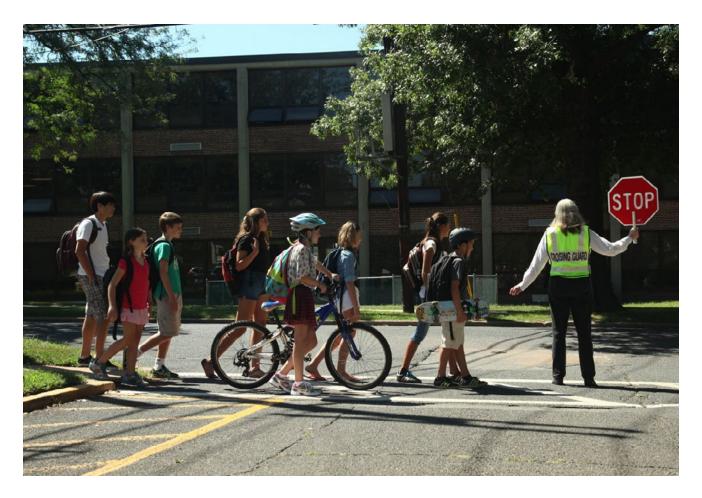
Although gratitude is appreciated by the crossing guards, several mentioned that being evaluated may provide an additional incentive to all crossing guards to do the job to the best of their abilities. Furthermore, guards thought that performance reviews may lead to higher job satisfaction, as they would demonstrate that people care about their job performance and have a goal to keep both children and the crossing guards themselves safe.

Limitations

Participants in the focus groups were purposefully selected for their variation in age and experience, but not randomly selected from the two communities. Thus, those willing to participate, represented here, may hold similar views and those crossing guards who were not willing to participate may feel differently about their job satisfaction, the safety of their environment, and the communication and training, among other topics. In addition, although field notes were taken by two researchers, the conversations were not audio-recorded. Thus, researchers were not able to listen to quotes verbatim after the discussions; however, note taking provided quotes for analysis.

Although qualitative methods such as focus groups allow for detailed descriptions, in ad-

dition to follow-ups and the time and ability to ask for justifications and rationale for perceptions, they may also introduce a social desirability bias. Participants in the group may be inclined to say what they feel the researchers want to hear and those who hold a minority opinion may decide not to speak up. This may have been true particularly in the larger of the two focus groups, where speaking time was divided among more participants. Lastly, only two focus groups were performed in geographically variable areas, thus individuals' perceptions from the focus groups are not being used to generalize their specific concerns or rationales to the community at large or other communities. Instead, these perceptions were used as a guide to create a training manual and other training resources.



Conclusion

The crossing guards in these focus groups reported high job satisfaction, expressing not only dedication to their jobs, but also their sense of responsibility to the children they cross. However, safety in the environment and training and communications could be enhanced to not only improve the welfare of the children they cross, but perhaps further enhance job satisfaction and encourage more active travel to and from school. Crossing guards report facing challenges including distracted drivers, adult pedestrians who ignore crossing guard instructions, parents who cause hazardous situations when picking up or dropping off their children at school, hazardous road conditions and walking situations due to poor or delayed maintenance, and ineffective trainings to prepare them for scenarios they may face at their post.

These gaps in the preparation of crossing guards for successful job performance suggest areas for improvement, not only in training and supervision, but also in the physical conditions surrounding crossing guard posts. At the municipal level, training and retraining to address proper crossing procedures, communication with children, parents, and other adults in the community, reporting of incidents and maintenance issues, and the extent of responsibilities and limits of a crossing guard's authority will increase confidence and better prepare guards for the challenges of the role. These improvements may be accomplished through adoption of a municipal crossing guard policy, a model of which is now located on the New Jersey Crossing Guard website. A training manual that details standards and procedures for school crossing guard supervisors in the hiring, training, and support of their employees could also enhance safety. Based on this recommendation, a training manual for the State of New Jersey has been created and placed on the New

Jersey Crossing Guard website, along with other resources.

Additional attention should also be paid to the posts at which crossing guards are located. The Crossing Guard Post Observation Report was incorporated into the training resources to help supervisors evaluate the conditions particular to each post. This form can be found on the New Jersey Crossing Guard website. Additional research efforts that examine crossing guard placement are also needed in order to identify and prioritize crossing guard locations for improvements.

Further evaluation of crossing guard training will also contribute to a safer experience for child pedestrians and crossing guards. A new training video has been created and additional videos should be created in the future to best prepare crossing guards to learn how to handle situations at their posts. These videos and trainings should be reviewed every several years to ensure the information is accurate and relevant for crossing guards. Additionally, given the lack of performance evaluations that crossing guards receive, adding evaluations into supervisory procedures may lead to better adherence to procedures, increased safety, and higher job satisfaction, as the review could be used to correct any performance errors and demonstrate the importance of the job. Based on this recommendation, a performance checklist has been added to the New Jersey Crossing Guard website for communities to download and use for crossing guard evaluations.

In conjunction with crossing guard training, pedestrian safety education that reinforces the role of, and encourages respect for, crossing guards should be promoted along with outreach to parents to educate them on safe street crossings and traffic laws in school zones. A broader awareness campaign should alert motorists to increases in pedestrian and bicycle traffic during the school year to attempt to increase the rate and safety of active travel to and from school.

By encouraging communities to focus on improving safety in the environment and enhancing crossing guard training and communications through the use of formal training manuals, municipal crossing guard policies, encouraging crossing guards to report on the safety of their post's environment, new training videos to help better prepare crossing guards, and evaluating crossing guard performance, crossing guard job satisfaction and performance is likely to rise along with the safety of the crossing guards themselves and the children who rely on them to get to and from school safely. These documents can be found on the New Jersey Crossing Guard website and we encourage all communities and crossing guards to utilize them to help promote safer active travel in the future.

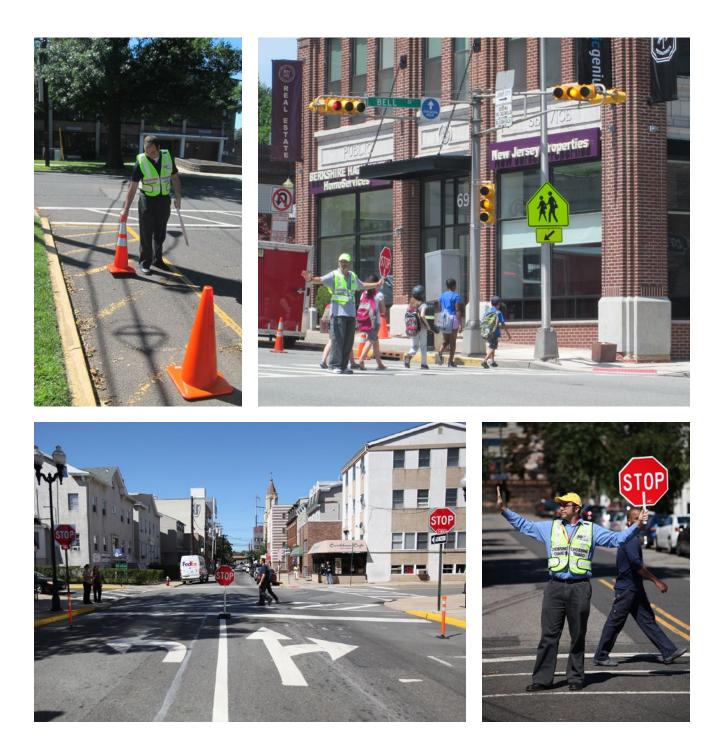
Future Research

Future research should focus on the importance of crossing guards, given the critical role they play in communities to encourage active travel and keep students walking to and from school safely. By engaging with crossing guards and having their voices placed at the center of this research, many tools were created to aid in the training, policies and safety of crossing guards. However, it is possible that crossing guards in different communities across the state have additional or different ideas about the training and policies necessary to enhance their job performance and satisfaction, encourage active travel, and increase safety. In the future, additional focus groups or interviews should be conducted in additional municipalities to help make the training program relevant to all crossing guards and current conditions. Municipalities that choose to use the documents found on the New Jersey Crossing Guard website should be interviewed to evaluate the use of these tools and ask for suggestions for further improvements in the future. Lastly, both the objective impact of these improved policies and trainings should be examined by measuring pedestrian crash rates in municipalities that have adopted the trainings or policies and the subjective impact should be examined by interviewing or holding focus groups with community members to determine how they perceive the effectiveness of area crossing guards. By continually discussing important issues such as crossing guard placement, policies, and trainings with crossing guards themselves, continual improvements can be made to keep all pedestrians, particularly children, safe on their way to and from school.



Acknowledgements

The authors would like to thank Sean Meehan and Andrea Lubin of the Alan M. Voorhees Transportation Center at the Bloustein School at Rutgers, The State University of New Jersey. We would also like to thank Elise Bremer-Nei and Sheree Davis of the New Jersey Department of Transportation.



References

- 1. Rodriguez, A., & C. A. Vogt. Demographic, Environmental, Access, and Attitude Factors that InfluenceWalking to School by Elementary School-Aged Children. Journal of School Health, Vol. 79, 2009, pp. 255-261.
- Hotz, G., A. Kennedy, K. Lutfi, and S. Cohn. Preventing Pediatric Pedestrian Injuries. The Journal of TRAUMA Injury, Infection, and Critical Care, Vol. 66, 2009, pp. 1492-1499.
- 3. Safe Kids Worldwide. Latest Trends in Child Pedestrian Safety: A Five Year Review. http://www.safekids.org/assets/docs/ourwork/research/pedestrian-safety-research.pdf. Accessed January 9, 2012.
- 4. National Center for Safe Routes to School. How Children Get to School: School Travel Patterns from 1969 to 2009. http://www.saferoutesinfo.org/sites/default/files/resources/ NHTS_school_travel_report_2011_0.pdf. Accessed June 5, 2012.
- 5. Centers for Disease Control and Prevention. Child Passenger Safety: Fact Sheet. http://www.cdc.gov/MotorVehicleSafety/Child_Passenger_Safety/CPS-Factsheet.html. Accessed July 30, 2012.
- 6. Dumbaugh, E., & L. Frank. Traffic Safety and Safe Routes to Schools. Transportation Research Record: Journal of the Transportation Research Board, Transportation Research Board of the National Academies, Washington, D.C., No. 2009, 2007, pp. 89-97.
- 7. Children's Safety Network. New Jersey 2012 State Fact Sheet. Education Development Center, Inc. http://www.childrenssafetynetwork.org/state/new-jersey. Accessed March 7, 2012.
- 8. U.S. Department of Labor. Occupational Employment and Wages, May 2011. http://www.bls.gov/oes/2011/may/oes339091.htm. Accessed June 15, 2012.
- 9. Municipal Excess Liability Joint Insurance Fund of New Jersey. (n.d.). Street Smart is Street Safe: A Program to Protect Children and School Crossing Guards. http://njmel. org/index.php/safety/crossing-guards/158-street-smart-is-safe. Accessed Sept. 5, 2011.
- 10. New Jersey Department of Health & Senior Services. Educational Outreach to New Jersey Adult School Crossing Guards. http://www.state.nj.us/health/surv/documents/ xguardsrpt.pdf. Accessed January 9, 2012.
- 11. U.S. Department of Transportation Federal Highway Administration. Human Factors Issues in Intersection Safety. http://safety.fhwa.dot.gov/intersection/resources/fhwasa09027/resources/Intersection%20Safety%20Issue%20Brief%2012.pdf, 2009. Accessed March 12, 2012.

- 12. New Jersey Division of Highway Traffic Safety. Crashes Related to Cell Phone Use Yearly Statistics. http://www.state.nj.us/transportation/refdata/accident/pdf/cellphone.pdf. Accessed Feb. 6, 2012.
- 13. Rivara, F. P., & M. Barber. Demographic Analysis of Childhood Pedestrian Injuries. Pediatrics, Vol. 76, 1985, pp. 375-381.
- 14. Schieber, A. R., & M. E. Vegega. Reducing childhood pedestrian injuries. Injury Prevention, Vol. 8, 2002, pp. 3-8.
- 15. Zeedyk, M. S., L. Wallace, & L. Spry. Stop, look, listen, and think? What young children really do when crossing the road. Accident Analysis and Prevention, Vol. 34, 2000, pp. 43–50.
- 16. Sarkar, S., C. Kaschade, & F. de Faria. How Well Can Child Pedestrians Estimate Potential Traffic Hazards? Transportation Research Record: Journal of the Transportation Research Board, Transportation Research Board of the National Academies, Washington, D.C. No. 1828, 2003, pp. 38-46.
- 17. Warsh, J., L. Rothman, M. Slater, C. Steverango, & A. Howard. Are School Zones Effective? An examination of moter vehicles versus child pedestrian crashes near schools. Injury Prevention, 2009, pp. 226-229.
- McMillan, T. E. Urban Form and a Child's Trip to School: The Current Literature and a Framework for Future Research. Journal of Planning Literature, Vol. 19, 2005, pp. 440-456.
- 19. U.S. Department of Transportation Federal Highway Administration. A Review of Pedestrian Safety Research in the United States and Abroad. http://www.fhwa.dot.gov/publications/research/safety/pedbike/03042/ Research. Accessed May 3, 2012.
- 20. Yeaton, W. H., & J. S. Bailey. Utilization Analysis of a Pedestrian Safety Training Program. Journal of Applied Behavioral Analysis, Vol. 16, 1983, pp. 203-216.
- Stewart, O. Findings from Research on Active Transportation to School and Implications for Safe Routes to School Programs. Journal of Planning Literature, 2010, pp. 127-150.
- 22. Ahlport, K. N., L. Linnan, A. Vaughn, K. R. Evenson, & D. S. Ward. Barriers to and Facilitators of Walking and Bicycling to School- Formative Results from the Non-Motorized Travel Study. Health Education and Behavior, 2007, pp. 221-244.
- 23. Eyler, A. A., R. C. Brownson, M. P. Doescher, K. R. Evenson, C. E. Fesperman, J. S. Litt, et al. Policies related to active transport to and from school: a multisite case study. Health Education Research, Vol. 23, 2008, pp. 963–975.

- 24. Fesperman, C. E., K. R. Evenson, D. A. Rodríguez, & D. Salvesen. A Comparative Case Study on Active Transport to and From School. Preventing Chronic Disease: Public Health Research, Practice, and Policy, Vol. 5, 2008, pp. 1-11
- 25. Greves, H. M., P. Lozano, L. Liu, K. Busby, J. Cole, & B. Johnston. Immigrant Families' Perceptions on Walking to School and School Breakfast: A Focus Group Study. International Journal of Behavioral Nutrition and Physical Activity, Vol. 4, 2007, pp. 64-72.
- 26. Knollenberg, W., P. Látková, C. Vogt, & A. Rodríguez. Active Transportation Among Elementary-Aged Studends: Walking or Biking to and from School. Proceedings of the 2008 Northeastern Recreation Research Symposium, 2009, pp. 15-20.
- 27. Spilsbury, J. C. Children's Perceptions of the Social Support of Neighborhood Institutions and Establishments. Human Organization, Vol. 64, 2005, pp. 126-134.
- 28. Bickman, L. & D. J. Rog. Handbook of Applied Social Research Methods. Thousand Oaks, CA, (1998).
- 29. U.S. Department of Transportation Federal Highway Administration/Federal Transit Administration. Public Involvement Techniques. http://www.planning.dot.gov/Public-Involvement/pi_documents/3b-a.asp. Accessed May 3, 2012.
- 30. Ahlport, Kathryn N., et al. "Barriers to and facilitators of walking and bicycling to school: formative results from the non-motorized travel study." Health Education & Behavior 35.2 (2008): 221-244.
- 31. Pate, Russell R., et al. "Overcoming barriers to physical activity: helping youth be more active." ACSM's Health & Fitness Journal 15.1 (2011): 7-12.