Is It Safe to Walk to School?
How Parents Perceive Their Child's Trip to and from School

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Prepared for:
New Jersey Department of Transportation
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Date:
April 2013

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U.S. Department of Transportation
Federal Highway Administration

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Executive Summary:

Parents are influenced by many factors when deciding what mode of transportation their children will take to get to and from school. One important factor is how parents perceive the physical and social environment. Adding parental perception questions to the *NJ SRTS Parent/Caregiver* survey may enable better communication of the SRTS message and may impact parents' decisions with the ultimate goal of increasing the number of students who walk and bike to and from school in New Jersey. In the fall of 2012, ten additional questions comprising three important categories: (1) traffic dangers, (2) social dangers such as crime and (3) child/community perceptions) were added to the 25-item *NJ SRTS Parent/Caregiver* survey. The survey was emailed out to parents of students attending the Judd School (K-5) in North Brunswick and four public elementary schools and one public middle school in Montclair.

Montclair: 70 parents completed the survey.

- Respondents were predominately white, well-educated and upper income.
    - Most respondents had a child in middle school with 63% having a male child.
    - Almost 66% reported that their child does not usually walk or bike to school.
- The magnet school system may influence the distance students live from school because students may elect to attend any school within their district and not necessarily the school closest to their home and distance between home and school was somewhat or very important to the majority or parents when deciding on travel mode.

- Most parents reported that environmental factors such as traffic speed, traffic volume and unsafe crossings were very important, respectively.
- Parents reported that social factors such as age of child, available adult supervision and "stranger danger" were very important factors affecting decisions on active travel.

Judd School: 74 parents completed the survey, and 62 provided demographic information.

- Half the respondents were white, well-educated and middle to upper income.
    - All respondents had a child in pre-K-5th grade with 51% having a male child.
    - Almost 84% reported that their child does not usually walk or bike to school.
- Several parents reported that Judd school may not allow bicycling and does not provide bicycle racks.
- Most parents reported that environmental factors such as unsafe crossings, traffic speed and traffic volume were very important, respectively.
- Parents reported that social factors such as age of child, followed by "stranger danger" and availability of adult supervision were very important factors affecting decisions on active travel.

When choosing how to send their kids to school: "Parents reported… traffic speed, traffic volume, and unsafe crossings were very important."

Perception vs. Statistics

Background:

Research has consistently shown that walking and bicycling to school are effective ways of achieving recommended levels of physical activity for children. Unfortunately, the number of students walking and bicycling to school has steadily declined over the years. Generally, parents decide how their children travel to and from school, and research has demonstrated that many factors, such as crime, traffic safety, weather, parents' schedules, and distance between school and home, play a role in this choice. In addition, there is some evidence that parents decide whether their child can participate in active or non-motorized travel (operationally defined as any form of human-powered travel such as walking or biking) based more on their view or perception of safety than on safety statistics that reflect actual conditions. An example of this tendency can be seen in results from the *NJ SRTS Parent/Caregiver* survey wherein parents ranked "stranger danger" as the third highest risk despite statistics which demonstrate that incidents of strangers abducting children walking or bicycling to school are extremely rare. When parents are deciding how their children will travel to and from school, *perceptions* of the physical environment and safety appear to be as important as the actual school route environment (Panter, 2010) and should be examined in detail for information that would contribute to the success of the Safe Routes to School Program.

This paper reviews risk perception literature and data from parent perception surveys, and examines questions regarding parental risk perceptions that were added to the *NJSRTS Parent/Caregiver* survey in October 2012. An understanding of risk perception will not only help the New Jersey Safe Routes to School

Resource Center and NJDOT better understand how to communicate the SRTS message to parents and respond to feedback, but also may help to influence parents' decisions regarding their children's mode of travel to and from school, with the ultimate goal of increasing the number of students walking and bicycling to and from school in New Jersey.

Literature Review:

Risk is often defined by statistics, such as mortality rates, and technical information. However, people's perception of risk is defined by additional factors, particularly controllability, voluntariness, familiarity and dread (Slovic, 2002; Schmidt, 2004). The average person often assigns little weight to risk statistics given by government officials or organizations since these statistics do not include the risk perception factors that impact people's view of risk (Slovic, 2002).

Controllability: Risks that are under one's own control are more easily tolerated than those under the control of others. For example, many people view flying as riskier than driving because, while flying, passengers concede control to the pilot. Furthermore, people have more confidence in their own abilities than in the abilities of others (Slovic, 2002; Schmidt, 2004). For example, not all people drive more safely than the average person, and yet, most individuals perceive other drivers to be less safe than themselves. People may talk on their cellphone or text while driving, however they are afraid when they see others engaged in the same activities.

Voluntariness: When examining the voluntary aspects of choice, risks that individuals choose are perceived as safer than risks that are imposed. When people choose risks, they believe they have made the best choice among other bad choices and that

they can prevent any hazard related to that choice. By selecting a risk, people choose not to accept other worse possibilities, and therefore improve their situation relatively. For example, people are more likely to accept the risks of smoking and tanning than exposure to radiation or chemicals from an industrial facility because the former elements involve choice and the participants may see some benefit in the action they selected. In contrast, exposure to radiation or chemicals is typically not chosen. This view may be particularly common in Western societies where an individual's right to choose is both individually and societally valued. When a choice is imposed, the risk is unwanted and people are less likely to see the potential benefits associated with the choice (Slovic 1987; Slovic, 2002; Schmidt, 2004).

Familiarity: When risks are familiar and understood people also lose fear. People are more cautious of new and unknown risks and perceive them to be more dangerous than those risks that are common and known (Slovic 1987; Slovic, 2002; Schmidt, 2004). For example, genetic engineering is often judged to be a greater risk than familiar risks such as slipping on ice. Once people become more familiar with technology they tend to become less fearful of them.

Dread: Lastly, risks that have a high catastrophic potential and evoke fear and anxiety are judged to be greater than risks without the associated emotions of dread. This dread factor in particular may help to explain why parents perceive the risk of child abductions to be so high in comparison to other potential risks associated with traveling to and from school such as motor vehicle accidents or tripping or falling while walking or bicycling, which are more common.

These four risk perception factors (controllability, voluntariness, familiarity and dread) can help us to understand the

theoretical framework surrounding parental risk perception associated with the various options for transporting children to and from school safely. As seen in Figure 1, different people and groups of people interpret risk differently. Experts' risk estimates are highly related to statistics such as annual fatalities, while the public places more importance on other factors, such as the four risk perception factors. However, risk perceptions among groups in the general population vary as well. Since the public tends to place less weight on risk assessments and statistics than on these other factors, it follows that parents thinking about risks on their child's trip to school, may not, for example, weigh abduction statistics properly.

Figure 1. Ordering Perceived Risks for 30 Activities and Technologies.
The ordering is based on the geometric mean risk ratings within each group. Rank 1 represents the most risky activity or technology as seen by each of the groups, while 30 represents the least risky.
From Slovic, 1987.

	League of Women Voters	College Students	Risk Experts
Nuclear Power	**1**	**1**	**20**
Motor Vehicles	**2**	**5**	**1**
Handguns	**3**	**2**	**4**
Smoking	**4**	**3**	**2**
Motorcycles	**5**	**6**	**6**
Alcoholic beverages	**6**	**7**	**3**
General (private) aviation	**7**	**15**	**12**
Police Work	**8**	**8**	**17**
Pesticides	**9**	**4**	**8**
Surgery	**10**	**11**	**5**

Figure 1. -- Continued. Ordering Perceived Risks for 30 Activities and Technologies.

The ordering is based on the geometric mean risk ratings within each group. Rank 1 represents the most risky activity or technology as seen by each of the groups while 30 represents the least risky.

From Slovic, 1987.

	League of Women Voters	College Students	Risk Experts
Fire fighting	11	10	18
Large construction	12	14	13
Hunting	13	18	23
Spray cans	14	13	26
Mountain Climbing	15	22	29
Bicycles	16	24	15
Commercial aviation	17	16	16
Electric power	18	19	9
Swimming	19	30	10
Contraceptives	20	9	11
Skiing	21	25	30
X rays	22	17	7
High school & college football	23	26	27
Railroads	24	23	19
Food preservatives	25	12	14
Food coloring	26	20	21
Power mowers	27	28	28
Prescription antibiotics	28	21	24
Home appliances	29	27	22
Vaccinations	30	29	25

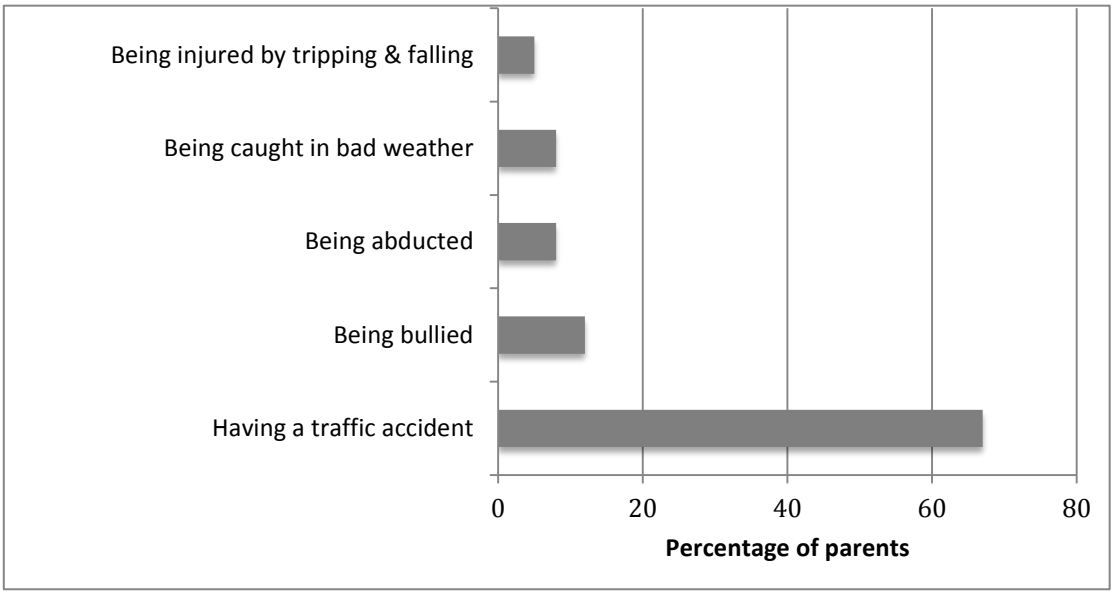
Abductions are dreaded and seen as beyond a parent's control. In contrast, parents may feel a greater ability to avoid a car crash while driving a child to school, particularly in light of people's tendency to have more confidence in their own abilities than in others' abilities. Car crashes are both more familiar to people and less sensationalized than abductions and therefore, may be seen as more acceptable risks. By looking at the perception of safety en route to school and in particular "stranger danger" through the risk perception lens, we can begin to understand how important parental perceptions are and how they may impact transportation mode choice. By combining this understanding with additional knowledge gained from active travel literature, we may be able to improve interventions, Safe Routes to School programs, and help change perceptions to increase active travel rates.

Several studies have examined parents' perceptions of risk of active travel. A 1994 study in the UK surveyed 83 parents in four schools on their perceptions of risk of active travel (Lee & Rowe, 1994). Although the most probable hazard reported was tripping or falling, it was not seen as the most serious. The most serious risk that parents perceived their children to be exposed to were road crashes at 67%, followed by bullying at 13% and abduction at 8% (See Figure 2, Lee & Rowe, 1994).

Figure 2. Most Serious Risk Child is Exposed To To/From School.

From Lee & Rowe, 1994

N=59 (Missing data: 24)



Parents in the study were asked about their personal experiences with the perceived risks. Ninety percent of the parents knew one or more adults who had been involved in a traffic crash, while 67% had been in a crash themselves and 26% were in a crash with a child (Lee & Rowe, 1994). Additionally, 25% knew an adult who had been assaulted more than once in a public place, 11% had been assaulted themselves, and 6% reported knowing a child who had been assaulted more than once (Lee & Rowe, 1994). However, the perceived probability of being assaulted correlated with the age of the respondent, with older parents rating this risk highest. The study interprets this correlation as potentially resulting from increased media reporting or longer exposure to informal community networks. Overall, the study shows a low correlation between parental perception of risk and 'reality,' and reports that this relationship is not unique to this study (Lee & Rowe, 1994).

A 2010 study in the UK explored parents' perceptions of their neighborhood and route to school as predictors of active travel (Panter, 2010). This study found that parental attitudes and concerns were predictors of the child's likelihood to participate in active travel with those children receiving family and peer support being more likely to participate than those children without this support, regardless of the distance the child lived from school (Panter, 2010). Although these two studies display the importance of parental perceptions with regard to mode choice, these perceptions may be different in the UK than in New Jersey and therefore, should be explored further.

An Australian study found that parental concerns about a lack of designated crosswalks, lack of lighting and difficulty crossing intersections were negatively associated with their children (10-12 year olds) walking or cycling (Timperio et al., 2003). Lastly, a 2006 study in King County in Washington state found that a combination of factors forming an overall parental concern variable had the strongest explanatory power to determine whether a child would participate in active travel or not (Kerr et al., 2006). Parents who had "few concerns" were five times as likely to allow their child to participate in active travel compared to those who had "many concerns" (Kerr et al., 2006). This demonstrates the important role parental perceptions play in determining how children travel to and from school. Since both physical environment features and parental perceptions are likely to vary across geographies and cultures, investigating these perceptions in New Jersey is important in order to improve efforts to increase the number of students walking and bicycling to and from school.

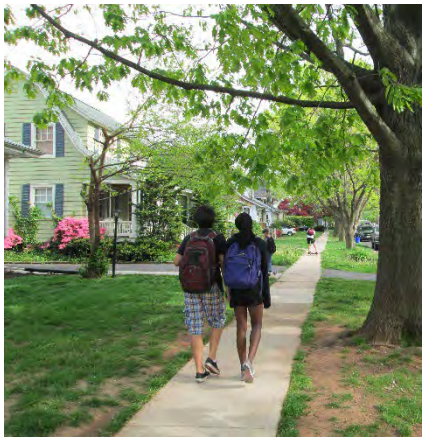
"Specific items…examine whether parents perceive walking and bicycling to have some of the expected benefits…the literate promotes"

Survey Instrument Creation:

The NJ Safe Routes to School Parent/Caregiver survey was based in part on an instrument developed by the National Center for Safe Routes to School. Between 2008 and 2011, thirteen schools from throughout New Jersey completed the survey. This survey lacked questions that would address parental perceptions, and in the fall of 2012, additional questions were added to reflect the importance of this topic (see Appendix). In addition to questions on how parent schedules may influence travel mode choice, three categories of parental perceptions were examined in detail: (1) traffic dangers, (2) social dangers such as crime, and (3) perceptions about the child and community, as described by Prezza et al. (2005).These three categories were broken down into more specific elements to attempt to determine not only which of these factors was important, but also what specific elements parents pearceived as dangerous. For example, when examining traffic danger, the survey addressed traffic volume, traffic speed and observation of traffic laws to try to determine which elements of the environment concerned parents most. When examining social dangers, the survey addressed the presence of drugs, the fear of physical assault, sexual assault, leering, muggings, kidnappings and bullying. This level of detail will help when designing possible interventions to increase walking and bicycling rates.

Several new and highlighted questions will be discussed in detail to provide examples of the perceptions parents were asked. Questions16a and b explore whether parents viewed possible dangers for themselves differently than they view these dangers for their children. Through a scaled response option including "very concerned," "concerned," "somewhat concerned," and "not

concerned," the survey gauges not only parental concern about certain elements, but also the degree of their concern. The survey asks parents to identify the single factor they were most concerned both for themselves and for their child. Specific items were gathered from previously administered surveys in the literature or those that were considered theoretically relevant (Timperio et al, 2003; Prezza et al, 2005). Question 17 examines what parents feel a sixth grader in their area would experience if they were to go out alone, while question 18 asks what skills or experiences a child walking or bicycling to school alone might gain. These questions explore whether parents perceive walking and bicycling to have some of the expected benefits that both the literature and Safe Routes to School promote, such as increased independence and familiarity with the neighborhood where children live. Question 19 specifically examines perceptions of a child's behavior, such as whether parents believe their child can remain focused to get to and from school, follow directions, and make good decisions. These factors were mentioned by adults in pilot interviews on the subject and are theoretically considered important. Regardless of how safe parents perceive their neighborhood to be, if they do not think their child is ready to walk or bicycle to school, they are unlikely to allow these modes of travel. These factors may relate to the child's age, which is also captured in the survey. Theoretically, the mode of transportation parents took to get to and from school may also influence their perception of the mode of transportation their child takes, and this potential is addressed in question 20. One of the five E's of the Safe Routes to School program is encouragement, which has been demonstrated to lead to higher rates of active travel, so we addressed this in question 21a/b by asking which groups of people may encourage or discourage active travel. Lastly, how children get to and from school is a complex



topic that may be influenced by the structure of the household (question 22) and how school schedules fit in with work schedules. Questions 23 and 24 examine the influence of work schedules on morning and afternoon travel separately since parents may be available at different times of the day, which may lead to different mode choices to school and from school. Together, these additional questions will provide a more detailed picture of how parents perceive their built environment and their child's trip to school and will help in the design of interventions to increase active travel rates.

Methods:

The survey consists of primarily closed-ended questions about the frequency with which students use different modes of transportation to get to and from school, in addition to parental concerns and perceptions about these modes and demographic information such as age, gender, race, education, income, marital status, number of vehicles in household and household type. In the fall of 2012, the survey was emailed out to parents of students attending the Arthur M. Judd Elementary School in North Brunswick as well as four public elementary schools, (Bradford, Bullock, Edgemont, and Northeast, comprising grades K-5) and one public middle school (Glenfield, comprising grades 6-8) in Montclair, NJ. The four elementary schools have between 300-500 students and Glenfield Middle School, has 720 students. These schools were selected due to their participation in a wider Safe Routes to School program. Prior to October of 2012, the survey was pre-tested to a sample group of parents who explored question wording, interpretation and desired outcomes with Rutgers staff. The schools' participation in the survey, in addition to that of the parents, was voluntary and follow-up with non-respondents varied

by school. In Montclair, all parents of the schools selected received an email between 9/15/12 and 10/9/12. Reminders were sent to all parents at participating schools on December 5th either by email or by flyer. The survey was available online and remained active until the end of December. No paper surveys were distributed. At Judd Elementary School in North Brunswick, which consists of grades PreK-5 with 782 students, the parents were notified via an email with a link to the survey on 01/24/13. The survey link was also posted on the school's website as was the PDF version for printing. The survey remained active for 16 days until 02/08/13 and no further reminder emails were sent.

Results:

As of mid-February 2013, seventy (70) parent/caregivers in Montclair, NJ and seventy-four (74) parent/caregivers of students at the Judd Elementary School in North Brunswick, NJ had completed the revised online version of the NJ SRTS parent survey. However, of the parent/caregivers who took the survey, only 60 out of 70 parents in Montclair completed the survey and only 62 out of 74 completed the survey in North Brunswick, resulting in missing data, particularly for questions near the end of the survey. Although the response rate is low and too much data is missing to provide definitive information describing the effect of parent perceptions on children's mode of travel to and from school, trends or general impressions may be gleaned from the responses.

"61% of parents believed that crossing guards were a very important decision making factor."

<u>Montclair:</u>

Demographic characteristics of the 60 respondents (out of 70 respondents total) who provided demographic information show the group to be predominantly white (48 respondents), and well-educated (55 respondents have at least a college degree and 31

have a graduate degree), with 46 respondents having household income over $100,000 annually. Seventeen of the respondents have at least one child attending grades 6-8, while 52 have at least one child in grades K-5. One respondent had a child in high school. Almost 63% of respondents have a male child and no parents reported that their child has a disability that prevents them from walking or bicycling to school.

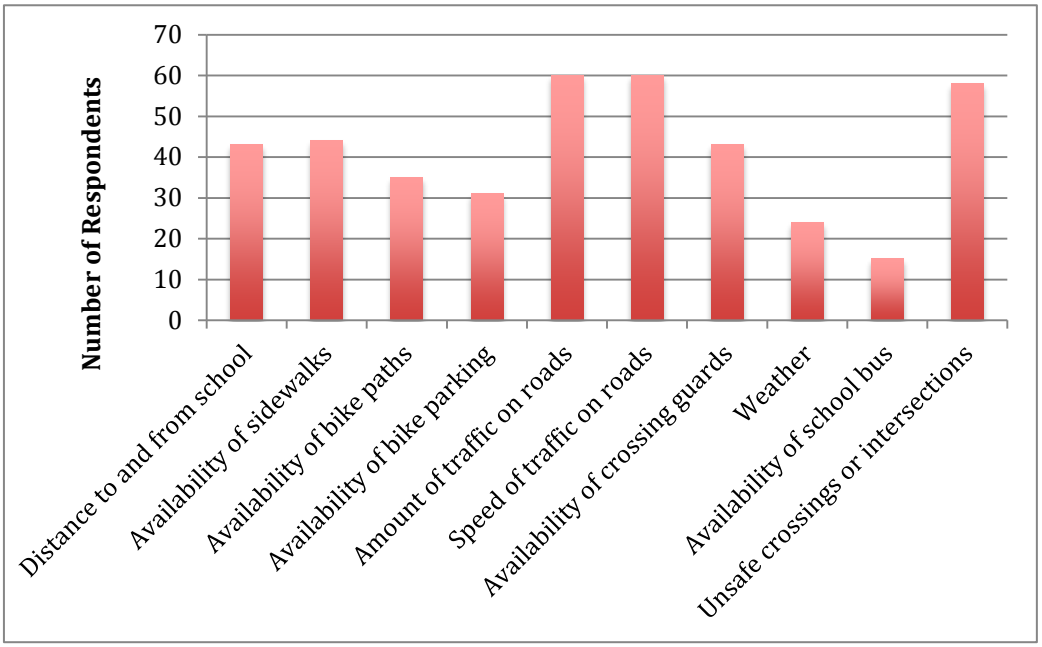
Of the 70 respondents, 46 noted that their child does not usually walk or bike to school. In general, these respondents live one mile or more from school. It is important to note that because of the magnet school system in Montclair, respondents are not necessarily sending their children to schools close to their homes. Distance between home and school appeared to be somewhat important or very important in decision-making for 57 respondents and was “most important” for 18 respondents. Over 75% of parents reported that their child’s school encourages walking and biking through walk or bike to school days, but very few reported any other encouraging activity.

Nine children walk to school five times each week and fifteen children ride the school bus to school five times each week. Although 59 respondents reported that their child has a bike that s/he could ride to school, only six might ride to and from school on any given day. Thirty-five reported availability of bike paths and/or trails as a very important element in their decision-making to let their child walk or bike to school, while 43 believed that crossing guards were a very important decision making factor. Although there is not enough data to explore the perceived importance of crossing guards as a function of child’s age, it should be noted that it is likely to play an important role.

When considering how important various environmental factors are to the decision to let a child walk or bike to school, most

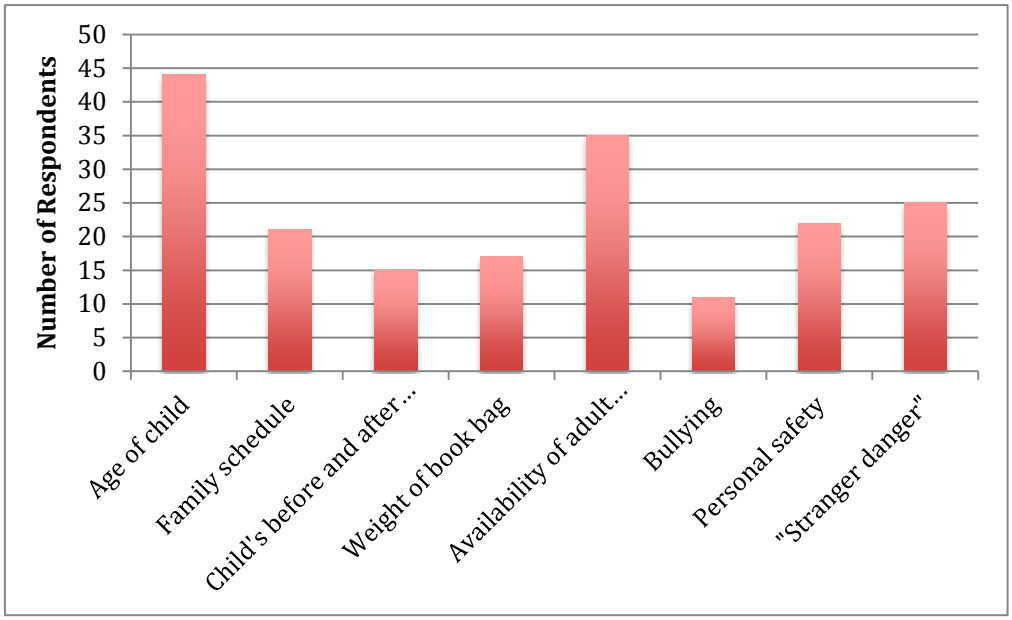
parents reported that traffic speed (60), traffic volume (60) and unsafe crossings (58) were very important (see Figure 3). Distance to and from school is the *most* important factor for 18 respondents, followed by unsafe crossings or intersections, speed of traffic on roads and amount of traffic on roads, with 12 and 11 and 10 respondents, respectively.

Figure 3. Montclair Parent Responses of "Very Important" to Environmental Factors Influencing the Decision to allow their Chilld to Walk and Bike to School



When considering social factors that might affect decisions on active travel, 44 respondents rated the age of the child as the most important, followed by availability of adult supervision (35 respondents), and "stranger danger"(25 respondents) (see Figure 4). Age of child was the *most* important factor for 24 of the respondents when deciding if a child would walk or bike to school. "Stranger danger" was the second *most* important factor, but for only 9 respondents.

Figure 4. Montclair Parents Responses of "Very Important" to Social Factors Influencing the Decision to allow their child Walk or Bike to School

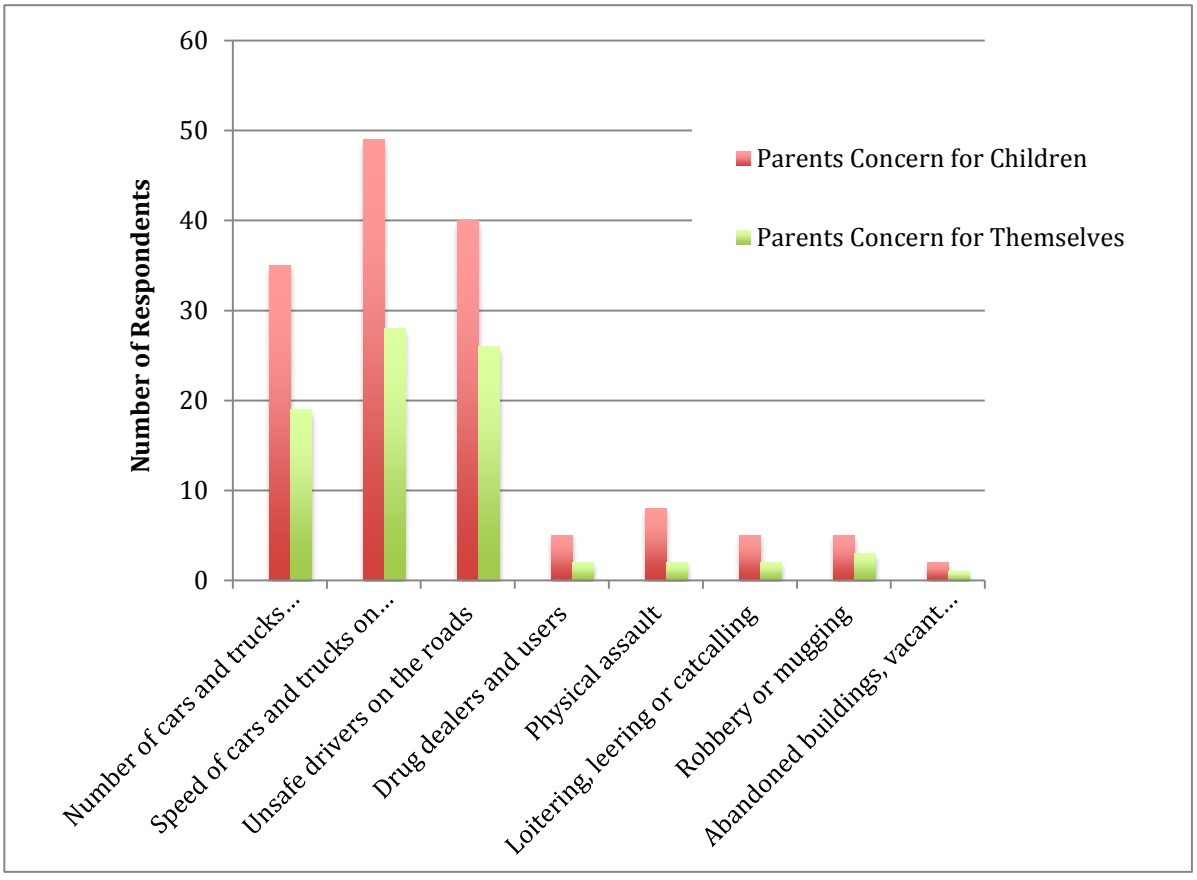


When parents indicated how concerned they are about various safety issues for their child in their neighborhood, 49 indicated that they are very concerned with speed of cars and trucks on the road, 40 concerned with unsafe drivers on the road, and 35 concerned with number of cars and trucks on the road. When parents consider which safety issues they are *most* concerned about for their child, speed of cars and trucks on the roads ranks highest with most respondents (26), with unsafe drivers and number of cars and trucks on the roads tied for second as most important with 14 respondents each.

Parents expressed similar concerns for their own personal safety in their neighborhoods as well as their child's safety. Respondents noted that they are very concerned about speed of cars and trucks on the road (28), unsafe drivers on the roads (26), and number of cars and trucks on the road (19) (see Figure 5).

When considering what factor they are most concerned about, respondents ranked unsafe drivers first (31), speed of cars and trucks on the roads (20), followed by number of cars and trucks on the roads (7) (see Figure 5).

Figure 5. Montclair Parent Responses of "Very Concerned" to Issues in their Neighborhood for Themselves Compared to their Children in Montclair Judd Elementary School, North Brunswick



Demographic characteristics of the 62 respondents who provided demographic information (out of a total of 74 respondents) show about half of the group is white (34 respondents), while 12 respondents report being Asian and 10 report being White Hispanic. The group is relatively well educated (32 respondents

have at least a college degree and 13 have a graduate degree), with 34 respondents having household incomes annually over $100,000 and 19 reporting household incomes between $50,000 and $100,000 a year. All of the respondents have a least one child in pre-K-5th grade, since the survey was distributed at one elementary school; 35 respondents have at least one child attending pre-kindergarten, kindergarten or 1st grade. Fifty-one percent of respondents have a male child and two parents reported that their child has a disability that prevents them from walking or bicycling to school.

"Several parents noted that bicycling is not permitted at Judd Elementary"

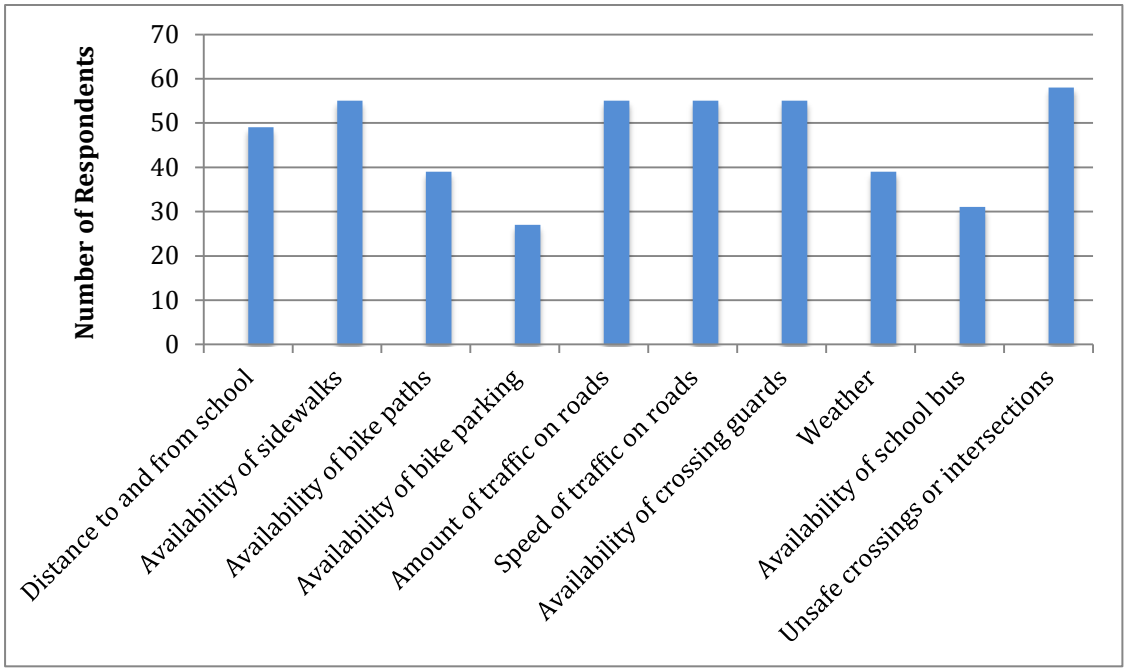
Of the 74 respondents, 62 noted that their child does not usually walk or bike to school. As is the case in Montclair, these respondents generally live one mile or more from school. Distance between home and school appeared somewhat or very important in decision-making for 58 respondents and was "most important" for 13 respondents. One parent reported that Judd Elementary School encourages walking through walk to school days and one reported encouragement through a walking school bus, but if these programs are in place, they were largely not acknowledged by survey respondents.

Although 50 respondents reported that their child has a bike, no parents reported their child bicycling to or from school, and several parents noted that bicycling is not permitted at Judd Elementary School nor are there bicycle racks. Nine children walk to school four or five times each week and 33 usually ride the bus. Fifty-five (of 67 who completed this question) reported that both availability of sidewalks and crossing guards were very important elements in their decision to let their child walk or bike to school.

When considering how important environmental factors are to the decision to let a child walk or bike to school, most parents reported that unsafe crossings (58) were very important as were

speed of traffic and amount of traffic (both with 55 respondents). Distance from school and unsafe crossings were the *most* important factors for 13 respondents each, followed by availability of sidewalks (11) and amount of traffic on road (10) (see Figure 6).

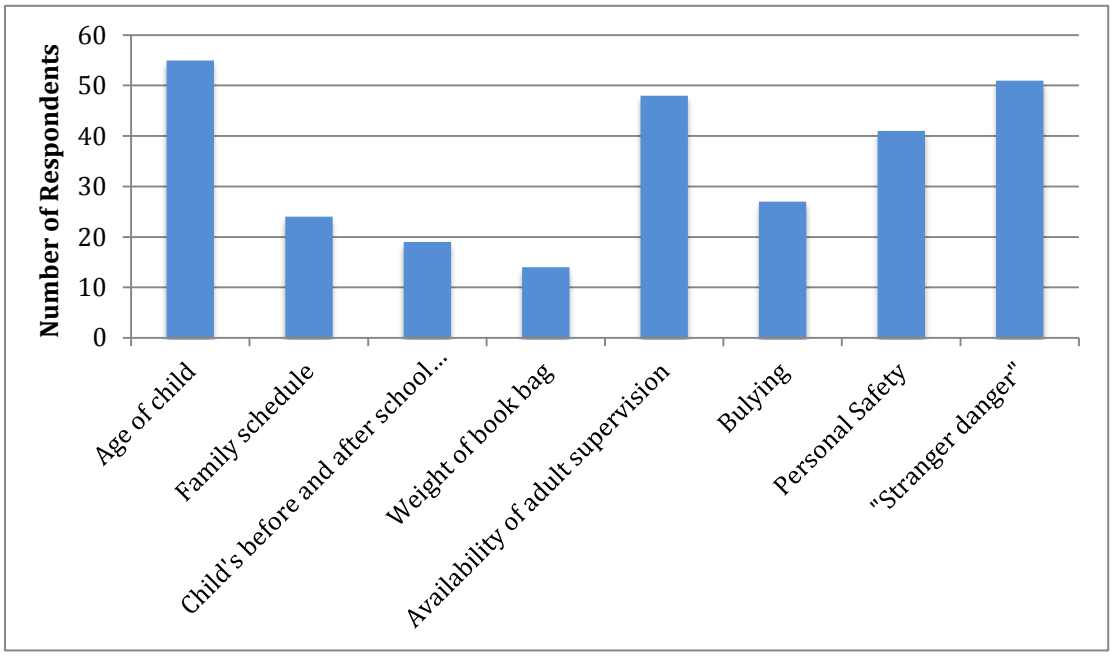
Figure 6. Judd Elementary School Parent Responses of "Very important" to Environmental Factors Influencing the Decision to Allow their Child to Walk or Bike to School



When considering social factors that might affect decisions on active travel, 55 respondents indicated that the age of the child was very important, "stranger danger" (51 respondents), followed by availability of adult supervision (48 respondents). "Stranger danger" was more of a concern for the respondents from Judd Elementary School than for Montclair parents. This difference may correspond to the age of the students, all of whom are in grades PreK-5 at Judd Elementary School compared to a population of elementary and middle school students in Montclair. Age of child was the *most* important factor for 21 of the respondents when

deciding if a child would walk or bike to school. "Stranger danger" was second *most* important for 18 respondents with personal safety being *most* important for 13 respondents (see Figure 7).

Figure 7Judd Elementary School Parents Responses of "very important" to Social Factors Influencing their Decision to Allow their Child Walk or Bike to School

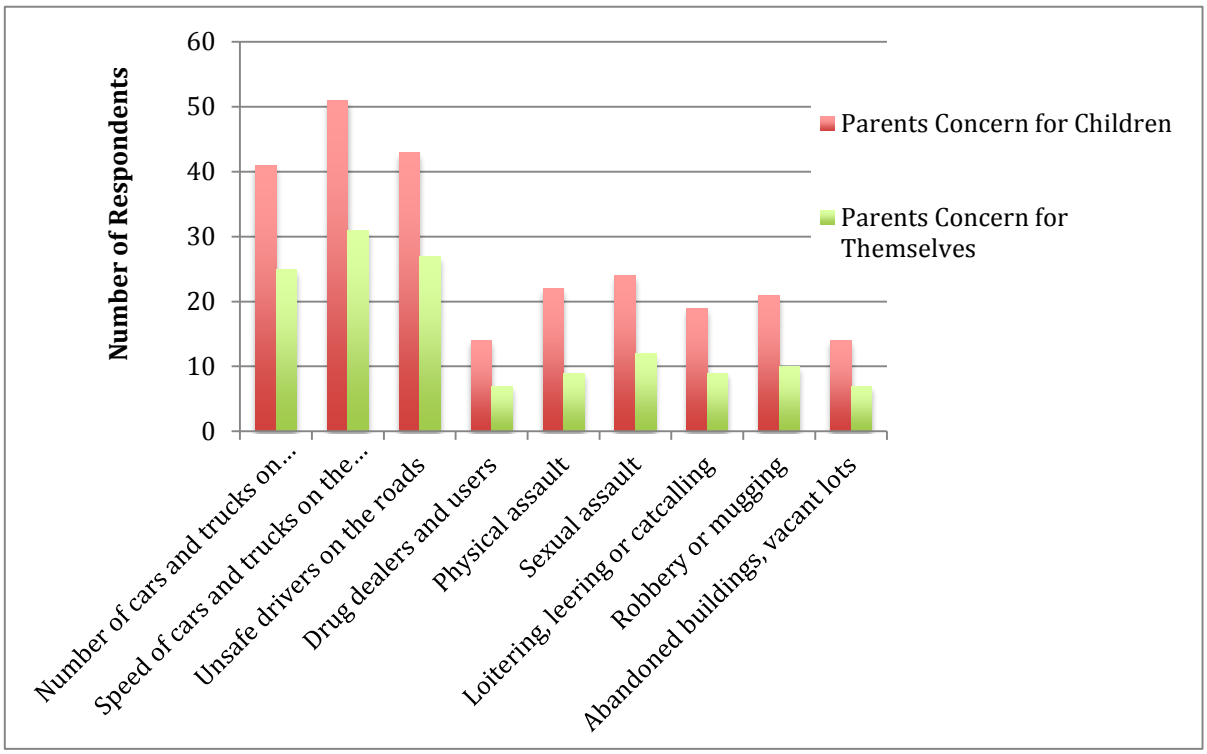


When parents indicated how concerned they are with various safety issues for their child in their neighborhood, 51 indicated that they are very concerned with speed of cars and trucks on the road, 43 with unsafe drivers on the road, and 41 with the number of cars and trucks on the road. When parents consider which safety issues they are *most* concerned about for their child, speed of cards and trucks on the road had the highest number of respondents (20), followed by number of cars and trucks on the roads and unsafe drivers on the roads, both with 12 respondents.

Parents expressed similar concerns for their own personal safety in their neighborhoods as they are for their child's safety.

Respondents noted that they are very concerned about speed of cars and trucks on the road (31), unsafe drivers on the roads (27), and the number of cars and trucks on the road (25)(see Figure 8). When considering what factor they are *most* concerned about, speed of cars and trucks on the roads had the highest number of respondents (19), followed by unsafe drivers with 16 respondents (see Figure 8).

Figure 8. Judd Elementary School Parent Responses of "Very Concerned" to Issues in their Neighborhood for Themselves Compared to their Children



Conclusion:

As the literature on risk perception revealed, a parent's perception of risk is a strong indicator of children's mode of transport to and from school. Risk factors, including controllability, voluntariness, familiarity, and dread, play a role in the assessment of the degree of risk associated with any activity.

In the most recent round of responses to the NJ SRTS survey, well over half of the parents noted that their children do not walk or bicycle to school. Distance to school is a factor for some, as is the age of their child and the availability of busing. Parents appear to have substantial concerns about traffic safety, including traffic volume and speed, in their neighborhoods both for their children and for themselves. Parents are also concerned about social factors, such as the age of the child, availability of adult supervision and "stranger danger." Age of child was the most important factor for parents of Judd Elementary School in North Brunswick and the schools surveyed in Montclair. "Stranger danger," however, was more of a concern for the respondents from Judd Elementary School than Montclair, which also may reflect the younger student population at Judd Elementary School.

The questions which were added to this version of the survey appear to be effective in eliciting responses concerning parent risk perception of child pedestrian safety. However the survey had not been reaching as many parents as hoped. As the survey is administered over time, more information can be gathered about parents' concerns with the hope to further refine efforts to address safety issues in communities statewide. With an increased response rate, the survey could provide clearer definition of areas of real risk within a community. The analysis of survey results would contribute to the development of an approach to increase rates of walking and biking. Depending on the data, an emphasis

might be placed on educating both parents and students, or efforts might be focused on engineering solutions to address measurable traffic problems in school zones.

However, even quantitative data with many respondents can only delve so deep, and unfortunately the number of respondents of this survey has not been significant. Therefore, in order to gain a deeper understanding and description of how and why parents view aspects of the built and social environment when considering their child's trip to and from school, qualitative methods such as interviews or focus groups should also be considered in the future to supplement this current information. The same issues could be addressed, but qualitative data may better demonstrate the complexity and number of elements that go into decision-making surrounding children's trip to school and by speaking to parents directly, more specific details from these survey responses can be further fleshed. This is particularly important since surveys may often miss important factors, particularly regarding reasons why or they may oversimplify issues such as the difference between the trip to and from school or why children take different modes of transportation on different days. Thus, qualitative research may be able to lend a voice to a previously numerical focus, which may help to continue to move the discussion of this important issue forward. Furthermore, qualitative research may lead to improvements in future survey design and provide a compelling narrative to the quantitative data.

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Appendix

NJ SRTS Parent/Caregiver Survey: Perception Questions

16a. From the list below, please indicate how concerned you are with the following issues **for your child** in your neighborhood? *Select one for each from the first four columns and then select the **single** item that makes you the most concerned in column five.*

	Very Concerned	*Concerned*	*Somewhat Concerned*	*Not Concerned*	*Most concerned about:*
Number of cars and trucks on the roads	☐	☐	☐	☐	☐
Speed of cars and trucks on the roads	☐	☐	☐	☐	☐
Unsafe drivers on the roads	☐	☐	☐	☐	☐
Drug dealers and users	☐	☐	☐	☐	☐
Physical assault	☐	☐	☐	☐	☐
Sexual assault	☐	☐	☐	☐	☐
Loitering, leering or catcalling	☐	☐	☐	☐	☐
Robbery or mugging	☐	☐	☐	☐	☐
Abandoned buildings, vacant lots	☐	☐	☐	☐	☐

16b. From the list below, please indicate how concerned you are with the following issues **for yourself** in your neighborhood?
*Select one for each from the first four columns and then select the **single** item that makes you the most concerned in column five.*

	Very Concerned	*Concerned*	*Somewhat Concerned*	*Not Concerned*	*Most concerned about:*
Number of cars and trucks on the roads	☐	☐	☐	☐	☐
Speed of cars and trucks on the roads	☐	☐	☐	☐	☐
Unsafe drivers on the roads	☐	☐	☐	☐	☐
Drug dealers and users	☐	☐	☐	☐	☐
Physical assault	☐	☐	☐	☐	☐
Sexual assault	☐	☐	☐	☐	☐
Leering or catcalling	☐	☐	☐	☐	☐
Robbery or mugging	☐	☐	☐	☐	☐
Kidnapping	☐	☐	☐	☐	☐
Bullying	☐	☐	☐	☐	☐
Abandoned buildings, vacant lots	☐	☐	☐	☐	☐

17. I believe that an 11-year-old child who goes out alone in the area I live in could:

Select one for each

	Very Likely	*Likely*	*Not Very Likely*	*Unlikely*
Be hit by a car	□	□	□	□
Encounter suspicious or threatening adults	□	□	□	□
Come into contact with drugs	□	□	□	□
Walk to a friend's house	□	□	□	□
Find someone willing to help him/her in case of trouble	□	□	□	□
Be bullied by other children	□	□	□	□

18. If my child were to walk or bicycle to school she/he would or does:

Select one for each

	Very Likely	*Likely*	*Not Very Likely*	*Unlikely*
Learn his/her way around the neighborhood	□	□	□	□
Gain independence	□	□	□	□
Make new friends	□	□	□	□
See things that may frighten him/her	□	□	□	□
Learn to follow directions	□	□	□	□
See many other children walking or bicycling to school	□	□	□	□

19. Do you agree with the following sentences about your child walking to school?

Select one for each

	Strongly Agree	*Agree*	*Neither Agree or Disagree*	*Disagree*	*Strongly Disagree*
My child would be easily distracted walking to school	□	□	□	□	□
My child does not follow instructions about crossing the street	□	□	□	□	□
My child is mature and makes good decisions	□	□	□	□	□

20. When you were a child in elementary school, how did **you** primarily get to and from school?

Check all that apply

- □ School bus
- □ Bicycle
- □ Walk
- □ Family vehicle
- □ Carpool, or shared a ride with others
- □ Public transit
- □ Other
- □ Do not know
- □ Do not remember
- □ Does not apply

21a. Certain people may encourage walking to school, while others may discourage walking to school. Do the following groups of people encourage or discourage walking to school?

Select one for each

	Encourage	*Neither Encourage or Discourage*	*Discourage*
My friends and family	□	□	□
Other adults in my neighborhood	□	□	□
My child	□	□	□
Other children	□	□	□
Other	□	□	□

21b. Do any other people or groups of people either encourage or discourage walking to school?

Please write in a response

Work Related Questions

22**.** Which of these best describes your household?

Select one

□ Single parent or caregiver, no other adults, *please go to question 23 and skip 24*

□ Single parent or caregiver, plus other adults, *please go to question 23 and skip 24*

□ Two parents or caregivers, no other adults, *please skip to question 24*

□ Two parents or caregivers, plus other adults, *please skip to question 24*

□ Other, *please go to question 23 and skip 24*

23. Do you agree with the following statements about your schedule on a typical school day? *Select yes or no*

In the Morning

	Yes	*No*
My child travels to school in the morning on his or her own	□	□
My schedule allows flexibility for me to help my child travel to school in the morning	□	□
Other adult(s) help my child to travel to school in the morning	□	□
I pay someone to help my child travel to school in the morning	□	□
Other children help my child travel to school in the morning	□	□
I had to adjust my work schedule to accommodate my child's schedule in the morning	□	□
My child attends a before care program prior to the start of school because of my schedule in the morning	□	□

In the Afternoon

	Yes	*No*
My child travels home from school in the afternoon on his or her own	□	□
My schedule allows flexibility for me to help my child travel home from school in the afternoon	□	□
Other adult(s) help my child travel home from school in the afternoon	□	□
I pay someone to help my child travel home from school in the afternoon	□	□
Other children help my child travel home from school in the afternoon	□	□
I had to adjust my work schedule to accommodate my child's schedule in the afternoon	□	□
My child attends an after school program because of my schedule in the afternoon	□	□

24. Do you agree with the following statements about your schedule on a typical school day? *Select yes or no*

In the Morning

	Yes	*No*
Our child travels to school in the morning on his or her own	□	□
My schedule allows flexibility for me to help our child travel to school in the morning	□	□
My partner's schedule allows flexibility to help our child travel to school in the morning	□	□
Other adult(s) help our child travel to school in the morning	□	□
We pay someone to help our child travel to school in the morning	□	□
Other children help our child travel to school in the morning	□	□
I had to adjust my work schedule to accommodate our child's schedule in the morning	□	□
My partner had to adjust his/her work schedule to accommodate our child's schedule in the morning	□	□
Our child attends a before care program prior to the start of school because of our schedules in the morning	□	□

In the Afternoon

	Yes	*No*
Our child gets home from school in the afternoon on his or her own	□	□
My schedule allows flexibility for me to help our child get home from school in the afternoon	□	□
My partner's schedule allows flexibility to help our child get home from school in the afternoon	□	□
Other adult(s) help our child travel home from school in the afternoon	□	□
We pay someone to help our child travel home in the afternoon	□	□
Other children help our child travel home from school in the afternoon	□	□
I had to adjust my work schedule to accommodate our child's schedule in the afternoon	□	□
My partner had to adjust his/her work schedule to accommodate our child's schedule in the afternoon	□	□
Our child attends an after school program because of our schedules in the afternoon	□	□