NOVEMBER 2001

An Analysis of North Carolina Guidelines and Criteria for Establishing

# SCHOOL WALK ZONES


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&

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Highway Safety Research Center

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION • DIVISION OF BICYCLE & PEDESTRIAN TRANSPORTATION

# An Analysis of North Carolina Guidelines and Criteria for Establishing School Walk Zones

Prepared for
North Carolina Department of Transportation
Division of Bicycle and Pedestrian Transportation

By

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A Joint Effort Between

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November 2001

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# Executive Summary

## BACKGROUND

Forty years ago, half of all U.S. school children walked to school. Today, according to the Centers for Disease Control, an estimated ten percent walk to school. In many communities, as much as thirty percent of morning commuter traffic is generated by parents driving their children to school. These travel habits and children's life style choices can have serious consequences. Traffic jams around our schools foul the air, waste fuel, and create safety problems for children. The Surgeon General recently reported that thirteen percent of children age six to eleven years and fourteen percent of adolescents aged twelve to nineteen years were overweight in 1999. This prevalence has nearly tripled in the past two decades for adolescents.

In recent years, a growing number of communities in the nation are promoting school children walking to school with groups from health professional, Smart Growth advocates, traffic safety group, local PTA, and elected officials supporting these initiatives. Some states have passed legislation instituting "Safe Routes to Schools" programs to encourage schoolchildren to walk or bike to school. The primary emphasis of these programs is to provide children with an opportunity to walk or bike to school in a safe, secure environment.

The North Carolina Department of Transportation, too, recognizes the need to improve the safety of students who walk or bike to school. In recent years, a number of initiatives to enhance bicycle and pedestrian safety around schools have been undertaken by the Department's Division of Bicycle and Pedestrian Transportation[1] and the Municipal and School Transportation Assistance Program[2]. These efforts include facility improvements, training initiatives, technical assistance, and research.

## SCOPE OF WORK

The North Carolina Department of Transportation (NCDOT), Division of Bicycle and Pedestrian Transportation initiated a project to research the potential for development of standardized school walk zone policies for the state. The School Transportation Group of the Institute for Transportation Research and Education at North Carolina State University (ITRE), and the University of North Carolina Highway Safety Research Center (HSRC) were selected to undertake the study. The resulting effort included the following activities:

[1] *www.ncdot.org/transit/bicycle*

[2] *www.doh.dot.state.nc.us/preconstruct/traffic/congestion/CM/msta*

1. The compilation of the existing policies of North Carolina public schools for walk zones, descriptions of the school commute pattern through surveys of all North Carolina Local Education Agencies (LEA's); analysis of North Carolina pedestrian/motor vehicle crash data; and focus group meetings with parents and school officials who have local transportation policy and operations responsibilities;

2. The review of school walk zone guidelines, policies, and practices developed by other states and municipalities, and;

3. The definition of focus areas and development of specific recommendations.

## SUMMARY OF RESULTS

### Local Education Agencies (LEA) Surveys

In general, public schools in North Carolina do not have guidelines for establishing school walk zones. Furthermore, there is no established definition for walk zones. For most districts, "walk zone" refers to a "no-transport" zone in which students do not receive public-funded pupil transportation, and as a result, students make the school commute by walking, bicycling, or riding in a private motor vehicle. A minority of districts define "walk zone" as being areas in which guidelines suggest walking routes for students that are based on proven safety and accessibility criteria.

Survey responses indicated that the 1.5-mile "no-transportation required" zone around a given school, established by state law, has significant influence in the definition of a "walkable" distance by a school district. Only about 12 percent of the 74 districts that completed the surveys actually have established walk zone guidelines, and there is little consensus among and within the districts concerning the official(s) responsible for approving these guidelines. School districts identified factors related to the fundamental design of the transportation infrastructure, such as the existence of sidewalks, traffic volume, and number of roadway lanes, as the most important factors for establishing safe walk zones in their district.

### Focus Groups

The project team conducted a total of six focus group sessions in Fayetteville, Winston-Salem/Greensboro, and Greenville. Two sessions were held in each location with one consisting of parents and another made up of school officials with responsibility for the policies and operations of the local pupil transportation systems.

In general, the parents expressed belief that personal safety, dangerous vehicle traffic, and poor pedestrian street designs are major barriers to walking. They however appeared skeptical that facility improvements alone would encourage more walkers without addressing the personal security concerns. The participants from the policy/technical group generally believed that dangerous vehicle traffic and poor pedestrian street designs are major barriers to walking. As public decision-makers, they also focused on potential policy problems with walk zones, and were especially concerned that school officials could possibly be legally liable for student pedestrian and bicycle accidents that occur in a "walk zone." This group also identified factors that reduce the incidence of school related walking and bicycling trips, including: tight time schedule of parents and students, linking of other automobile trips to the school trip, and students' heavy backpacks.

## Crash Data Analysis

The purpose of motor vehicle crash data analysis was to attempt to determine the number and severity of pedestrian and bicycle crashes that occur during the school commute. It is difficult to determine this number for several reasons: the North Carolina collision report form does not have a field to indicate whether a pedestrian or vehicle crash involved a school trip; a high number of crashes involving pedestrians and bicycles go unreported to law enforcement; and many pedestrians and bicyclists involved in crashes do not seek medical treatment (under circumstances in which the medical facility would report the crash incident).

This crash analysis effort used a two-step method to attempt to identify and analyze the school related pedestrian and bicycle crashes. Pedestrian crashes occurring between January 1, 1991 and December 31, 1999, and during likely "school commute" months, days, and times were identified. In addition, a spatial analysis was performed on 32 randomly selected crash records in Cumberland, Forsyth, and Guilford counties – these counties participated in the project focus groups.

Analysis of the 2,147 crash records identified as being possible school related did not reveal any unexpected trends or information. The analysis showed: significantly fewer crashes occur during winter months; the distribution of crashes by day, e.g., Monday, Tuesday, etc., is fairly even; the majority of the pedestrian crashes occurred in the afternoon; and crashes are highest among middle school children.

The spatial analysis of the 32 selected crash records concluded that three crashes probably occurred during the school commute. The remaining crashes occurred at sites that were not likely along any school/home commute route. If this ratio is true for the larger school age population from 1991 through 1999, and the calculation takes into account the fact that only 68 percent of these crash types are reported, there are an estimated 33 crashes of this nature each year in North Carolina.

## Review Of School Walk Zone Guidelines Developed By Other States

A review of relevant literature and contacts with school transportation officials in other states revealed that a majority of the states give Local Education Agencies the authority to establish walk zones and there are no state guidelines. A few states, including Washington, New York, and New Mexico, have established guidelines and/or recommendations related to students walking to school. California provides funding to improve and enhance the safety of pedestrian and bicycle facilities near the school sites.

The states of New York and New Mexico implement quantifiable guidelines for deciding which students live within the statutory distance from school can safely walk to school. The State of New York's guidelines identify types of hazards with assigned point values. If the total points equal or exceed the prescribed point system, then the school district may choose to transport the student by school bus. The State of New Mexico applies a "Hazardous Walking Condition Survey" collecting detailed traffic information and

comparing conditions to regulation requirements such as "traffic volume, speed limit, width of the roadway, traffic lanes and type of traffic control, etc.

Washington State and California place emphasis on developing safe school walking routes instead of identifying hazard types. In Washington, school districts are required to develop and distribute school walking routes for all elementary schools. The guidebook is written to assist school transportation directors, in conjunction with parents, teachers and local public works officials, with developing safe walking routes.

California's Safe Routes to School Program went into effect in 1999 in response to the passage and signing of Assembly Bill 1475. The Safe Routes to School Program funds the construction of traffic calming devices, crosswalks, sidewalks, bike lanes and paths in and around California schools. The Safe Routes to School Program has funded improvement projects for pedestrian and bicycle safety at 186 school sites since 1999.

## SUMMARY OF RECOMMENDATIONS

The School Transportation Group makes the following recommendations based on this study. The recommendations are categorized in four groups: 1) Clarify Terminology; 2) Training Needs; 3) Development of Partnership, Planning, Procedure. 4) Research Needs.

A. Terminology

- The North Carolina school systems should adopt the term "no-transport zone" instead of "walk zone" to define areas where school bus transportation is not provided

- The North Carolina school systems should adopt the term pedestrian "corridor," "path," or "route" instead of "walk zone" to reflect the fact that not all sections of a "no-transport zone" are reasonably safe for a student to walk or bicycle.

- School systems and transportation planners should not use the word "safe" to describe defined "pedestrian corridors." Instead, they should be described as routes that meet established procedures to define and evaluate "pedestrian corridors."

- Clearly define the separation between pedestrian and bicycle facility needs. The terms "pedestrian" and "bicycle" should not be used in conjunction with one another unless bicycle suitability was part of the corridor evaluation.

B. Training Needs

- Develop materials and programs to raise the awareness of school administrators and parents concerning pedestrian and bicycle issues.

- Bicycle and pedestrian training should be conducted for all school children. Specifically, training should be increased at the elementary level, where training has been shown to be relatively effective during children's formative years, and both bicycle and pedestrian training need to be reinforced in an appropriate, effective format for the middle school level.

C. Partnership, Planning, and Procedures

- Develop state guidelines and/or recommended procedures to assist school transportation officials and planners in the establishment and evaluation of pedestrian and bicycle "corridors." These guidelines and/or recommended procedures would assist and provide guidance in the development of potential walking and bicycling routes by using objective and quantifiable methods to identify safety deficiencies and to prioritize possible improvements to potential routes.

- Include pedestrian and bicycle issues during the school siting process. The lack of consideration for pedestrian and bicycle accessibility and safety in the school siting process can significantly contribute to low numbers of children walking and bicycling to school, and to high levels of private vehicle traffic.

- Promote a unified model in which a collaboration of local and state agencies and groups, such as public schools, public works, transportation, planning, public health, law enforcement, and community organizations (e.g., Safe Kids coalition), form a partnership to effectively evaluate the needs, funding, and options for improving the walking and bicycling school commute.

- Promote available school transportation resources that could benefit school transportation directors and other officials who are responsible for school transportation. These resources include: technical assistance such as that available from the NCDOT Municipal and School Transportation Assistance program; funding sources and application assistance; and, guidelines that identify and discuss the application of a variety of alternative transportation practices.

D. Research Needs

- Safety impact: School bus transportation is among the safest travel modes. The establishment of a school "no-transport zone" would shift trips from buses to walking, bicycling, or riding in automobiles. School officials need to be confident that safety would not be compromised by establishing pedestrian or bicycle corridors.

- Modal choice impacts: Research is needed to understand school trip modal choice. For example, how many students will utilize pedestrian or bicycle facilities and how many will be transported in private vehicle after establishing pedestrian or bicycle corridors.

- Modal shift impacts: Research is needed to address school campus traffic congestion problem from a multi-modal approach. In some communities, engineering solutions provide only temporary relief for school traffic congestion; the long-term solution is to reduce private vehicles traffic volume. Concepts such as Walk to School Day and Walking School Bus encourage school related pedestrians and may be an alternate approach to address school campus traffic congestion.

- Costs: Research on the comparable costs of the various modes is needed to help maximize the cost-efficient use of limited funds.

- Data: Data collection changes should be made to improve the identification of school commute crashes, including the addition of a relevant data field to the North Carolina collision report.

## BACKGROUND

The state of North Carolina has not developed standardized guidelines that are distributed to individual school districts concerning the establishment and evaluation of school walk zones. Perhaps this is due to the ambiguity in the definition of the term, "walk zone." There is no established definition of a walk zone, but it might be understood as a specified area adjacent to the school in which students do not receive public-funded pupil transportation. This interpretation is often used by many Local Education Agencies (LEA) citing the Public School Laws Section 115 C-246(c):

> *"Unless road or other conditions shall make it inadvisable to do so, public school buses shall be so routed on state-maintained highways that the school bus, to which such pupil is assigned, shall pass within one mile of the residence of each pupil, who lives on and one half miles or more from the school to which such pupil is assigned*."

As a result, students living in this prescribed area would have to make the school trip by either walking, or riding in an automobile. A walk zone might also be understood as an area in which guidelines suggest walking, routes for students based on proven safety and accessibility criteria.

Before attempting to develop school walk zone guidelines for school transportation officials, it is important to determine if walk zone guidelines are desirable, and fully understand the related issues, problems, data, and opportunities. Comprehending the many issues, for example, can be difficult because the establishment of school walk zones involves many stakeholders, from the local school transportation planners who address the operational issues of pupil transportation on a daily basis to the parents and guardians of the students. School board and administration officials, and local law enforcement have a strong interest in this issue as well.

In order to understand the concerns of these many groups, this project used a variety of activities to gather information and view the problem from a broad range of information sources and perspectives. The project team sought to gather comprehensive information on current walk zone policies, the public and professional perceptions of problems and risks associated with establishing walk zones or walk zone guidelines, and how pedestrian and bicycle crash data might impact walk zone policy. The principal activities included:

- **LEA Survey***:* The project team administered a written survey to North Carolina Local Education Agencies (LEA) to understand the perception of pupil transportation professionals concerning walk zones, walkable distances, characteristics for establishing walk zones, bicycling, and safety programs.

- **Focus Groups***:* The project team conducted total of six focus groups, two each in Fayetteville, Greenville, and Winston-Salem. One group consisted of policy and technical personnel such as pupil transportation directors and school principals, and the other group consisted of the parents of students and other community members.

- **Analysis of Pedestrian and Bicycling Crash Data:** The project team developed a profile (e.g., age of person, time of day) of pedestrian and bicycle crashes during the school commute, and selected 2,147 North Carolina crash records from an eight year period that met the profile. They analyzed the spatial and other characteristics of the crash records to understand the actual number and severity of pedestrian and bicycle crashes during the school commute.

- **Relevant Literature**: Policies, laws, and guidelines from several other states were examined to determine how walk zones are established and implemented elsewhere.

# LOCAL EDUCATION AGENCY SURVEY

## PURPOSE

The objective of the Location Education Agency (LEA) survey was to efficiently collect quantifiable data on the perceptions of pupil transportation professionals concerning the definition of school walk zones, walkable distances, characteristics for establishing walk zones, bicycling, and safety programs. The survey provided the opportunity to collect brief narrative information.

## METHODOLOGY

The project team drafted a written survey and distributed the survey to the pupil transportation directors of the 117 Local Education Agencies in North Carolina. LEA's are the city, county and other public school districts in the state. The team received 74 completed surveys with useful information, signifying an approximate 66 percent response rate. Appendix A is a blank copy of the survey.

## RESULTS

### Walk Zone Definition

There is no official definition of a walk zone. The survey attempted to understand the perceived definition of walk zone by the districts, and the number of districts with a walk zone. The results are depicted in Figure 1 and the following summary:

- 40 districts have walk zones (sometimes termed "no-transport zones" when they have not been established as safe for walking) and 34 districts do not have walk zones.
- 26 define a walk zone as "an area within a defined distance from a school where school bus service is not provided." (18 of these districts have walk zones, 8 do not).
- 27 define a walk zone as "an area established as safe for walking/ bicycling to school." (19 of these districts have walk zones, eight do not).
- 3 define a walk zone as a combination of the above definitions. (All 3 of these districts have walk zones).
- 17 do not have established walk zones and identified with neither of the above definitions.
- One district that does not have walk zones left this question blank.

It is important to note that 16 of the 34 districts without walk zones did indicate which definition they felt best described a "walk zone." The remaining 17 districts indicated only that walk zones were not established in their districts.

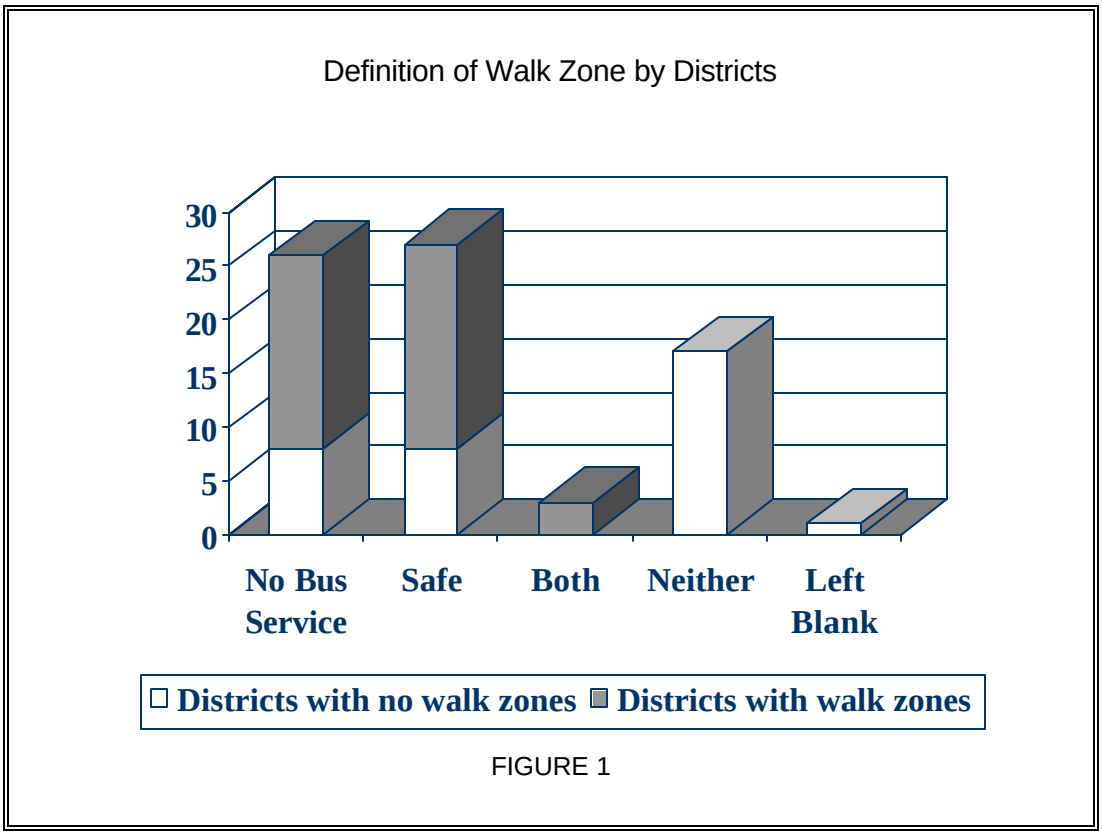



FIGURE 1

## Walkable Distances

NC state law establishes that "[school] buses should be routed so that they pass within ½ mile of the residence of each pupil who resides more than one and one-half [1 ½] miles from the school, which serves his or her attendance area." If area conditions are not suitable, however, this law does allow for revision of this standard. Many districts have revised this law to make this distance shorter or to provide school bus service to everyone in the district.

The survey attempted to understand and calculate how the districts might define a walkable distance for school children. Data from 37 of the 40 districts with walk zones were used to calculate an average walkable distance for the state by grade level. The results are presented in Figure 2. Three of the respondent districts with walk zones did not have responses that could be used in this calculation. For the purpose of this report, the grade levels are categorized by the following school types: the elementary schools are from kindergarten to fifth grade (age ranges from five years old to eleven years), the middle schools are from sixth grade to eighth grade (age ranges from twelve years old to fourteen years old), and the high schools are from tenth grade to twelfth grade (age ranges from fifteen years old to eighteen years old)

| Average Walkable Distances by Grade Level | | | | | |
|---|---|---|---|---|---|
| **Grade Level** | **Range of Walkable Distances** | **Frequency** | | | |
| | | 0.0 mile | 0.1 – 0.5 mile | 0.6 – 1.0 mile | 1.1 – 1.5 mile |
| K-5 | 0.0 to 1.5 miles | 4 | 5 | 9 | 19 |
| 6-8 | 0.0 to 1.5 miles | 2 | 6 | 6 | 23 |
| 9-12 | 0.0 to 1.5 miles | 0 | 6 | 7 | 24 |

FIGURE 2

Figure 2 shows that among the 37 schools that have established a walk zone, the 1.1-1.5 mile range is the most commonly adopted distance. As expected, the elementary schools serving grade level kindergarten to fifth grades are less likely to have walk zones. Furthermore, the survey looked at how a district defines a walk zone might affect that district's understanding of a walkable distance. Figure 3 presents information on the relationships between grade level, walkable distance, and walk zone definition. There is an observable pattern, for all grade levels, in that the highest frequency of districts using 1.5 mile walk zones are those that define walk zones as a defined distance where transportation is not provided (i.e., no bus service).

| Relationship Among Grade Level, Walkable Distance and Walk Zone Definition | | | | | |
|---|---|---|---|---|---|
| **Grade Level** | **Definition of Walk Zone** | **Frequency of Walk Zone Distance** | | | |
| | | 0.0 mile | 0.1 – 0.5 mile | 0.6 – 1.0 mile | 1.1 – 1.5 miles |
| | | | | | |
| K - 5 | Safe for walking | 2 | 3 | 5 | 7 |
| | No bus service | 2 | 2 | 3 | 10 |
| | Both | 0 | 0 | 1 | 2 |
| | | | | | |
| 6 - 8 | Safe for walking | 1 | 4 | 3 | 9 |
| | No bus service | 1 | 2 | 3 | 11 |
| | Both | 0 | 0 | 0 | 3 |
| | | | | | |
| 9 - 12 | Safe for walking | 0 | 4 | 3 | 10 |
| | No bus service | 0 | 2 | 4 | 11 |
| | Both | 0 | 0 | 0 | 3 |

FIGURE 3

## Responsibility for Walk Zones

There are not any laws or recognized customs that define who is responsible for defining or approving a walk zone. Therefore, there are a variety of positions and agencies that might have this responsibility. The survey indicated the following:

- Thirty-eight of the 40 respondent districts with walk zones (defined either as safe for walking, no bus service, or both) listed one or more of the following for those whose approval is required for walking: School Board, School Transportation Director, Superintendent, Assistant Superintendent, School Principals, TIMS Coordinator, District Safety Director, and Transportation Specialist.

- One respondent district had walk zones in place that were approved previously and the person(s) who approved was not known.

- One respondent district cited only the NC Legislative Code as approval for their 1½-mile no-transport zone.

### Walk Zone Guidelines

The survey attempted to discern the existence of walk zone guidelines and any written documentations that those guidelines might take. Figure 4 and the following summaries depict how walk zone guidelines are interpreted among the 72 out of 117 LEAs returned the survey:

- Forty LEAs have established walk zone.

- Twenty-five of the 40 have no established, documented guidelines.

- One LEA was not sure and three LEA did not indicate whether they had guidelines.

- Two of the 40 (Guilford and Carteret) only have "no-transport zones" and thereby have no "walk zone" guidelines.

- Nine of the 40 have established, documented walk zone guidelines in their district.

Further inquiry into the nine districts with documented walk zones revealed that six districts refer to the Public School Laws Section 115 C-246(c) as their guideline, one district used guidelines in excess of these state guidelines, and two districts did not provide any additional information.

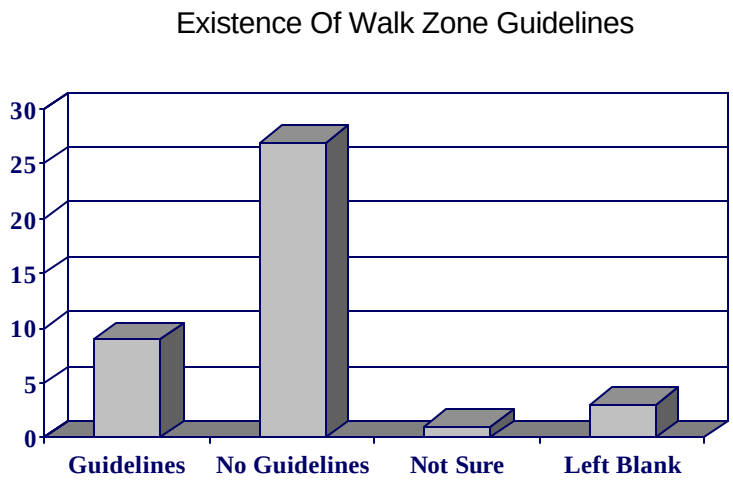



FIGURE 4

## Contributing Factors

The survey listed ten factors and asked all districts to rank these factors by their relative importance for establishing walk zones. Figure 5 provides the results – note that lower totals indicate higher importance. Factors are shown in order of importance in Figure 5.

**Factors Important in Establishing Walk Zones**

| Rank | Factor | Total* |
|---|---|---|
| 1 | Sidewalks | 232 |
| 2 | Traffic Volumes ** | 275 |
| 3 | Number of Lanes** | 318 |
| 4 | Crossing Guards | 348 |
| 5 | Posted Speed Limit** | 384 |
| 6 | Marked Crosswalks | 398 |
| 7 | Pedestrian Signals | 409 |
| 8 | Area Accident History | 475 |
| 9 | Railroad Crossings** | 543 |
| 10 | Bike Paths | 672 |

* Lower totals indicate greater importance.
** Traffic operation characteristics

FIGURE 5

Eight districts mentioned “major streets” or “major intersections.” “Major” is believed to be a function of traffic volumes, number of lanes, and posted speed limit, and therefore, numbers two, three, and five in the above listing were adjusted to account for the additional priority given by those eight districts. Railroad crossings ranked relatively low

because many districts do not have at-grade railroad crossings near schools with which to be concerned.

Districts could list (i.e., write in) additional factors besides the ten factors that the survey proposed. These additional factors and the frequency of occurrence are as follows:

1. Area crime reports / perceptions (7)
2. Student age (5)
3. Distance from school (4)
4. Walking paths available other than sidewalks (4)
5. Traffic control (3)
6. Area business type- industrial, manufacturing, etc. (3)
7. Drug infested areas (2)
8. Clear view of traffic (2)
9. Well lit areas (2)
10. Number of students required to walk (1)
11. Number of roads to be crossed (1)
12. School starting time (1)
13. Visibility of children walking (1)
14. Number of buses available (1)
15. "Pedestrian friendly" (1)
16. Practice in similar areas (1)

Eight of the 40 districts with walk zones did not list any required factors for establishing a walk zone. Three of these eight districts indicated that no factors are considered in the decision-making process of establishing walk zones.

### Bicycling

Figure 6 indicates that the great majority of districts allow their students to bicycle to school. The two counties requiring special permission are Chatham, which requires permission from the parent, and Hyde, which requires permission from the school principal. Figure 7 graphically depicts the same information.

| Number of Districts Permitting Students to Bicycle to School | | | | | |
|---|---|---|---|---|---|
| **Grade Level** | **Yes** | **No** | **Not Sure** | **With Special Permission** | **Left Blank** |
| K – 5 | 53 | 12 | 2 | 2 | 5 |
| 6 – 8 | 56 | 7 | 2 | 2 | 7 |
| 9 - 12 | 56 | 7 | 2 | 2 | 7 |

FIGURE 6

## Safety Programs

Students who walk or bicycle to school can likely improve their safety by completing bicycle and/or pedestrian training. The survey found that 34 of the 74 respondent districts offer some type of safety program. Bicycle safety programs are twice as popular as pedestrian safety programs, and almost all pedestrian programs are offered in districts that also offer a bicycle program. Figure 8 and Figure 9 show the frequencies at which safety programs are offered and the relationship between the type of safety program offered and the way the district defines a walk zone. The highest frequency of districts that do not offer safety programs is in the "no walk zones" category. Surprisingly however, the second highest frequency without any type of training belongs to districts that define walk zones as safe for walking.

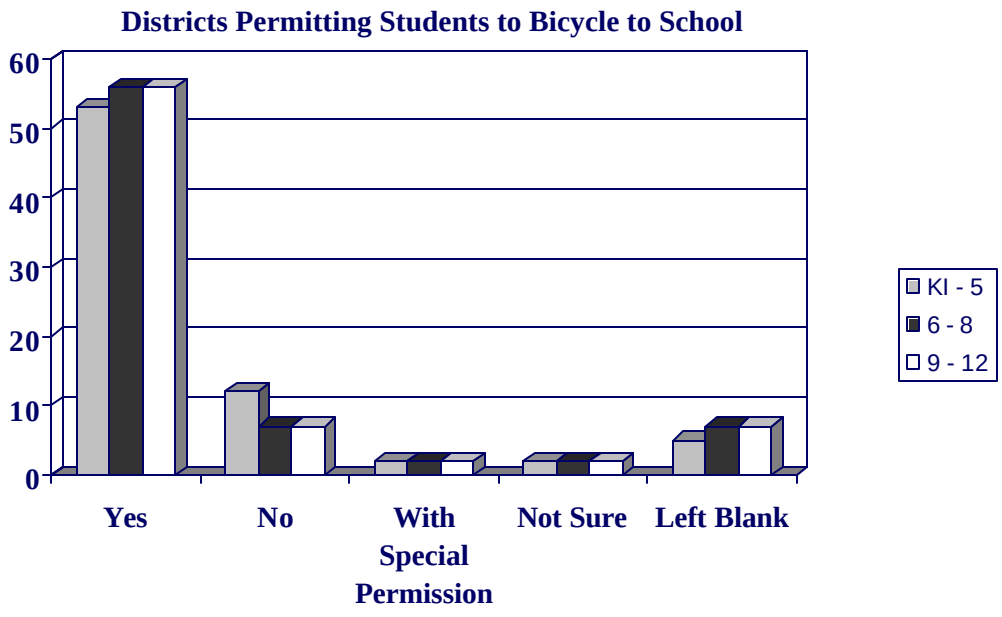



FIGURE 7

| Districts Offering Safety Program | |
|---|---|
| Safety Program Offered | No. of Districts |
| Bicycle Only | 18 |
| Pedestrian Only | 2 |
| Both Bicycle & Pedestrian | 14 |
| None | 32 |

Note: "Not sure" and blank responses are not included.

FIGURE 8

| Districts Offering Safety Programs -- by Walk Zone Definition | | | | | | | |
|---|---|---|---|---|---|---|---|
| Definition of Walk Zone | Safety Programs Offered | | | | | | |
| | Bike | Pedestrian | Both | None | Not Sure | Left Blank | Total |
| Safe for walking | 3 | 1 | 3 | 9 | 2 | 1 | 19 |
| No bus service | 6 | 0 | 5 | 5 | 2 | 0 | 18 |
| Both | 0 | 0 | 1 | 1 | 0 | 1 | 3 |
| No Walk Zones | 9 | 1 | 5 | 16 | 1 | 1 | 33 |

FIGURE 9

Among the 34 districts with safety programs (and the two districts that were unsure), the following organizations were involved in developing or delivering programs:

- School System
- Individual Schools
- Director of Student Services
- School Bus Driver Education Specialist
- DARE program
- Safety Officers
- Optimist Club
- Police Resource Officers
- Local Police/Sheriff
- NC Highway Patrol
- Division of Motor Vehicles
- Safe Communities Organization
- City Parks and Recreation

Figure 10 presents the number of safety programs offered for students in each grade level (one program was noted as being offered only for 3rd graders and another specifically for 3rd and 4th graders). Nineteen of the 36 districts offer programs that are mandatory, 16 districts offer voluntary programs, and one district was unsure. It is important to point out that the number of safety programs for middle school children is less than one-half that of elementary school children, even though middle school children are disproportionately involved in pedestrian and bicycle crashes.

| Number of Safety Program Offered by Grade Level | | | | | |
|---|---|---|---|---|---|
| Grade Level | 3rd | 4th | Elementary | Middle | High |
| Frequency | 1 | 2 | 32 | 14 | 8 |

FIGURE 10

## FOCUS GROUPS

### PURPOSE

A focus group format gathers more specific narrative data that is richer than standard survey data. This method allows researchers to pose follow-up questions that help reveal the underlying opinions, attitudes, and perceptions that support the interviewee's beliefs.

### METHODOLOGY

The project team conducted focus groups in three different locations including Fayetteville, Winston-Salem/Greensboro, and Greenville. The team chose these locations to obtain a geographical representation of the state. Two separate focus groups were conducted in each location:

- **Community Focus Group** – consisted of some school principals, transportation directors, parents living within a designated walk zone for that district and school crossing guards; these sessions were conducted in the early evening.

- **Policy-Technical Focus Group** – consisted of school officials who are responsible for the policy and operations of the local pupil transportation system, and other professionals such as school board attorneys, city planners, district and city transportation engineers, and local law enforcement personnel; these sessions were conducted during the workday.

The facilitators encouraged open and honest discussion in all the focus groups. They prompted discussion using a set of questions that had been developed for the focus groups, and used follow-up questions to darify issues and thoughts. Appendix B is a copy of the standard questions. Appendix C is a transcript for each of the six focus groups.

The desired size for each focus group was eight persons, with an allowable maximum of 12 and minimum of four. The policy-technical focus groups were well attended with an average of nine participants. Although the community focus groups had an average of only six participants, the facilitators believed there was a consistent set of issues being expressed among the participants.

The project team also attempted to arrange focus group meetings in Asheville to ensure that western North Carolina was represented in this portion of the study. However, the Asheville meetings were cancelled because an increase in busing and the phasing out of walk zones occurred this year when the magnet school structure began in Asheville City Schools. Telephone interviews with other Western districts revealed that there are few walk zones in place in this part of the state, so generating focus group participants with interest and activity related to school walk zones would be difficult. The project team does not believe this omission is critical because information from the various other focus groups appeared to all focus on the same basic issues, thereby raising the prospect that Asheville focus groups would have provided similar information.

## RESULTS – COMMUNITY FOCUS GROUPS

This section discusses the results and recommendations that were provided by the parents and other participants from the community focus groups. Generally, they believed that personal safety, dangerous vehicle traffic, and poor pedestrian street designs are major barriers to walking. However, they seemed skeptical that many more students would walk if these barriers were eliminated.

### Personal Safety

The issue of personal safety, e.g., a student might be harmed or abducted, was a consistent issue for the Fayettevile and Winston-Salem/Greensboro community focus groups. Parents believe the route, or parts of the route, to school are dangerous because of "crazy people" and "drug dealers," and therefore are not comfortable permitting their children to walk or bicycle to school. There was a sense that personal safety has precipitously declined during the last few generations. One parent remarked, “things are going on in society now that weren’t occurring when parents were growing up." They believed the issue of personal safety is so critical that some schools check area crime records to establish and modify walk zones (i.e., zones in which bus transportation is not offered), and many schools must post teachers outside school buildings to monitor the situation.

### Traffic and Streetscape

The parents consistently identified dangerous traffic, and the lack of sidewalks and other pedestrian facilities as major impediments to walking and bicycling. They believe that motor vehicles travel too fast on many of the congested roadways that are along walking and bicycling routes, and that there are too many five-lane and other multilane roads to cross. Ironically, they identified parents who drive their children to school as major contributors to the congestion and excessive speed problem, especially in areas adjacent and close to the schools. "Most of people speeding and driving recklessly are the parents on their way to drop off a child," opined one participant. The lack of sidewalks and marked crosswalks along major portions of school walking routes are believed to greatly compound the dangerous traffic situation.

### Student Age is Important

Parents believe that any walk zone policy or definition must consider the age of the students. Young children are more vulnerable to personal harm, and have relatively less experience and critical judgment in dealing with vehicle traffic and street crossing. The parents seemed to fear that a walk zone policy might treat all students the same, regardless of age.

### Culture, Convenience and Time

Generally, the parents doubt that a noticeable number of students would walk or bicycle to school if the traffic congestion and speed, and streetscape problems were eliminated. They feel that walking is no longer an often-modeled activity in our culture. “Parents wouldn’t walk a mile to work, so why would they expect their children to walk," claimed one participant. Also, community focus participants identified time management as an important factor. Parents and students are under much pressure to efficiently manage their time, and driving children between home and school takes comparatively less time than

walking for both parents and students. For example, students can be ready to leave the house at a later time if they are driven to school.

Student extracurricular activity influences travel mode decisions. The irregular schedules of sporting and other extracurricular activities increase the likelihood that students must travel earlier in the morning or later in the afternoon than normal, and subsequently heightens personal safety and time management concerns. Convenience is also a factor for determining whether students are driven between school and home for two reasons. First, driving a child between the school and home can be convenient if it works well with the work schedule of a parent. Second, several parents claim that the backpacks of children, especially those that are in extracurricular activities such as band, are simply too heavy to carry more than a few blocks. These conditions seem to conspire against any significant increase in student pedestrian or bicycle activity.

### Community Focus Group Recommendations

The community focus group participants discussed several recommendations for establishing a walk zone, and for improving conditions under which children walk or bicycle to school. The following points are among the most notable and common recommendations:

- **More children not likely to walk under any conditions** – Participants were asked what policies might motivate more children to walk to school. Although they provided some recommendations, many participants offered little hope in motivating very many children to walk to school. In fact, one participants responded, "Nothing! Leave that question blank." Parents afraid for children and will not encourage them to walk even if infrastructure is adequate.

- **Community oversight** – Some participants want to increase community oversight. They recommend using senior citizens, school resource officers, school crossing guards, teachers, and police officers to patrol walk zones and suggested walk routes to decrease personal safety concerns. These measures could include "safe houses" in walk zones.

- **Improve pedestrian facilities** – Participants want sidewalks, marked crosswalks, and crossing guards to be installed at key sites along recommended walk routes.

- **Improve school site design and operations** – Some participants believe that improved school site design to more effectively handle the growing volume of automobile traffic and increase pedestrian safety is very important. These improvements would include better drop-of and pick-up zones and increased enforcement of traffic laws.

- **Change school bus policy** – A few parents want more flexible and efficient school bus transportation in order to eliminate the need for a "walk zone" or "no-transport zone." They would permit children who live in the "no-transport zone" to ride the school bus on a space available basis. However, some parents saw a problem with the possible changing eligibility status of such a policy. A few parents also felt that

the capacity of school bus transportation could be improved by using neighborhood bus stops.

- **Set up car pools** – A few parents also believe the need to designate a "walk zone" or "no-transport zone" could be reduced by initiating and supporting car pools to transport students between school and home.

- **Walking school bus** – The use of a "walking school bus" was also mentioned as a method to reduce personal safety and vehicle traffic concerns for students who walk. A "walking school bus" consists of one or more "older" students, parents, or adult volunteers who walk a set route each day to pick up and drop off students in a group.

## RESULTS – POLICY/TECHNICAL FOCUS GROUPS

This section discusses the results and recommendations that were provided by the school and community professionals who comprised the policy/technical focus groups. Although they generally believed that dangerous vehicle traffic and poor pedestrian street design are major barriers to walking, as public decision-makers they seemed to focus on potential policy problems with walk zones. Unlike the community focus groups, they did not identify personal safety as a major issue for safe walk zones.

### Many Barriers to Walkability

The policy/technical group identified many traffic, pedestrian facility, and land use barriers to safe walking. In contrast to the community focus group members, they did not feel personal safety was a major barrier. The barriers and problems included the following:

- **Traffic Congestion** – There is a high volume of traffic congestion on many of the streets that are close and adjacent to schools. They identified the high volume of traffic created by parents driving their children between home and school as a problem that is greatly exacerbated by poor school facility design. The school facilities do not have the capacity to handle the high volume of automobile traffic, and the design does not adequately mix the many modes such as automobiles, buses, pedestrians, and bicycles. As a result, many parents pick-up and drop-off children from locations that are a few blocks away from school in order to avoid the congestion. These locations, which are often street corners, driveways, and parking lots, are not designed for safe passenger boarding and alighting. Furthermore, these children must walk along and across the congested streets that are adjacent to the schools and are often poorly designed for safe pedestrian traffic.

- **Lack of Pedestrian Facilities** – There are a lack of sidewalks, crosswalks, and adequate traffic signals along and across the streets that many students must walk.

- **Land Use** – Schools are increasingly built in suburban areas that make walking distances longer and pose certain safety issues. Suburban areas have relatively lower housing unit densities, neighborhoods that are isolated by the hierarchical road network, and wide arterial roads. Furthermore, current school facility designs require large land tracts that many times can only be assembled in isolated areas.

### Responsibility, Control and Liability

The policy/technical groups raised concern that the use of a walk zone would make school officials responsible for a program over which they have little control. Control of the many barriers to safe walking and bicycling rests in the hands of local taxpayers, public works engineers, city planning and development professionals, parents, and police. On the other hand, school officials are concerned that they would be responsible for eliminating these barriers to develop a safe walk zone, but would not have the power to make the needed improvements. Some focus group participants likened this dilemma to an "unfunded mandate." Those participants who did not believe they would be responsible for making such improvements were still were concerned with the level of effort, resources, and coordination they would need to expend in order to maintain close partnerships with these many responsible public entities.

Furthermore, policy/technical group participants were consistently wary of liability issues. They are very concerned that if school officials were involved in designating walk zones, they would be liable for student pedestrian accidents within the walk zone. One official indicated that school administrations have already assumed more responsibility for student commutes than should be expected, and was concerned that parents would shift additional responsibility to the administrations if walk zones are established. It is clear that liability issues would have to be resolved to gain school official support for implementing walk zones.

### How to Define Walk Zones

Policy-technical group participants saw a challenge with defining walk zones. First, walk zone definition would have to be quantitative and included as part of written school policy in order to minimize allegations that school officials are implementing the policy in an unfair or discriminatory manner. Walk zone definition criteria that is subjective may lead parents in some "no-transport" neighborhoods to perceive that the walking barriers encountered by their children are not being properly considered or weighed. Second, several participants believed that a walk zone policy would also have to be very comprehensive in order to take into account the multitude of varying characteristics, such as urban, rural, and high crime areas, among the different schools and students. Next, some participants believed walking time is a more important factor in defining a walk zone than walking distance. However, the calculation of walking time is much more elusive than walking distance because of the different impact that a multitude of roadway and pedestrian factors have on walking time, and as result, calculating walking time will complicate the walk zone definition.

Finally, some participants are uncomfortable with setting grade and age cutoffs for school bus transportation and walk zones. For example, there may be little difference between 6$^{th}$ and 7$^{th}$ grade students in terms of ability to safely walk to school, but the 7$^{th}$ grade students might be required to negotiate a more hazardous walking environment if walk zones definitions segregate by grade or age.

### Children Unlikely to Walk

Similar to the opinions of the community focus group, policy-technical group participants believe that it would be difficult to motivate many additional students to walk or

bicycle to school. They point to the fact that many parents drive their children the short distance to the bus stop (which produces vehicle safety problems for pedestrians). Even if sidewalk, roadway crossing, and other safety barriers were eliminated, there are many reasons students will not walk or bicycle to school, including:

- **Time** – Parents and students have many activities and responsibilities, and therefore will choose to drive between school and home in order to save time.

- **Trip linking** – Student activities require trips to destinations other than school and home that are not easily or quickly walked.

- **Book bags and backpacks** – Students carry so many books, band instruments, and other items that the load is too heaving to carry a considerable distance.

- **Cultural values** – Some participants believe that walking is simply not an American cultural value, and others feel that the prevalence and dominance of the automobile make walking an uncommon mode choice.

### Shifting Transportation Mode

Given the apparent likelihood that many students will not walk between school and home, participants predicted that increasing the size of a "no-transport" zone would shift problems to another mode. They believe most students in the "no-transport" zone would be driven to school, and the subsequent increase in vehicle traffic in the school drop-off zone and adjacent road network would decrease safety for students who walk. Such a policy might decrease the cost of bus transportation, but would likely expand the need to invest funding to make pedestrian safety and traffic efficiency improvements to the school drop-off facility and adjacent road network. Funding sources would not be equitably affected. For example, reduced pupil transportation would mostly reduce required state funding, but the expanding facility and street needs would be the burden of the local school system, public works, and local taxpayers. The imbalance of the changed funding burden aside, the participants also questioned whether the needed infrastructure improvements might cost more than the savings from reduced pupil transportation.

### Funding Flexibility

Some participants felt that these diverse transportation-funding programs are not flexible enough to address problems that are highly related. Funding for school bus operations and capital costs, school site facilities, local street improvements, and crossing guards must be expended on specific items. For example state pupil transportation funding cannot be expended on sidewalks, marked crosswalks, crossing guards, or expanded pick-up/drop-off zones even though such facilities might reduce the overall need for pupil transportation funding through reduced bus transportation demand.

### Policy/Technical Focus Group Recommendations

The policy-technical focus group participants discussed many recommendations for establishing a walk zone, and for improving conditions under which children walk or bicycle to school. The following points are among the most notable and common recommendations:

- **Designate walking routes** – Most participants believe that designating walking routes for students in "no-transport zones" would improve overall pedestrian safety and be worth the possible small increase in liability risk that school administrations might experience. In fact, many participants believed the liability issue could be reasonably minimized if the walking routes were not labeled as "safe," but rather were called "preferred paths," "recommended walking routes," or "a walking route," or "school access corridor."

- **Improve pedestrian facilities and streets** – Many participants saw the need for partnerships with public works and local planning officials to target specified routes in walk zones for sidewalk installation and improvement, marked crosswalks, and traffic and pedestrian signals. A special facility improvement program could fund these measures in the case of schools that are not located in municipalities and therefore do not have a public entity that is responsible for building and/or maintaining pedestrian facilities. Also, there is a relatively small NCDOT program to fund school parking lot expansion and improvements. Participants recommend increasing the funding for this program and broadening the program application to include pedestrian and street improvements adjacent to schools.

- **Walking school bus** – The community focus groups also recommended the walking school bus program to reduce personal safety and vehicle traffic concerns for students who walk.

- **NCDOT review building plans** – Some participants believe that NCDOT review of school building plans, especially the design and capacity of vehicle drop-off zones and pedestrian facilities, would minimize future pedestrian safety issues and traffic congestion. This review and input must occur early in the planning process so school and NCDOT officials can coordinate the site design with adjacent roadway features such as turning lanes and driveway curb cuts.

- **Police partnership** – A closer partnership with police to patrol walk zones and more closely monitor traffic can increase the actual and perceived safety of pedestrians.

- **Stagger release times** – School officials may be able to reduce school site traffic congestion by staggering the release times of students (although this policy may burden parents with children that have different release times, and make the formation of car pooling more difficult for the same reason).

# CRASH DATA AND ANALYSIS

## PURPOSE

The purpose of the crash analysis portion of the project was to determine the magnitude of the reported crash problem. While it is possible to determine if a school bus or activity bus is involved in a crash, it is difficult to identify crashes that are school transportation related involving other modes. The North Carolina collision report, DMV-349, does not have a field to indicate if the crash involved a trip to or from school. If a crash involves a school bus or occurs on the school grounds, then the school district would know about these events and complete the necessary reports. However, when a pedestrian or bicycle crash occurs involving a student, the school systems may not be notified and therefore would not know the extent of these events. This is also true with other modes of school transportation such as carpool and parent provided transportation.

The high degree of underreported crashes involving the bicycle and pedestrian modes compounds the difficulty in identifying the target crashes. Stutts *et al.* found in North Carolina that only 68-69 percent of the bicycle-motor vehicle or pedestrian-motor vehicle crashes reported to hospital emergency rooms are reported to law enforcement officers and then make it to the crash data systems. It is also noted that this under-estimates the number of events because it does not account for the crashes where the pedestrian or bicyclist did not seek treatment.[3]

## SCHOOL WALK ZONE CRASHES

### Definition

A broad definition of a school walk zone crash was used to flag the crashes for further review. The first step was to look at a general trend of the potential crashes involving school aged children walking to school. The Wake County public school system bell times were used to identify the time ranges for arrival and dismissal of schools. The following definition was applied to all reported crashes between January 1, 1991 and December 31, 1999 to determine if the crash was a potential walk-or-bike-to-school crash.

- Any crash involving a pedestrian between five and 18 years old, **AND**
- occurred on a weekday, **AND**
- occurred between August 15 through May 31, **AND**
- did not occur between December 20 and January 2, **AND**
- occurred between 6:45-9:30 AM **OR** 2:00-4:15 PM

[3] *Injuries to Pedestrians and Bicyclists: An Analysis Based on Hospital Emergency Department Data*, Publication No. FHWA-RD-99-078, J.C. Stutts and W.W. Hunter, Federal Highway Administration, Washington, DC, November 1999.

### Potential Problems with Definition

Clearly all the crashes identified by the above definition would not be a walk-to-school crash. And there are other opportunities that may cause a school purpose trip to occur outside of these times. While there are many threats to the definition, there are not other mechanisms that can reliably identify these crashes without a considerable data collection effort. Some of these potential problems are described below.

- **Year Around School Calendars.** Year around school calendars challenge this definition in two forms. One track is always on a break and therefore increases the likelihood that a child would be outside walking or riding to school during these times and not traveling to school. The different tracks also place children in schools, and potentially walking or riding to school, during the traditional school calendar's summer vacation. While the majority of schools remain on traditional calendars, the year around option is becoming more popular.

- **Summer School.** This definition would systematically omit the summer school times.

- **Teacher Workdays.** There are over 100 different school systems in North Carolina and the schedule for teacher workdays varies across the different systems, thus creating opportunities for children to be out and about on traditional school days while not traveling to school.

- **Private Schools.** The issues that are related to teacher workdays are very similar to the issues introduced with private schools.

- **Widely Varying Bell Times.** The wide range of bell times creates many opportunities where children may be walking or biking during the target times, but not traveling to or from school. This is especially a problem during the afternoon times.

- **Extracurricular Activities.** Extracurricular actives generate school purpose trips that may fall outside of the times used in the definition. These activities include school-sponsored activities such as clubs and sports but also non school-sponsored activities such as playing and visiting with friend, or stopping by the store between school and home.

### Summary of Crash Data

Figure 11 shows the breakdown of the potential crashes by county over the nine-year period. As expected the frequency of these events, especially for the higher frequency counties, follows population trends. Statewide, there were 2,147 pedestrians or bicyclists meeting the criteria used to define walk-or-bike-to-school crashes. Some of the crashes may have included more than one pedestrian or bicyclist and this figure shows person count not crash count.

Figure 12 shows the trend of crashes from 1991 through 1999. There is generally a downward trend especially since 1995 and 1996. Note that there was a relatively large jump, approximately 14 percent increase, from the 1994 to 1995 years. There was also a very large

drop, over 31 percent, from 1996 to 1997. This represents a drop of over 90 crashes from one year to the next. Further investigation may indicate what events may have influenced such large changes over very short periods of time.

Figure 13 shows the distribution by day of week and month. The persons involved are relatively evenly distributed over the day of week, approximately 20 percent on each day. However, the distribution based upon month is not evenly distributed. It appears that the warmer months are more represented while the colder months have fewer people involved. August shows only six percent because the data include only the last two weeks of the month. The data reflect seasonal trends with the late fall and winter months having the smallest percentages, the spring seasons shows and increasing relative frequencies, and the fall season showing a decreasing relative frequency. These trends may indicate that fewer children are waking and riding their bikes to school during the colder months or it may reflect a general trend of the seasonal effects on children outside activities.

School Age Pedestrians And Bicyclists Involved In Crashes Meeting Crash Definition

| County | Number of Pedestrian or Bicyclist | County | Number of Pedestrian or Bicyclist | County | Number of Pedestrian or Bicyclist |
|---|---|---|---|---|---|
| Wake | 207 | Columbus | 17 | Ashe | 2 |
| Mecklenburg | 176 | Pasquotank | 17 | Caswell | 2 |
| Guilford | 108 | Granville | 16 | Chowan | 2 |
| Cumberland | 103 | Scotland | 16 | Gates | 2 |
| Forsyth | 99 | Beaufort | 15 | Greene | 2 |
| Durham | 77 | Brunswick | 14 | Hertford | 2 |
| New Hanover | 73 | Surry | 13 | Washington | 2 |
| Onslow | 58 | Lee | 12 | Alleghany | 1 |
| Pitt | 51 | Pender | 12 | Cherokee | 1 |
| Gaston | 50 | Stanly | 12 | Clay | 1 |
| Cabarrus | 49 | Martin | 10 | Franklin | 1 |
| Buncombe | 46 | Moore | 10 | Hyde | 1 |
| Catawba | 46 | Rutherford | 10 | Madison | 1 |
| Davidson | 39 | Wilkes | 10 | Polk | 1 |
| Wilson | 39 | Person | 9 | Swain | 1 |
| Edgecombe | 35 | Yadkin | 9 | Warren | 1 |
| Halifax | 35 | Bladen | 8 | | |
| Iredell | 35 | Dare | 8 | | |
| Robeson | 33 | McDowell | 8 | | |
| Lenoir | 31 | Sampson | 8 | | |
| Cleveland | 30 | Duplin | 7 | | |
| Union | 28 | Haywood | 7 | | |
| Alamance | 27 | Lincoln | 7 | | |
| Nash | 27 | Watauga | 7 | | |
| Wayne | 26 | Chatham | 6 | | |
| Craven | 25 | Transylvania | 6 | | |
| Rowan | 25 | Avery | 5 | | |
| Rockingham | 24 | Bertie | 5 | | |
| Caldwell | 23 | Davie | 5 | | |
| Harnett | 23 | Northampton | 5 | | |
| Carteret | 22 | Pamlico | 5 | | |
| Henderson | 20 | Jackson | 4 | | |
| Randolph | 20 | Montgomery | 4 | | |
| Burke | 19 | Stokes | 4 | | |
| Richmond | 19 | Anson | 3 | | |
| Johnston | 18 | Hoke | 3 | | |
| Orange | 18 | Macon | 3 | | |
| Vance | 18 | Alexander | 2 | | |

Figure 11

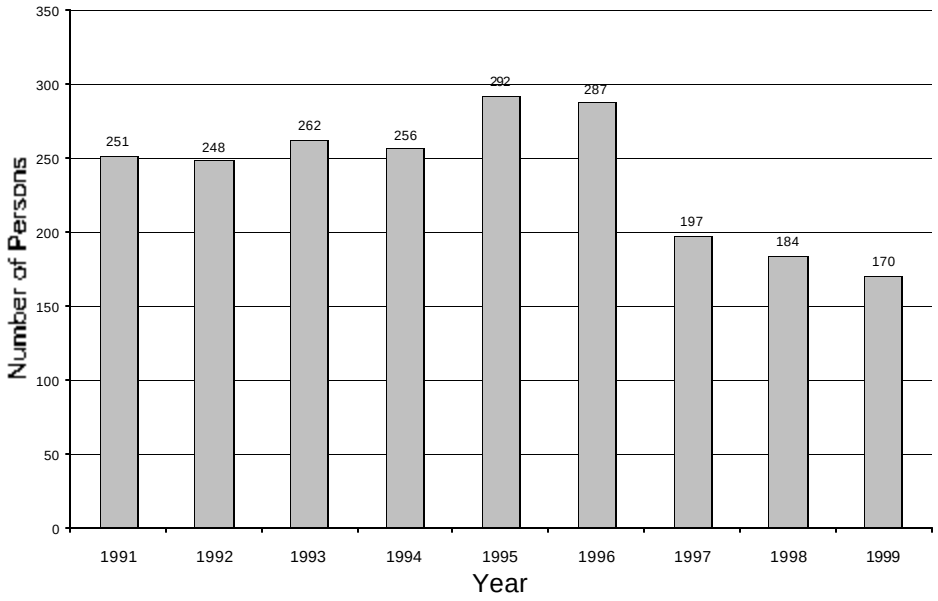



FIGURE 12

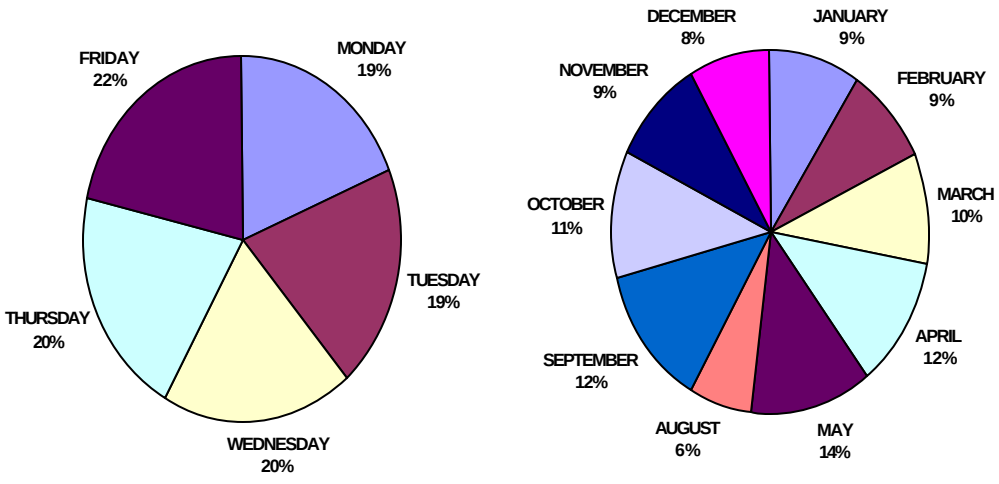



FIGURE 13

When reviewing the light conditions during these crashes, it was noted that nearly 95 percent of the events occurred during daylight conditions. Only 1.3 percent occurred during darkness, and in 1.4 percent the light conditions were not stated.

The review of the injury level shows that these crashes follow the general trends of typical pedestrian and bicycle crashes. As shown in Figure 14, very few of the persons received no injury, roughly three percent were fatally injured, and a large proportion received some type of injury.

Injury Level of Pedestrians and Bicyclists Involved in Potential Walk-or-Ride-to-school Crashes

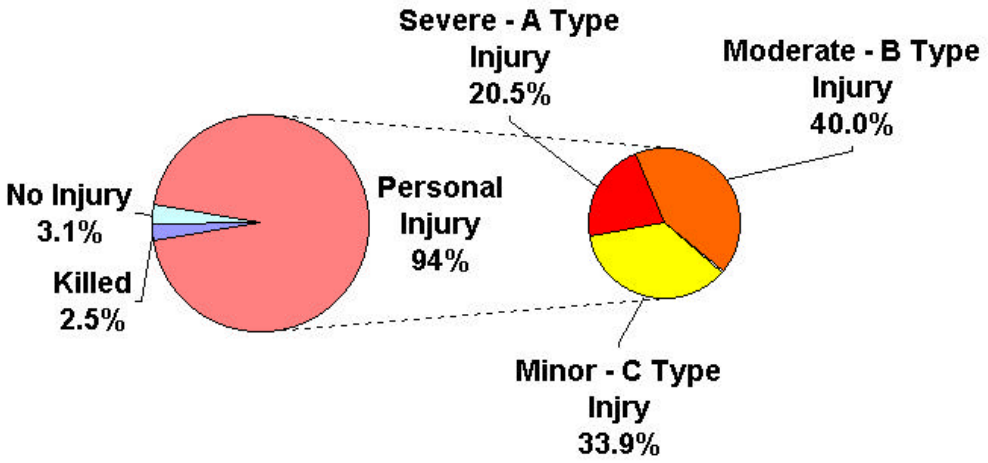



FIGURE 14

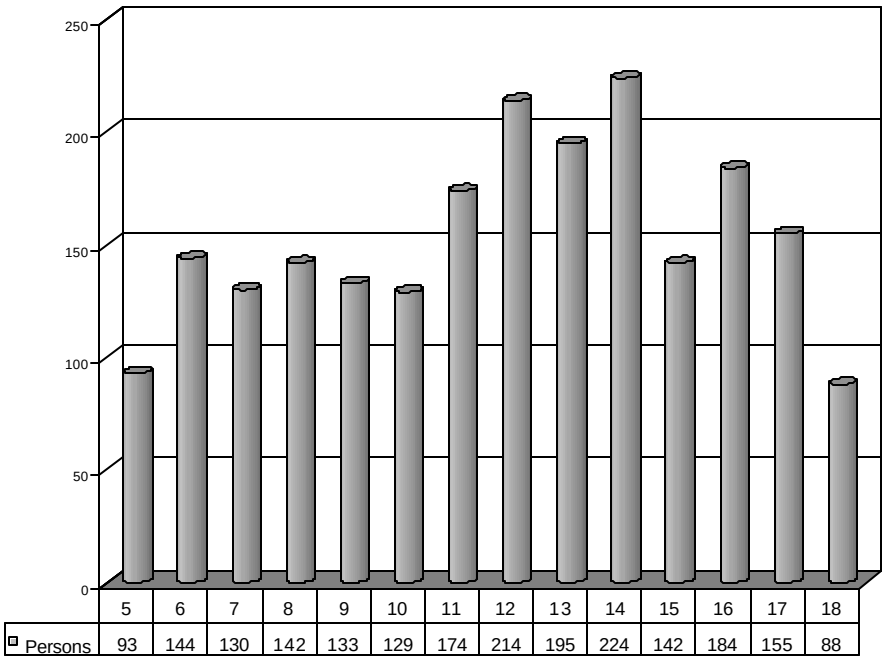
The age of distribution appears to follow a trend that increases into the middle school ages then starts to decrease in the high school ages. The decrease in junior and senior high school age children, 16- through 18-year olds, involvement may be due to decreases in exposure as these young adults are beginning to drive and/or ride with their friends. Parents may be less likely to allow their elementary aged children to walk without adult supervision. Figure 15 shows the age distribution of the persons involved in the walk-or-ride-to-school crashes.

## SPATIAL ANALYSIS FOR SELECT COUNTIES

The project team selected Buncombe, Cumberland, Forsyth, Guilford, Pitt and Wake Counties for more detailed analysis of the potential walk or bike-to-school crashes. These counties were also selected to participate in focus groups. This task involved matching the students involved in crashes reported between January 1, 1999 and March 31, 2001 with their respective schools. The location of the students' home, assigned school, and the crash were spatially represented to better determine if the crash actually occurred while the student was walking to or from school. Figure 15 shows an example of one crash in Guilford County. The crash site is between the child's home and school and occurred within a reasonable time of the school bell. The total distance between the home and school is 0.7 mile, walking along the street. The distance between the home and the crash site is 0.3 mile.

Although it would require further investigation to determine if that day was an actual school day, we can say with a higher degree of confidence that this crash was a walk-or-bike-to-school crash.

Pedestrians and Bicyclists by Age Involved in Potential Walk-or-Bike-to-School Crashes




| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Persons | 93 | 144 | 130 | 142 | 133 | 129 | 174 | 214 | 195 | 224 | 142 | 184 | 155 | 88 |

FIGURE 15

## DISCUSSION OF SPATIAL ANALYSIS RESULTS

The project team discovered the difficulties in determining whether the past crashes involved school age children during the normal school transportation hour and if they were associated with walking to or from school. Since the police report did not indicate if the crash was "school related", spatial analysis was used to determine the likelihood that the child was on-route to school or to home. This approach required research on the school assignment, location of school and residence location at the time of the crash. Figure 16 shows an example of the spatial analysis mapping where the child lives 0.7 mile from school and the crash occurred 0.3 miles from home.

Of the 71 potential crashes in Cumberland, Forsyth and Guilford Counties, 10 or 14 percent were unmatched records meaning a school assignment for the pedestrian or bicyclist involved in the crash could not be determined. Given the limited project resources for this particular task and the uniformity of results, the project team was able to review 32 of the remaining 61 crashes. The spatial analysis of these 32 crashes resulted in three probable

target crashes. Two of these crashes occurred at locations between the child's home and school within reasonable walking distance. The time of these two crashes are also close to the schools' start or release time when students should be in transit. The third crash occurred right after school and the child was crossing the street to go to a convenience store. This estimates to approximately nine percent of the crashes reviewed. If this ratio is true for the larger population from 1991 through 1999, and the calculation takes into account the fact that only 68 percent of these crash types are reported, there are an estimated 33 crashes of this nature each year statewide. This would average to approximately one fatal injury every two years and 21 injuries annually assuming the same ratio holds true.

Example of Spatial Analysis of Home-School-Crash Site.

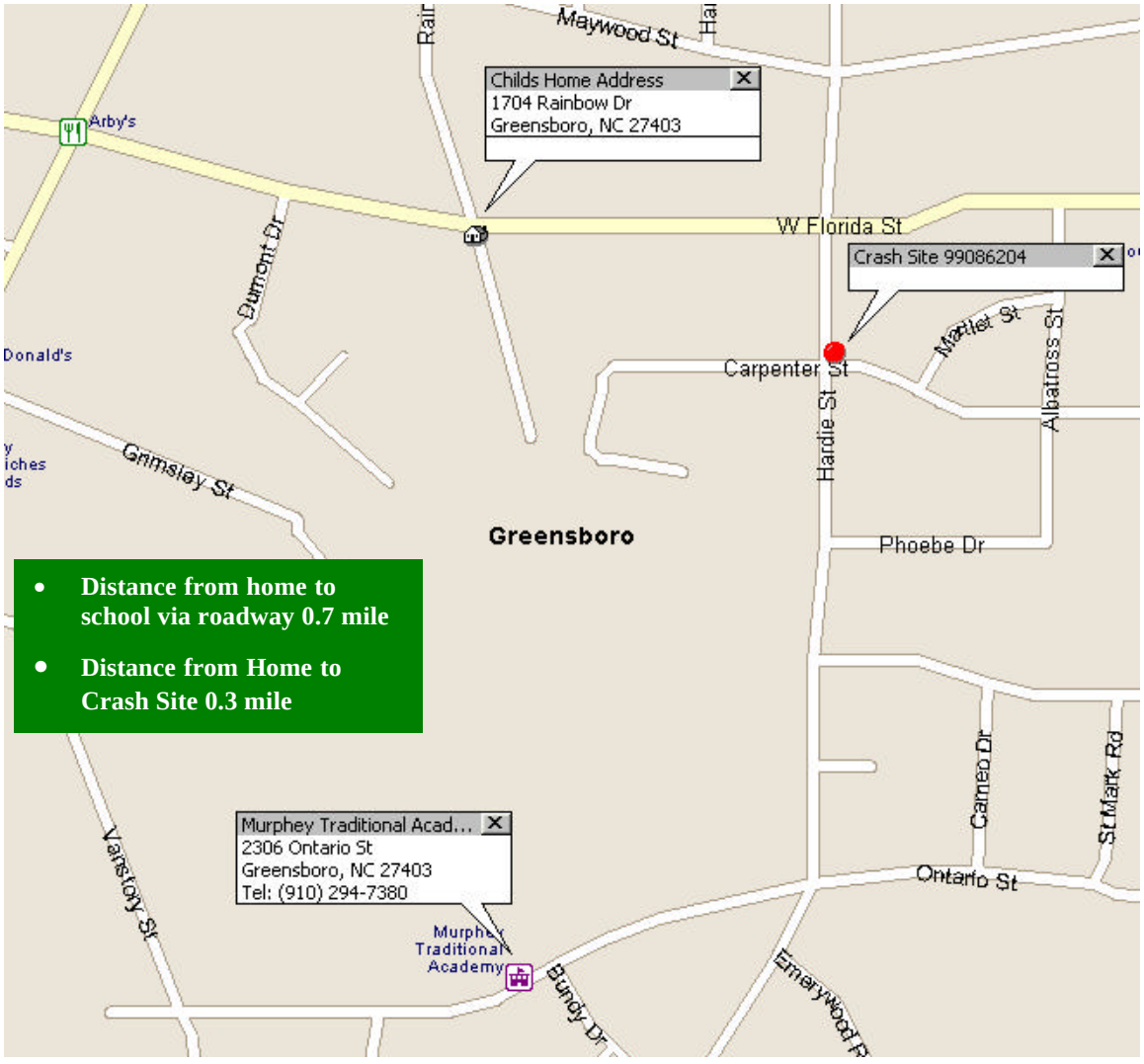



FIGURE 16

## DATA ANALYSIS CONCLUSIONS

The data analysis indicates that the occurrence of pedestrian and bicycle crashes involving school aged children while traveling to and from school is relatively low. If these estimates hold true, then all but Cumberland, Forsyth, Guilford, Mecklenburg and Wake Counties would expect to have less than one event annually.

The relatively low occurrence of these crashes is a positive indication. It is good that very few children are injured while traveling to school, as this is the intent of many programs and active countermeasures already in place. For instance, school zones are clearly signed and marked to alert drivers that there may be children in the immediate area. Traffic regulations, school-speed zones, lower speed limits during times when it is likely for children to be walking to and from school also protect pedestrians during school transportation hours. Many schools have school crossing guards to assist younger children to cross the street, especially on busy roads. Special programs are designed to educate children how to safely walk and bike around traffic. The result of these countermeasures appear to be reflected in the data analyzed in this study.

The low occurrence of school related pedestrian crashes from the data analysis and the few schools with established walk zone are also an indication that there are few children who walk or ride a bicycle to and from school in North Carolina. There are no data available in North Carolina on mode users other than yellow school buses but the national average is estimated to be less than ten percent.

## DATA ANALYSIS RECOMMENDATIONS

The apparent infrequent occurrence of walk-or-bike-to-school crashes should not be construed as a reason to not develop guidelines for walk zones around schools. Low exposure is likely a primary reason for the low frequency of these crashes. As demands increase for limited budgets, increasing the number of children walking to school is a strategy that schools can implement in order to reduce transportation dollars. The international Walk to School Day program is encouraging more children to walk to school for various reasons. Programs that promote walking and biking to school will increase the exposure and need for ensuring a safe route to and from school. Developing walk zone guidelines to assist school transportation officials in establishing safe walk zones is a proactive approach to offset any potential increases that may occur due to higher exposures. A well-developed and comprehensive guide could also help school transportation officials recognize dangers that children may encounter while walking to school bus stops as well.

## RELEVANT LITERATURE

The School Transportation Group conducted a literature search using TRIS (Transportation Research Information Services), national listserves survey of the National Association of State Directors of Pupil Transportation Services (NASDPT), and standard Web searches. The search produced a few community and outreach resources relating to walking and biking to schools including the National Highway Traffic Safety Administration's "Safe City" web site (*http://www.nhtsa.dot.gov/people/outreach/KidsPage*) and the International Walk to School Day hosted by the Highway Safety Research Center (*http://www.walktoschool-usa.org*). There is, however, very little information on quantifiable guidelines and criteria for establishing school walk zones other than New York's and New Mexico's.

The four information sources described below that are most relevant to the scope of this study.

### NEW YORK CHILD SAFETY ZONES

In New York State, the Child Safety Transportation Act of 1992 allows school districts to transport students for distances less than the statutory transportation distances. However, the local school board must approve establishment of a Child Safety Zone (CSZ), and receive voter approval to fund the additional cost to transport students who live less than the statutory distance. In the 2000-01 school year, at least 30 school districts established a total of 68 child safety zones, providing transportation for at least 1,737 pupils who otherwise would not be eligible for bus transportation.

The state has provided a quantifiable guideline for deciding which students in a CSZ can safely walk to school. Appendix E provides additional information on the New York CSZ program. The main features of the guideline include:

- **Hazard Type** – The guideline examines the student-walking route by three hazard types: 1) walkway (e.g., sidewalks and highway shoulders); 2) highway intersections; and, 3) railroad crossings.

- **Assigning Points** – The different safety factors of each hazard type are assigned point values, and added together to determine if a hazard exists.

- **Quantifiable Factors** – The factors are fairly quantifiable. Points are assigned for factors such as: the existence, placement, and width of a walkway or sidewalk; traffic volume (broken into 15 minute increments); traffic speed; road width; the distance along the road in which the hazard exists; use of traffic and pedestrian signals and safety facilities.

- **Grade Sensitive** – Final hazard determination depends on the grade of the student (two groups are K-8 and 9-12) and point total.

- **Forms** – Provides sample forms for determining points and requesting a hazard determination for a student.

Sample calculations for several different hypothetical situations and a set of FAQs (Frequently Asked Questions) are included in the guideline to illustrate proper use of the system.

## NEW MEXICO HAZARDOUS WALKING CONDITIONS

The state of New Mexico permits school districts to make exceptions to the statutory distance that a student must live from school in order to receive bus transportation. The law is known as Hazardous Walking Conditions. The exceptions are made on a case-by-case basis, and the local school board and the state transportation director must approve the exception before school bus transportation is provided. The additional costs to provide the transportation under Hazardous Walking Conditions must be within the current state and local transportation appropriation, and the district must attempt to remedy the hazard before providing the transportation. Among recommended remedies are posting signage and crossing guards.

The state has set criteria for establishing hazardous walking conditions that are grouped similar to the New York program: 1) Walking parallel to the roadway; 2) Walking across the roadway or an intersection; and, 3) Crossing railroads. The system is less detailed than the New York example – a point system is not used and traffic volume counts are not broken into 15-minute increments. If a walking condition fails any of the listed criteria, then it is a hazardous walking condition. An example of a criterion is:

> "Walking across roadway and/or intersection, if the total traffic volume of the street or roadway being crossed exceeds a rate of 180 vehicles per hour through an unregulated crossing site, which exceeds forty (40) feet in width during the times when children are en route to or from school."

Local boards of education may choose to adopt hazardous walking standards that exceed the state standards, however, the district is responsible for the total amount of the increased bus transportation. Appendix F and below URL provide more information on the New Mexico standards: *http:/sde.state.nm.us/divisions/finance/transportation.gnmac9.5.2html*.

## WASHINGTON GUIDEBOOK FOR STUDENT PEDESTRIAN SAFETY

In Washington State, school districts are required to develop and distribute school walk routes for all elementary schools. This valuable guidebook assists school transportation directors, in conjunction with teachers and local public works officials, with developing these routes. The issue of liability is also addressed. Appendix D provides partial information on this guidebook, the full guidebook can be found at the following website address: *http://www.wsdot.wa.gov/TA/PAandI/Bike-Ped/Guide_Reg.htm*

The most relevant sections of the guidebook include:

- **Safety Advisory Committee** – Describes the role and a process for setting up a comprehensive safety advisory committee (SAC) that is responsible for developing school walk routes. Three different SAC models that have a community focus are described.

- **School Walk Routes** – Explains step-by-step procedures to select the safest routes and developing maps. Lists useful data sources.

- **Pedestrian Safety Deficiencies** – Highlights several procedures for identifying and prioritizing pedestrian safety features along a school walk route. Considers non-infrastructure items such as volunteer route monitors, as well as traditional infrastructure improvements.

- **Improving Safety** – Describes a process to identify and implement improvements to correct pedestrian safety deficiencies. Discusses common funding and programs, and the establishment of partnerships with other agencies, especially the local public works agency.

The guidebook emphasizes steps in the process and provides guidelines for decision making, however is not intended as a comprehensive reference for all aspects of developing school walking routes and improving school trip safety.

## CALIFORNIA "SAFE ROUTES TO SCHOOL" LEGISLATION

In 1999, the state of California passed a bill known as the Safe Routes to School Bill. This initiative identified four broad approaches to safe routes to school programs:

- **The Traffic Calming Model** – This model aims to change the behavior of motorists by altering street design.

- **The Encouragement Model** – An opportunity for a community organization to get involved includes educational materials targeted at young pedestrians and their parents. A famous example of the encouragement model is the Walking School Bus where children, buffered by adults walk to school all holding a single string.

- **The Enforcement Model** – This model relies heavily on the cooperation of the Police Department and involves stepped up enforcement of traffic law around schools in addition to a public education campaign by the police.

- **The Funding Model** – California reserves one-third of the state's federal safety set-aside for a program to fund traffic calming initiatives, crosswalks, sidewalks, bike lanes and paths in and around California schools.

The Safe Routes to School is a construction program. It is intended to improve and enhance the safety of pedestrian and bicycle facilities and related infrastructure. However, costs for programs or activities related to education, enforcement or encouragement are eligible for reimbursement when those costs are related to the facility improvement and are incidental to the overall cost of the project.

The Safe Routes to School program also allows the California Transportation Department to substitute state highway funds for federal funds. Since the passage and signing of the bill, the Safe Routes to School program has funded 185 school sites totaling $52 million dollars. Appendix G has additional information on California's Safe Routes to School program. Additional information may also be accessed at *http://www.dot.ca.gov/hq/LocalPrograms/saferoute2.htm.*

## CONCLUSIONS

The LEA survey, crash data analysis, focus groups, and literature search provide a broad and balanced understanding of the issues, problems, and opportunities related to school walk zones. Even though these research activities are very diverse, and therefore produce a variety of information types, there are several important conclusions that stand out from many results of these activities. A review of these conclusions will help to frame the recommendations of the project team that is presented in the following section.

- **Existence and Understanding of Walk Zones** – In general, public schools in North Carolina do not have guidelines for establishing school walk zones. Furthermore, there is not an established definition or guideline for a walk zone. For most school districts, walk zone refers to a "no-transport" zone for school bus transportation which is usually a 1 ½ mile radius around the school. A few districts understand walk zone as an area in which guidelines suggest that walking and bicycling are safe based on proven safety and accessibility criteria.

- **Concerns Over School Walk Zones** – School officials have several concerns over initiating school walk zones (i.e., no-transport zone) or safe walking routes. These concerns include: liability for pedestrian or bicycle crashes; responsibility for walking routes without having control to manage, monitor, or improve the routes; difficulty in objectively defining walk zones; and, the possibility that a mode shift from bus to private vehicle would exacerbate existing traffic congestion.

- **Streetscape and Traffic Barriers** – There are many streetscape and traffic barriers that reduce the safety and comfort of walking and bicycling to school. These barriers commonly include inadequate or nonexistent sidewalks, wide intersections and roadways, and high traffic volumes, speed and congestion.

- **Inducing Walking and Bicycling** – Some study participants, especially those from the Parents' Focus Group, believe that major improvements to bicycling and walking safety and access would not significantly increase the number of students that walk or bicycle to school.

- **Improvements Worthwhile** – Although improvements to streetscape and traffic conditions would likely generate only an small increase in the number of school walking and bicycling trips, these improvements are worthwhile to increase the safety of students using those modes.

- **Partnerships and Funding Needed for Making Improvements** – Initiating a process to make these improvements is difficult because the responsibility lies with several organizations, including local public works departments, police departments, school administrations and boards, and transportation departments. Funding is needed for improvements, and the establishment of partnerships may help to make current transportation, public works, and safety funding more flexible.

- **Perception of Pupil Transportation** – The perception that public and transportation professionals have concerning pupil transportation mostly relates to

bus transportation. They often do not consider other transportation modes such as private vehicle, walking, and bicycling. As a result, the funding and facilities to support these modes may be deficient.

- **Safety Training** – Pedestrian training aimed at school children is not prevalent. Approximately one-half of the school districts offer bicycle or pedestrian safety training, and the bicycle training is twice as popular as pedestrian training.

- **Low Crash Numbers** – Spatial analysis of pedestrian and bicycle crashes resulted in a low number of school related crashes. Explanations for the low number include: low exposure (i.e., few school related pedestrian and bicycle trips); trip linking; extracurricular school activities; and relatively safe walking and bicycling environment near schools (e.g., use of crossing guards).

- **Community Involvement and Innovations** – School officials and parents are interested in involving members of the community, such as senior citizens and the students' parents, and initiating innovative measures, such as a "walking" school bus, to improve the safety of bicycling and walking to school.

# RECOMMENDATIONS

Based on information from the LEA survey, crash data analysis, and focus groups, the project team has identified the issues, problems, and opportunities related to school walk zones. Based on this information, the team has developed several recommendations to further explore and resolve the issues surrounding the establishment of school walk zones, if it is determined that walk zones are desirable.

## GUIDELINES TO IDENTIFY SAFE WALKING AND BICYCLING CORRIDORS

The project team recommends the development of guidelines to help school transportation officials and planners identify safe walking and bicycling corridors for students. These guidelines would use objective and quantifiable methods to identify safety deficiencies and to prioritize possible improvements to potential walking and bicycling corridors or routes. A few schools can implement the guidelines as a test, and the results can be monitored to make adjustments and decide if use by other schools is warranted. Once the guidelines are in general use, school systems can adopt and modify the guidelines for their particular needs. The guidelines would need to be easy to understand and implement, and reliable in a variety of urban, suburban, and rural school environments. (However, there is likely to be little demand for a rural model given the extended commute distances and lack of pedestrian facilities in rural areas.)

It should be emphasized that given the different design and safety characteristics of pedestrian and bicycle transportation, the particular evaluation guidelines and route recommendations for each mode will vary considerably.

In order to avert liability issues, the product of these guidelines, e.g., Map of Recommended Walking and Bicycling Routes, must be clearly understood to be recommendations. Based on the fact that school officials are generally not responsible for student pedestrian crashes between school bus stops and students' homes, the project team does not expect liability to be a barrier in establishing recommended walking routes.

Based on the experience of the project team and a review of the "Washington Guidebook for Student Pedestrian Safety," the guidelines would most likely have the following capabilities.

- **Gather data related to walkability** – Walkability data would include the physical conditions of streetscapes and street crossings, traffic volume and behavior, and social conditions such as crime. An efficient system must identify possible repositories of data, e.g., town planning office, and use existing data to the greatest extent possible in order to reduce the burden to gather primary data.

- **Evaluate data to identify walk routes** – A system to evaluate the data, and subsequently score, and rank the various walking routes is needed to identify recommended walk routes. As previously stated, evaluation methods must be valid for a variety of school environments, and be based on the experience of transportation professionals and similar walking route systems.

- **Prepare maps** – An easy-to-read walk zone map would be the best medium to identify the recommended routes.

- **Establish policy and distribute maps** – The school system must establish policy guidelines for using the maps. For example, the policy might state that the recommended walking routes are a result of a particular evaluation system and do not imply liability on the part of the school administration.

- **Evaluate the system and make adjustments** – The system will need to be adjusted based on feedback from parents and students, experience of appropriate school officials, and information on changing street, pedestrian, traffic, and social conditions along the route.

The school system would need to decide who has the responsibility for implementing and managing the walk route system. They might keep responsibility within the school administration, e.g., transportation director or a committee of various school officials, or decide to assign such responsibilities to a community advisory committee. School systems in the state of Washington, for example, have organized Safety Advisory Committees that are responsible for developing the walk route maps, maintaining a partnership with other public officials to improve the infrastructure, traffic, and other safety conditions in the walk zone, and overseeing pedestrian and bicycling education programs in the school district. Members of these broad-based committees are parents, teachers, school board members, planning and public works managers, and transportation engineers.

## PROMOTE AVAILABLE SCHOOL TRANSPORTATION RESOURCES

The promotion of available school transportation resources could benefit school transportation directors and other officials who are responsible for school transportation. These resources include technical assistance such as that available from the NCDOT Municipal and School Transportation Assistance program, and information on funding sources and application assistance.

Furthermore, the study participants and project team identified several alternative commute practices and other school policies that might improve transportation. Among these practices are: the "walking school bus;" walk routes that are monitored by parents, senior citizens and other adult volunteers; organized car pools; and staggered school bell times. School transportation directors and professionals could use a set of guidelines that identify and discuss the application of these various alternative practices.

## PARTNERSHIP TO IMPROVE WALKING AND BICYCLING CONDITIONS

School officials and parents that participated in this study believe that collaborative efforts to improve pedestrian safety conditions would be worthwhile. They are aware that these efforts would need to come from a collaboration of a variety of public agencies, such as public works, planning, transportation, law enforcement, and public schools, and that a system would need to be in place to determine which particular measures deserve the finite amount of funding that is available for making such improvements.

The state of North Carolina could develop and promote a model to assist school districts in establishing such partnerships and conducting a process to effectively evaluate

needs, funding, and options. These partnerships would be especially important for those schools that have established recommended walking routes by giving the school some influence to make safety improvements along the routes. Furthermore, these partnerships could provide the focus and force needed to recognize the relationship between the pedestrian environment, school bus transportation, and vehicle traffic in school zones, and make policy changes to ensure that state and local transportation funding is more flexible.

A partnership or other efforts to improve pedestrian and bicycling safety along school routes could create an inconsistency in relationship to school bus transportation. It might be asked, "Would overall student safety be improved more by improving the walking routes between school bus stops and homes than by improving the walking/bicycle routes between the school and homes?" A focus on school pedestrian/bicycle routes may appear to be a double standard in relationship to school bus stops. This issue may need to be addressed in any program to identify recommended pedestrian/bicycling routes, or policy to make improvements along these routes.

## CLARIFICATION OF KEY TERMINOLOGY

Several key terms need to be clarified or defined in order to reduce confusion among school officials and the parents of students, and in some cases, to reduce legal exposure. These terms include:

- **Walk Zone** – Make sure that school officials and parents understand "walk zone" to mean an area that is reasonably safe for a student to walk or bicycle to/from school. The term should not mean "no-transport zone," or an area in which school bus transportation is not provided.

- **Pedestrian/Bicycle Corridor** – Officials should use pedestrian and bicycle "corridor" instead "zone" to reflect the fact that not all sections of a "no-transport zone" are reasonably safe for a student to bicycle or walk to/from school.

- **Safe Routes** – In order to reduce exposure to liability, school officials and transportation planners should not use the term "safe" to describe a defined pedestrian or bicycle "corridor." These corridors should be described as being paths or routes that meet established procedures to identify and evaluate corridors.

- **Pedestrian/Bicycle** – School and transportation professionals must take into account the differences between pedestrian and bicycle transportation in the design of facilities and establishment of recommended corridors. Furthermore, they must be careful when using the terms "pedestrian" and "bicycle" in conjunction with one another. For example, a corridor that has been recommended for pedestrian use should not be called "pedestrian/bicycle corridor" unless bicycle suitability was part of the corridor evaluation.

## INCLUDE PEDESTRIAN/BICYCLE ISSUES IN SCHOOL SITING PROCESS

Several focus group participants believed that the lack of consideration for pedestrian and bicycle safety in the school siting process significantly contributes to the low volume of children walking and bicycling to school. Schools are often located next to major highways and away from neighborhoods, i.e., the homes of the students. The state of North

Carolina could establish a set of standard criteria that school systems can use, perhaps with customized modifications by the school system, in making school location decisions. The recommended guidelines for evaluating and establishing walking routes could likely be modified to serve this purpose. The resulting system would need to estimate the mode split, i.e., the number of students trips by walking, biking, and bus, among several proposed locations, and estimate the cost and safety (e.g., crash) impacts of those options.

## ADDITIONAL TRAINING

Generally, additional bicycle and pedestrian training should be conducted for all school children. Specifically, pedestrian and bicycle training should be increased at the elementary school level when they are more effective. Since middle school students are involved in a disproportionate number of pedestrian and bicycle crashes, both bicycle and pedestrian training need to be reinforced at the middle school level in a format that is appropriate and effective for children at that age level.

## IMPROVE DATA COLLECTION

It is difficult to identify pedestrian, bicycle, and automobile crashes that are related to school transportation. Data collection changes should be made to make the identification of school commute crashes more certain. An effort should be made to add a field to the North Carolina collision report, DMV-349, to indicate if the crash involved a trip to or from school.

Furthermore, schools and school districts may want to implement a system that encourages students and parents to notify the school system of the occurrence of a crash during school commute trips involving automobile, bus, pedestrian, or bicycle transportation. A pilot study could be conducted at several schools that uses an on-line and hard copy form to collect crash data from parents, and links the data to the corresponding automobile or bus accident report. Although this type of voluntary pilot system would produce sample data, the results may prove valuable in estimating the number of crashes and determining important characteristics of the crashes. Furthermore, the pilot system may prove to be valuable to the school system, parents, and students, and encourage implementation of a permanent, mandatory system that would produces even more valuable data.

## FURTHER RESEARCH ON WALK ZONES NEEDED

Further research on school walk zones (i.e., no-transport zones) is needed. This project has exposed the many issues related to walk zones from the perspective of several different stakeholders. However, the ultimate impact of implementing a walk zone in terms of mode split, costs, and safety changes are not understood well enough for officials to implement a system or statewide policy.

The state of North Carolina needs to research and provide more information to school districts on the following areas before school walk zones can be implemented with confidence in their outcome.

- **Modal Split** – The magnitude that implementing a school walk zone might have on modal split is not known. Given the increase in the number of students who are no longer eligible to ride the school bus, there is likely to be an increase in the number of

children who are driven to school. However, different factors such as the quality of pedestrian facilities, traffic volume, type of road network, and traffic congestion will influence this mode shift, and it is not understood to what extent each of these factors influence that mode choice. For example, Belmont Elementary School in Halifax County recently began enforcing a walk zone policy (i.e., no bus transportation provided in the walk zone), and preliminary impressions describe increased vehicle congestion around the school site because parents are driving children to school. A before/after study of several of these school sites that represent a variety of environmental factors (e.g., suburban or urban road network, good or poor pedestrian facilities) would begin to develop useful information on expected modal shift impacts given a particular school profile.

- **School Campus Traffic Congestion -** In many communities, it is estimated that 30 percent of the morning commute traffic is generated by parents driving their children to and from school. Traffic congestion near school campuses is a very familiar problem. NCDOT's Municipal and School Transportation Assistance has a two to three year backlog of requests from schools across the state that need assistance with traffic problems on their campuses. Research is needed to address the school campus traffic congestion problem from a multi-modal approach. In some communities, engineering solutions such as adding a turning lane or changing campus traffic patterns provided only temporary relief for school traffic congestion. The long-term solution is to reduce private vehicles traffic volume. Concepts such as Walk to School Day and the Walking School Bus encourage modal shift from private vehicles to pedestrian mode and have promising potential to be an alternate approach to address school campus traffic congestion.

- **Safety** – Public officials will likely want to understand the safety impacts of establishing walk zones. Pupil bus transportation is among the safest travel modes. If the establishment of a school walk zone shifts trips from pupil transportation to walking or riding automobiles, officials will want to be confident that student safety is not jeopardized.

- **Costs** – Even if the expected modal shift could be accurately estimated, little is known about the comparable costs of the various modes. There are many questions. Can school bus transportation funding provide more transportation, i.e., trips, by being invested in pedestrian improvements such as crosswalks and crossing guards? If there is a modal shift to the private automobile, would the savings in school bus transportation be adequate to fund needed improvements to the vehicle capacity of the school facility? How should societal health benefits, such as increased student exercise and reduced vehicle emissions, be measured and valued given a modal shift to walking and bicycling? Can a array of related cost elements, such as pupil bus transportation, private automobile, traffic calming, school crossing guards, school facilities, and public health, all be taken into consideration when evaluating public investments even though the responsible funding agencies and governments are different?

- **Funding Flexibility** – The potential for allowing funding flexibility should be explored. This flexibility should include policy that allows districts to use state school bus transportation funds for safety improvements in pedestrian/bicycle corridors.

## APPENDIX A. BLANK SURVEY ON SCHOOL WALK ZONE POLICY

# Information Survey on School Walk Zone Policies

[For Transportation Directors]

The School Transportation Group (STG) is a combined effort of the Institute for Transportation Research and Education (ITRE) at NC State University and the Highway Safety Research Center (HSRC) at UNC-Chapel Hill. We research the application of technology, policy, and planning to make all modes of school transportation more safe and efficient. STG would like your input in order to define the problems and issues of school-aged children within the "walk zone." This project is funded by the NCDOT Division of Bicycle and Pedestrian Transportation.

**Please return the completed survey to Jeff Tsai, Tori Rhoulac, Kathy Montgomery, or the conference registration desk <u>prior to leaving Spring Conference</u>.**

Thank you in advance for your contribution!

1. Please check only one box to define what is considered a "walk zone" in your district.
   - ☐ An area within a defined distance from a school where school bus service is not provided
   - ☐ An area established as safe for walking/ bicycling to school
   - ☐ Other, please explain. _____

2. Does your district have walk zones? ☐ Yes ☐ No

***Questions 3 - 7 apply only to those who have walk zones in their district.***

3. What is the maximum established "walkable distance" in your district?
   Elementary school students _____
   Middle school students _____
   High school students _____

4. By whom are walk zones in your district approved?
   _____
   (i.e. transportation director, school board, etc.)

5. Are there established, documented guidelines for walk zones in your district?
   ☐ Yes ☐ No

6. Please list the safety/ security factors, from Question 8, that are **<u>required in your district</u>** for establishing walk zones.
   _____ _____
   _____ _____
   _____ _____

7. Please list any factors other than those in Question 6 that **may not be required, but are at least considered** in establishing walk zones in your district.

_____ _____

_____ _____

8. Based on your professional opinion, please rank the following items in terms of their importance in establishing safe walk zones in your district- 1 being most important and 11 being least important.

_____ Crossing Guard(s)
_____ Pedestrian Crossing Signal(s)
_____ Marked Crosswalks
_____ Sidewalks
_____ Posted Speed Limit
_____ Traffic Volumes
_____ Number of Lanes (for street on which the school is located)
_____ Area Accident History
_____ Nearby Railroad Crossings
_____ Bike Paths
_____Other, please explain.

_____

9. Are there established, documented guidelines for when crossing guards are necessary/ required in your district? Yes ☐ No ☐

10. Are students in your district **permitted** to bike to school?

| | | |
|---|---|---|
| Elementary: | ☐ Yes | ☐ No |
| Middle: | ☐ Yes | ☐ No |
| High: | ☐ Yes | ☐ No |

11. Is there any type of pedestrian/ bicycle safety program(s) offered in your district?

☐ Yes, pedestrian ☐ Yes, bicycle ☐ Yes, both ☐ No

12. By whom are the safety programs offered? _____

13. (Please check the appropriate box.) The safety program(s) in my district are offered for:

☐ Elementary school students
☐ Middle school students
☐ High school students

14. Is the program voluntary?

☐ Yes, only some students in the indicated grade level(s) receive training
☐ No, all students in the indicated grade level(s) receive training

# APPENDIX B. FOCUS GROUP STANDARD QUESTIONS

## SCHOOL WALK ZONE PROJECT- QUESTIONS FOR COMMUNITY FOCUS GROUPS

*Objective 1: To establish the community definition of a school walk zone.*

- What is a school walk zone?
- Explain state law and no-transport zone concept>
- Should there be a difference between a no-transport zone and a walk zone? What would those differences be?
- Would you consider bicyclists to be included in "walk zone" discussion?

*Objective 2: To identify general feelings and concerns involving walk zones.*

- Do children in your neighborhood walk or bike to school?
- Do/ would you allow your child(ren) to walk or bike to school?
- Do you feel that children in your neighborhood should be provided with school bus service? Why/ why not?

*Objective 3: To assess the perception of problems and potential solutions in school walk zones.*

- What dangerous conditions are seen most often involving students walking to school? Bicycling?
- What solutions do you envision to correct these problems?
- Name one thing that you feel should definitely be included if walk zone policies were being drafted.

*Objective 4: To determine the likelihood of decreasing parent's vehicles on school campuses by increasing the number of students that walk.*

- What rules could schools develop or what changes could be put in place that would increase students walking (and decrease parents driving) to school?
- Who should pay to put these solutions in place?
- Would you be willing to pay to implement all or some of these solutions?

*Objective 5: To present and encourage more opportunities for students to walk to school.*

- Were you aware that each October there is an international "Walk Our Children To School" day?
- Present a few facts from the "Walk Our Children To School" program
- Do you feel that programs like this are helpful to encourage walking to school on a regular basis?

**SCHOOL WALK ZONE PROJECT- QUESTIONS FOR POLICY AND TECHNICAL FOCUS GROUPS**

Objective 1: To identify inconsistencies between the community and policy-technical definitions of a walk zone.

- In your opinion, what is a school walk zone?
- Explain state law and no-transport zone concept should there be a difference between a no-transport zone and a walk zone? What would those differences be?
- Would you consider bicyclists to be included in walk zone discussion?

Objective 2: To assess the political and technical perceptions of school walk zones.

- Do you feel there are problems associated with school walk zones? If so, what?
- Ask about local school speed zone policies.
- In your opinion, do many children in this city walk to school (i.e. is there a large pedestrian demand)?
- Would any solution, implemented to make walk zones more safe, increase the demand?

Objective 3: To evaluate the feasibility of community-generated solutions to problems with walk zones and generate other feasible solutions.

- What assistance, if any, is currently available for a parent who calls to request help in determining a safe route for his/her child to walk to school?
- Present facts from the "Walk Our Children To School" day program
- Do you feel that programs like the international "Walk Our Children To School" day are helpful to encourage students to walk to school on a regular basis?
- What solutions/policies could be implemented to promote walking (and decrease parents driving) to school?
- What is required/ what are the obstacles to putting these solutions in place? (i.e. sidewalks, crossing guards, lower speed limits, etc.)
- How easy/ difficult would it be to implement local policy changes making these factors required?
- Which, if any, of the following proposed solutions are infeasible? List solutions generated in community group.

Objective 4: To highlight those solutions deemed "best" in professional opinion.

- What standardized guidelines would be appropriate for DOT to promote concerning establishing and evaluating school walk zones? (What factors should go into establishing/ evaluating a school walk zone?)
- **Name one change/policy that you feel would be a hindrance if incorporated into walk zone policies.**

Objective 5: To better understand potential liability issues.

- What liability issues do you foresee with declaring school walk zones to be "safe?"
- How could these issues be addressed?
- What terminology would you use to name what has been called a school walk zone?

## APPENDIX C. FOCUS GROUP PARTICIPANTS AND TRANSCRIPTS

- Community Focus Group, Winston-Salem/Greensboro, NC
- Policy-Technical Focus Group, Winston-Salem/Greensboro, NC
- Community Focus Group, Greenville, NC
- Policy-Technical Focus Group, Greenville, NC
- Parents Focus Group, Fayetteville, NC
- Policy-Technical Focus Group, Fayetteville, NC

| Participant | Title | Location | Focus Group Attended | |
|---|---|---|---|---|
| | | | Pol./ Tech. | Community |
| Joey Weathington | School Transportation Director | Greenville | * | * |
| Alice Reese | Crossing Guard | Greenville | | * |
| Gwen Evans | Crossing Guard | Greenville | | * |
| Debi Holcombe | Middle School Parent | Greenville | | * |
| Denese Tyson | Middle School Parent | Greenville | | * |
| Claudia Battle | Elementary School Parent | Greenville | | * |
| Tiffany Benfield | Asst. Elementary School Principal | Greenville | * | |
| Stephanie Edmonson | School Board Attorney | Greenville | * | |
| Steve Yetman | Traffic Engineer | Greenville | * | |
| Steve Hamilton | Division Engineer | Greenville | * | |
| Kenneth Tippette | Senior Planner | Greenville | * | |
| Scott Johnson | School Crossing Guard Instructor | Greenville | * | |
| Vetrious Sutton | Crossing Guard | Greenville | * | |
| Craig W. McKinney | Transp. Planner- Sidewalk Coordinator | Greensboro | * | |
| Corporal Alan Jeffries | School Safety Officer | Greensboro | * | |
| Spencer Glenn | School Transportation Director | Winston Salem | * | * |
| Pat Calloway | Asst. Pupil Transportation Director | Winston Salem | | * |
| Reginald Teague | Asst. Superintendent for Operations | Winston Salem | | * |
| Brenda Butler | Elementary School Principal | Winston Salem | * | |
| William Peay | Middle School Principal | Winston Salem | * | |

| Participant | Title | Location | Focus Group Attended | |
|---|---|---|---|---|
| | | | Pol./ Tech. | Community |
| Douglas Punger | School Board Attorney | Winston Salem | * | |
| Loretta Barren | City Planner | Winston Salem | * | |
| Greg Turner | City Traffic Engineer | Winston Salem | * | |
| Elisa Tompkins | Crossing Guard | Winston Salem | * | |
| John H. Greer | Crossing Guard | Winston Salem | * | |
| Shelia Rucker | Elementary School Parent | Winston Salem | | * |
| Debra Pankey | Elementary School Parent | Winston Salem | | * |
| Denise McEachin | Middle School Parent | Winston Salem | | * |
| Toni Myers | Middle School Parent | Winston Salem | | * |
| Crystal Alleyne | Middle School Parent | Winston Salem | | * |
| Phil Mullen | Asst. Pupil Transportation Director | Fayetteville | * | * |
| Cal Violette | Middle School Principal | Fayetteville | * | * |
| Cindy McCormic | Elementary School Principal | Fayetteville | | * |
| Terry Gibson | NCDOT Division 6 Engineer | Fayetteville | * | |
| Ray Goff | NCDOT Division 6 Traffic Engineer | Fayetteville | * | |
| Barry Warren | Planning Dept. Director | Fayetteville | * | |
| Tom Cain | Crossing Guard Expert | Fayetteville | * | |
| Elonda Hicks | Asst. School Safety Supervisor | Fayetteville | * | |
| Mary Meletiou | NCDOT Program Manager | Fayetteville | * | * |
| Joel Cranford | NCDOT Urban Traffic Engineer | Fayetteville | * | |
| Lisa Jones | Elementary School Parent | Fayetteville | | * |
| Regan Garcia | Middle School Parent | Fayetteville | | * |

# Community Focus Group, Winston-Salem, NC
**Wednesday, July 11, 2001, 6 – 8pm**

**Q1: In your opinion, what is a school walk zone?**

**A1:** An area within a one-mile radius of the school in which students are required to walk as opposed to riding the bus.

Children who live in an area that is "close enough" to walk to school walk as opposed to riding the bus. (Main factor is proximity.)

Children who live within a one-mile radius of the school walk to school- safely.

**Q2: Should everywhere within the 0.75 – 1.5 mile no-transport zone be termed a walk zone or should there be a difference between a walk zone and no-transport zone? (How would you feel comfortable defining a walk zone? What SHOULD a walk zone be?)**

**A2:** A "walk zone" should be safe and the environment would be a top priority. (Like in Forsyth County where they check the area crime record for proposed school walk zones.)

## Lowered speed should be included in walk zone definition

Parents are reassured by knowing that the school system has checked certain aspects of the walk zone area like crime statistics, speed limits, etc.

More "safe houses" should be incorporated in school walk zones to help young children like Kindergarteners, who if encountered with trouble while walking to/ from school may not have the wisdom to know what to do in that situation. "Safe houses" would help since there is no longer a sense of community. [***safe house***- a round circle placed in a street-side window of a home so that a child would know that in case of emergency he/ she is welcome in that residence and that someone (whether retired or working at home) will be there.]

Neighborhood associations have been asked to assist by taking turns walking with children to the front of the community and then crossing guards can be placed as necessary, depending on roadway characteristics. In warmer weather, more recreational walkers can be seen in communities who could help with student walkers.

**Q3: Would bicyclists be included in a discussion of school "walk" zones?**

**A3:** Parents agree on "yes." Increasing the distance for bicyclists would not be acceptable to be practical since children already have a hard time waking in the mornings for school.

Transportation director has recommended bike racks in inner city schools. Bicycle safety is taught in schools.

**Q4: What is the factor that is the "worst" under which conditions students should not be required to walk? Does age play a role in determining this "ultimate" factor?**

**A4:**

- Age is important to parents!
- Exposure to strangers with lack of ability to fend for themselves
- Walking in groups would help ease parental fear that individual child cannot reason well enough to make proper decisions in emergencies while walking to/ from school. Small children even play and are late for school. (Some children- K especially-need to be on buses even within a walk zone.)

**Q5: What streetscape would be considered acceptable for a walk zone?**

**A5:**

- Speed limit of 35mph and below
- Avoid major streets
- Evaluate traffic during the year to make sure volumes are not too high
- Sidewalks
- Crossing guards when there are no sidewalks
- No children walking in the dark
- No crossing streets
- No cutting through wooded paths

**Q6: Asked of middle school children in attendance, what street is "too big" to cross?**

**A6:** Buchanan (fairly narrow, 36', 2-lanes, but extremely busy)

**Q7: Do many children in your neighborhood walk to/ from school? Do you allow your children to walk to/from school?**

**A7:** Mother of 7-year-old daughter does not allow her child to walk. She also brings home 3 neighbors who attend the same school. Most children in neighborhood do not walk.

Mother of elementary-age daughter allows her child to walk because the distance is so small and she does not cross any major streets. All children in neighborhood walk to school. Many children from neighborhoods farther back also walk.

Mother of middle-school aged son did allow her son to walk to school with many personal reservations, but asthma problems allowed him to be put on a bus. Most parents in the neighborhood drive their children to school. She now has a job where she does not have to be at work as early so she drives her son to school and he and a friend walk home in the afternoons.

Mother of 18 and 17 year olds who drive to high school also has 9-year-old son who rides the bus because the school is farther away and 12-year-old daughter who did walk but should be put on a bus in the coming school year using space available policy.

Mother of middle-school aged son allows him to walk with many reservations. She also has a 6-year-old son who walks to elementary school, but is driven to school at times.

**Q8: Would small children walking in groups (5 or 6 people) alleviate some of the concern?**

**A8:** No, not for 5 and 6 year olds.

**Q9: What most dangerous conditions are seen most often?**

**A9:**

- City buses on streets (in the mornings), especially with no crossing guard, poses a real hazard in parents minds, along with high traffic volumes.
- Dark (poor lighting) in winter when children are walking early in the morning like 7am.
- Stray/ loose dogs and other animals like snakes.
- Children having to cross (or catch a bus) at the bottom of a steep hill or place where there is low visibility.
- Children having to walk in the street because of areas with no sidewalks.
- Young children (5 and 6 year olds) walking to school unattended (maybe because of high occurrence of single parent homes in the area).
- Mature-looking females scared (one has even turned and gone back home) because of harassment while walking to middle school by high school males driving to school and other men driving through the neighborhood. *Would be viewed differently if she had other students with whom she could walk.

**Q10: (parents question) NC is known for thunderstorms with no notice. In the event that a storm is beginning as students are being dismissed from school, are they allowed to stay in the building or do they have to leave?**

**A10:** School should welcome them to stay. On the first day of school in 2000-2001, a similar situation occurred and all students were held within the school- even bus riders until conditions got better. Ashley Elementary principal will hold children, if weather is bad.

**Q11: What are conditions that you have seen that you liked that can be put in place in other places? (assessing potential solutions)**

**A11:** Principal and a few teachers stand outside in the mornings. School resource officer seen solving fights and other disputes helps with parents concerns.

Sidewalks put in place to keep students from having to walk in the street.

School guards used in NY periodically (every 2 or 3 blocks) throughout school walk zones so students and public know that children walking to/ from school are being monitored. Used as a security measure, not just in a crossing guard function.

Make parents knowledgeable about the "space available" policy so that small children that live farther out in the walk zone can get a seat on a bus and not have to walk. In general, not just when space is available, small children should be on the bus and not walking.

Neighborhoods with several car riders could carpool.

Senior citizens or parents who don't work or work at home could help by positioning themselves along the route to monitor children walking from their points of origin to the school and vice versa. ("It takes a village…")

Transportation meeting for parents living within the walk zone at the beginning of the school year would be helpful to coordinate parents, find out where other students live, and arrange for group walking, carpooling, etc.

**Q12: One of the goals of the NCDOT Division of Bicycle and Pedestrian Transportation is to encourage children to walk more. What rules could schools develop or what policies could be put in place that would make parents encourage their children to walk as opposed to driving them?**

**A12:** Nothing. Leave that question blank! Parents don't want to walk a mile to work, so they wouldn't encourage their children to walk that far to school. Things are going on in society now that weren't when parents were growing up, so they will always be reluctant to allow children to walk under today's societal conditions. Walking to school means walking early in the morning so realistically no child wants to walk at that time of morning and parents won't encourage their child to walk at that time.

**Q13: Are there other groups in the community that you feel have a role to play in school walk zones?**

A13: senior citizens (cost effective), adult recreational walkers, area businesses cannot play a part because most live in solely residential areas with no businesses, churches could get involved because many churches now have mentoring, tutoring, academic reward type programs, meet with alderman to request participation of local police who could have presence in the neighborhood

**Q14: Do you think walking with your child to school on one given day would make you more likely to encourage them to walk or would you probably then disallow them from walking again?**

**A14:** No, this would not prompt them to encourage. Some of the parents have walked with their children and observed the dangerous conditions during the week. One has walked as a

part of weekend recreation and was so tired she would certainly not encourage her child to walk.

**Parents concerns expressed throughout the group-**

- Parents leave for work as child is walking to school and can only pray that they get there safely, unless parent works from home.
- "Crazy" people in neighborhood to provide problems for children
- Some of the recommended paths (i.e. pedestrian way in WS that due to lack of use is not kept up and parents regard it as walking through the woods) are not deemed safe by parents and alternate routes are too long of a walk.
- Traffic conditions (high volumes)
- Many areas do not have traffic signals, but stop signs and high school children driving to/ from school and other do not observe the stop signs in residential areas so children must make street-crossing decisions based on available gap.
- Numerous hills make walking difficult because of the uphill portion of the walk. Many people have been seen pushing their bikes up the hills.

Solution Mentioned

- Winston-Salem/ Forsyth allows students within the walk zone to be added to a bus that comes through their area after picking up farther out on a "space available" basis. Parents with concerns can check with the school principal for availability of buses that come through their area and to arrange for this type of pick-up.
- Contact city to handle lighting and tree/grass maintenance along paths children must use to walk to/from school.
- Principals and other staff standing out to monitor walkers and ensure that they are practicing safe walking. Concerned administrators/ teachers can make a large difference.
- Cellular phones for walkers to carry to school for emergencies (and then turn in at school since school policies disallow cell phones). Emergency phones like on college campuses placed periodically along walk routes.

# Policy-Technical Focus Group, Winston-Salem/ Greensboro, NC

Thursday, July 12, 2001, 10am – 12noon

**Q1: What is a school walk zone?**

**A1:** An area around the school for which state law says that an LEA does not have to provide transportation.

Any area where children are walking to school (even if beyond the "no-transport" zone by choice of parent or student not to ride bus).

Walk zone is a common term in pupil assignment cases to decide which child goes to which school.

Safe and convenient access to school, not defined solely by distance from school.

Distance from a child's neighborhood to the school.

0.5 miles around the crosswalks that lead directly onto the school campus.

**Q2: Is there/ should there be a difference between a school walk zone and a no-transport zone (1.5 miles provided for in state law)?**

**A2:** Yes. Convenience should be addressed in a walk zone because it could take a long time to walk 1.5 miles based on the available roadway system. Safety is also a concern from the standpoint of roadway width if there are no sidewalks and lighting conditions. If these are inadequate, the roadway is not as safe as it could be.

Sometimes conditions like nearby waterways make areas inconvenient or unsafe for walking- even within a 1.5-mile radius or so of the school.

All topographical barriers (freeways, streams, etc) should be considered.

**Q3: How could "school walk zone" be effectively defined, noting that it is not just based on distance?**

**A3:** You would have to know the specific no-transport area around a specific school, instead of using the general 1.5 miles.

There is a problem with using distance to define it instead of time b/c the primary concern is how long it takes a child to walk, not really how far the child is walking- an exposure risk based on how long the child is in route.

Traffic is not the only concern, but societal safety aspects must be taken into consideration like drug dealers and people lurking at corners or in the woods.

Loose animals sometimes prevent the child from walking a shorter distance in order to maintain safety. This too must be considered.

Principals match times from crime reports from local police with school start and end times so that if offenses were happening in the times that children would be walking, undercover policemen could be positioned along those routes with reported problems. Even if the problem was 1 mile from the building, there is a sense of responsibility felt by administrators for the student from home to school. (There is no legal responsibility, however, for children walking to school.)

From the legal perspective, the responsibility falls on law enforcement, not the public schools. It is not the responsibility of the school system to provide safe streets. Potential problems occur when schools dismiss at the same time as local police shift change.

Upkeep of streets and sidewalks falls into safety concerns as well because students may have to walk in the streets because of growth around sidewalks.

**Q4: (directed to law enforcement representative) Do you all deal at all with schools and children walking on the home side of the crosswalk?**

**A4:** School resource officers (at nearest middle school if elementary school involved) are trained and used to handle school-related problems. SROs handle anything involving school children, to and from school, in Guilford Co - even bus stop issues. SROs are subsets of all three law enforcement agencies- Guilford Co. Sheriff, Greensboro PD, and High Point PD- coordinated by the Guilford Co. Schools Safety Office. In Winston Salem, law enforcement handles bus stop conflicts (and would therefore be assumed to also handle walking issues). SROs may become involved when problem is outside city limits.

**Q5: In Forsyth County, parents are allowed to select the school their child will attend. Do you find that parents often select schools in part because they know a bus will be provided for their child?**

**A5:** Yes, but not solely due to bussing. Parents concerns mentioned are not allowing their child to walk in the rain or desiring that their child attend a suburban school for the "better" education potential or safety concerns such as no good sidewalk, vehicular access to children walking, busy streets, dangerous people nearby, etc.

**Q6: Would you consider bicyclists to be included in a discussion of school "walk zones?"**

**A6:** Mostly yes.

Bikes are ridden in the street, not on the sidewalk so they cannot be addressed together. Vehicles in and out of driveways make biking on the sidewalk dangerous and bikes are forced into the street anyway.

A cyclist can make better time than a pedestrian and they should therefore not be considered in the same group. Local ordinances prohibit bikes on sidewalks regardless of size. In a college town, usually more space allocated for bikes.

From school administrator perspective, the safety issues are the same for pedestrians and bicyclists. So, safe travel home to school and vice versa is the only concern- making it logical to group bikes and peds. There is no policy that can adequately address this.
Also, administrators deal with incomplete or non-traversable sidewalks, which affect both bikes and peds (considering small children who would be biking on the sidewalk).

Children walk in the street sometimes even when sidewalks are provided. Why is this? No policy answers this question.

Many factors go into the decision-making process for determining what will/will not be a walk zone. Some factors that should be considered include neighborhood characteristics, area type (urban, suburban, rural), and presence of thoroughfares.

**Q7: What are the most dangerous conditions seen or the problems with children walking to school?**

**A7:** loose animals, children walking in streets, area crime/potential for crime

- parents driving for pick-up/drop-off of students create huge traffic problems that schools have not been built to handle and safety hazards to students walking
- traffic pattern in front of the school can cause a large problem (staggered dismissals necessary for safety)

**Q8: For elementary and middle school parents living within the walk zone who drive their children to school, in your opinion, is there any policy that can be implemented/ anything that DOT could promote for walk zones that would make parents more likely to encourage walking and less likely to drive their children to school?**

**A8:** major changes would have to be in place in order for administrators to tell parents it is OK/ "safe" for their children to walk- like alternative access (to separate walkers, drivers, etc), control of loose animals, better traffic control *one-way-in-one-way-out is a large problem

Sidewalks, better lighting, and different school times are not going to make large changes; perceptions would have to be changed and that can't be written into a policy. There may be no policy that can fulfill that purpose.

Sidewalks should be planned for in any new construction in an urban area. Bike lanes cannot be a retrofit just by painting a line adjacent to travel lanes for bikes. The entire cityscape would have to be conducive to promoting cycling.

Neighborhood associations can get involved. School could provide a meeting place for parents to meet (and form walking partnerships, carpools, etc). Seniors and other adult

recreational walkers could provide supervision for children walking to school, but there is not a connection between neighbors. Parents encourage safe houses. *Don't neglect parental responsibilities for getting their children to school.

Parents now drive children to bus stops. This is viewed by administrators as more dangerous than to driving children to school since there is no supervision at bus stops like there is at the school. This shows parents lack of willingness to let their children walk even shorter distances to a bus stop, emphasizing the need for a change in perception.

People do not want to walk anymore. Safety is not as large of a problem as it is made out to be, it is just a lack of willingness to walk. Parents don't walk; children complain of having to walk. Walking is no longer a part of this culture.

**Q9: In terms of local ordinances, how feasible would it be to have sidewalks and proper signing for walk zones around each school?**

**A9:** exiting and proposed residential areas must be addressed. Current ordinances in Greensboro are weak for requiring sidewalks. Sidewalks required near "pedestrian generators," but no definition is provided for what a pedestrian generator is. Developers resist because it cuts into profit and they cite that subcontractors will break it up. Residents of older developments don't want sidewalks because they feel they own up to the street (though there is public space at the street edge of each land parcel). New funding in Greensboro has allocated $2 million for sidewalk construction this year. Greed factor keeps people from wanting "those people" or anyone for that matter walking on/near their properties.

Winston Salem has no ordinance that requires sidewalks. Smaller, neighboring cities do require them. New ordinance about to go before the board requires sidewalks in new developments- expected not to be approved. Desire from planning perspective is to have an ordinance requiring 3 to 5' planning strip separation between sidewalk and major roadways. In recent years, bond monies and planners have been working to put in sidewalks in conjunction with needs as expressed by school system.

Maybe the ultimate measure of effectiveness for a street in terms of safety is a road with a sidewalk that people ignore because they feel safe walking in the street.

Having to cross the street to get to the sidewalk (when sidewalks are required on only one side) is a frequent complaint of pedestrians. People not wanting sidewalks "in their front yard" is also a major block to sidewalk implementation. Similar problems with greenways- plans are being made to connect schools, libraries, and recreational facilities, but several neighborhoods are opposing because they don't want to look out their back window and see "those people."

In some neighborhoods, bikeways and other infrastructure that promote community are seen as an asset.

Livable communities concept would be wonderful, but it requires that change in perception. Still, we should plan for these type of communities since the day will come when people will have to become less dependent on their personal vehicles.

**Q10: Rather than worrying about the perceptions of others, what can we do about those parents that do want their children to walk?**
**A10:** Make the conditions better for children that are walking now and eventually, they will influence others to walk as well.

**Q11: How feasible would it be from a law enforcement perspective to position people along walk zone routes during the times that children are walking to ease some of the safety concerns of parents?**

**A11:** Parents and PTAs would have to get involved as volunteers. Crossing guard program currently costs about $1000/day to run, which is $180,000 a year for about 35 crossing guards, which is quite expensive. Costs would therefore prohibit this walk zone monitoring as paid positions.

Safety education program needs to be put together to present to small children on walker safety must be incorporated as well. Teaching the children how best to be safe while walking is necessary. One uniform program is needed so that all children are exposed to the same information.

Some parents really do enjoy walking their children to school. Schools are beginning programs to involve parents more and hopefully thereby increase safe walking.

Winston Salem police are involved in walk zone supervision as a part of regular duty since they are assigned to drive around and patrol certain areas anyway. They get information from schools to target specific areas that are noted as being problematic or potentially problematic. WS just received grant to use statistics to identify high crime areas of the city, then law enforcement strategies are used to address the perception and actuality of crime in these areas. (Law enforcement must be a partner.)

Parents On Patrol, a parent-based group with T-shirts who walk through the building for safety and to improve perceptions by having seen the school on a regular basis. This concept would work for parents in the communities to patrol during walk times for schools. This will also bring communities together, helping parents to know and respect each other.

Disposable or Polaroid cameras are being given to parents in the community to photograph troublemakers and submit the pictures to the school for enforcement. This is a part of teaching parents how to help assist children practice safety. (Pictures should be given to police to erase any liability of school system.)

**Q12: Concluding comments?**

**A12:** Having to consider the safety of small children, the school system has worked well with individual schools to improve safety concerning children walking and to implement programs that will educate the children who can help to educate the parents on safe walking

issues. The city has also worked well. (Smooth partnership between the various agencies involved is critical.)

Please do not issue yet another "unfunded mandate." If DPI isn't going to change the funding formula to enter in walk zone provisions, new policies under the old rules (that nothing need be provided within 1.5 miles of the school) will not work.

NCDOT owns a significant portion of the roadway system in the state, so they could address the need for sidewalks, curb and gutter, etc on existing roadways as they evaluate needed improvements.

Public videos used to educate the public should use an area/neighborhood that really depicts the types of neighborhoods in which children will be walking- nothing "high and glossy," people must be able to relate.

An effort to put in sidewalks and better lighting (because in winter, it is dark when children are having to get to school) is appreciated. WS changed type of lighting used to get twice as much light out of the same wattage bulb - something to consider.)

# Community Focus Group, Greenville, NC
**Tuesday, June 19, 2001, 6-8pm**

**Q1: What is a school walk zone? Is there a difference between a walk zone and no-transport zone?**

**A1:** Even though there is not the 1.5 - mile radius being used [in Greenville/Pitt County], there is a busy street that children have to cross. Even with a crossing guard, it is hectic as many parents are dropping off/picking up children and the local traffic is there. School is located amongst several subdivisions. Children leave crossing guard and swell into communities. If there were some means by which walkways or paths could be provided - there are no sidewalks- that would be ideal.

Children are crossing 5 - lane road with no crossing guard at back of school. There is dead time with the traffic signals, but still.

Children don't move for vehicles in the streets once they cross the street from school campus. There needs to be guidelines established for the home-side of the crosswalk to prevent children from walking in the streets. Monitors would be good.

School bus transportation is not the solution because many children would still elect to walk, ride bikes, etc. There should be a difference made between walk and no-transport zones

Streets are wide enough to allow parking and speed limit is 25 mph. Are there ordinances whereby sidewalks are only put in where speed limits are 35 mph or higher?

On typical afternoon, residential streets are lined with vehicles waiting for children. There is real potential for student-vehicle accident in these situations.

Many vehicles don't slow down for crossing guard or they try to speed past before crossing guard stops traffic.

**Q2: Would you consider bicyclists to be included in "walk zone" discussion?**

**A2:** Adults on bikes ride through crossing zone while children are crossing. Not many children ride bikes because of the safety risks for the bikes while on the school campus. Many just rollerblade, skateboard, or walk. Skateboards and roller blades are allowed until they "get out of hand," then they are disallowed. In good weather, many children would prefer to ride.

A bike is considered a vehicle, so that is a "sticky issue." But since children are transporting themselves to and from school perhaps they should be included. Helmets are required. Bikes adhere to cross with crossing guard (walkers too) because crossing guard enforces it.

Parents would feel uncomfortable with bikes traveling with students walking.

**Q3: Do many children in the neighborhood walk/bike to and from school? (Is there a large demand?)**

**A3:** Yes, there are 75 - 100 children walking on any given afternoon. No bicycles, roller blades, or skateboards on elementary level. There are few bikes on middle level, but a definite pedestrian demand.

**Q4: Do you feel that children in your neighborhood (who are not being provided with bus service) should be provided with bus service?**

**A4:** No, we live too close to the school. Some children wouldn't ride the bus even if it were offered. The issue is a "safe" walking area, not so much, school bus service- crossing guards or even a teacher to monitor would help.

Children not dropped off in designated drop - off area in back of school. They are let out near crossing guard area and the students don't wait with other children to be monitored across the street.

**Q5: Do you believe there are problems associated with walk zones? If so, what?**

**A5:** traffic, in genera l - vehicle/student interactions on or near the school campus- no limitations on how close parked vehicles can get to crossing zones

Children being dropped off in/too near crossing zones and not in the designated area

Children are walking between cars and haphazardly across streets. They also walk down the middle of the street once they leave the crossing guards jurisdiction. There are no sidewalks.

A large flow of traffic due to the number of entrances and exits into nearby neighborhoods, plus the school. There is a need to alleviate congestion caused by these multiple exits - it is dangerous for walkers.

Parents in vehicles need to drop off (or pick up) and keep moving so as not to further add to congestion problems.

Children cut through yards to achieve the shortest distance home.

Some things are personal preference. Children choose not to ride bus when it is offered leaving them to walk in dangerous conditions like crossing a 5-lane road.

Some things are just student behavior.

Uncontained (loose) animals present safety problems for students walking and the crossing guard.

Students that live too far (even within the no-transport zone) will ride double on bikes.

**Solutions generated in discussion of problem**
There is space for retrofitting, but that would take away playground land.

There is a need to work with Joel Cranford (Division of Municipal and School Transportation Assistance, DOT) to manage traffic on the school campus.

Develop "red zone" of a car length or more where parents cannot park near crossing zones to open it up and make it more visible.

Cars should not be allowed to park so many feet from the corner so that kids can cross the secondary street, which is away from the crossing guards jurisdiction, without major danger of accident with a vehicle trying to leave that has already picked up their child.

Crossing guard could move from the crosswalk to the middle of the intersection to hold off cars in all directions while children cross the secondary street also. Crossing guards directed traffic is needed!

Schools stagger bell times- boys and three minutes later girls, and it alternates OR different bells for walkers, bus riders, carpoolers, etc.

Lower speed limits and fewer number of lanes to cross contribute to parents feeling of their children's safety.

Part of NC State school bus provision law states that no-transportation is an option "within city limits"?

Crossing guards should be added into allowances in local school transportation budget spending because many times a crossing guard for an area would alleviate the need for a bus for that area and a huge cost savings could result from paying a crossing guard as opposed to operating a bus.

Consider student pedestrian to crossing guard ratio because too many children can create a safety issue when crossing behind crossing guard where the guard cannot see.

Enforce leash and other municipal laws.

**Q6: Name one thing that you feel should be included if walk zone policies were being drafted.**

**A6:** Sidewalks, bicycle zones, or designated walking-areas using painted lines would increase the feeling of safety on "main/major" roads (even in residential areas where speed limit is 25 mph) to separate students from vehicles.

Designate and enforce a drop off zone separate from the crossing zone.

Enforce traffic laws- like no parking zones along curbs near crossing zones.

Designate crossing guards to patrol most logical walking paths so children do not have to break rules to take the most reasonable way home.
Establish and adhere to policies to separate vehicles, buses, and pedestrians.

**Q7: What if passenger cars were not allowed on the school campus? (Reason for asking- trying to assess problems other than student-vehicle interaction)**

**A7:** Parents will continue to bring children and drop them off so traffic problems on surrounding streets would increase tremendously.

**Q8: What strategies could schools develop or what changes could be put in place that would increase students walking (and decrease parents driving) to school?**

**A8:** That is a societal problem- parents will bring children to school.

Some students cannot walk home because of the additional load of having to carry instruments. ($4^{th}$ grade begins orchestra, $6^{th}$ grade begins band)

Many parents believe 0.75 miles or longer is just too far to walk and will therefore drive children to school. It is not a safety issue.

Why would you want to increase walking and decrease driving?

Communicate message to parents first. If parents want children to walk (and do not drive them) more students will walk.

Heavy book bags cause parents to bring children to or from school to avoid health problems proven to stem from carrying too much weight on the back. (Typically begins around $5^{th}$ grade)

Lighting not a problem because children are not walking at times when it is still dark.

Parents drop off because it is convenient to do so on the way to work. Change school start times to make that inconvenient and possibly fewer parents will drive their children to/from school.

Bus service set up only when parents communicate with school that a bus is needed.

Children will be more apt to walk if friends are walking together. Find a way to get friends to walk, while talking, laughing, etc on the way to and from school.

Too many other-than-engineering, political things are factors to find a definite solution. (like black-white ratio that prompts bussing)

**Q9: Do you feel that programs like "Walk Our Children To School Day" are helpful to encourage walking to school on a regular basis?**

**A9:** Recreational walking common in many areas so doubtful that walking to school would increase due to a one-day program since parents are walking anyway.

Many parents too lazy to get up and help children prepare for school, so doubtful that they would walk them to school, even for one day.

**Q10: Who should pay to put these solutions in place? Would you be willing to pay?**

**A10:** Yes, some parents would be willing to pay, but this is believed to be the minority.

City should pay for all- crossing guards and sidewalks

City should pay for sidewalks and schools for crossing guards.

Schools governed by the state so state should mandate certain things, like sidewalks, to promote safety and provide $ to do so (local would also have a part).

Parents may resent being asked to pay. (Example- parents dropping children off [at Aycock Middle] prior to 7:45 am are asked to pay $1 to hire someone to monitor the children until teachers/administrators arrive and parents are angry.)

If property owners will voluntarily give up property to put in sidewalks, then taxpayers should not be asked to pay.

**Q11: What should not be included (what would be a hindrance) in walk zone policies?**

**A11:** Any policy should consider the "big picture" (holistic view) of why people are traveling in cars.

Any policy should include a majority of the affected people in the process. Parents included in policy development/ decision board, not just presented with the policy once it is drafted and approved.

**Q12: Closing comments?**

**A12:** Safety of crossing guards is compromised, especially by traffic not coming into/out of the school, who do not want to slow down or stop for crossing guards. If officer would patrol crossing zones periodically, people would begin to slow down.

# Policy-Technical Focus Group, Greenville, NC
## Wednesday, June 20, 2001, 1pm-3pm

**Q1: What is a school walk zone?**

**A1:** An area close to school where speed is lowered (somewhere within a school speed zone).

A predetermined path/route designated for students walking to school.

In 2000 MUTCD, there is a drawing showing a school in the middle of a housing area with grid streets that outlines the paths that would be laid out for the walk zone as children come together and come toward the school. In reality, schools are far from housing areas b/c schools are not built to be "walked to" anymore.

School walk zone could also be stretched to cover the designated walking paths to bus stops for students bussed to school- similar to students meeting at a central location so that bus will only stop once in a given subdivision or area.

State law says students within 1.5 miles of school need not be provided with transportation. School transportation director does not deal with "walk zones;" they just inform those within that distance that the state does not fund their transport to or from school, unless there are hazardous conditions like at-grade railroad crossings.

Parental and political pressures make enforcing 1.5-mile radius (or diameter, as in Pitt County) difficult.

The specific path/route a pedestrian could walk along to get to or from school. Allows for better control of pedestrian and vehicular traffic, including placement of crossing guards.

**Q2: Is there a difference between a walk zone and a no-transport zone?**

**A2:** Currently, signing and marking only applies to streets adjacent to school- not throughout the no-transport zone. Some school systems may designate walking paths/ zones throughout the area to determine where crossing guards need to be and they may sign those as well.

There needs to be a limit placed on how far into the neighborhoods an official "walk zone" will be.

No cases of crossing guards (or signing known) in Pitt County monitoring neighborhood streets- only those adjacent to schools. Students required to walk on sidewalk and cross at a specific place.

The minute students hit the other side of the crosswalk- out of crossing guard jurisdiction- they go everywhere, not following a specific path.

Subdivisions built from 1950's to today do not require sidewalks. (Sidewalks would promote walking by providing a seemingly safe path.) Most sidewalks seen are adjacent to schools. In Greenville, all new subdivisions required to have sidewalks on at least one side of the street as of approx. 3 years ago. Now schools are located in more rural areas so sidewalks not considered because no one lives within miles of the school.

**Q3: Would you consider bicyclists to be included in a "walk zone" discussion?**

**A3:** yes, absolutely

In NC, a bike is considered a (non-motor) vehicle, but in discussion of school walk zones, bikes should be included because within 1.5 miles, bikes could cut travel time by 70 percent and it is a healthy mode of transport and students within this area should be encouraged to bike to school- with bike parking facilities provided on the school campus.

Perhaps change wording to be "school access zone" so that bicyclists are included and in addressing school access zone safety, bicyclists would be taught the dos and don'ts of interacting with pedestrians on paths and crossing zone aspects such as dismounting bike to cross. But bikes should not be on sidewalks with pedestrians (there is a Greenville ordinance, however, preventing bikes over a certain wheel size from riding on the sidewalk).

School access zone including both bikes and pedestrians should have a sidewalk component solely for pedestrians and an on-street component conducive to safe cycling.

Needs to be a closer look at school speed zones as a component of this research. DOT tries to utilize general guidelines, but there is currently no clear reasoning for school speed zones. Some have regulatory, some advisory. Tendency is toward regulatory zones in front of every school, but there is no logical reason for regulatory speed reduction in front of a school where no one walks or bikes. Just because it is a school, does not mean it needs a regulatory speed zone. Regulatory speed zones should coexist with areas where there is pedestrian traffic (and should therefore be considered in a school walk zone study). MUTCD implies regulatory for schools with pedestrian traffic and crosswalks and advisory for other schools. If a standard were in place, the public would get used to regulatory meaning there is pedestrian traffic and advisory meaning to watch out for other automobiles.

When there is no housing in close proximity and no walking facilities, regulatory speed zones would still not encourage walking because of these factors, so using regulatory to promote walking will not work in areas such as this.

These opinions supported from enforcement standpoint, but signing is important. Sometimes regulatory may be warranted when there is no pedestrian/bike traffic if collisions due to vehicular traffic into/out of school are frequent.

In advisory zone, speeding citations not given because speed is suggested, not absolute. Tickets can be given for traveling faster than what is "reasonable and prudent" under certain conditions, including weather, presence of pedestrians, or heavy vehicular traffic. So, this

class of ticket could be given in school advisory speed zone. In court, "reasonable and prudent under the existing conditions" must be proven and is difficult to defend.

**Q4: Would an alternative convention (to that currently used in NC) be more appropriate? Like in PA where every school zone is 15mph, regardless of traffic and ped/bike conditions or in FL where every school zone is heavily signed for 15 or 20mph but for a shorter-than-normal stretch of approx. 100 feet.**

**A4:** Speed reduction would not be that low in NC anyway because lowest used is 20 mph for CBDs with crosswalks every block, frequent signals, on-street parking, etc. There is a benefit to having something uniform. In NC, uniform standard for regulatory speed zones is that required speed is a ten mph reduction of posted speed (with some exceptions where 55mph reduced to 35mph, but then blinking lights required Vehicles tend not to slow down anyway when there appears to be no need. **Q5: What are the issues/problems associated with school walk zones (that need to be addressed in developing guidelines)?**

**A5:** Roadway conditions in the area must be taken into consideration. Are there sidewalks? Are the roads wide enough for bikes and vehicles to use simultaneously? What are current speeds?

Bottlenecks- caused by traffic into/out of school… a traffic control problem. Decide whether to bring all kids to cross at the same location where all vehicular traffic is being routed (for student drop off, etc) or if you want to separate pedestrians and vehicles. ***

Enforcement- if walking path is established, students shouldn't be allowed to walk anywhere. They should be required to walk along the specified route/path.

Children crossing secondary streets, near crossing zone- crossing guard in Greenville got reported and "cursed out" for not monitoring children across the secondary street as well as crossing zone. (Limits/parameters of what is to be covered must be established.)

**Q6: Can crossing guards direct/control traffic by law?**

**A6:** Crossing guards are covered by statute to regulate traffic for the purpose of stopping vehicles so children can cross safely, but are not allowed to direct traffic or act as a "traffic control device."

Crossing guards are "doing a favor" to the community by directing traffic in situations where impatience due to high volumes of traffic could cause accidents, but this could be a liability issue if an accident occurred because of crossing guard directions.

Some crossing guards do this to keep vehicles a certain distance back from the crosswalk as well. Otherwise, vehicles will encroach crossing zone markings instead of staying a safe distance back.

Crossing guard directing traffic does upset some parents because school traffic doesn't necessarily get priority all the time, but local traffic is allowed to move through- even though they could use other entrances/exits.

Communication with bicyclists and enforcement of safety policies has been found to alleviate problems with riding through crosswalks and other infractions.

DOT personnel are allowed, and protected by law, to direct/control traffic control in walk zones. Vehicles can be cited for infractions as with standard TCDs. Could crossing guards work under that same general rule?

There is a statute that allows crossing guards to direct traffic WITH an authorization card upon meeting certain criteria. These criteria are covered in crossing guard training in Greenville, but cards have not been distributed. County schools would be the ones to accept liability and they recommend 6 – 8 hours of training for crossing guards. Instructor cannot cover this magnitude one-on-one in training. To be a traffic control officer and regulate all forms of traffic, not just at/near crosswalk requires a certain amount liability coverage. This coverage for crossing guards in Pitt County was unknown because there are several exclusions. Without that coverage, crossing guards would be stuck with the basic functions covered by statute and could not direct traffic.

Maybe there needs to be two levels of crossing guards. One for zones where no type of traffic control is needed other than stopping and another for intersections where traffic control is needed.

Lawmakers need to be petitioned to allow crossing guards to direct traffic as needed (revision of existing statute).

Crossing guards patrol for one hour in each time period. Could policies be implemented restricting left turns, for example, out of a subdivision to force residents to use alternate entrances/exits? Yes, this is feasible, but information dissemination to parents, students, and community is critical. Enforcement is also important.

Can't label access zone as safe, use "designated [or preferred] path" to indicate that students should take this route to school because it presents less hazards than other paths.

**Q7: Is there a large pedestrian demand in Greenville?**

**A7:** Depends on the school. Many children do walk.

**Q8: Are there solutions that would increase the demand by decreasing the number of parents driving children to school who live within the walk zone?**

**A8:** yes, with infrastructure solutions like sidewalks.

Bike lanes won't be put in because residential streets considered safe for bikes anyway and this is where most of the bike traffic would be.

The general sentiment of the group is that- a school access zone is a series of preferred or designated paths within the no-transport zone leading to the school. Once established, DOT could sign appropriately- provisions are made in MUTCD to put in crosswalk and sign at intersections not directly adjacent to the school, if needed. But this shouldn't be done everywhere because the proliferation of crossings would defeat the purpose. Perhaps this could be implemented at all "major" crossings within the no-transport zone.

**Q9: What assistance, if any, is currently available for a parent who calls to request help in determining a safe [or designated] route for his/her child to walk to/from school?**

**A9:** Nothing is formally written. Depending on where students live, a principal or assistant principal can suggest a walking path to the parent, designating the appropriate entrance for pedestrians (if separate from vehicular entrance).

If you start designating school access zones as "safe," then there is a risk of liability under the negligence theory. "No-transportation" zones, however, are covered by state law- shifting responsibility to parents to get their children to school however they choose. If school access zones are established, hopefully courts will be as lenient with them as they are with the placement of school bus stops. Consider- do you mind the risk of a small chance of liability to ensure that children who are walking to school are safer (than without established school walk zones)?

If some effort is put forth, negligence will be difficult to prove because the best you can with a certain set of circumstances is a defense. Legislature can set it up though- if they make school access zones a part of the law- to where city/school/state has no liability (similar to allowing crossing guards to be traffic control officers). Be sure not to refer to it as a safe walk zone, but a "school access corridor." A preferred, pedestrian path should be set up in every " zone.

Schools could distribute maps with disclaimers at the bottom stating that whoever has determined these paths, but ultimate responsibility for students safe travel to school within the no-transport zone rests with the parents. On the contrary, telling parents that you want their children to follow a specific path, but then saying they have the responsibility of making sure it is safe defeats the purpose. But some disclaimer needs to be given to parents to establish parental responsibility (and reduce liability). [Like parents feeling school is responsible for how their child gets to school when they have been kicked off the bus, parents have to be told they are ultimately responsible.]

Liability issue should be trivial because a similar argument could be made for school site selection saying that the school should have been placed on the other side of the street so pedestrians wouldn't have to cross it.

Most important, is to set up a program for how pedestrians/bikes will get to school, selecting a route with the fewest hazards- include surveys, inventorying sidewalks. Also, use panel of parents to give their opinions on what is/ is not safe in that neighborhood. May

discover that particular property owners are willing to allow students to use their property if it provides a shorter, safer route.

School access zone definition (drafted during focus group): a defined geographic area for which provisions have been made for non-motor vehicular access to school (makes no claim that this is the safest route to school, but shows that some thought went into transportation for students not riding the bus to/from school)

**Q10: Do you feel that programs like the International "Walk Our Children To School" Day are helpful to encourage students to walk to school on a regular basis?**

**A10:** It will either help or kill it altogether. If parents walk the route with their children, they may see how dangerous it is and not allow them to walk anymore or the opposite may happen and parents will stop bringing their children to school, forcing them to walk, once they see how pleasant of a walk it is.

**Q11: Would it be feasible to add sidewalks to the streets adjacent to all schools?**

**A11:** Not economically, but technically, yes. Sidewalks in Greenville are beginning to be built and priority is given to streets near schools where there are no sidewalks. Should be able to increase the number of sidewalks constructed each year with the approval of additional funds. There are obstacles like people who do not want sidewalks in their subdivisions (probably because they do not want to give up property) but the reality is that sidewalks are planned in the right of way in many places so property would not be taken.

Students are not going to walk as long as transportation is provided. In new school site selection, walkability should be a factor. Is there potential for pedestrian traffic? This would be a total change from the way school sites are currently selected. Sometimes slight shifting of school site could tremendously increase the number of pedestrians possible- land may cost more, but there would be savings in buses.

Schools are paid by the state for the number of buses they operate, but improvements like sidewalks would have to come from their own local budgets. State funds based on efficiency with number of students transported and number of buses operated. There is not flexibility in the spending of state money to cover sidewalks or any capital expenditures (including building improvements). Can adjustments be made to school transportation funding formula to get money to assist city in funding sidewalks? Like half of students live within walking distance and half need buses, could transportation budget be split 50/50 for each purpose? Currently, school transportation is really just school buses. More flexibility is needed in school transportation spending- like putting in a crossing guard so that many students in a particular area can walk instead of operating a bus would result in cost savings.

From traffic engineering perspective, getting all passenger vehicles off school campus would be optimal. Maybe parents drop off place should be further down the street and then students would be required to walk to school from that place.

**Q12: Excluding sidewalks, are there other solutions/policy changes (like altering school transportation spending constraints) that would promote walking?**

**A12:** Make school transportation funding more comprehensive to encompass ped/bike modes and assist in improving school campus to better handle traffic flow, if desired (improve internal circulation).

Making school campus less conducive to vehicular traffic would assist law enforcement because there would be fewer accidents in the area and could increase walking/biking.

Ultimate goal is to ensure that all students get to school safely, regardless of mode.

Is there a survey/ study to show that is x children begin walking, $x can be saved in school bus transportation? Then, that $ could be placed elsewhere like adding crossing guards. Having something concrete to show people would help the case.

**Q13: Are there any specific guidelines that you feel should definitely be included in school access zone criteria? Is there anything that definitely should not be included/implemented?**

**A13:** School site should be equipped to handle non-motor vehicular traffic- i.e. secure places to park bikes.

Don't have policies too specific because could end up being more restrictive than accomplishing the original intent. Like not allowing vehicles on campus, if the school campus has been well set-up to handle traffic volumes would waste the capacity to handle this traffic and potentially cause more problems.

Crossing guard responsibilities should be more clearly defined to include their legal authority as far as directing traffic.

**Q14: What words would you suggest we definitely NOT use**?

**A14:** Never give the impression that something is guaranteed to be "safe." "School access zone" plus a disclaimer is a good idea using wording that the school system has found to be good for decreasing liability.

Don't water it down too much. Not using safe, but "recommended corridor" or "school route" or something of that nature is needed, admitting that there may be hazards along the route but there are fewer than other possible routes because of crossing guards and other factors.

Designate as "a" route, not necessarily the "preferred" route.

In court, a determination is made as to whether or not risks were foreseeable. The more input you get into the development process, the more foreseeable risks you address, creating less of a chance for being found negligible in court.

# Parents Focus Group, Fayetteville, NC
## Wednesday, July 25, 2001, 6:30pm – 8pm

*Note: This group was conducted differently from the others because at 6:30pm, with the focus group scheduled to begin at 6pm, no parents had arrived. One parent arrived as we were preparing to leave so we spoke more informally with her to get an idea of the problems from her perspective and potential solutions. Another parent arrived around 7pm and joined in the conversation.*

**Q1: What is your perception of the problem (with children walking to school)?**

**A1:** There are many small children walking this long distance of 1.5 miles and there are no sidewalks. A lake is nearby presenting other potential hazards. In the mornings, the children are walking very early and adults are driving to work, going around corners at high speeds, and there is great potential for children to be hit.

Most dangerous conditions:
- No sidewalks
- Age of children walking
- High vehicle speeds (not adhering to speed limits)
- Nearby hazards, like the lake
- High volumes on roads where children must walk
- Parents parking too near crosswalks

Driver frustration builds in the mornings because there are two crossing guards close together so the traffic is queued for a mile some days.

This parent drives her 9-year-old (rising 4$^{h}$ grade) son to school each day. If she allows him to walk, like with other children in the neighborhood, she walks behind them. *not a single parent home*

**Q2: Do you want the children in your neighborhood to be able to ride the bus or do you like the idea that they could walk if there were better facilities?**

**A2:** Bus is preferred because of security concerns, like the child could be abducted, and there is no one really out in the neighborhood in the mornings so if something were to happen, no one would know anything. Even if children could be allowed on the bus on a space available basis, that would be better than nothing. This parent was ready to move when she found out that her son would be required to walk such a long distance (they are right at the 1.5 mile mark) to/from school each day.

In Fayetteville, the shortest possible street distance is used in interpreting the 1.5-mile rule-even if there is another, preferred route that makes the walk longer than 1.5 miles, the ability to take the shorter route (with whatever hazards may be on that route) makes that particular house still ineligible for bus service. Easements are included in "street distance."

Most of the people speeding and driving recklessly are the parents on their way to drop off or having just dropped off a child!

*Fayetteville statistics:*
*484 school buses (expected to open 01-02 with 475) travel 24,000 miles each school day*
*28,000 students carried by bus each day*
*approx. 52,000 students total in Cumberland Co. schools*
*53 to 58% of students transported by bus*

In the past, children living in the outer range of the 1.5-mile distance were allowed to walk to nearby bus stops and ride the bus as long as space was available, but that is rarely used now because all students can't be carried once the bus is full. It is difficult to get parents to understand that as new people move into a neighborhood and bus becomes full that their children can no longer ride because the space is no longer available. The transportation director discourages this.

**Q3: If the transportation funding formula were changed, would there be more opportunity/ willingness to provide better facilities and make changes that would help parents encourage their children to walk to school?**

**A3:** Funding is a problem. Sidewalks should be mandatory in neighborhoods like this parent's, but retrofitting is difficult.

**Q4: What conditions would need to be in place for you to allow and encourage your children to walk to school?**

**A4:** sidewalks

Solutions mentioned prior to Question 4-

- There should be an age limit for children required to walk to school.
- A certain location where students from neighborhoods within the walk zone could meet and be provided with bus service would be appreciated.
- Parent-volunteer coordinators in schools can help coordinate parents to form walking buses or carpools.
- Parents parking in the no parking areas near crosswalks is against the law, but enforcement is a problem because people tend to adhere only when the "blue light" is there. Signs are totally disregarded. A potential solution is to alleviate parking space on the street and make a 2-way-left-turn lane with the space remaining after travel lanes have been designated.
- Or create faculty/staff parking in these lanes so that there is not space for parents to pull to the side and drop children off. Cones don't work because parents will maneuver around cones- barrels may need to be used instead of cones.
- Guardrails or something else to separate the sidewalk or designated pedestrian path from traffic would help to alleviate some parental concern.

Second parent allows 12-year-old son to walk, but gives strict mandates for him to follow while walking like only crossing where there is a crossing guard. Street leading into neighborhood is 55mph, 45mph in the school zone, and has high traffic volumes. Distance to school is not a problem, but these traffic concerns are. There is no sidewalk, but on average 15 - 20 children walk each day. There is a bus that comes right by the house, but it is coming from a development outside of the walk zone. Prior to allowing him to walk, she walked with him to determine exactly how long it took so she would know when he needed to leave in the AM and when he should arrive home in the PM. Children started walking when living on base where the school could be seen from the home. Once they moved, she was reluctant to allow him to walk since the conditions were different, but finally allowed him to. *not a single parent home*

There were not 29 school-related accidents in Fayetteville last year. (Accident stats from this research show that there have been.) That many accidents have not been observed/reported in the past five years, much less in the last year alone- may have been from playing in the neighborhood after school and getting hit, but not in transit to/from school.

Bottom line- parents have to take responsibility for their children's transportation, regardless of the mode, within the walk zone.

**Q5: What would be the one thing that you would like to have changed from a security standpoint, regardless of distance, that would make you more comfortable with having your children walk?**

**A5:** -haven't really thought about it-
"Children walking" signs would help so that at least people know that they should slow down and drive more carefully. (DOT has said "you buy them, we'll install them" previously) Signs only "keep the honest honest." They probably won't change the behavior of those who speed anyway.

**Q6: As parents and professionals, do you all feel that walking to school is of any value?**

**A6:** Yes!
One parent walked 2 miles one way to school. There were no buses and parents encouraged walking to combat complacency and laziness. Weather was not a large factor because this was in San Diego. Walking provides opportunities for the children to make friends.

Walking has physical benefits and helps to bring a neighborhood together.

Walking requires a different budgeting of time.

Walking provides time for the children to think about what they are about to approach in school or prioritizing what to tell their parents when they get home and adds to educational benefit in that respect. It is also a time when they can develop social skills because of the diverse types of people who will also be walking.

Walking provides the children a sense of freedom that they appreciate, but strict guidelines are necessary.

Greatest fear- someone taking or hurting the child, but parental fears can be eased by having children walk together. (Children will look out for each other in looking out for themselves.)

Age is critical- like the younger children attracted by the lake and bugs near the lake.

Carpool would be preferred over walking. Even then, not knowing the other parents well would make her reluctant, but that would be better than walking because of the excessive speeds observed in the mornings.

**Q7: There are two primary concerns- 1) speeds and curves and 2) someone might take my child. Who do you think would be ultimately responsible for minimizing that second fear?**

**A7:** If the schools set the 1.5-mile radius law, they should be responsible for getting the children there safely. 1.5 miles is too far to walk to school anyway. It requires leaving home too early before the start of school.

**Q8: If statewide walk zone guidelines were being developed, what is the one thing that you feel should definitely be included?**

**A8:** If the law could be changed, the no-transport distance would be decreased.

Walking bridges into schools would be nice, though probably not economically feasible. Crossing the street is a concern, especially with no crossing guard. Law does not say that crossing guards have to be provided.

A child walking safely to school takes a cooperative effort. Sometimes speed limits need to be reduced. School principals sometimes make decisions that aren't communicated to the transportation director concerning children walking.

# Policy-Technical Focus Group, Fayetteville, NC

**Thursday, July 26, 2001, 10am – 12noon**

**Q1: In your opinion, what is a school walk zone?**

**A1:** Based on one interpretation from the MUTCD, every street on which children walk to get to school comprises the walk zone. Local (Fayetteville) law enforcement says the walk zone is only that which is adjacent to the school campus and if true, that should definitely be changed.

A regular route or routes available to students and parents by which they can arrive at school in a safe and orderly fashion. It may be that walk zones are different, even for schools down the street from each other, however, because every school and its surroundings are different.

According to state law, a walk zone is the area 1.5 miles from a child's assigned school, that's it. The law does not mention railroad tracks or major thoroughfares, leaving much room for a school system to say no to parents concerning transportation. No provision is made in the law for rain, cold, heavy book bags, drug houses, loose dogs, high vehicle speeds, no shoulders, or no sidewalks. That may not be a bad thing because it provides defense that what is being done (or what is not being provided) is within the law. How do you promote a guideline that is all-inclusive and does not leave room for loopholes through personal interpretation? Guidelines may create more problems than there are now. School systems and other government agencies are not making parents be responsible for their own children and their safety

**Q2: What should a school walk zone be? Should there be a difference between a no-transport zone and a walk zone?**

**A2:** Maybe there should not be a difference because if a child is not provided with transportation, that does not mean that they have to walk and the school system is not saying that they should walk, they are just saying that the parents are responsible for getting their children to school. In an ideal world, a safe place for students to walk and bike to school would be a good walk zone.

There are parents (like in the Chapel Hill example) who just want their children to walk. Everyone will not be happy no matter what- some want a walk zone in the no-transport zone, some want buses in the no-transport zone.

Vehicle-pedestrian interaction is the primary concern from the traffic engineering perspective. So, the "perfect world" walk zone would be safe pedestrian facilities, separated from the roadway in every neighborhood coming into the school to get children to/ from school without the possibility of an accident. Crossing guards scare people because of the inabilities of drivers.

Walking is a problem today because of sprawl and land use plans that don't work and governing bodies that have given in to real estate developers trying to make economic

decisions as opposed to decisions that would be best for building good, safe communities. There is a reverse taking place across the nation with livable communities that are walkable and pedestrian friendly. There are low speed limits but people do not observe them and they not only drive fast but recklessly. Adults in the Fayetteville area are killed all the time just trying to cross the street. It is not possible to have walk zones for every school built within the last 30 years- taxpayers won't pay for it. You just can't meet the demands for everyone.

Money is such a large concern. Developers don't want to pay the extra dollars to put in the sidewalks and things of that nature.

We need to bring everyone "back in" and stop accommodating those who choose to live so far out by building schools so many miles out.

There is a new ordinance in Fayetteville requiring sidewalks on one side of the street for subdivisions/ developments with 5 dwelling units or more per acre. Both sides were required but developers complained and it has now been changed to one side.

There is a neighborhood that "did everything right" in terms of sidewalks and making the neighborhood pedestrian and bicycle friendly, but in order for the children to get to school, they had to cross a 7-lane road and therefore could not walk, so these type of problems should be kept in mind as well (school placement and developer issues).

Problem- walking is not the major priority in people's lives, getting to and from their various destinations as quickly as possible is. The reality is that we are slave to the automobile and these mobility goals cannot be matched with pedestrian goals.

School size has also changed over time so entire schools cannot be walkable because we cannot afford to build schools that are small enough for the population to be comprised of everyone living within a 1.5-mile radius of the school. Also, in the past, children were involved in fewer activities and part of the changing dynamic with moms driving more is due to soccer, basketball, baseball, dance, etc. Parents want their children to have these opportunities, which makes for more vehicle trips. There are more vehicles per household now as well.

**Q3: Are there many children in the Fayetteville/ Cumberland County area that do walk? How large is the pedestrian demand?**

**A3:** Only 28 of 51,000 are transported by bus, so the rest are walking, driving, being driven, bicycling or using some other mode.

Several crossings in the county have in excess of 100 children walking through them in the mornings and afternoons.

On a low estimate, 1/3 of the students at a Hope Mills elementary school walk. At least 100 pass through the crossing zone in front, plus there are three easements in the back. Bike racks were put in and now some children ride bikes.

The thought is that mostly middle and elementary students walk to school, but middle school has the largest bus ridership so that may not be true. 62 – 75% of middle school aged children ride the bus. A large number of high school students do drive. About 50% of high school students ride the bus. There is one elementary school in Cumberland Co. with a population of 600 students and one bus that is not full.

**Q4: Do many students ride bikes to school?**

**A4:** Yes. Many schools have one or two full bike racks. This is seen mostly in "neighborhood schools."

Streets in Fayetteville can be so busy that they have redone attendance boundaries so that students on one side of a busy street would not have to cross the street but were assigned to another school far enough away so that they would receive bus service.

**Q5: Considering the large bike/pedestrian demand, what can be done to make the walk to/ from school better? Parents concerns include children walking in the streets, small children (K – 2) walking, high vehicle speeds, vehicles not adhering to speed limits, area conditions that are potentially hazardous like lakes and streams, high traffic volumes along roads children have to cross or walk along, loose dogs, and heavy book bags. What solutions would be feasible to ease some of these parental concerns?**

**A5:** Some policies could be changed like even if there were money to build sidewalks, many are not built because sidewalk maintenance is a function of the local jurisdiction and for schools that are not located within a city limits, but just within the county, there is no local agency to readily maintain the sidewalk. A process could be developed whereby these sidewalks can be maintained.

Communities (volunteer parents that are at home) could get together and meet children in a specific location within the community to walk them across or along high volume streets to the school. *walking school bus concept* This would help to alleviate the concern of parents who worry about their children walking once they have to leave for work. Carpools could also be formed. These ideas may work better in a less transient community than Fayetteville (due to the high military concentration). There are schools in Fayetteville that change their entire student body in a year.

DOT builds roads with the best intentions for moving traffic along those roads and they can't always consider school placement and related impacts because they are building for cars and transportation. Few people choose routes based on scenery; the majority wants the quickest route. Analogy- airbags are great, but you don't buy a car just because you want an airbag, though airbags may help prevent some problems. Similarly, you don't go back and build sidewalks everywhere there are safety issues because there is no guarantee that this will make the routes more safe. It will help with parents to say that this is a measure you are taking, but we need to focus more on how schools and DOT are going to work together,

like to divert some volumes during peak hours to make conditions more safe for children walking.

Historically, cities have built sidewalks because they maintain their street system and therefore have street departments and receive funding that counties don't. Counties are just now getting into urban services- like water and sewer and sidewalks- that were usually only typical of municipalities. But counties still don't have the funding or staff (via street departments) that cities have to put into sidewalks and that is something that should be considered.

One of the new NCDOT deputy secretaries, Robert Sheats, is very interested in rural problems and issues and is in the process of setting up rural planning organizations that will hopefully address these issues.

At one school on Hope Mills Road, 3 parents did come and escort the children across the street. One would have 5 – 7 children, another 8 – 10, and the other 15 – 20 and they would escort them in the mornings and afternoons, but parent volunteer crossing guards is a feasible solution if the PTAs will lead and coordinate the effort.

Drivers typically make erratic movements when they feel they are being delayed or unduly stopped. Fayetteville is now implementing a computerized signal system. The benefits include the ability to see what is going on at the intersections and see which cars are not progressing and allow signals to adjust and enhance progression. These could be used to supplement crossing guards (not replace because the human is needed to tell children to stop) by wiring crossing signals for each school so the guard could press the button to request the signal and that signal would be coordinated with progression on the roadway and the guard could make sure everyone was stopped and then help the children across the street. This would take money, but not a tremendous amount of money… and they would not be put in everywhere. But this would be much more effective and safe than a person walking out with a stop paddle. Driver irritation would decrease and some of the erratic movements would be alleviated. (There is a guard at Ramsey Street who does work with the signal. The problems with angry drivers are decreased when the guards are smart enough to work with the signal. So coordination with the city signal system would be a tremendous help.)

Spot improvement funding was available at one time for schools to do things like put in a turn lane when right of way was available or purchase pedestrian signals as mentioned above. It is worth checking into to see if funding like this is still available to do a demonstration project with some of these ideas and this could be a beginning step in coming up with solutions.

DOT is very good at working with the school system to make needed improvements for recognized problems.

One thing that would help is to get a draft concept plan of the school so that engineers/planners could give input early in the process on proper driveway placement and secure funding for turn lanes. Now, the site plans for schools are received by DOT only when requesting a driveway permit and that is too late for advice/ input to be given. As far

as funding for things like turning lanes, DOT receives $50,000 each year to help schools with bus parking, but the left turn lanes at John Griffin cost near $100,000 so there is not money for what is needed. So, there needs to be money set aside for projects to make schools as safe as possible. Elected officials need to factor this type of funding in from the beginning. Recommendations need to be made by the transportation director to schools to involve DOT in the planning phase of new schools and major improvements.

DOT is currently revising the statewide driveway manual, which will require that schools bring conceptual plan to DOT for review prior to requesting a driveway permit. Some do it now, but it must be consistent. The emphasis must be placed on transportation needs of the specific schools to get the children and traffic in and out and this is not in place now.

A large problem is that if the $50,000 is given to a school for bus parking projects, then no money is left to put toward the necessary turning lanes. Also, whenever you start looking at driveway placement, consider lining them up to create logical crossing points so traffic does not have to look at multiple locations for where people are crossing. This would be much simpler for everyone. The fewer conflicts you have, the more attention drivers can pay to what is going on. 5-lane curb and gutter roads are not safe because of the number of conflicts in the center turn lane, including pedestrians standing in there waiting for a time to cross. Safe zones in the middle of the road may be needed, but all of this needs to be considered in the early planning phases with the particular student body of that school in mind.

Factoring in the pedestrian and giving visual clues to motorists concerning who has the right of way by striping for example is helpful. But the basic question remains, why don't more people walk? Answers usually tend toward people being in such a hurry that they no longer have time to walk or drivers don't have time to yield to pedestrians and how do we change the busy lives that people lead?

Young women have been cited as causing many of the traffic problems. Crossing guards note that moms with children in the car commit the majority of speeding violations.

"Children in Traffic" video, made in Germany, should be more widespread to educate the public on pedestrian issues. The video contains incredible information concerning the lack of peripheral vision in children and other things that make child pedestrians different. AAA redid the video, but it is not as good as the original. Consider showing the video on public access TV or other venues so that the public can better understand.

In providing suggestions to principals and PTAs from the congestion management side, the emphasis is always on motorist awareness. Drivers need to be made aware of where the children will be crossing so that they will be more apt to slow down. Routes may need to be relocated because of traffic volumes and speeds along major routes to areas that are less traveled, but better suited for pedestrians. The route can't be too far out of the way either because of abductions and related issues. So, the push is to put the children on lower speed, lower volume roads. Crossing guards shouldn't be placed too close together either- like one example where crossing guards were seen working one block from each other. In the case, a decision should have been made on which would be the primary crossing and only one

crossing should have been used. The fewer crossing locations, the less impact on the main route, the quicker drivers can travel.
* Crossing guards are sometimes placed close together because after children have walked so far to get to school, they are not going to walk the extra .10 miles to get to the crossing. They will cross wherever to get to the school quickest from where they are, regardless of whether there is a guard or not. Children are going to take the shortest/ quickest route possible, much like drivers. Perhaps sidewalks should not be poured for a new school until after school opens so that the sidewalks can be placed wherever paths are made by the children.

Municipal and School Transportation Assistance-
Began by working with small municipalities dealing with local issues, then schools were observed having vehicles queuing out onto the roadways and motorists could not traverse the are. Accident potential was noted as high.

Schools, both new and old, were noted as not going through the appropriate planning measures and facilities were not built to house the generated traffic on the school campus. Vehicular volumes are increasing and bus ridership is decreasing. Vehicles begin to park alongside or in the middle of the road to let out students and through traffic is weaving around them. The goal is to develop low-cost solutions to these problems and help schools re-route traffic on their properties and use what they have. Loading zone facilities are a focus because this related directly to how long vehicles have to stay on the school campus. There are usually multiple lanes with vehicles stopped in groups to load/ unload and then the next group comes. Some vehicles take 20 – 30 seconds while others take 2 – 3 minutes. Then, parents circumvent what was intended by stopping on the street to let children in/out. Some principals think students walk to/from home, but close review shows that the students are walking to a nearby location like a church and being picked up there. The goal is to get all vehicles on the campus to keep the roads open and prevent circumventing of the system and puts organization to loading/unloading. Parents learn how best to get to the campus and what time is best to arrive and they alter their schedules based on this information. Turn lanes do not always solve the problem either. One woman was killed about a month ago because vehicles were stopped in turn lane unable to get on the campus and a vehicle turned out without appropriate sight distance and ended up causing a fatal accident. That is not to say that left turn lanes won't help because they do provide time for vehicles to make their turn movements and through traffic to still get through, but it is dangerous when they become a parking lane in front of the school.

A large problem is parents not having the children ready to get out of the car. One Fayetteville principal implemented two lanes- "kiss and go" and "stop and hug." Maybe parents should be banned from the property if they are creating hazards by taking too much time to load/unload. This can't be done of course because it requires law enforcement and if nothing else, it kills the PR of the school with the parents for the rest of the year.

**Q6: If the problems with parents dropping their children off in cars were mitigated, to what extent would some parents feel that it is not as dangerous for their child to walk and begin encouraging their children to walk?**

**A6:** The parents that look after their children are not those we are discussing. They will establish guidelines and rules for their child walking (and mitigating on campus problems would probably not affect them). Only those who expect the schools to look after their children are the problems. DOT puts the roads out there having considered safety issues, such as sight distance and visibility, but the parents must take an active role in getting their children to school safely.

The problem is not students not wanting to walk, but the parents not wanting to accompany them. Many times both parents work and no one is there to watch the children as they get to and from school.

The best the school system can do is present 'the best that we have to offer," everything that can be feasibly and economically done to provide safe transportation. Schools have now gone into day care. Some schools are open from 6am – 6pm, which is a shame but is it worse to have the child at school all day or at home before and after school by him/herself? You may not reach all, but you can reach some (parents). Tweenty-three guards have been removed in Fayetteville (there were 82 and 12 substitutes, now there will be 55 or 56).

Awareness may be the only output of this project, but usually the ones who get the awareness messages are the ones who were already aware.

Fayetteville has one of the most aggressive 1.5-mile walk zone policies in the state. Interest of this project is in getting a better-articulated definition of what safe is- what volumes, what speeds, what sight distance is considered safe. (Although there is nothing that can be done about things like book bag weight.)

Sight visibility is a large consideration in determining cross walk and bus stop locations. The real problem is traffic traveling too fast/exceeding the posted speed limit.

Magnitude of the problem is another issue- crash analysis is one part of this study. There is discrepancy however between what has been reported in the school system (about 5) and what resulted from the crash analysis (about 29). Fayetteville does have large problem with stop arm violations however. Last year, a check revealed 117 violations in a single day! If flashing red lights don't do it, no number of signs will be effective.

**Q7: What role does the school safety office play in children walking to school?**

**A7:** This office handles accidents, some traffic problems are reported related to congestion going in and coming out of the school campus. The reported 29 accidents in the last 3 years for school aged children in the school time frames (6am – 9am and 2pm – 4pm) September through April, excluding weekends and holidays, is shocking from school safety office perspective because nothing close to these numbers have been reported. There are problems with parents dropping children off too early in the mornings. A child went through a window in a Cumberland County school because of horseplay prior to school opening.

If administrators know that students are being dropped off early and do not attempt to tell parents that this is disallowed, then the school system is liable if anything happens. This is wrong.

DOT unit has been very responsive with calls concerning down signs or potholes at/near crosswalks. Remember- a child will jump into traffic to miss splashing water from rain in a pothole. So, things like this that rarely cross another's mind need to be considered. (A good working relationship with the local DOT is necessary.)

The desired output from this project is something to tell parents that this is something that has been looked at and as a school system and parent we are aware of these issues, but we can't be all things to all people. We can't do certain things- like putting in sidewalks everywhere or putting in new streets- but guidelines to help transportation directors make a better determination of what areas to transport are needed. There are considerations like should grade level be a factor. If the decision was made to transport all students, transportation could not handle it. So, if nothing is printed for the public, something needs to be printed for school transportation to make the best possible choices for the students. With nothing in writing, people think that they are denied bus service because someone does not like them or because they do not live in an affluent neighborhood. The law simply says 1.5 miles, nothing is mentioned of age or other factors, but should these things be considered? And if divided by grade, what is the real difference between a 5$^{th}$ (elementary) and 6$^{th}$ (middle) grader except a couple months? Or what if a kindergartener is transported but a 5$^{th}$ grader in the same household is not? So, age limits would have to be based on the grade level of the school.

Middle school fatalities are higher than any other, possibly because they are less supervised.

There is probably a greater risk with children "going crazy," running in every possible direction after getting off a school bus than walking to/ from school… which may be the cause of there being more accidents in the crash analysis than are reported to the schools because school to home trips are not always direct. Principals have too much to do in the afternoons to investigate whether children went straight home when parents call because the child is not home from the bus.

The burden falls on the principals ultimately to communicate, articulate, and educate the students and parents on safety in transportation and this will continue to be done as best as possible through what is provided from studies like this. (AAA put out a pamphlet educating parents on dropping their children off at school. DOT can make these things available to schools.)

Anything that would help the transportation director make good decisions and inform the parents would be very helpful..

## APPENDIX D. Copy of State of New York "Child Safety Zones"

PART 191
CHILD SAFETY ZONES

Section

191.1 Purpose
191.2 Definitions
191.3 Types of Safety Hazards Students May Encounter While Walking to and from School
191.4 Point Determination
191.5 Illustrative examples of various hazards
191.6 Petition for the Designation of a Child Safety Zone
191.7 Application for Determining a Child Safety Zone
191.8 Analysis Sheet for Determining a Child Safety Zone

Section 191.1 Purpose.

The Child Safety Transportation Act of 1992 (Chapters 69 and 403 of the Laws of 1992) allows school districts to transport students for distances less than the statutory transportation distance requirements. These guidelines have been developed in consultation with the State Education Department, the Department of Motor Vehicles and the Division of State Police in order to identify conditions under which walking to and from school may endanger the safety of children. Using these guidelines, school districts can authorize the establishment of a child safety zone.

There are three basic types of safety hazards students may encounter while walking to school:

Highways without sidewalks or adequate shoulders,
Highway intersections, and
Highway-railroad grade crossings

The guidelines identify factors for each of these types of hazards. These factors, each with assigned point values, are added together to determine if a hazardous zone exists. If the total points equal or exceed the values as set forth in section 191.4 of this Part, then the school district may choose to create a child safety zone.

191.2 Definitions.

The following words and phrases used in this Part are defined as follows:

(a) Curb - A vertical or sloping member along the edge of a roadway clearly defining the pavement edge.

(b) Highway - The entire width between the boundary lines of every way publicly maintained when any part-thereof is open to the use of the public for purposes of vehicular

travel. For the purposes of this part, the word "highway" is a generic term for parkway, road, street, avenue, drive, boulevard, lane, etc.

(c) Intersection - The area embraced when two or more highways join one another. Where a highway includes two roadways 30 feet or more apart, then every crossing of each roadway of such divided highway by an intersecting highway shall be regarded as a separate intersection. In the event such intersecting highway also includes two roadways 30 feet or more apart, then every crossing of two roadways of such highways shall be regarded as a separate intersection.

There is no differentiation between intersections involving major highways and intersections involving minor highways. Each intersection is evaluated on its own merits by calculating the hazard points from the appropriate chart in Part 191.4.

(d) Narrow Bridge or Underpass - A bridge or underpass which, because of significant reduction in pavement widths on or under the structure, requires students to walk on the roadway due to the absence of shoulders or sidewalks. In addition, for a location to be considered as a narrow bridge or underpass, at least one of the following roadway widths shall exist:

(1) Two way traffic with a width of less than 18 feet
(2) Two way traffic with a width greater than or equal to 8 feet, but less than the width of the approach roadway
(3) One way bridge with a width of less than or equal to 10 feet
(4) One way bridge with a roadway width less than the width of the approach roadway

(e) No Control - Neither stop signs nor traffic signals are in place that would require vehicles to stop on the roadway which the children are crossing. Yield signs are not considered as stop controls for the purpose of these guidelines.

(f) Number of Lanes Crossed - The total number of lanes on the roadway being crossed, including through lanes and turning lanes.

(g) Number of Tracks - The number of railroad tracks at a railroad crossing. Tracks must be within 100 feet of each other to be considered as part of the same crossing. Crossings with an adult school crossing guard is considered in the same vain as crossing a street with an adult crossing guard. Therefore, no hazard is deemed to exist.

(h) Number of Trains - The sum of all freight and passenger trains using a railroad crossing during a one hour interval in the morning and a one hour interval in the afternoon. The one-hour intervals should occur during the normal hours students can be expected to walk to and from school.

The number of passenger trains using the crossing during the affected hours can usually be obtained from the railroad companies. However, determining the number of freight trains may require a manual count because their schedule is subject to a degree of randomness. Since the number of freight trains using a crossing may vary from day to day, an average count based on five weekdays of observations during the morning and afternoon

crossing periods must be made. Switching movements using a crossing can also be considered, but the number used should be an average count based on five weekdays of observations during the morning and afternoon crossing periods.

(i) Pedestrian devices - The presence of traffic control equipment such as pedestrian signal indications and/or pedestrian push buttons for the purpose of controlling pedestrian traffic. Pedestrian indications are traffic signal indications which consist of the illuminated words "WALK" and "DONT WALK". A traffic signal equipped with pedestrian indications may or may not have push buttons to operate the pedestrian signal. The other type of pedestrian device is simply a pedestrian push button attached to a pole or post. When used without pedestrian signal indications, the activated push button provides for additional time so that a pedestrian can cross the street safely.

It should be noted that all traffic will not necessarily come to a halt when the indications are displayed. While some traffic signals are equipped with pedestrian indications that provide an exclusive walk phase and no turns on red, others have pedestrian indications which allow traffic and pedestrians to move concurrently. Therefore, it is important to recognize the type of pedestrian indications because they do not all operate in the same manner.

(j) Roadway - The portion of a highway improved, designed, marked, or ordinarily used for vehicular travel, exclusive of the shoulder and slope. In the event a highway includes two or more separate roadways (i.e. divided highway), the term "roadway" shall refer to any such roadway separately. The median is not considered a part of the roadway.

(k) Shoulder - The portion of a highway contiguous with the roadway. Generally, this is the relatively flat area between the outer edge of a roadway with no curb and the point where the earth begins sloping either upward or downward, intended for the use by stopped vehicles and for emergency use. It may be paved or unpaved. A shoulder with a width less than five feet is considered a narrow shoulder.

For the purposes of this program, a shoulder will be considered to exist if it is visible by means of pavement marking delineation (i.e., a white edgeline) or if the pavement seams or joints makes it appear that a shoulder (usually less than the width of a travel lane) is present.

(1) Sidewalk - The portion of a street between the curb lines, or the lateral lines of a roadway, and the adjacent property lines, intended for the use of pedestrians. It may be paved or unpaved.

(m) Speed Limit - The legally set maximum speed which vehicles are permitted to travel on a roadway.

(n) Stop Sign Control - Traffic on the roadway being crossed by the school children is required to stop by a stop sign.

(o) Traffic Control Signals - Any device, whether manually, electrically, or mechanically operated, by which traffic is alternately directed to stop and permitted to proceed.

(p) Volume of Traffic - The volume of traffic on a highway is based on a fifteen minute vehicular traffic count including all through and turning vehicles, during a typical morning or afternoon period in which students are walking to or from school. The hourly volume, if known, may be substituted for the 15-minute count by simply-dividing the hourly count by 4. If traffic counts are conducted for both the morning and afternoon period, then the average of the two volume counts should be used. However, there is no requirement to conduct more than one traffic count for each highway under consideration.

The volume of traffic can be classified into the following categories for the purpose of this program:

| | |
|---|---|
| Low (L) | < 50 vehicles per 15 minute period |
| Medium (M) | 50 to 100 vehicles per 15 minute period |
| High (H) | > 100 vehicles per 15 minute period |

A separate count should be made whenever a change in the speed limit occurs or the type of walking facility changes (i.e. sidewalk to shoulder to no shoulder). In addition, a new traffic count should be made when it is suspected that the volume changes due to the influence of an intersecting highway. It is possible that a stretch of highway may have several segments each with different or similar volume groups.

191.3 Types of safety hazards students may encounter while walking to and from school.

A student may encounter three different types of potential hazards while walking to school;

a) Highways without sidewalks or adequate shoulders

With this type of hazard, a student must be walking either on a narrow shoulder or in the roadway. If a useable sidewalk exists, then the student is expected to use it unless the sidewalk is closed to the public by order of the local municipality.

The length of the highway section without sidewalks where children walk on the roadway or on a shoulder within 5 feet of the roadway is to be measured by any normally accepted method (i.e. use a measuring wheel, measuring tape or scale the distance from a map).

For children to be covered by a child safety zone, they must walk the complete length of the section under analysis. When evaluating a subdivision or neighborhood, the district may use the closest residence to the school for which all students in the neighborhood must pass as the point to begin calculations. If this residence qualifies, all other residences in the neighborhood will also qualify.

In order to determine a point value for this type of hazard, the following information, must be known:

(1) Facility which the student walks on (i.e. sidewalk, shoulder greater than 5 feet wide, shoulder less than 5 feet wide, or roadway)

(2) 15 minute volume count on the affected roadway during the normal period when students walk to and from school
(3) Speed limit on the affected roadway Determine the type of facility, the volume of traffic, and the speed limit using the definitions for "Curb", "Narrow bridge or underpass", "Roadway", "Shoulder", "Sidewalk", "Speed limit", and "Volume of traffic".

Distances should be rounded to the nearest foot. On a roadway without a shoulder for a distance of 397 feet, one point is awarded for the first three hundred feet and a second point is
awarded for feet 301 through 600.

(b) Highway intersections

With this type of hazard, the student must be crossing a roadway at an intersection or a marked midblock pedestrian crossing. Two roadways may need to be crossed at an intersection. When this occurs, only the most critical roadway (highest points) should be used. The roadways which the student must cross can either be public or private. In the case of a private road, such as an entrance to a shopping center or an industrial plant, the 15 minute volume must be representative of a 15-minute period when the student walks to or from school.

Crossing a roadway is not considered a hazard due to the presence of any of the following controls which provide pedestrian protection:

(1) All way stop signs
(2) Adult crossing guard
(3) Pedestrian bridge or underpass within 500 feet of the crossing which can be utilized instead of crossing the road

Each intersection is considered a separate, distinct hazard. Along a given route, a student may cross four to five intersections. The intersection with the highest point value should be used in the analysis to determine if a CSZ exists because a hazardous intersection must be crossed. If a combination of hazards is to be examined, then the two, intersections which have the highest individual point totals may be used. Consequently, the number of qualifying points is higher for multiple hazards than it is for a single hazard.

Determine the type of control, the number of lanes of traffic on the roadway being crossed, the volume of traffic, and the speed limit using the definitions for "No control", "Number of lanes crossed", "Speed limit", "Stop sign control", "Traffic control signals", and "Volume of traffic".

(c) Highway-railroad grade crossings

With this type of hazard, the following information must be known:

(1) Number of tracks in use,

(2) Number of trains using the tracks during the morning and afternoon crossing periods.

Determine the number of tracks and trains using the definitions for "Number of tracks" and "Number of trains".

191.4 Point determination.

An analysis should be completed for the highway sections containing the types of hazards the student encounters.

A route to school can involve walking along one or more highways. As a result, it is not always obvious when a new highway segment should be evaluated, especially when conditions may change along that highway. A new highway segment exists whenever the facility type on which a student must walk changes. There are four different types of facilities:

A. Sidewalk (any width) or a shoulder $\geq$ 5 feet wide
B. Shoulder < 5 feet wide
C. Roadway with no shoulder
D. Roadway with a narrow bridge or overpass

In some cases, a highway or several highways with the same type of walking facility, may undergo several changes regarding its volume and/or speed limit. To simplify matters, the average volume and/or speed limit that occurs in the segment should be used. For example, over a mile stretch, the following situation occurs for a series of contiguous highways without adequate shoulders (i.e. shoulder < 5 feet wide) :

| | | | |
|---|---|---|---|
| Point A to B | .15 mile | Low Volume | 40 mph |
| Point B to C | .35 mile | Medium Volume | 35 mph |
| Point C to D | .50 mile | High Volume | 30 mph |
| | 1.0 mile | | |

The average speed is 35 mph [( 40 + 35 + 30) / 3] and would be used in calculating the point totals. Since the average speed is only required to be determined to the nearest 5 mph interval, it can be easily calculated as simply a straight, unweighted average of all the speeds.

The route used between home and school must avoid hazardous locations when a more reasonable route is available. In addition, the analysis is to be based on conditions that will remain basically unchanged throughout the school year.

Section 3635-b (2) specifies that transportation will be provided "on the basis that. Their lost direct walking route to school will traverse a hazardous “zone”. However, before a CSZ can be established, alternative solutions must be investigated. Sometimes, a hazard can be mitigated by changing the route which the student walks to one that is slightly shorter or longer. Such a route could be deemed more “reasonable” because it avoids the alleged hazards found on the more direct walking route.

For routes where a single hazard exists, determine the type of hazard, the number of points produced by the hazard and the highest grade level that would, qualify for bus transportation as indicated in the accompanying chart.

For routes where several hazards exists, there are two options which can be followed. First, determine the type of hazards that exist and calculate the number of points produced by each hazard. Compare the point totals for each hazard and use the point value of the greatest hazard to determine the highest grade level that would qualify for bus transportation as indicated in the accompanying chart.

If an area fails to qualify for a specific grade level, then a combination of hazards should be examined. Determine the types of hazards, the sum of points produced by the two greatest hazards and the highest grade level that would qualify for bus transportation as indicated in the accompanying chart. It should be noted that the two hazards identified may be of the same type or of different types.

A school route will be determined to be a hazardous zone for children in certain grades if it produces at least the points indicated in the accompanying chart.

| TABLE 1 - NUMBER OF QUALIFYING POINTS REQUIRED | |
|---|---|
| Total number of points required to qualify a student for transportation | POINTS |
| A. Grades K - 8 with 1 HAZARD | 12 |
| B. Grades K - 8 with 2 Greatest HAZARDS | 21 |
| C. Grades 9 - 12 with 1 HAZARD | 15 |
| Grades 9 - 12 with 2 Greatest HAZARDS | 27 |

| TABLE 2 - HIGHWAYS WITHOUT SIDEWALKS OR ADEQUATE SHOULDERS | |
|---|---|
| SITUATION | POINTS |
| 1. Student walks on a sidewalk, shoulder or roadway with a given length: | |
| A. Sidewalk or shoulder $\geq$ 5 feet wide: | 0 |
| B. Shoulder < 5 feet wide: *1 point for every 500 ft or fraction thereof; examples: 1 to 500 ft = 1 point, 501 to 1000 ft = 2 points | * |
| C. Roadway with no shoulder: ** 1 point for every 300 ft or fraction thereof; examples: 1 to 300 ft = 1 point, 301 to 600 ft = 2 points | ** |
| D. Roadway with a narrow bridge or overpass: *** 1 point for every 25 ft or fraction thereof; examples: 1 to 25 ft = 1 point, 26 to 50 ft = 2 points | *** |
| 2. Student walks on roadway or shoulder < 5 ft wide with 15 minute traffic volumes of: | |
| A. Low (L) - Less than 50 vehicles | 1 |
| B. Medium (M) - 50 to 100 vehicles | 3 |
| C. High (H) - more than 100 vehicles | 5 |
| 3. Student walks on roadway or shoulder < 5 ft wide with a speed limit $\geq$ 40 MPH | |
| A. 40 MPH | 1 |
| B. 45 MPH | 2 |
| C. 50 MPH | 3 |
| D. 55 MPH | 4 |

| TABLE 3 - HIGHWAY INTERSECTIONS | |
|---|---|
| SITUATION | POINTS |
| 4. Student crosses a highway intersection with the following degree of traffic control: | |
| A. All way stop signs, an adult crossing guard, or a pedestrian bridge/underpass within 500 feet of the crossing | 0 |
| B. Traffic signal with pedestrian devices | 1 per lane * |
| C. Stop Signs, or a traffic signal without pedestrian devices | 2 per lane * |
| D. No traffic control measures | 3 per lane * |
| 5. Student crosses on roadway or shoulder < 5 ft wide with 15 minute traffic volumes of : | |
| A. Low (L) - less than 50 vehicles | 1 |
| B. Medium (M) - 50 to 100 vehicles | 2 |
| C. High (H) - more than 100 vehicles | 3 |
| 6. Student crosses a highway intersection with a speed limit of: | |
| A. less than 40 MPH | 0 |
| B. 40 MPH | 1 |
| C. 45 MPH | 2 |
| D. 50 MPH | 3 |
| E. 55 MPH | 4 |
| * - Up to 4 lanes may be considered | |

| TABLE 4 - HIGHWAY-RAILROAD GRADE CROSSINGS | | |
|---|---|---|
| SITUATION | | POINTS |
| 7. Student crosses an active railroad crossing during the normal school crossing period: | | |
| A. 1 or 2 tracks and | 0 trains | 0 |
| | 1 trains | 5 |
| | 2 trains | 9 |
| | 3 or more trains | 13 |
| B. 3 or more tracks and | 0 trains | 0 |
| | 1trains | 7 |
| | 2 trains | 11 |
| | 3 or more trains | 15 |

191.5 Illustrative examples of various hazards

(i) HIGHWAYS WITHOUT SIDEWALKS OR ADEQUATE SHOULDERS

A 4th grade child going to an elementary school must walk 4 feet from the roadway on a shoulder along a two lane road for a distance of 1/2 mile. If the road is posted at 50 mph, with a 15 minute vehicular traffic count of 120, the situation would produce the following points:

HAZARD TYPE - HIGHWAYS WITHOUT SIDEWALKS OR ADEQUATE SHOULDERS

| | |
|---|---|
| 1. Shoulder < 5 feet wide, 1/2 mile | 6 points |
| 2. 120 vehicles per 15 minutes | 5 |
| 3. 50 mph | 3 |

HAZARD TYPE - HIGHWAY INTERSECTIONS

| | |
|---|---|
| 4. Does not cross highway | 0 |
| 5. N/A | 0 |
| 6. N/A | 0 |

HAZARD TYPE - HIGHWAY-RAILROAD GRADE CROSSINGS

| | |
|---|---|
| 7. Does not cross railroad tracks | 0 |
| | 14 points |

Result: CSZ established for grades K - 8
No CSZ established for grades 9 -12

To establish a CSZ, 12 points are required for a 4th grade student and 15 points for students in grades 9-12. The situation meets the criteria for establishing a CSZ for students in grades K - 8 since 14 points were calculated. However, a CSZ is not justified for students in grades 9-12.

(ii) HIGHWAYS WITHOUT SIDEWALKS OR ADEQUATE SHOULDERS

A family has a 3rd grade child and a 9th grade child going to schools at the same location. They must walk 1050 feet on a two lane roadway posted at 40 mph with no shoulder or sidewalk. Recent traffic counts indicate that 600 vehicles per hour use the roadway during the morning walk to school. Each child would have the following points:

| | |
|---|---|
| HAZARD TYPE - HIGHWAYS W/0 SIDEWALKS OR ADEQUATE SHOULDERS | |
| 1. No Shoulder, 1050 feet | 4 points |
| 2. veh (150 mph per 15 minutes) | 5 |
| 3. 40 mph | 1 |
| HAZARD TYPE - HIGHWAY INTERSECTIONS | |
| 4. Does not cross highway | 0 |
| 5. N/A | 0 |
| 6. N/A | 0 |
| HAZARD TYPE - HIGHWAY-RAILROAD GRADE CROSSINGS | |
| 7. Does not cross railroad tracks | 0 |
| | 10 points |

Result: No CSZ established for grades K - 8
No CSZ established for grades 9 –12

To establish a CSZ, 12 points are required for a 3rd grade student and 15 points for students in grades 9-12. The situation does not meet the criteria for establishing a CSZ for students in grades
K-8 since 10 points were calculated. Also, a CSZ is not justified for students in grades 9-12.

(iii) HIGHWAY INTERSECTIONS

An 8th grade child walking to a middle school on a sidewalk must cross Central Avenue, a 4 lane highway with a posted speed limit of 45 mph. Traffic is not required to stop on Central Avenue, only on the intersecting side streets. A 15 minute vehicular traffic count generated 200 vehicles on Central Avenue. The child would have the following points:

| | |
|---|---|
| HAZARD TYPE - HIGHWAYS W/0 SIDEWALKS OR ADEQUATE SHOULDERS | |
| 1. Sidewalk | 0 points |
| 2. N/A | 0 |
| 3. N/A | 0 |
| HAZARD TYPE - HIGHWAY INTERSECTIONS | |
| 4. Cross 4 lane roadway w/o traffic control | 12 |
| 5. 200 vehicles per 15 minutes | 5 |
| 6. 45 mph traffic on Central Avenue | 2 |
| HAZARD TYPE - HIGHWAY-RAILROAD GRADE CROSSINGS | |
| 7. Does not cross railroad tracks | 0 |
| | 19 points |

Result: CSZ established for grades K - 8
CSZ established for grades 9-12

To establish a CSZ, 12 points are required for an 8th grade student and 15 points for students in grades 9 - 12. The situation meets the criteria for establishing a CSZ for students in grades in grades K - 8 since 14 points were calculated. A CSZ is also justified for students in grades 9-12.

(iv) HIGHWAY-RAILROAD CROSSINGS

A 5th grade child walking to school on a sidewalk must cross two adjacent railroad tracks. If this location has two trains crossing daily during the one hour period children are going to school and one train crossing daily during the one hour period children are returning from school, there would be a total of three trains, and the situation would produce the following points:

| | |
|---|---|
| HAZARD TYPE - HIGHWAYS W/0 SIDEWALKS OR ADEQUATE SHOULDERS | |
| 1. Sidewalk | 0 points |
| 2. N/A | 0 |
| 3. N/A | 0 |
| HAZARD TYPE - HIGHWAY INTERSECTIONS | |
| 4. Does not cross highway | 0 |
| 5. N/A | 0 |
| 6. N/A | 0 |
| HAZARD TYPE - HIGHWAY-RAILROAD GRADE CROSSINGS | |
| 7. Cross 2 tracks, 3 trains | 13 |
| | 13 points |

Result: CSZ established for grades K - 8
No CSZ established for grades 9 - 12

To establish a CSZ, 12 points are required for a 8th grade student and 15 points for students in grades 9-12. The situation meets the criteria for establishing a CSZ for students in grades K - 8 since 13 points were calculated. However, a CSZ is not justified for students in grades 9 -12.

(V) COMBINATION OF TWO GREATEST HAZARDS

A sophomore student going to a high school must walk four feet from the roadway on a shoulder along a two-lane road for a distance of 1/2 mile. The road is posted at 35 mph, with a 15-minute vehicular traffic count of 240.

The student must also cross Main Street, a three-lane highway with a posted speed limit of 45 mph. Traffic is controlled by a traffic signal with pedestrian indications. A 15-minute vehicular traffic count generated 200 vehicles on Main Street. The situation would produce the following points:

| | |
|---|---|
| HAZARD TYPE - HIGHWAYS W/0 SIDEWALKS OR ADEQUATE SHOULDERS | |
| 1. Shoulder < 5 feet wide, h mile | 6 points |
| 2. 240 veh per 15 minutes on 2 lane road | 5 |
| 3. 35 mph on two lane roadway | 0 |
| | 11 points |
| HAZARD TYPE - HIGHWAY INTERSECTIONS | |
| 4. Cross Main Street, 3 lanes, traffic signal with pedestrian indications | 3 |
| 5. 200 veh per 15 minutes on Main Street | 5 |
| 6. 45 mph on Main street | 2 |
| | 10 points |
| HAZARD TYPE - HIGHWAY-RAILROAD GRADE CROSSINGS | |
| 7. Does not cross railroad tracks | 0 |
| | 0 points |
| Sum of Two Greatest Hazards | 21 points |

Result: CSZ established for grades K - 8
No CSZ established for grades 9 -12

To establish a CSZ, 12 points are required for a 8th grade student and 15 points for students in grades 9 - 12. The situation does not meet the criteria for establishing a CSZ based on a single hazard for students in grades K - 8 or grades 9 - 12. However, when the two greatest hazards are combined, the criteria is met-for grades K - 8 since 21 points were calculated. However, a CSZ is not justified for students in grades 9-12.

(vi) COMBINATION OF TWO GREATEST HAZARDS

A sophomore student going to a high school must walk four feet from the roadway on a shoulder along a two lane road for a distance of .8 miles (4224 feet). The road is posted at 35 mph, with a 15 minute vehicular traffic count of 240.

The student must also cross Main Street, a three lane highway with a posted speed limit of 45 mph. Traffic is controlled by a traffic signal without pedestrian indications. A 15 minute vehicular traffic count generated 200 vehicles on Main Street.

In addition, the student must cross a highway-railroad grade crossing with one track. This location has one train crossing daily during the one hour period children are going to school and one train crossing daily during the one hour period children are returning from school. Therefore, there would be a total of two trains, and the situation would produce the following points:

| | | |
|---|---|---|
| HAZARD TYPE - HIGHWAYS W/0 SIDEWALKS OR ADEQUATE SHOULDERS | | |
| 1. | Shoulder < 5 feet wide, .8 miles | 9 points |
| 2. | 240 veh per 15 minutes on-two lane road | 5 |
| 3. | 35 mph on two lane roadway | 0 |
| | | 14 points |
| HAZARD TYPE - HIGHWAY INTERSECTIONS | | |
| 4. | Cross Main Street, 3 lanes, traffic signal without pedestrian indications | 6 |
| 5. | 200 veh per 15 minutes, on Main Street | 5 |
| 6. | 45 mph on Main Street | 2 |
| | | 27 |
| HAZARD TYPE - HIGHWAY-RAILROAD GRADE CROSSINGS | | |
| 7. | Cross 1 track, 2 trains | 9 |
| | Sum of Two Greatest Hazards | 27 points |

Result: CSZ established for grades K - 8 based on 1 hazard
CSZ established for grades 9 - 12 based on 2 hazards

To establish a CSZ, 12 points are required for students in grades 8-12 and 15 points for students in grades 9-12. The situation does meet the criteria for establishing a CSZ based on a single hazard for students in grades K - 8 as there are two individual hazards with 13 and 14 points respectively. However, the criteria is not met for students in grades 9-12. If the two greatest hazards are combined, the criteria is met for both grades K – 8 and 9-12 since 27 points were calculated.

191.6 Petition for the designation of a child safety zone. We the undersigned, request that the Board of Education of the _____ School District review a request for designating _____ between _____ and _____ as a Child Safety Zone.

After receipt of the petition, the Board of Education or Board of Trustees of the affected school district may directly, or by appointment of an advisory committee, make an investigation to determine if a such a zone should be established in the district. The investigation shall be made pursuant to the regulations set forth in Part 191 of 17 NYCRR.

Name Address

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17 _____
19. _____
20. _____
21 _____
22. _____
23. _____
24. _____
25. _____

Page ___ of ___

191.7 Application for determining a child safety zone.

---

Pursuant to Section 36'35-b of the Education Law, a petition shall be submitted in order to request that the Board of Education investigate the need to establish a Child Safety Zone for the purpose of transporting students to and from school.

The petition shall contain a minimum of 25 qualified voters of the school district or 5 % of the number of voters who voted in the previous annual election of the members of the Board of
Education, whichever is greater.

For requests that designates an area/neighborhood, please submit the application as a package for the entire neighborhood or area to be affected. The package shall contain the petition and application for each family requesting transportation.

---

Name of Parent/Guardian
_____
Mailing Address
_____
City _____ Zip Code _____ Telephone #
_____

---

Name of the
Student(s)_____
Name of School to Which Qualifying
_____
Student(s) is Walking
Address of School
_____
City _____ Zip Code _____

On a separate 8 1/2 inch by 11 inch sheet of paper, please provide a map or sketch showing the school route. As a minimum, this map should include the residence where the student(s) reside, location of the school that the student(s) attend, and the route the student(s) travel to and from school. Please indicate all street names and route numbers along the route.

191.8 Analysis sheet for determining a child safety zone.

Date: _____ Completed by: _____
Name of School to Which
Qualifying Student(s) is Walking:
_____
Address of the School _____
City; _____ State:: NY Zip Code: _____

POINT DETERMINATION

HAZARD TYPE - Highways Without Sidewalks or Inadequate Shoulders

1. Location on highway (check one): ____ Points
   [ ] on shoulder ≥ 5 feet wide or sidewalk
   [ ] on shoulder ≤ 5 feet with without a sidewalk
   [ ] on roadway with no shoulder
   [ ] on roadway at a narrow bridge or overpass

2. 15 minute vehicular count on roadway being walked by the students: ___ vehicles ____ Points
3. Speed limit on roadway being walked: ___ mph ____ Points

X. Total Points (Line 1 + Line 2 + Line 3) ____ Points

HAZARD TYPE - Highway Intersections

4. Traffic control on roadway being crossed (check one); ____ Points
   Number of lanes of traffic: _____ lanes
   [ ] no control
   [ ] stop sign or traffic signal w/o ped walk lights
   [ ] traffic signal with ped walk lights
   [ ] all way stop signs, adult crossing guard, or pedestrian overpass/underpass

5. 15 minute control on roadway being crossed ____ Points

   (check one) :

Number of lanes of traffic: _____lanes

   [ ] no control
   [ ] stop sign or traffic signal w/o ped walk lights
   [ ] traffic signal with ped walk lights
   [ ] all way stop signs, adult crossing guard, or pedestrian overpass/underpass

6. Speed limit on roadway being crossed: _____ mph _____ Points

Y. Total Points (Line 4 + Line 5 + Line 6) _____ Points

HAZARD TYPE - Highway –Railroad Grade Crossing

7. a) Number of tracks crossed: _____ Points
   b) Number of trains daily during school crossing periods : _____

---

Z. Total Points (Line 7) _____ Points

---

FINDINGS

Single Hazard: (Line X,Y, or Z) _____ Points

_____ Exist for children through grade _____.

_____ Does not exist for any school children.

Combination of Hazards: (Line X, Y, or Z) _____ Points
(sum of Two Greatest Hazards)

_____ Exist for children through grade _____

_____ Does not exist for any school children.

---

I hereby certify that the results of the analysis are accurate and reflect traffic conditions as of this date for the location under study.

_____ _____
Signature of School Superintendent Date

# APPENDIX E Copy of State of New Mexico Standards for Determining Hazardous Walking"

| | |
|---|---|
| **TITLE 6** | **Primary & Secondary Schools** |
| **CHAPTER 41** | **Transportation – School Bus Safety** |
| **PART 3** | **Standards for Determining Hazardous Walking Conditions** |

**6.41.3.1 ISSUING AGENCY**: State Board of Education [12-31-98, 07-30-99; 6.41.3.1 NMAC-Rn, 6 NMAC 9.5.2.1, 02-14-01]

**6.41.3.2 SCOPE**: Provisions of Chapter 41, Part 3 apply to public school districts to provide general standards pursuant to statute to allow for exceptions to Section 22-6-4.B., supra, which establishes the distance from the attendance center that a school bus route may be approved or maintained. [12-31-98, 07-30-99; 6.41.3.2 NMAC - Rn, 6 NMAC 9.5.2.2, 02-14-01]

**6.41.3.3 STATUTORY AUTHORITY**: This regulation is adopted by the State Board of Education pursuant to Section 22-16-2, NMSA, 1978 which stipulates that the State Transportation Division shall enforce those regulation adopted by the state board relating to school bus transportation and Section 22-16-4.B, NMSA, 1978 which stipulates that no school bus route shall be maintained for lesser distance than: (1) one mile one way for students in grades kindergarten through six; (2) one and one-half miles one way for students in grades seven through nine; and (3) two miles one way for students in grades ten though twelve. [12-31-98, 07-30-99; 6.41.3.3 NMAC - Rn, 6 NMAC 9.5.2.3, 02-14-01]

**6.41.3.4 DURATION:** Permanent [12-31-98, 07-30-99; 6.41.3.4 NMAC - Rn, 6 NMAC 9.5.2.4, 02-14-01]

**6.41.3.5 EFFECTIVE DATE:** July 30, 1999 [12-31-98, 07-30-99; 6.41.3.5 NMAC - Rn, 6 NMAC 9.5.2.5, 02-14-01]

**6.41.3.6 OBJECTIVE:** In school districts having hazards walking conditions as determined by the local school board and confirmed by the state transportation director, students of any grade may be transported a lesser distance then that provided in Section 22-16-4.B, NMSA, 1978. The standards shall be flexible and not rigidly applied by the local school board and the state transportation director to prevent accidents and help ensure student safety. [12-31-98, 07-30-99; 6.41.3.6 NMAC - Rn, 6 NMAC 9.5.2.6, 02-14-01]

**6.41.3.7 DEFINITIONS:**

A. **Regulated** - A crossing site where, for the street or roadway being crossed, a crossing guard, traffic enforcement officer, stop sign, or traffic control signal is present or the crossing site is designated and marked as a reduced speed school crossing zone.

B. **Unregulated** - A crossing site where, for the street or roadway being crossed, no crossing guard, traffic enforcement officer, stop sign, or traffic control signal is present, or the crossing site is not designated or marked as a reduced speed school crossing zone.

C. **High Speed** - 40 Miles Per Hour (MPH) or higher posted speed limit. [12-31- 98, 07-30-99; 6.41.3.7 NMAC - Rn, 6 NMAC 9.5.2.7, 02-14-01]

**6.41.3.8 REQUIREMENTS:** In school districts having hazardous walking conditions, as determined by the local school board and confirmed by the state transportation director, students of any grade may be transported a lesser distance than that provided by law.

A. **The local board** of education and the state transportation director must approve any costs incurred for implementing transportation due to the qualification of the hazardous walking standards prior to implementation. The costs must be within the available resources of the categorical transportation appropriation.

B. **The school district** shall justify that an attempt has been made to improve or eliminate hazardous walking conditions and/or establish properly posted signs or supervised school crossings in those cases where such crossings would eliminate hazardous walking conditions.

C. **The district** must also show effort to utilize the existence of available pedestrian crossings at controlled intersections within the statutory walking distance to the specific attendance center, which may require students to walk an increased distance before crossing the street.

D. **Traffic volume** shall be determined by the most current traffic engineering study conducted by a state or local agency. [12-31-98, 07-30-99; 6.41.3.8 NMAC - Rn, 6 NMAC 9.5.2.8, 02-14-01]

**6.41.3.9 STANDARDS FOR HAZARDOUS WALKING CONDITIONS:**
Transportation may be provided for students in grades K through 12 who reside within the statutory walking distance from their attendance center pursuant to Section 22-16-4 supra, if the following criteria are met:

A. Walking parallel to (along side of) roadway.

(1) If the total volume on roads exceeds a rate of 120 vehicles per hour or on roads with little or no walking space is available (shoulder or path) and the traffic volume exceeds sixty (60) vehicles per hour during the times when children are en route to or from school and at least one of the following exists:

(a) Less than four (4) feet of walking space outside of a curbed roadway for a continuous distance of 75 feet or more on at least one side of the roadway. (b) Less than five (5) feet of walking space outside of the traveled portion of an uncurbed roadway for a continuous distance of 75 feet or more on at least one side of the roadway.

(c) A physical or visual obstruction on the walking space that obstructs for a distance of 75 feet or more.

B. Walking across roadway and/or intersection.

(1) If the traffic volume of the street or roadway being crossed exceeds a rate of180 vehicles per hour through an unregulated crossing site, which exceeds forty (40) feet in width during the times when children are en route to or from school.

(2) If the total traffic volume of the intersection in all directions exceeds the following vehicle rates as applicable:

(a) Secondary school children - - a rate of 70 vehicles per minute

(b) Elementary school children - a rate of 55 vehicles per minute through a regulated intersection during the times when children are en route to or from school, unless crossing guards or other traffic enforcement officers are present.

(3) If roadways that students must cross are major traffic arteries for high volume movement of traffic with five lanes or greater, high speed and high accident frequency, during the times when children are en route to or from school, and where it is determined that traffic lights and traffic guards are not adequate. If a turn bay is present at a traffic control signal, it is not considered a lane. High speed is 40 M.P.H. or higher posted speed limit.

C. Railroad Crossings. Hazardous walking conditions shall automatically apply to students required to walk across a main lane, at grade, railroad crossing. (This does not include industrial, spur or exempt railroad crossings.) [12-31-98, 07-30-99; 6.41.3.9 NMAC - Rn, 6 NMAC 9.5.2.9, 02-14-01]

**6.41.3.10 TEMPORARY HAZARDOUS WALKING CONDITIONS:**
Temporary transportation service may be provided in cases involving conditions such as construction, dams, drainage ditches, etc., which have been determined to be hazardous by the local board of education. The superintendent of the local district must provide justification to the state transportation director to show that efforts have been made with local government entities to eliminate the hazardous conditions or show that efforts are underway to eliminate the conditions. [12-31-98, 07-30-99; 6.41.3.10 NMAC-Rn, 6 NMAC 9.5.2.10, 02-14-01]

**6.41.3.11 APPLICATION FOR TRANSPORTATION DUE TO HAZARDOUS WALKING CONDITIONS:** The determination of hazardous walking conditions shall be made on a case by case basis by a local board of education and approved by the state transportation director in accordance with the

application format. Where additional transportation services are requested by official action of the local board of education due to the determination of hazardous walking conditions, the request shall have the recommendation of the police agency having jurisdiction and shall have the necessary back-up data, cost impact and method for implementation submitted by the administration of the
local public school prior to approval. [12-31-98, 07-30-99; 6.41.3.11 NMAC -Rn, 6 NMAC 9.5.2.11, 02-14-01]

**6.41.3.12 DISCONTINUANCE OF TRANSPORTATION:** In the event that transportation is approved under any of the foregoing exceptions, such transportation will be discontinued immediately upon the improvement of the conditions for which the transportation has been provided. It shall be the responsibility of the local school district administration to notify the state transportation director and all affected parties as soon as walking conditions are improved and temporary transportation is terminated. [12-31-98, 07-30-99; 6.41.3.12 NMAC - Rn, 6 NMAC 9.5.2.12, 02-14-01]

**6.41.3.13 APPEAL:** If a local board of education does not agree with the final determination of the state transportation director, the board may appeal to the State Board of Education. [12-31-98, 07-30-99; 6.41.3.13 NMAC - Rn, 6 NMAC 9.5.2.13, 02-14-01]

**6.41.3.14 FLEXIBLE APPLICATION OF THIS REGULATION:** In accordance with Section 22-16-5C, supra, the local school board and the state transportation director to prevent accidents and help ensure student safety shall flexibly and not rigidly apply the standards for hazardous walking conditions. Local boards of education therefore, may choose to adopt hazardous walking standards that exceed those outlined under Section 6.41.3.10 of this regulation. The requirements for the application of the hazardous walking standards that exceed Section 6.41.3.9 of this regulation are:

A. The local board of education shall adopt a written policy which includes the standards for hazardous walking within the local district that exceed those outlined in Section 6.41.3.9 of this regulation, and;

B. Any additional costs incurred due to the local school district's policy which exceed the standards established in Section 6.41.3.9 of this regulation shall be the responsibility of the local district unless a legislative appropriation has been approved for this purpose. [12-31-98, 07-30-99; 6.41.3.14 NMAC - Rn, 6 NMAC 9.5.2.14, 02-14-01]

**6.41.3.15 CLARIFYING THE LIMITATION ON QUALIFICATION FOR TRANSPORTATION:** Where the educational program of a school district is structured on a basis other than grades one through six, seven through nine, and ten through twelve, the highest limitations of Section 22-16-4, N.M.S.A., 1978, shall be applied for all students attending each attendance center served by the school bus route. The walking distance for each attendance center is based on the highest-grade level served. [12-31-98, 07-30-99; 6.41.3.15 NMAC - Rn, 6 NMAC 9.5.2.15, 02-14-01]

**HISTORY OF 6.41.3 NMAC:**

**PRE-NMAC HISTORY:** The material in this regulation was derived from that previously filed with the State Records Center and Archives under State Board of Education Regulation 73-3 Clarifying the Limitation on Qualification for Transportation, filed January 22,1973;

Amendment #1 State Board of Education Regulation 73-3 Clarifying the Limitation on Qualification for Transportation, filed June 27, 1988;

State Board of Education Regulation 93-22 General Standards for Determining Hazardous Walking Conditions, filed December 20,1993;

State Board of Education Regulation 84 5 Standards and Criteria for Determining Extremely Hazardous Walking Conditions, filed July 11,1984;

State Board of Education Regulation 80-9 Hazardous Walking Conditions Criteria, filed December 1, 1980;

State Board of Education Regulation 79-5 Hazardous Walking Conditions Criteria, filed May 14, 1979;

State Board of Education Regulation 78-7 Hazardous Walking Conditions Criteria, filed July 7, 1978.

**HAZARDOUS WALKING CONDITION SURVEY**

**I. WALKING PARALLEL TO (along a side of) A ROADWAY.**

**REQUIREMENTS:**

A. If the total traffic volume exceeds a rate of 120 vehicles per hour during the times when children are en route to or from school and one of the following exist:

1. Less than four (4) feet of walking space outside a "embed" roadway for a continuous distance of 75 feet or more on at least one side of street/roadway.

   a. Width of walking space outside a curbed street/roadway _____.

   b. Length of continuous walking space that is less than (4) feet of width on at least one side of street/roadway _____.

2. Less than five (5) feet of walking space outside of the traveled portion of an "uncurbed" street/roadway for a continuous distance of 75 feet or more on at least one side of street/roadway.

   a. Width of walking space outside of “uncurbed” street/roadway _____.

   b. Length of continuous walking distance that is less than (5) feet of width on at least one side of street/roadway

3. A physical or visual obstruction in the pedestrian walking space that obstructed for a distance of 75 feet or more.

   a. Type of obstruction _____.

   b. Length of obstruction_____.

**FINDINGS:**

Name of street/roadway _____.

Posted speed limit _____.

Number of vehicles per hour _____.

Type area: Business _____, Residential ____.

Times monitored: from ____to _____, from_____ to _____.

**REQUIREMENTS:**

B If on mountainous street/roadways when little or no off-road pedestrian walking space is available (shoulder or path) and the traffic volume exceeds the rate of 60 vehicles per hour during the times when children are en route to or from school.

**FINDINGS:**

Name of street/roadway _____

Posted speed limit _____.

Number of vehicles per hour _____ .

Type area: Business _____ Residential ——————.

Times monitored: from _____to _____ from_____to _____.

**II. WALKING ACROSS STREET/ROADWAY AND/OR INTERSECTION.**

**REQUIREMENTS**:

A. If the traffic volume of the street/roadway or intersection being crossed exceeds a rate of 180 vehicles per hour through an "unregulated" crossing site which exceeds 40 feet in width during the times when children are en route to or from school.

"Unregulated" is defined as a crossing site where, for the street/roadway being crossed, no crossing guard, traffic enforcement officer, stop sign, or traffic control signal is present, or the crossing site is not designated or marked as a educed speed school crossing zone.

**FINDINGS:**

Name of street/roadway _____.

Posted speed limit _____.

Number of vehicles per hour _____.

Width of street/roadway or intersection in all directions _____.

Number of traffic lanes _____.

Type area: Business ___, Residential ____.

Times monitored: from ____to ____, from_____ to _____.

**REQUIREMENTS:**

B. If the total traffic volume of the intersection in all directions exceeds the following vehicle rates as applicable.

Elementary school children - a rate of 55 vehicles per minute through a "regulated" intersection during the times when children are en route to or from school.

**FINDINGS:**

Name of intersection _____.

Number of vehicles per minute at intersection in all directions _____.

Type of traffic control _____.

Type area: Business ___, Residential ____.

Times monitored: from ____to ____ from_____ to _____.

**REQUDIEMENTS:**

Secondary school children - a rate of 70 vehicles per minute through a "regulated" intersection during the times when children are en route to or form school.

**FINDINGS:**

Name of intersection _____.

Number of vehicles per minute at intersection in all directions_____.

Type of traffic control _____.

Type area: Business _____, Residential_____.

Times monitored: from ____to_____ from _____ to_____.

"Regulated" is defined as a crossing site where, for the street/roadway or intersection being crossed, a crossing guard, traffic enforcement officer, stop sign, or traffic control signal is present, or the crossing site is designated and marked as a reduced speed school crossing zone.

**REQUIREMENTS:**

C. If roadways that students must cross are major traffic arteries for high volume movement of traffic with live lanes or greater, high speed and high accident frequency, during the times when children are en route to or from school, and where it is determined that traffic lights and traffic guards are not adequate.

**FINDINGS:**

Name of street or roadway _____.

Posted speed limit _____.

Accident frequency _____

Number of traffic lanes _____.

Type of traffic control _____.

NOTE: **Traffic** volume shall be determined by the most current traffic engineering study conducted by a state or local government agency. If a turn lane is present at a traffic control signal, it is not considered a traffic lane. High speed is 40 mph or higher or in excess of the posted speed limit.

**III. RAILROAD CROSSINGS.**
**REQUIREMENTS**:

A. Hazardous walking conditions shall apply to students required to walk across a main lane, at grade railroad crossing. (This would not include industrial, spur or exempt railroad crossings.)

**FINDINGS:**

**Name of railroad _____.**

**At grade main lane: yes ___ no ____ if no what? _____.**

**Number of lanes _____.**

**Survey meets regulation requirements_____.**

**Survey does not meet regulation requirements _____.**

**Police agency having jurisdiction _____**

**Personnel doing survey: _____.**

## APPENDIX F Table of Content of State of Washington's "A Guidebook for Student Pedestrians"

# A Guidebook for Student Pedestrian Safety

**Final Report**

**Prepared by**

**KJS Associates, Inc.**
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**Prepared for**
**Washington State Department of Transportation**
**Washington State Traffic Safety Commission**
**Superintendent of Public Instruction**

**August 1996**

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## Appendix G. California Safe Routes to School

# CHAPTER 24 SAFE ROUTES TO SCHOOL

## 24.1 INTRODUCTION

Established in 1999, the Safe Routes to School (SR2S) program came into effect from the passage and signing of Assembly Bill 1475 (AB 1475). In 2001, Senate Bill 10 (SB 10) was enacted which extended the program for three additional years. It is now scheduled to sunset on January 1, 2005. Information on both bills can be found at www.leginfo.ca.gov.

Section 2333.5 of the Streets and Highways Code calls for Caltrans, in consultation with the California Highway Patrol (CHP), to "make grants available to local governmental agencies under the program based upon the results of a statewide competition that requires submission of proposals for funding and rates those proposals on all of the following factors:

(1) Demonstrated needs of the applicant.
(2) Potential of the proposal for reducing child injuries and fatalities.
(3) Potential of the proposal for encouraging increased walking and bicycling among students.
(4) Identification of safety hazards.
(5) Identification of current and potential walking and bicycling routes to school.
(6) Consultation and support for projects by school-based associations, local traffic engineers, local elected officials, law enforcement agencies, and school officials."

SB 10 includes a provision that allows Caltrans to substitute State Highway Account (SHA) funds for federal funds. Although Caltrans intends to fund SR2S projects with state funds, it cannot guarantee their continual availability in future fiscal years. Caltrans will assess the availability of state funds at the initial project implementation phase to determine the funding source. Applicants should be familiar with the procedures for expending federal and state funds prior to submitting an application. For more information on both funding sources, see the *Local Assistance Procedures Manual* (LAPM) at *www.dot.ca.gov/hq/LocalPrograms/*.

The SR2S program is a construction program. It is intended to improve and enhance the safety of pedestrian and bicycle facilities and related infrastructure. However, costs for programs or activities related to education, enforcement or encouragement (often referred to as "3E" by school safety and law enforcement officials) are eligible for reimbursement when those costs are related to the construction improvement and incidental to the overall cost of the project. Reimbursement for incidental costs will be limited to 10 percent of the construction cost.

Each February or March, Caltrans will solicit project applications from local agencies. Interested local agencies may submit an application to the Caltrans District Office by the due date established by the district. Applicants that are proposing a project on a freeway, state highway or county road are encouraged to obtain the CHP's approval of the project prior to submitting the application to Caltrans.

The SR2S program is a "reimbursement" program. The reimbursement ratio for all projects will be 90 percent (maximum) with the local agency providing a 10 percent (minimum) local match. The maximum reimbursement amount for any single project is $450,000. Applications with a total project cost that exceeds $500,000 must identify elements or components of the project that are being financed with other funding sources. Section 6 of the Application Form (Exhibit 24-A) allows the applicant to address this situation in detail.

These guidelines contain several references to other Caltrans publications. Further information on, and links to, these publications can be found at Caltrans' Internet site, *www.dot.ca.gov*. For a direct link to the Division of Local Assistance, use *www.dot.ca.gov/hq/LocalPrograms/* and for Caltrans Traffic Operations use *www.dot.ca.gov/hq/traffops/*. For a direct link to Caltrans Bikeway Planning and Design Standards, go to *www.dot.ca.gov/hq/oppd/hdm/t*. These sites provide additional information on policies, procedures, standards, and specifications that will be applied to, and may impact, SR2S project designs.

## 24.2 APPLICANTS

The applicant, or project sponsor, is the agency that assumes responsibility and accountability for the use and expenditure of SR2S funds. The applicant must be an incorporated city or a county within the State of California. Exceptions to this requirement will be reviewed on a case-by-case basis. Applicants that do not represent a city or county must provide written justification for the exception and attach it to the application. The applicant should enlist the assistance of other participants in the development and submittal of an SR2S project. Other participants could include school boards, school districts, elected officials, community groups, students, and various city, county, and state agencies. The success of a project proposal being approved for funding will depend upon the ability of the applicant and participants to develop a comprehensive and unified solution to improving the safety and encouraging the use of pedestrian and/or bicycle routes to and from schools within their jurisdiction.

## 24.3 RATING FACTORS AND CRITERIA

In the development of projects, participants should structure their proposed improvements to meet as many of the following six rating factors and criteria as possible. The SR2S Application Form (Exhibit 24-A) requires applicants to provide specific information related to these factors. Project applications will be rated in each of these categories as being excellent, good, fair, poor or ineligible.

1. Identification and demonstration of needs
2. Potential for proposed improvement to correct or improve the problem
3. Potential for encouraging increased walking and bicycling among students
4. Consultation and support for project
5. Potential for timely implementation
6. Demonstrated coordination of related activities

## 24.4 PROJECT CATEGORIES

There are six general categories for SR2S projects. They represent program areas that are broad in nature and are typical of the range of approaches used to address pedestrian and bicyclist safety issues. The six categories are:

**Sidewalk improvements:** Includes new sidewalks, widened sidewalks, sidewalk gap closures, sidewalk repairs, curb cuts for ramps, curbs and gutters, etc.

**Traffic calming & speed reduction:** Includes roundabouts, traffic circles, neck downs, sidewalk bulb-cuts, speed humps, raised crosswalks, raised intersections, narrowed traffic lanes, full or half-street closures, and other speed reduction techniques. May also include traffic signs, stripes and pavement markings.

**Pedestrian/bicycle crossing improvements:** Includes new or upgraded traffic signals, crosswalks, median refuges, pavement markings, traffic signs, traffic stripes, lighted crosswalks, pedestrian and/or bicycle over-crossings and under-crossings, flashing beacons, traffic signal phasing extensions, bicycle-sensitive signal actuation devices, pedestrian activated signal upgrades and sight distance improvements.

**On-street bicycle facilities:** Includes new or upgraded bikeways, widening outside traffic lanes and/or roadway shoulders, geometric improvements, curve corrections, turning lanes, channelization and roadway realignment. May also include traffic signs, stripes and pavement markings.

**Off-street bicycle/pedestrian facilities**: Includes exclusive bicycle and/or pedestrian trails and pathways, bicycle parking facilities, bicycle racks and lockers, etc. May also include traffic signs, stripes and pavement markings.

**Traffic diversion improvements:** Includes improved pick-up/drop-off areas, separation of pedestrians and bicycles from vehicular traffic adjacent to school facilities, and traffic diversion away from school zones or designated routes to school. May also include traffic signs, stripes and pavement markings.

## 24.5 FUNDING CONSIDERATIONS

The reimbursement percentage for all SR2S project is 90 percent. The maximum amount of SR2S funds that will be allocated to a single project is $450,000. Therefore, the total cost of a project should not exceed $500,000 unless the applicant has identified and secured other funds (local, state, federal or private) to fund the balance of the project cost.

Eligible project costs that the local agency is entitled to reimbursement include:

- Preliminary engineering:
    - Environmental clearance
    - Preparation of Plans, Specifications and Estimate (PS&E)

- Right-of-way:
    - Engineering
    - Appraisals and acquisition

- Construction:
  - Construction costs
  - Construction engineering

- Public education and outreach

All of the project elements and construction improvements must be eligible to obtain reimbursement. Ineligible project elements will be removed from the project scope and deducted from the total project cost estimate. Ineligible project elements include any component that is not necessary to fulfill the original objective of the safety improvement. Landscaping and irrigation systems are examples of ineligible project components. If you have questions about the eligibility of components included in your project, contact your District Local Assistance Engineer (DLAE).

Construction improvements must be made on public property. Improvements can be made on public school grounds providing the costs of these improvements are incidental to the overall cost of the project. Costs for activities related to public education and outreach are eligible for reimbursement when those costs are directly related to the proposed improvement and incidental to the overall cost of the project. These activities may include preparing and distributing safety awareness flyers to school personnel, students, drivers, and neighboring home and/or business owners. It may also involve outreach efforts that promote walking and bicycling, to and from school, along the designated school routes. In all cases, the total amount of incidental costs shall not exceed 10 percent of the construction cost.

For all projects, the total project cost shown on the original application form will be used to determine the project's reimbursement amount. Requests to increase the total project cost shown on the application form will not be granted except in unusual circumstances and subject to the availability of funds.

The enactment of SB 10 allows Caltrans to substitute state funds for federal funds. Although Caltrans intends to fund SR2S projects with state funds, it cannot guarantee their continual availability in future years. Caltrans will assess the availability of state funds at the initial project implementation phase to determine the funding source. If preferred, a local agency may request a SR2S project be funded with federal funds.

## 24.6 PROGRAM SCHEDULE & PROCESS

The following schedule typifies the annual calendar year milestones for soliciting and programming SR2S projects:

| | |
|---|---|
| February | Caltrans District Offices solicit candidate SR2S projects from local agencies. |
| May | Local agencies submit candidate projects to Caltrans District Offices. |
| June | District Offices, in consultation with the CHP, submit a list of categorized projects to Caltrans Headquarters. |
| July | The Statewide Project Recommendation Committee submits a list of projects to approve for funding to the Director of Caltrans and the Commissioner of the CHP. |
| Fall | Caltrans HQ and CHP HQ release an approved list of projects. |

# LOCAL AGENCY SUBMITTALS

The Application Form (Exhibit 24-A) must be completed in its entirety and accompany all application submittals.

A local agency must submit candidate projects to its respective Caltrans District Office, directed to the attention of the District Local Assistance Engineer (see Exhibit 24-C for addresses and telephone numbers). An original application, plus one copy, is required. Any maps, schematics or letters of support that are attached to the application should be made on 8-'/2 x 11 inch paper.

Candidate projects must include cost estimates for all phases of the project. See the Project Cost Estimate portion of Exhibit 24-A, "Application Form," of this chapter.

Candidate projects must include estimated dates when various project milestones will be completed.

Candidate projects should contain information on accident histories or a narration on the potential for accidents. Photographs should be submitted to better illustrate the problem. Also, schematic plans showing the general nature and location of the proposed improvements should be submitted for all projects.

If a local agency is submitting multiple candidate projects, the local agency must prioritize the projects prior to submitting them to the Caltrans District Office.

A candidate project may contain similar improvements at several different school sites or it may contain several different improvements at a single school site. Avoid submitting candidate projects that combine several individual, dissimilar projects as a single master project application.

Any SR2S project encompassing a freeway, state highway or county road must be approved by the CHP to ensure that the project complements their "Pedestrian Corridor Safety Program" and is consistent with its statewide pedestrian safety statistical analysis. The local agency should obtain the CHP's approval prior to submitting the project to Caltrans.

### CALTRANS DISTRICT REVIEW

Caltrans District staff and CHP Division staff may establish a District Review Committee comprised of local and regional stakeholders to assist in the prioritization of projects. This committee will review all projects, using the factors identified in Section 24.3, "Rating Factors and Criteria" of this chapter, and categorize each project as excellent, good, fair, poor or ineligible. The district then submits the list of projects to Caltrans Headquarters.

**PROJECT SELECTIONS**

Caltrans and CHP establish a Statewide Project Recommendation Committee comprised of representatives from the FHWA, other state departments, city and county coalitions, pedestrian and bicycle associations, and other stakeholders. This committee categorizes all projects on a statewide basis and submits a recommended list of projects to be funded to the Director of Caltrans and the Commissioner of the CHP. Upon approval, the final list is posted on the Local Assistance website at *www.dot.ca.gov/hq/LocalPrograms/*.

## 24.7 DESIGN STANDARDS

All bikeway projects shall be designed in accordance with the Caltrans Highway Design Manual and the Caltrans Traffic Manual. Exceptions to these standards will be handled in accordance with the exception approval process described in each manual. All other projects shall be designed in accordance with the appropriate design standards applicable to the type and location of the improvement. Chapter 11, "Design Standards," of the LAPM, describes statewide design standards, specifications, procedures, guides and references that are acceptable for application in the geometric, drainage, and structural design of local assistance projects. The chapter also describes design exception approval procedures. These standards and procedures shall be used in the design of SR2S projects off the National Highway System (NHS). All projects shall meet the Americans with Disabilities Act (ADA) requirements. Any public agency that proposes to install an experimental Traffic Control Device (TCD) on a public roadway should follow the process prescribed in Section 1A.11 of the Manual on Uniform Traffic Control Devices (MUTCD) published by FHWA. A direct link to the new millennium MUTCD can be found at mutcd.fhwa.dot.gov/. The public agency should also comply with the experimental process of the California Traffic Control Devices Committee (CTCDC) at *www.dot.ca.gov/hq/traffops/signtech/newtech/*.

## 24.8 STATUS REPORTS

Local agencies are required to provide an update of project schedules and costs no later than July 1 of each year for each project that has not been awarded a construction contract. If the project is under construction, a Project Status Report does not have to be submitted. Failure to provide a Project Status Report may result in the project being dropped from the program. The report should be mailed to the appropriate DLAE. A sample Project Status Report form is included as Exhibit 24-B.

## 24.9 DEADLINES

If the project is funded with federal funds, the local agency should have federal funds obligated and a construction contract awarded by September 30th of the federal fiscal year in which the project is programmed. If the project is funded with state funds, the local agency should have state funds encumbered and a construction contract awarded by June 30th of the state fiscal year in which the project is programmed. Projects unable to meet these delivery deadlines may be provided one time extension, for a maximum period of one year, subject to written approval by the DLAE. Projects unable to meet the second delivery deadline will be dropped from the program unless supporting documentation that justifies the delay is submitted to, and approved by, Caltrans HQ.

## 24.10 EVALUATIONS

Applicants that construct a SR2S project must conduct a before/after evaluation. Safety deficiencies that are corrected by this program may justify increased funding for it in the future. Successful applicants will be sent instructions on how to conduct an evaluation.

## 24.11 REFERENCES

Title 23, United States Code, Section 120, 130, and 152
Streets and Highways Code, Sections 890-894 and 2330-2334
Caltrans *Local Assistance Program Guidelines*
Caltrans *Local Assistance Procedures Manual*
Caltrans *Highway Design Manual*
Caltrans *Traffic Manual*
*Manual on Uniform Traffic Control Devices*
AASHTO: *A Policy on Geometric Design of Highways and Streets* - 1994

# APPLICATION FORM
## FOR
# SAFE ROUTES TO SCHOOL PROGRAM FUNDS

Please read the instructions carefully. All sections must be completed. Failure to provide information that is required or failure to prepare the application in accordance with the instructions may result in your application being disqualified.
This entire Application Form must be submitted, including this introductory page. Applicants should download the Application Form from the Safe Routes to School (SR2S) link at www.dot.ca.gov/hq/LocalPrograms/. The brief instructions (depicted in italicized font throughout the application) should be deleted or erased when you answer the questions.
Limit the application to twelve (12) pages plus attachments. Attachments should be grouped and numbered to correspond with the application section number. Do not provide brochures and samples of materials unless they are directly related to a response.

**APPLICANT:** *Required - City of: or County of:*

**SCHOOL DISTRICT:** *Required - Include all districts that are involved*

**SCHOOL NAME(S):** *Required - List all schools or attach a list of all schools that are directly involved -with or affected by the project – no exceptions*

**CALTRANS DISTRICT ____ASSEMBLY DISTRICT_____SENATE DISTRICT_____**

**SHORT DESCRIPTION OF PROPOSED IMPROVEMENTS:** *Required - Provide a "short" description - 50 words or less - of the proposed improvements usins project terminology described in Section IV: Project Categories, of the guidelines. Example: Construct curb, sutler and sidewalk: install bike lanes: install pavement markings and traffic signs*

**GENERAL LOCATION OF PROJECT:** *Required - Provide street name or geographical references to project location(s). Attach map showing general location of improvements and the location of the school(s).*

**LOCAL AGENCY PROJECT PRIORITY:** *7, 2, 3. etc... .... Required if applicant is submitting more than 1 application.*

**PLACE A CHECK-MARK NEXT TO THE CATEGORY(IES) INCLUDED IN THIS PROJECT:**

| | |
|---|---|
| Sidewalk improvements | _____ |
| Traffic calming and speed reduction | _____ |
| Pedestrian/bicycle crossing improvements | _____ |
| On-street bicycle facilities | _____ |
| Off-street bicycle/pedestrian facilities | _____ |
| Traffic diversion improvements | _____ |
| Other | _____ |

Complete the following "Project Cost Estimate" section. Include only those costs that are being requested for this project. The "Total Project Cost" should not exceed $500,000.

**PROJECT COST ESTIMATE: (REQUIRED)**

| | |
|---|---|
| Preliminary Engineering | |
| Environmental.. | $ _____ |
| PS&E | $ _____ |
| Right of Way | |
| Engineering. | $ _____ |
| Appraisals and Acquisitions | $ _____ |
| Construction | |
| Construction* | $ _____ |
| Construction Engineering | $ _____ |
| Public Outreach and Education. (includes education, enforcement, and encouragement activities) | $ _____ |
| Subtotal | $ _____ |
| Contingency. | $ (*10% of Subtotal: max)* |
| Total Project Cost | $_____ |

Reimbursement Funds Requested. $ the lesser amount of 90% of Total Project Cost. or. $450.000

*Note: Section 9 of this application requires the applicant to provide further details on the construction costs. The amount shown on the "Construction*" line item, above, should match the total construction costs tallied in Section 9, or an explanation must be given for the discrepancy in that section.

---

The following parts of this Application Form request specific project related information. Most of the sections request the applicant to provide narration related to a specific topic. Other sections contain questions that the applicant can simply answer in the space provided. Pictures, maps, exhibits, diagrams, survey summaries, petitions, etc. must be attached to the application. If a section does not apply to the proposed project or if data is not available, simply write "DNA" beneath the section heading.

## 1. IDENTIFICATION AND DEMONSTRATION OF NEEDS

This section allows the applicant to demonstrate the need for the project. Using the following questions and statements as a guide, provide a detailed, narrative description of the problem:

Provide some background information about the risks children are exposed to because of unsafe routes to the school(s) in your proposed project area. How and by whom have unsafe routes been identified as a local problem by organizations and officials (e.g., council or board resolution, agency's plan, etc.)? Given that unsafe routes may exist in numerous locations in your jurisdiction, explain why these routes have been targeted for improvements. Describe the magnitude of the risks facing children who walk or bicycle to schools. Use whatever demographic information, community surveys and audits, injury data, traffic and other environmental conditions that apply.

Select the following categories that most closely reflect the primary need(s) your project is targeting:

[ ] Increasing connectivity
[ ] Separating children from motor vehicles (along routes or at the school)
[ ] Improving children's ability to cross streets
[ ] Improving pedestrian pathways
[ ] Improving bicycle pathways
[ ] Improving visibility of motorists and children (by restricting obstacles, improving sight-lines or installing lighting, etc.)
[ ] Improving slow or safe driving by motorists
[ ] Other (please describe)

Provide photographs to illustrate the problem or hazard. Include these photographs as attachments. Maximum of 6 photos and no video tapes, please.

If applicable, describe the primary cause of student injuries. If available, attach a listing of pedestrian and bicycle injuries sustained by students on their trips to and from school during the past three years.

If it will help describe and define the nature of the problem, provide diagrams, exhibits, maps and listings as attachments to the application.

## 2. POTENTIAL FOR PROPOSED IMPROVEMENT TO CORRECT OR IMPROVE THE PROBLEM

This section allows the applicant to describe how the proposed solution will improve the safety for children along school routes. The applicant must clearly demonstrate the connection between the problem and the proposed solution. Using the following questions and statements as a guide, provide a detailed, narrative description of the proposed improvement:

How does the proposed project correct or improve the pedestrian/bicycle traffic safety at or near the project site, especially in reducing child injuries and fatalities? Justify your response.

Discuss how the proposed improvement is the best, most cost effective solution to the problem.

Describe options or alternatives that were considered.

If applicable, describe how the proposed solution improves traffic safety for other users of the facility or system.

If it will help describe and define the scope of the improvements, provide pictures, diagrams, exhibits or maps as attachments to the application.

## 3. POTENTIAL FOR ENCOURAGING INCREASED WALKING AND BICYCLING AMONG STUDENTS

This section allows the applicant and participants to describe how the proposed improvements will encourage students to walk or bicycle to school. Using the following questions and statements as a guide, provide a narrative response:

How many children (total) walk and bicycle to and from school in the proposed project? Provide historical data if it exists.

Describe the impact the project's improvements will provide to students:

Student population _____
Number of students currently traveling along route(s) targeted for improvements ____
Estimated number of students traveling along route(s) after improvements ____
% increase of travel along targeted route(s) _____
% of total student population impacted by project _____

Justify your responses to the figures provided above.

| | YES | NO |
|---|---|---|
| Will the route improvements create shorter walking distances? | ___ | ___ |
| Will the improvements create more direct walking or cycling routes? | ___ | ___ |
| Will the improvements improve connectivity of the routes? | ___ | ___ |

If known, describe how this project impacts pedestrian and bicycle level of service. Describe whether the improvements will enable or encourage walking and bicycling along the route(s) for other than school trips. Describe the components of the project that will promote the use of the improved routes through education, enforcement, and encouragement. If it will help describe how the project will encourage students to walk or bicycle to school, provide pictures, diagrams, exhibits or maps as attachments to the application.

## 4. CONSULTATION AND SUPPORT FOR PROJECT

This section allows the applicant to provide information on the consultation and support for the project. List the participants and the roles they played in the development of this proposal. Identify organizations that pledged their support of the project. Attach no more than one (1) letter of support from each organization. Support letters should be addressed to the applicant, not Caltrans or the CHP. Include these letters as attachments to the application. The following is a list of potential participants and organizations to consider as project partners:

School officials
Local traffic engineers
Law enforcement agencies
Public health agencies or organizations
School based associations
Local elected officials
Other community groups

Letters of support that are submitted after the application deadline will not be accepted nor considered in the project evaluation.

Do not submit or attach individual student survey sheets or petitions. Narratives and summaries of the surveys or petitions are acceptable.

## 5. POTENTIAL FOR TIMELY IMPLEMENTATION

This section requires the applicant to provide information on project implementation schedules.

Applicants must estimate dates for the following milestones based upon receiving written "authorization to proceed" from the DLAE on October 1st of the year in which this application is being prepared. Note: Any work performed prior to receiving written authorization to proceed is not eligible for reimbursement.

Obtain Environmental Clearance _____(*date required*)_____

Obtain Right of Way Clearance _____(*date required*)_____

Advertise Project for Construction _____(*date required*)_____

Award Project _____(*date required*)_____

Complete Construction of Project _____*(date required)*

Project Duration from "authorization" to "completion" _____*(approximate number of months)*

## 6. DEMONSTRATED COORDINATION OF RELATED ACTIVITIES

This section allows the applicant to illustrate how other activities, either on-going or planned, complement the objectives of this project. Using the following questions and statements as a guide, provide a narrative response:

Identify any partnerships, coalitions, community groups, etc. that have a goal or objective to improve the safety of pedestrian and bicycle routes that serve the school? Elaborate on the history and status of these groups. Describe the group's activities in the preparation of this application.

Describe any "education, enforcement and engineering" (3E) efforts directed at improving pedestrian and bicycle safety at the school.

Has the city, county, school or school district prepared a plan or document that addresses the transportation alternatives available to students that attend the school? If so, explain the relationship between this project and that plan.

Have other funding sources been requested or secured from other agencies or grant providers (e.g. public health, public safety, etc.) for related traffic improvements? If so, identify status, source and amount of funds. Elaborate on how these other funding sources are necessary to make the entire project a success.

List or describe any related policies, practices or documents that demonstrate an overall strategic plan for traffic safety improvements specifically targeted for the school site or school district.

## 7. CALIFORNIA HIGHWAY PATROL APPROVAL

If any of the improvements are located on a freeway, state highway, or county road where the California Highway
Patrol has enforcement authority, the CHP must approve the proposed improvement.

California Highway Patrol Approval: _____ *(required, if applicable)*
(Signature)

_____
(Print Signing Officer's Name and Division)

## 8. DETAILED CONSTRUCTION COSTS; (REQUIRED)

The following categories of work replicate Chapter 24.4 Project Categories. Identify the category (or categories) that contain descriptions of work that are included in the project. Provide some level of detail of the estimated costs associated with specific components. Examples are shown in italics, which should be deleted or erased on the application that is submitted to Caltrans for review.

**Sidewalk improvements**: Includes new sidewalks, widened sidewalks, sidewalk gap closures, sidewalk repairs,
curb cuts for ramps, curb and gutter, etc.

*-New sidewalks: $50,000 (includes curb cuts)*
*-Curb and gutter: $35,000*

**Traffic calming & speed reduction:** Includes roundabouts, traffic circles, neck downs, sidewalk bulb-outs, speed humps, raised crosswalks, raised intersections, narrowed traffic lanes, full or half-street closures, and other speed reduction techniques. May also include traffic signs, stripes and pavement markings.

*- # of Speed humps @ __ ea. = $25,000*

**Pedestrian/bicycle crossing improvements:** Includes new or upgraded traffic signals, crosswalks, median refuges, pavement markings, traffic signs, traffic stripes, lighted crosswalks, pedestrian and/or bicycle over-crossings and under-crossings, flashing beacons, traffic signal phasing extensions, bicycle-sensitive signal actuation devices, pedestrian activated signal upgrades and sight distance improvements.

*-Upgrade traffic signal: $60,000 (includes bicycle-sensitive detectors, pedestrian activated push buttons, and upgraded Walk/Don't Walk indicators)*
*-Traffic signs: $10,000*
*-Pavement markings: $10,000*

**On-street bicycle facilities:** Includes new or upgraded bikeways, widening outside traffic lanes and/or roadway shoulders, geometric improvements, curve corrections, turning lanes, channelization and roadway realignment. May also include traffic signs, stripes and pavement markings.

*-Widen shoulders at various locations: $150,000*
*-Misc. Striping: $5,000*

**Off-street bicycle/pedestrian facilities:** Includes exclusive bicycle and/or pedestrian trails and pathways, bicycle parking facilities, bicycle racks and lockers, etc. May also include traffic signs, stripes and pavement markings.

*-Bicycle lockers: $10,000*

**Traffic diversion improvements:** Includes improved pick-up/drop-off areas, separation of pedestrians and bicycles from vehicular traffic adjacent to school facilities, and traffic diversion away from school zones or designated routes to school. May also include traffic signs, stripes and pavement markings.

*-pick-up/drop-off area: $15,000*
*-Misc. signs and stripes: $5,000*

**Total Construction Costs:** (Add all costs shown above and write the total amount on this line. This amount should match the "Construction" line item cost estimate shown on Paw 2 of this application form. If the amounts do not match, explain the discrepancy in this space.)

## 9. APPLICATION SIGNATURES (REQUIRED)

An agency official, representing the applicant, must sign the application. The undersigned affirms that the statements contained in the application package are true and complete to the best of the applicant's knowledge. If portions of the improvements extend into areas where the applicant has no jurisdictional authority, a notation must be made that officials representing the affected local agencies support the project. In the notation, provide names and telephone numbers of whom to contact for corroboration. Only one agency official needs to sign the application. "Agency Official" means Director, Assistant Director, Executive Director, Assistant Executive Director, or their respective designated administrators, engineers, or planners.

Agency Official: _____ *(required )*
Name
_____ *(required )*
Signature
Title _____ *(required )*

Phone Number _____ *(required )*

Email _____ *(if available)*

Notation: *(If applicable)*

A school official must sign the application. If the project encompasses several schools within a single school district, a signature from an official representing the school district is required. If the project involves several schools from different school districts, a notation must be made that school district officials representing the other schools affected by this project support it. In the notation, provide names and telephone numbers of whom to contact for corroboration. Only one school official needs to sign the application. "School Official" means Superintendent, Principal or other administrative official authorized to sign on behalf of the school(s).

School Official: _____ *(required )*
Name
_____ *(required )*
Signature
Title *(required )* _____

Phone Number *(required )* _____

Email *(required )* _____

Notation: *(if available)*