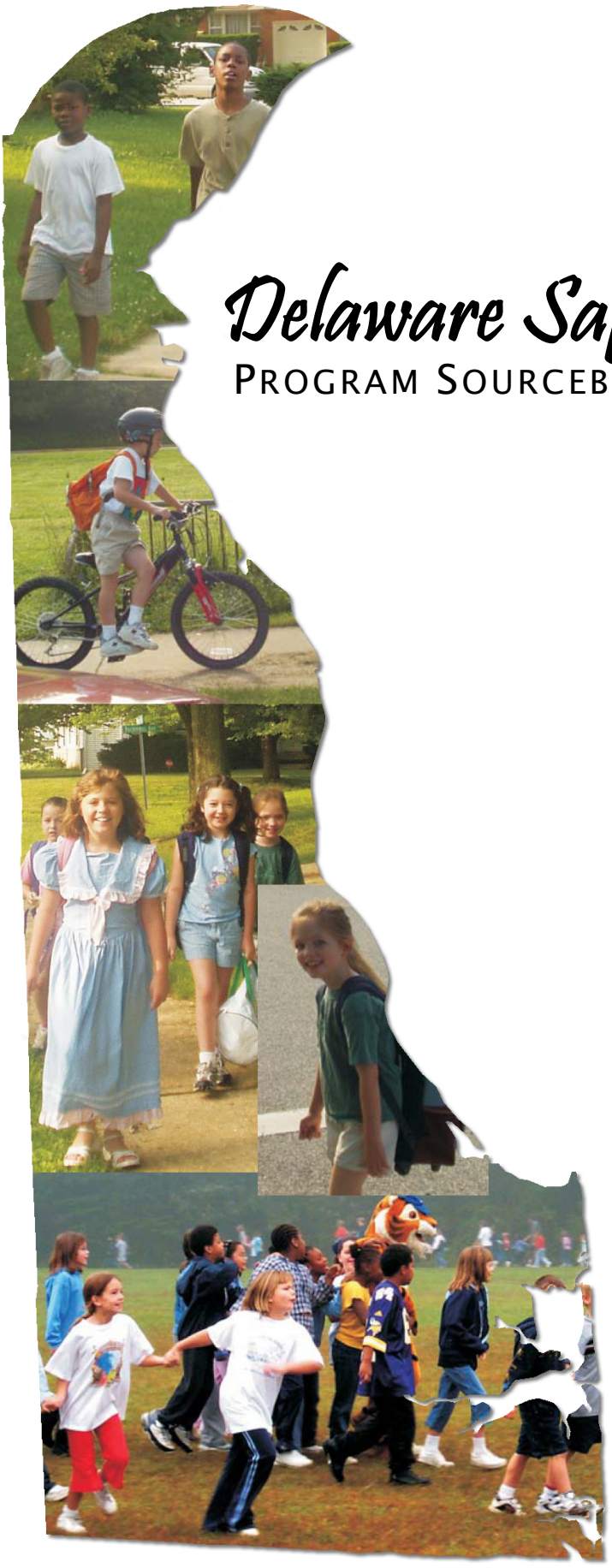

Delaware Safe Routes to School

Program Sourcebook

Delaware Department of Transportation
800 Bay Road
Dover, Delaware 19901

Delaware Department of Transportation

Carolann Wicks
Secretary

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Division of Planning

Ralph Reeb
Director

Joseph Cantalupo
Assistant Director of Planning

Jeff Niezgoda
Planning Supervisor

Consultant Team
Parsons Brinckerhoff Quade & Douglas, Inc.
Toole Design Group

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The Honorable Representative Robert Valihura
Mr. Ron Love, Department of Education
Mr. Don Carbaugh, Delaware Bicycle Council
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We would also like to thank the students, parents, teachers, and staff of the following schools for helping to provide photos for this *Sourcebook*:

East Millsboro Elementary School, Millsboro
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John R. Downes Elementary School, Newark
Linden Hill Elementary School, Wilmington
New Castle Middle School, New Castle
P.S. duPont Elementary School, Wilmington
W.B. Simpson Elementary School, Camden

With the initiation of the Safe Routes to School program, Delaware joins a growing movement nationally, geared toward encouraging children to walk and bicycle to school while making their way safer. Similar programs in other states have achieved dramatic results in improved safety and physical fitness for participating students. I am pleased to officially launch Delaware's Safe Routes to School program with this *Sourcebook*, a guide for helping you get a program started in your community.

The *Sourcebook* contains everything you will need to get your program started. It explains how to put together a Safe Routes to School committee, ideas for encouragement activities, resources for safety lessons, and tips on how to slow traffic and improve safety. It also includes ideas for how to incorporate the larger community in ensuring a safe, healthy, journey to school for Delaware's students.

We at the Delaware Department of Transportation (DelDOT) look forward to working together with you in creating Safe Routes to School.

For more information about Safe Routes to School or any other DelDOT sponsored program, visit our Web site at: *www.deldot.gov*, and click on Community Programs and Services.

Sincerely,

Carolann Wicks

Carolann Wicks, Secretary
Delaware Department of Transportation

The Department of Education is pleased to see the launch of the Delaware Safe Routes to School Program. This is an excellent initiative designed to help local communities improve the safety, health, and well-being of our children. The timing of this initiative could not be better. Recent studies have indicated a relationship between physical activity and school performance. Increased physical activity may also help in reversing the trend of childhood obesity and other chronic diseases. This Sourcebook will show you how to encourage more physical activity through walking and bicycling to school. The guide also explains how schools, communities, and transportation planners can work together to improve pedestrian and bicyclist conditions and ensure that a child's trip to school is a safe one.

We encourage you to use this Sourcebook to help make walking and bicycling a fun, safe way to get to school.

Sincerely,

Valerie Woodruff, Secretary
Delaware Department of Education

Contents

Introduction 1

Welcome to the Delaware Safe Routes to School Program!

WELCOME AND CONGRATULATIONS! You have joined a growing number of citizens who are concerned about the safety of children who walk or bicycle to school, and who have decided to work together to improve conditions. This *Sourcebook* will enable you to establish a successful and ongoing Safe Routes to School (SRTS) program at your school—and to ultimately enhance the safety and health of your community for years to come.

The Problem…

It is 7:45 A.M., and the kids are beginning to arrive at school. Some walk to school along busy roads crossing at intersections that have high-speed motor vehicle traffic. In some locations, there are crossing guards, but students also cross these streets at convenient crossing points where there are no crosswalks, in order to avoid walking longer distances. Some children are driven to school by their parents who wait in long lines to drop them off. Buses arrive at the same driveway, adding to the confusion and congestion around the school entrance. Many passing motorists appear oblivious to these children and other pedestrians in the area. The problem has created growing safety concerns among parents and school administrators.

▸ Morning drop-off at an elementary school

▸ Linden Hill Elementary School, Wilmington

It is no surprise that parents are reluctant to let their children walk or bicycle to school. New development has focused on cars, which has made it a challenge to get around without one. Sometimes sidewalks, crosswalks, trails, and bike paths do not exist or are hit-or-miss. Furthermore, schools are often built on the fringes of developed areas, far from where children live, where affordable real estate that meets the minimal school site size requirements is found. Another concern parents have is exposing their children to dangerous strangers. Couple these with increased traffic near schools; it is certainly valid that parents are concerned about the safety of their children.

Nationally, fewer than 15 percent of all school trips are made by walking or bicycling, one quarter are made on a school bus, and over half of all children arrive at school in private automobiles (2001 National Household Travel Survey, Federal Highway Administration). Of course the high number of motor vehicle trips to school only adds to the traffic congestion around schools. This continues the cycle of fewer and fewer parents who are comfortable with their children walking or bicycling to school, which leads them to drive their children to school, as well.

However, many of us remember a time when walking to school was part of everyday life. Walking to school helps children feel more connected to their community, and increases their confidence that school is a safe place for learning. Some teachers report that kids who walk and bike to school arrive more alert and ready to work.

Legislation

In 2002, Senate Bill No. 353 of the 141st General Assembly established Delaware's first SRTS program. The bill authorizes DelDOT to establish and administer a SRTS Program, and instructs the Secretary of Transportation, DelDOT, the county governments, and governing bodies of the incorporated municipalities to "do all things necessary in their respective jurisdictions to secure and expend federal funds" for SRTS programs throughout Delaware.

In 2005, the federal SRTS program was established under the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU). The law states that the purpose of the program is:

(1) to enable and encourage children, including those with disabilities, to walk and bicycle to school;
(2) to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and,
(3) to facilitate the planning, development, and implementation of projects and activities will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. (Pub. L. No. 109-59, §1404 (b))

What is the Delaware SRTS Program?

A SRTS program is a way to improve the safety of children who walk or bicycle to school and to promote these types of transportation. In a SRTS program, parents and administrators at the school work along with other community groups and agencies to improve pedestrian crossings, build new sidewalks and bike paths, teach children safer bicycling and walking skills, increase traffic enforcement around schools, and promote healthier, more active lifestyles.

Any elementary, intermediate, or middle school in Delaware can participate in SRTS. All that is required is a dedicated group of parents, teachers, school administrators, and other community members who want to take actions to improve the walking and bicycling conditions near and around the local school. This *Sourcebook* provides step-by-step instructions for conducting a SRTS program, as well as many ideas and examples from other schools that have achieved success.

Why have a SRTS Program?

Chances are, you are reading this because you are concerned about children's health and safety, and with good reason. Trends in Delaware mirror national trends towards increased levels of inactivity and obesity among children. The national trends noted below offer some good reasons for starting a SRTS program at your school. The statistics can also be helpful as you talk to other people about why a SRTS program is needed in your community.

A SRTS program can improve child safety and increase health and fitness opportunities for Delaware youth in a number of ways. Programs in other areas of the US have achieved outstanding benefits. In Marin County, California where a SRTS program has been in place since 2000, participating schools have seen the following results of their efforts:

- The number of students walking to school rose from 14 to 23 percent.
- The number of students biking to school increased from 7 to 15 percent.
- The number of children carpooling increased from 11 to 21 percent.
- The number of children arriving alone in a car dropped from 62 to 38 percent.

Child Health and Fitness Facts

- In 1999-2000, 15.3% of children ages 6-11 were overweight, compared to 4.2% in 1963-1964. (1999-2000 National Health and Nutrition Examination Survey, National Center for Health Statistics)
- Children age 2 and older should get at least 30 minutes of moderate-intensity activities every day. They should also get at least a half-hour of vigorous physical activities 3-4 days each week to achieve and maintain a good level of heart and lung fitness.
(American Heart Association,
http://www.americanheart.org/presenter.jhtml?identifier=4670
http://www.americanheart.org/presenter.jhtml?identifier=4596)
- Exercise improves self-confidence and self-esteem. People who are active are also more likely to be better adjusted, to perform better on tests of cognitive functioning, and to exhibit reduced cardiovascular responses to stress.
(American Heart Association, *Circulation.* 1996; 94:857-862)
- Age-specific deaths from asthma increased 118% between 1980 and 1993. Vehicle emissions, especially diesel exhaust, are a known contributing factor. (Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report, May 3, 1996; 45(17): 350-353)

Travel Facts

- In the US, 469 children younger than age 15 were killed as pedestrians in traffic crashes in 2000. *(http://www.state.de.us/highway/information/bicycle.shtml)*
- An estimated 20-25% of rush hour traffic on local roadways is school traffic. (US Environmental Protection Agency, Travel and Environmental Implications of School Siting, 2003)

The increasing number of students riding in a car or taking the bus has contributed to a number of other problems, including: increased congestion and pollution near schools, children who are less physically active, and schools that are less connected with the surrounding community. Starting a SRTS program is a great way to help address many of these problems. Depending on the unique needs and goals of your school, your SRTS program may seek to:

- Increase child health and physical activity levels through increased walking and bicycling;
- Improve traffic safety for children by:
  - Teaching children pedestrian and bicycle safety skills, and better awareness of traffic conditions;
  - Getting physical improvements (such as new sidewalks) that can help to reduce pedestrian and bicycle crashes on the journey to and from school; or,
  - Increasing law enforcement activity at and around the school at the beginning and end of the school day;
- Improve children's personal safety and security by working to reduce crime along a route to school;
- Contribute to a reduction in traffic congestion and improved air quality;
- Develop a stronger relationship between children and their neighborhood community;
- Teach children to become more independent and self-reliant; and,
- Enable parents to become involved in making their community safer.

What Does "Safe" Mean to Your Community?

There are different ways to define the word *safe*. In some communities, it means preventing kids from being hit by a car on the way to school. In others, it might mean keeping kids safe from crime such as drugs and violence. Or it might mean both. By starting a SRTS program, you can find out what the most pressing safety problems are in your school and begin working as a community to address them.

Who Prepares the SRTS Plan?

You prepare the SRTS Plan. Although DelDOT developed this book, the SRTS program is a local, school- and community-based initiative. This *Sourcebook* explains how to get your project underway, and gives practical advice based on successful programs in Delaware and other parts of the US.

Anyone can start to develop the SRTS plan, but you will be more successful if you involve a range of different people along the way. The SRTS plan is usually developed by a mix of people from various groups working together as a committee. This includes parents, neighborhood organizations, the local parent teacher organization, a group of teachers, local police, transportation planners, and other interested businesses or organizations. There is no set formula. The key is to attract and retain dedicated, motivated individuals who will work together to improve the safety of the journey to school.

- The Downes Elementary School SRTS Committee works on the SRTS plan

Contents of this Sourcebook

This *Sourcebook* explains how to establish a SRTS program and provides the tools and resources necessary to successfully implement that program. It is fairly comprehensive. The process it describes may be short or long, depending on the goals you establish and the work that is needed to achieve them. Keep in mind that some improvements, take a long time—sometimes years—to implement, and experiencing the results of your efforts will take time, as well.

The tools contained in this *Sourcebook* include:

- Surveys;
- Ideas for ways to educate and encourage safer walking and bicycling;
- Descriptions of different types of physical improvements that may help solve the problems at your school;
- Enforcement ideas; and,
- Resources for the programs you plan to implement as part of your SRTS program.

Getting Started 2

NOW THAT YOU KNOW what SRTS is, why you should have a program, and how it will benefit your community, it is time to get started. This chapter describes the process of starting a SRTS program and will provide examples along the way. Keep in mind that there is no single right way to develop a SRTS program. Your project will be unique due to the particular characteristics and needs of your community. However, the most successful SRTS programs implement changes in the following five areas: evaluation, education, encouragement, enforcement, and engineering.

The success of a SRTS program depends on the commitment and dedication of a few people who act as champions of the project, with a wider group of people who help out from time to time. From the start, there should be someone willing to make arrangements and coordinate the project. It will be this person's job to get others involved, and to find ways to delegate tasks. To do this, it is essential that you establish a SRTS committee that is able to involve a broad range of community members and interested parties.

The SRTS Process in a Nutshell

There are five distinct phases in each SRTS project. In the first phase, you generate interest and enthusiasm about the project and assemble a core group of people who will help with the project. During the second phase, the group gathers information through observation and by conducting outreach to students, parents, and the community. Phase three is sharing the information that was collected. The fourth phase is identifying and prioritizing activities, improvements, and programs that are needed. The final phase includes implementation—that is, getting projects built, putting education and encouragement programs in place, and any other activities you have identified to make the journey to school safer—and evaluation to ensure that the measures being taken are effective.

Some Tips for a Successful Program

- **Involve potential stakeholders** early and strive to get them to buy-in. Stakeholders include parents, teachers, law enforcement, community groups, health officials, and state and local transportation and public works agencies. Do not forget the students! SRTS is for their benefit, and their enthusiasm will help generate success.
- **Elect a committee captain** who is focused and has the motivation and perseverance to keep the program moving and the other committee members excited.
- **Stick to the schedule,** stand by your goals and refer back to them regularly. They will help guide you through the program.
- **Be efficient** in your meetings. Short meetings are better than long meetings.
- **Hold open meetings.** Advertise meetings along with other school functions to let the larger community attend. Have a time in the meeting agenda to allow for those not on the SRTS program committee to comment. Be receptive and responsive to those comments.
- **Accomplish your set goals will likely not come easily**, so remember that persistence, tenacity, and patience will be required.
- Finally, **celebrate successes** along the way. Recognize those that have invested their time and effort in the program. This attitude will knit the SRTS committee together and provide encouragement to stay the course.

Forming a SRTS Committee

Step 1: Identifying a Committee of People

The first step is to prepare a list of potential committee members. There are a variety of potential partners for a SRTS committee, including individuals who might not be directly involved with the school, but may be interested in helping. The following is a list of potential candidates to consider asking to volunteer on your SRTS committee:

- The school principal or assistant principal;
- Three or four interested parents;
- A parent teacher organization representative;
- One to two teachers—consider those with outside duty before or after school, and especially:
  - The physical education teacher,
  - The health teacher, and
  - The school nurse or a representative from the coordinated school health committee;
- A representative from the school's Safe and Orderly Committee or School Improvement Team;
- The school district's transportation director;
- Neighborhood and community association members;
- A local transportation or traffic engineer;
- A School Resource Officer from the State Police;
- A Community Traffic Safety Program (CTSP) representative from the Delaware Office of Highway Safety;
- A school crossing guard;
- Local bicycle and pedestrian clubs or advocates, such as Delaware Greenways, or the Delaware Bicycle Council;
- Local council members;
- Local police;
- A representative from the state or local roadway department;
- An employee of the local Metropolitan Planning Organization (MPO);
- Nearby business owners; and,
- Children who are already walking to school.

This is just a sample list. There may be other individuals or organizations that you would like to invite to serve on your SRTS program committee. Once you have put the list together (i.e., names, phone numbers, mailing addresses, and email addresses), organize a kick-off meeting.

Ideally, your committee should include ten to fifteen people. Groups larger than fifteen are sometimes hard to manage, while having groups smaller than ten increases the workload on each person as the committee size diminishes.

A letter should be sent to each person inviting him or her to attend the kick-off meeting. The letter should give a brief explanation of the purpose of the SRTS program committee and what you hope to accomplish. If possible, send the invitations on the school letterhead. Remember that if you plan to meet at the school, you need to obtain permission from the principal or assistant principal. It is a good idea to provide childcare at the meetings. Make sure to note the availability of childcare in the invitation. A sample invitation letter is provided in *Appendix D*.

Allow three to four weeks of lead-time between the day you mail the invitations and your first meeting. Make the meeting date, time, and location as convenient as possible for everyone. The easier you make it for invitees to attend, the greater the chances are of a good turnout. If you can, make reminder calls a few days before the meeting.

Even if all recipients do not respond, it is a good idea to keep them on your mailing list. You may need assistance from some of these people in the future (such as local transportation officials and neighborhood organizations), and it will be beneficial to have kept them informed. You should strive to achieve broad-based community support for a walkable school neighborhood.

Letting People Know: Publicity

Getting the word out about your SRTS project is very important. You should provide updates on the SRTS project at regular parent-teacher organization meetings, at Back-to-School Night (if you are beginning the project at the start of the school year), and at community and neighborhood association meetings. Placing a brief update in school and neighborhood newsletters or email listservs is another way of reaching out to parents and community members.

Keep in mind that your school may typically prepare announcements and newsletters in both English and in Spanish; therefore, you may need assistance from the school's translator.

Local community newspapers will often be interested in SRTS projects—they usually receive very positive press. With the permission of your school's principal, contact the editor of your local paper and let them know about the project. Send them periodic updates as the project moves along.

A presentation at a kick-off meeting

Step 2: Managing the Kick-off Meeting

The kick-off meeting is a very important event—it will set the tone, pace, and level of enthusiasm for the project. You will want to be well prepared for this meeting. At the meeting you should:

- **Set the scene.** Talk about the school's traffic problems and the difficulties children face in making the journey to school. Explain the purpose of the program.
- **Mention national trends** (see statistics in *Chapter 1*). Talk about the growth in traffic, the decline in walking and bicycling among youth, and the increasing concern for children's health.
- **Explain how SRTS will work** and describe the likely benefits for children, parents, staff, and the community. You may want to share some items from this *Sourcebook* as handouts.
- **Give participants an opportunity to talk** about their safety concerns. Keep a running list of problems and ideas for solutions.
- **Summarize the discussion** by making a list of the goals for the program. Goal statements can be simple and straightforward. Increase traffic safety for students walking to school, alter unsafe pedestrian behavior among students, educate parents who drop off kids, and increase security near the school are just a few examples of goal statements.
- **Develop a project timetable.**
- **Explain what the next steps will be.** Ask for volunteers and assign responsibilities. If you have a large group, you may decide to set up subcommittees. Regardless, there are certain tasks that you will need to do. Examples of these tasks are provided here; however, greater details are given in the following chapters.
  - **Mapping**—Some members of your SRTS committee should be responsible for obtaining maps, gathering information about where kids live and what routes they take to school, and finding out more about the existing conditions of streets and roadways near the school. The mapping task is likely to take a lot of work so it should be assigned to several volunteers or one of the larger subcommittees.
  - **Outreach**—The outreach volunteers will be responsible for getting input on safety problems and potential solutions from parents, teachers, administrators, and community members. An outreach volunteer will also be in charge of informing the school and the community about meetings.
  - **Developing the SRTS Plan**—The plan will include a range of recommendations including evaluation, education, encouragement, and enforcement activities and physical improvements such as sidewalks. Most likely everyone will be involved in this task.
  - **Implementation**—This is when you put your SRTS plan into action by working with various groups to start education and encouragement activities, get added enforcement in place, make evaluations, and get physical improvements scheduled for construction. This is another task that will require help from everyone on your SRTS committee.
- **Ask for support** and involvement from everyone and assign some responsibilities to be completed prior to the next meeting.
- **Set the dates for future meetings.**

Downes Elementary Safe Routes to School Program Planning Workshop

Wednesday, April 20, 2005
3 PM – 4 PM
School Cafeteria
Childcare will be provided

Help us make walking and biking to school safer and more enjoyable!!

Dear Parents,

John K. Downes Elementary School has been selected as one of five pilot schools to participate in the Delaware Safe Routes to School Program. The school will receive up to $10,000 for improvements and activities related to walking and bicycling safety and encouragement.

Please join us for a Planning Workshop on Wednesday, April 20 from 3 pm to 4 pm. A team of consultants from the Delaware Department of Transportation will help us develop a Safe Routes to School Plan and we will begin developing programs and committees. If you are interested in participating in this or other Safe Routes activities, please return the form below. Thank you!

Denise Schwartz, Principal

Please tear off bottom portion and return to the front office.

___Yes, I will attend the workshop. I will need childcare for ____ children.

___Please keep me informed! I can't attend the safety workshop but would like to be involved in Safe Routes to School activities.

Parent/Guardian
Name:
Email:
Phone:
Student's Name:
Grade: ____Teacher:

An example of a workshop announcement letter

Schedule about two hours for the first meeting, and make sure everyone signs an attendance list. Future meetings should be shorter, but the kick-off meeting usually takes longer. Remember that meetings should have goals and objectives, and should be as enjoyable and easy to attend as possible. Have childcare available, provide refreshments, and, most importantly, keep the discussion lively.

In addition to the resources in the *Appendices*, the SRTS Coordinator at DelDOT will be able to provide you with additional materials and resources to make the kick-off meeting a success. Experts have developed excellent presentation materials that you may use. Do not expend yourself recreating the wheel; instead, concentrate your efforts on ensuring that the right people are involved and that the meeting runs smoothly.

Baseline Data

The critical first step in any SRTS program is to collect baseline data through surveys and traffic counts to learn how students currently arrive at school. You can collect some of this information before putting together a committee, if you think it will be helpful to convince officials, school administrators, and others of the project's importance. However, you may want to wait until you have established that you are moving forward with SRTS—that there is a team of people willing to make SRTS a reality. You may find that it is easier to collect the data with the help of others from your committee.

It is essential to collect baseline data before your SRTS program activities and projects are implemented. After the hard work of beginning the SRTS program, you will need to be able to measure the success of the program by determining if your efforts have impacted the number of children walking and biking to school, and if safety conditions have improved.

There are different types of data that you will need to collect. **Student surveys** will enable you to determine how children get to school. A quick daily show of hands during homeroom is often enough to get a feel for student travel habits at your school. **Traffic counts** will supplement this information by determining how many vehicles enter school grounds to drop off children. **Parent surveys** measure attitudes and identify obstacles and opportunities for changing behavior. See *Chapter 3* for information on methods for collecting data. The SRTS Coordinator will also be able to provide you with assistance.

Letting People Know: Publicity

A competition to design a SRTS logo for your school can help to build momentum for the program. Possible prizes may include a helmet, a red rear blinking light and white headlight for a bicycle, a water bottle, reflective gear, and other fun stuff! The winning logo can then be used on t-shirts, flyers, and posters as an additional promotional aid. Think creatively when developing ideas for contests and prizes.

▸ Delaware's Safe Routes to School logo

Gathering Information 3

NOW THAT PEOPLE ARE EXCITED ABOUT SRTS and are interested in starting a SRTS program, it is time to get to work. Before making a list of all the projects or activities you would like to implement, it is important to make some observations and gather input from multiple perspectives, rather than relying on intuition or anecdotal information. These steps will help your committee choose efforts that will make the most impact and be effective in bringing about change. This chapter describes methods of collecting information. Presented here are directions on how to (a) identify and map current conditions, and (b) gather information from stakeholders. Your committee does not have to follow the order of the activities in this chapter—your committee may choose to make observations first and then gather input, vice versa, or do both at the same time.

Mapping and Observing Existing Conditions

You will need to find out more about conditions on the streets and roadways near the school site. In this section, you will learn how to evaluate student walking and bicycling route conditions. First you will need to obtain maps, which will most likely require some preparation. Then you will use these maps to evaluate the existing conditions using the site audit tools.

Step 1: Preparing the Base Maps

You will want to obtain or prepare two maps for the SRTS committee—a *School Neighborhood Map* and a *School Site Map*.

Elements of the Base Maps

There are a few elements that should be common to the *School Neighborhood Map* and the *School Site Map*. The maps may be simple, hand drawn creations, or they can be more elaborate computer-generated maps. Either way, the maps should be a fairly large size, so that there is enough room to make notes of the observations made. Use a photocopier to enlarge the map if needed. The maps should have a north arrow and scale, as well as an area for a legend of any markings that people make, so others can easily understand them. You should save a master copy of the map in order to make clean duplicates for future maps.

Quick Solutions for Developing Base Maps

There are a number of ways that these maps can be prepared. A commercially available road map pinned to a board can serve as a base map, with the other information added via markers or highlighters. Often these maps are the most user-friendly because people are familiar with them. However, for some areas these maps may not show enough detail so you may need to look elsewhere for a map that will work for your purposes. Be sure the map includes the entire school district. School neighborhood maps are available from your local library. You may also want to check the following sources:

- The municipal or county planning department or metropolitan planning organization;
- The School Master Plan (a map which may have been created when the school was built);
- Delaware DataMIL *(http://datamil.delaware.gov);*
- United States Geological Survey (quad maps are available at *http://mapping.usgs.gov/)*; and,
- Internet map websites such as *Google Earth (http://earth.google.com/)*.

Note: If you do not have computer access or need help finding maps on-line, ask a librarian at your local library for help.

The School Neighborhood Map

The *School Neighborhood Map* should either cover a one- to two-mile radius in every direction from the school or the entire feeder area for the school. Make sure the *School Neighborhood Map* includes road names; names of major destinations, such as the local park, shopping center and library; and other useful information. This map should include: the location and names of roads and side paths within a one- to two- mile radius of the school; the school's walk-zone or

non-transport limits, where busing is not provided; and the location of residential neighborhoods and how many students are walking from those locations (you may be able to obtain this information from the principal, however sometimes this information is kept confidential).

The School Site Map

The *School Site Map* should be a large map of the school property (ask the school to provide a copy of their school site map, if available). This map should depict parent and school bus drop-off and pick-up zones, sidewalks and paths, bike lanes and bikeways, immediately adjoining roads with their configurations (e.g., the number of lanes, any medians or other features, etc.), and intersections with traffic signals, marked crosswalks, and locations that are staffed by crossing guards.

▸ A SRTS committee prepares a School Neighborhood Map

Step 2: Researching Planned Improvements

Next, you need to gather more information to accompany the maps. Ask the volunteers who are responsible for mapping to research roadway improvements for the area. This will be important later, since road projects and intersection improvements can have a tremendous impact on pedestrian safety, and also represent an opportunity to incorporate your project proposals into roadway improvements that are already planned for the near future.

In order to complete the list, it will be necessary to contact DelDOT, the metropolitan planning organization (MPO) in New Castle and Kent County, and the local jurisdiction. The information you are seeking is what improvements are funding for construction within the next five years. Only **funded** improvements should go on the list. Proposed **unfunded** improvements may be scheduled as far out as twenty years.

Idea: Involving Students in the Process

Involve students in the SRTS process by asking them to create a map showing where they live in relationship to the school and the route they take to get to school. Ask the students to show locations that need safety improvements along their route to school and why. For those students that arrive by bus or car, have them concentrate on traffic safety issues at the school site.

The master list can be prepared in a table format like the example shown below. You may also want to include this information on the map using some kind of notation.

Road Name	Improvements Start Point	Improvements Finish Point	Sidewalks Planned	Bike Lanes Planned	Construction Start Date
Maple Ave	1st St	4th St	Yes	No	Oct 2007
Oak Blvd	32nd Ave	38th Ave	Yes	Yes	Mar 2008

▸ Example of a list of funded improvements

A Few Tips About Road Ownership in Delaware

Most roadways in Delaware are owned and maintained by the State. Information about future improvements to these roadways can be obtained from several different sources.

The Wilmington Area Planning Council (WILMAPCO), the metropolitan planning council (MPO) whose regional jurisdiction includes New Castle County, compiles a Transportation Improvement Program (TIP) each year listing projects for the following three-year period. Likewise, the Dover/Kent County Metropolitan Planning Council compiles the TIP for Kent County. Sussex County and DelDOT can provide information on proposed projects for Sussex County, which does not have a large enough population to establish an MPO.

The school board has responsibility for school grounds and school driveways. Typically, the school facilities department handles maintenance in these areas. Talk to the principal to determine who is responsible for these facilities at your school.

Step 3: Determining School Walking Route Conditions

Now that you have created the base maps and determined if any roadway improvements are planned near the school, it is time to get out and take a look at the existing conditions of the infrastructure at the school and the nearby areas that were identified as routes that students currently walk or live along. The main goal of this exercise is to make a list of specific locations on the school site and surrounding streets that need improvements.

Take time to watch what happens at the school during the morning drop-off and afternoon pick-up period. It is very important to watch the traffic patterns and observe student movements. Do this on several different days and make sure you talk to parents, teachers (especially those who serve outside duty), students, and crossing guards about the issues. Keep a list of these problems. In many cases, you may already know the major 'hot spots' such as the intersections that are difficult to cross. However, during the walk-through, you may also identify areas where sections of sidewalks are missing or are in poor condition, corners that need curb ramps, intersections that are too wide and dangerous, streets where traffic appears to travel faster than the posted speed limit, and other concerns. These are the types of problems that you need to write down on your list.

At some schools, you may find that a simple observation of a typical day's activities, coupled with input from parents, staff, and students, may be enough to get an informed idea of a school's existing conditions. At other schools, you may need to do a more detailed study. If so, there are two types of site audits provided in *Appendix E* of this sourcebook to assist in evaluating conditions—the *School Site Audit* and the *Neighborhood Site Audit.* There are directions in *Appendix E* on how to use the site audits, as well.

At the conclusion of the site audits, gather participants together to summarize the findings and create a list of problems and improvements that are needed. If a local transportation planner has not been involved yet, this would be a good time to speak with him or her about the problems you have identified.

Designating Specific "Safe Routes"

As you identify where students live and the routes that they walk or bike, you will begin to learn a lot about where to prioritize improvements. In dense city neighborhoods, kids may come from every street around the school. However, in suburban communities, there might be a major street that carries a lot of the student foot and bicycle traffic. You will find that there are several logical main routes to school.

Some communities have designated these main routes as "safe routes" and focused the improvement efforts along them. You may want to do this depending on what you find in your community. This might be particularly helpful in neighborhoods that deal with violence. In these neighborhoods, a specific route could be the focus in order to (1) create a safe space for children using a walking school bus, and (2) strengthen advocating for physical improvements that make it safe and more secure.

Getting Input from Parents, Teachers, Administrators, and Students

The other method of collecting data is to get information from people. The most effective SRTS programs take full advantage of the first-hand experience of students, parents, and teachers at the school. These are the people who witness areas of concern on a daily basis, and their opinions are important. It is also essential that input be gathered from the broader neighborhood community. They will want a say in anything that happens in their neighborhood. A number of techniques are recommended to gather input.

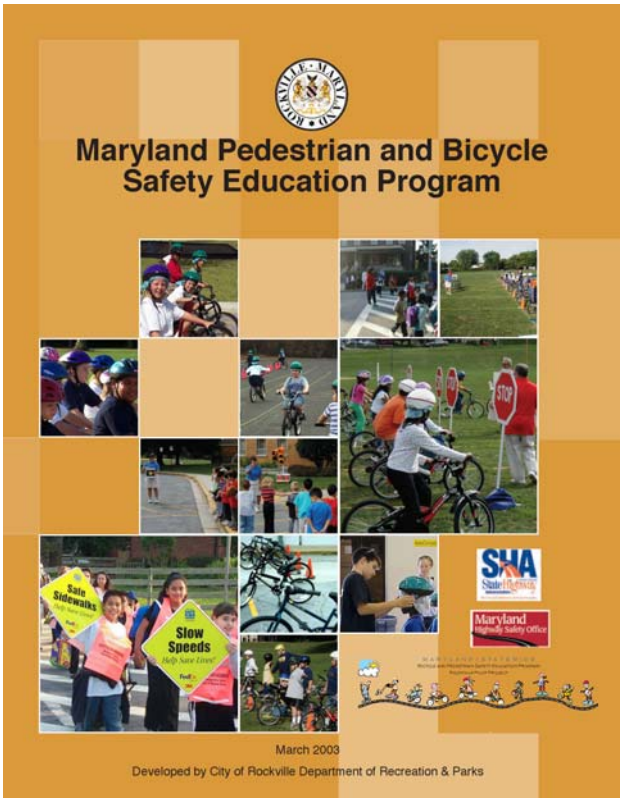
▸ The SRTS committee examines walking conditions at Downes Elementary in Newark

Step 1: Discussing the Project with Teachers and Staff

Find an appropriate time, such as a school staff meeting, to make a presentation to teachers and other staff about the project. Solicit their input about student attitudes, unsafe behaviors, and other concerns. Ask the teachers if they typically teach pedestrian and bicycle safety skills, and to what extent these lessons are taught (i.e., how many hours in a typical year). This will be a good time to find out if they are interested in teaching more lessons on bicycle and pedestrian safety. (See *Chapter 4* for information on education programs and safety curricula.)

Pedestrian and Bicycle Safety Curricula

Public schools in Delaware typically do not teach comprehensive pedestrian and bicycle safety skills as a standard component of the yearly curriculum. However, there are several education programs that can be used for this purpose. Bicycle and pedestrian safety is one aspect of the Risk Watch Program. The Maryland Bicycle and Pedestrian Safety Curriculum is an excellent source for a comprehensive curriculum with hands-on bike and pedestrian safety training. Also, talk to your local Community Traffic Safety Program representative to determine if they can provide assistance.



Step 2: Conduct Student and Parent Surveys

Surveys are one way to get a broad understanding of the safety concerns at your school. While conducting a survey can generate a lot of important information, be aware that it will take a considerable amount of time.

There are two surveys in *Appendix F* that can be used for your program. One of the surveys is for students and the other is for parents. These surveys are an important part of the SRTS process. The information gathered in these surveys will enable you to evaluate progress and the success of your program. They will also give your SRTS committee a better understanding of the current situation, so you can plan more effectively for future improvements and safety features.

Getting in contact with parents and compiling student data can be tedious. However, by following the instructions in this *Sourcebook*, these surveys should be relatively easy to accomplish, and should provide you with accurate information.

The *Student Travel Survey* is a before-and-after survey that documents changes in student travel behavior. This type of survey is essential to any SRTS program because it provides measurement of the program's success. DelDOT has developed a simple oral survey for this purpose. The survey may be conducted over the school intercom with teachers recording the answers. Students raise their hands to indicate whether they walked, biked, bused, carpooled, or were driven to school that day. The survey should be conducted for at least three days before the program begins and at least three days after the program has been implemented. It is a good idea to implement this survey on a regular basis thereafter, such as once near the beginning of the school year and again in the spring, near the end of the school. Every attempt should be made to conduct the surveys on days with similar weather conditions and on the same days of the week. For example, if the before surveys were taken on a fall Monday, Tuesday, and Wednesday with mild and sunny weather, after surveys should be taken on a spring Monday, Tuesday, and Wednesday with mild and sunny weather. The before and after surveys will provide a means of assessing whether SRTS activities have resulted in a measurable change in student travel behavior.

The *Parent Survey* will collect vital information on parent's perceptions and opinions of conditions near the school, as well as what types of improvements would be needed in order to feel comfortable enough

to let their child walk to school. The survey is specifically targeted at families who live within a two-mile radius of the school. The survey can be sent home with the students or distributed by direct mail. Parents should be given two weeks to return their completed surveys to the school. Some schools have found success in having surveys returned if the student receives a small incentive, such as an eraser, when the survey is returned. The following topics are covered in the *Parent Survey*:

- Gender, age, and grade of their child (or children) who attend the school;
- Distance between their residence and the school;
- Opinions on walking and biking conditions;
- Factors that influence the decision to walk or bike;
- Routes used to reach school; and,
- Education programs.

Note: consult the school principal for appropriate procedures before distributing the surveys.

The results of these surveys will help determine program goals and priorities. For example, you may find from the surveys that many parents would allow their children to walk to school if they walked with an adult. You will then be able to focus on programs such as a Walking School Bus where parents and other adults accompany children to school. Another finding may be that a large percentage of children already walk to school, but parents are worried about safety due to the lack of sidewalks. At such a school the goal would be to improve safety—sidewalks and other physical improvements would be a top priority. You will also be able to determine the most heavily traveled routes to school.

Step 3: Asking the Community What They Think

Hopefully, you have been able to involve representatives of your local community group or neighborhood organization on your SRTS committee. If not, it will be particularly important that you gather input from them during this phase of the project. They may already be working to address some of the problems you identify and they may have strong opinions about what should happen on their neighborhood streets. There are many ways you can get input from the neighborhood. Some ideas include: making a presentation at a local neighborhood association meeting; talking to local environmental groups; having volunteers knock on doors to get neighbors input about the project; or inviting neighborhood residents to participate in a workshop about the SRTS program.

Getting the Community Involved

One way of gaining greater involvement from the community is to have your committee hold a community workshop during this phase of your project. This workshop should be advertised and hosted by the school. An introduction at the workshop by the school's principal would be helpful. Activities at the workshop can include:

- A presentation of the goals and benefits of the SRTS program;
- Group activities that allow workshop participants to work on a copy of the base map, marking locations they feel are in need of improvements and why, and as well as providing ideas for solutions;
- Involving the community members in small field investigations that are part of the *School Site Audit* and *Neighborhood Site Audit;* or,
- Ask people who attend the meeting to talk to their friends and neighbors to help build support for the program.

The SRTS Committee at Downes Elementary School

The Safe Routes to School Plan 4

Analyzing the Information and Developing a SRTS Plan

NOW THAT YOU HAVE thoroughly evaluated site conditions, and have asked parents, teachers, students, and the community for their input—it is time to pull it all together into a plan of action to make your school a safe, walkable and bikeable destination! This section of the *Sourcebook* explains how to study the information you have gathered to develop goals and actions for your SRTS plan, and also provides some successful techniques other schools have used to promote safe walking and biking.

Looking at the Information

It is important that once you have gathered the information from site audits and surveys, to take a step back and analyze the data that you have collected. This information needs to be shared with everyone who has been involved with the process so far. There are several reasons why this step of the SRTS process is important.

First, people will want to know what you have discovered. If a parent filled out a survey, they will be curious to know if others feel the same way they do.

This information can also be informative. Perhaps people in the community had not been aware of the level of concern for children's safety due to speeding near the school. People are interested when it is in their own backyard. So, letting the community know what you have learned may be a powerful public outreach tool.

Furthermore, you must help people to recognize that there is a problem before they will be willing to accept a solution. You may be doing yourself a favor by gaining community buy-in now.

It is also important because by taking a step back and viewing all of the information collectively, you may have new insights. Most importantly, to get a vision for where you are going, you need to know where you are and what you have. It is important to clearly identify what the real issues are, as well as, what you have that is working. For example, you may want to do as other schools and have a safety expert train the physical education teacher on how to teach pedestrian and bicycle safety skills in class. While this is an excellent way to implement the education component of the SRTS program, it will be a waste of resources if he or she is already effectively teaching these skills. The purpose of this chapter is to help you identify the actions you will take in implementing your SRTS program. Therefore, making sure that the right questions have been asked, and that everyone is familiar with what you are working with and the problems that have been identified, will ensure that your efforts will be expended towards needed improvements and solutions.

You may choose to distribute this information in whatever way works for your committee. You may use different formats for the different people you are informing. You can hold an open meeting to share the information with parents, teachers, and community members. Or you may choose to go over the information in detail with the SRTS committee, and use a website or newsletter to briefly inform others.

Developing a List of New Programs and Physical Improvements

You will find that your school's needs fall into five categories, often called the "Five E's":

1. Evaluation
2. Education
3. Encouragement
4. Enforcement
5. Engineering/Physical Improvements

Working with your SRTS committee, prepare a list of planned periodic evaluation activities, needed education, encouragement, and enforcement programs, and a separate list of needed physical improvements. To generate these lists, you will need to review the survey evaluation results and the maps that you have prepared. They will be the basis of your school's needs list.

1. Evaluation

The first "E" is evaluation and is critical for every SRTS program. The *Sourcebook* has already touched on aspects of evaluation in the section on taking baseline data in *Chapter 2*. Collecting data at the beginning of a project, prior to any interventions, will be helpful in identifying and addressing areas of concern, and will provide you with information to measure against once your SRTS program is in place. After your SRTS projects have been implemented, you will want to collect information periodically to monitor its progress. If your program is successful, you deserve to have the satisfaction of knowing this based on facts! Or, if modifications need to be made, this information will help you to pinpoint where the problem lies, so that you can jump in there and fix it, instead of letting all of your hard work go to waste.

Just like the rest of the SRTS program, the evaluation you do should be unique to your program. The reasons that drove you to starting your SRTS program will direct the information you will want to monitor for change. For example, if you started SRTS because few students were walking, you will certainly want to know if those numbers are increasing. But you will also want to know why they are not walking. It may be based on how their parents feel about them walking to school. Therefore, you will also need to measure parents' perceptions and try to address the reasons they do not allow their children to walk or bicycle, and monitor the effects that those activities make. As time progresses you will want to continue observing perceptions to determine if you have been successful at addressing their concerns.

Do not let yourself get bogged down—doing evaluation should not have to involve special instruments or a degree! A great place to start is with the surveys in *Appendix F*. Be aware that if you intend on applying for SRTS funds, the DelDOT SRTS Coordinator may need you to collect certain data to submit to the Federal Highway Administration (FHWA). So, it is a good idea to involve the SRTS Coordinator in the evaluation process. Below is a table of key indicators of success for SRTS efforts—these indicators can help you identify the areas you should measure.

2. Education Programs

A well-rounded SRTS program involves more than just "concrete and steel" solutions. In fact, the federal SRTS program requires that at least ten to thirty percent of a state's SRTS funding be spent on non-infrastructure projects such as education, encouragement, and enforcement. While physical improvements often seem to be the most urgent needs at a school, these improvements generally take time to put into place due to the coordination, design, permitting, and funding involved. In the meantime, a great place to start your program is with a series of education programs. These programs are easy to get off the ground and can help provide the momentum on which physical improvements can be built. Educational programs are usually at the heart of a successful SRTS program.

Classroom activities are a great way to raise awareness, encourage kids to walk to school and teach safe walking and bicycling behaviors. Many organizations such as AAA and local police and fire departments have curricula designed for use in elementary and

Outcome	Measure Before and After	Desired Change
Behavior of children	Numbers of children walking to and from school	↑ More
	Numbers of children bicycling to and from school	↑ More
	Skills for walking and bicycling safety	↑ Better
Behavior of drivers	Numbers of vehicles arriving and departing school at drop-off and pick-up times	↓ Fewer
	Speed of vehicles in and around school area	↓ Slower
	Aggressive driving behavior (e.g., not yielding to pedestrians)	↓ Less
	Number of driving trips by parents and length of morning and evening commute	↓ Less
Community facilities	Quality of walking environment: number	↑ Better
	Safely designed intersections (lights, crosswalks, etc.)	↑ More
Crashes and injuries	Number of traffic crashes involving children walking or bicycling to and from school	↓ Lower
	Severity of injuries of children from traffic on their way to and from school	↓ Less severe
	Number of conflicts between vehicles and pedestrians/bicyclists which would be likely to lead to crashes (i.e., "near misses")	↓ Lower
Community buy-in	Number of different types of people involved in the SRTS effort	↑ More
	Level of commitment and energy displayed by the SRTS collaborators	↑ Higher
	Parent enthusiasm about SRTS and allowing their children to walk or bicycle	↑ Higher
Environmental quality	Level of air and noise pollution in school area	↓ Lower
	Land devoted to parking and drop-off/pick-up areas	↓ Less

▸ Key indicators of success for Safe Routes to School efforts (from National Highway Traffic Safety Administration's *Safe Routes to School: Practice and Promise)*

middle school classrooms. In addition to safety lessons, classroom involvement can also include activities such as mapping routes to school as part of a geography lesson and writing letters to local transportation and elected officials about safety concerns in the school neighborhood.

▸ A school safety patrol

3. Encouragement Programs

In conjunction with education programs, encouragement programs are an excellent way to get students to apply what they have learned from the education program to their daily school habits and participate in SRTS activities. Parental involvement can maximize the effectiveness of these programs by allowing parents to take a more inclusive role in their child's school safety activities. You can use several types of activities to encourage walking and biking to school.

International Walk to School Day is typically held in early October each year, and is an excellent way to raise awareness of pedestrian conditions surrounding the school. If you are interested in holding this event at your school, visit the official website to learn about organizing the event *(http://www.walktoschool.org)*. Prizes can be given for longest distance walked or biked or for the most kids walking or cycling from one classroom, for example.

▸ Forming partnerships with multiple organizations helps to make events successful!

Different Approaches to International Walk to School Day

There is no "one size fits all" solution for Walk to School Day events. The events can be as diverse as the schools that plan them. Here are some examples of Walk to School Day events at schools in Delaware:

Walk to School—Walkers at John R. Downes Elementary School in Newark met at a nearby park and walked to school together. In addition to parents, teachers, and the principal, the mayor and Miss Delaware joined the walk. Police were on hand to direct traffic and to otherwise ensure the safety of the event.

Walk at School—At P.S. duPont Elementary School in Wilmington, students and teachers participated in a walk around the school track. Balloons marked the walking route and the school mascot cheered students on. The majority of students at P.S. duPont live too far away to walk to school and this event allowed every student to participate. This event required less planning than a walk to school event, but allowed the school to build momentum for other SRTS education and encouragement activities.

School Safety Patrols provide an opportunity for students to participate in promoting traffic safety in the area around their school. Patrols are often sponsored by AAA and undergo training from local police.

Frequent Walker and Biker Cards provide students with an incentive to walk or bicycle to school. When a student walks or bicycles to school, he or she gets a hole punched into their card. Then once the card is full, the student can trade it in for a prize.

▸ A frequent walker card hangs from a child's bag

The Walking or Cycling School Bus is an adult supervised walk or cycle from a neighborhood to and from school. It allows children to walk or cycle in groups, which increases their visibility and safety. Led by an adult "bus driver," this is a safe (and fun) way for kids to get to school.

A Monthly Walk to School Contest is another way of providing incentives to children to walk to school. Rewards could be given out as part of the contest.

Walk or Bike Across America is an activity that students in the Marin County, California SRTS program participated in. Students keep track of the miles they spend walking and bicycling to school by calculating how far they live from school and multiplying that by the number of times they walk or bike. Each week the students add up the distance the whole class has traveled and plot it on a map. Then they "travel" to a destination chosen by the class within those miles. Students become aware that they can travel great distances on foot or bike. Each new destination can be researched by the class to find out more about other parts of the country. At specified time, the class that has traveled the farthest gets a special reward. (Web resources for these and other education and encouragement activities are listed in *Appendix B.)*

4. Enforcement Programs

As you looked at existing conditions and gathered input from the school and local community, you may have found that you need increased law enforcement to reduce speeding, illegal turns, and increase patrols for crime suppression. Hopefully you have kept your local police or sheriff's office involved with or informed of your SRTS program. Talk to them about the possibility of doing some "spot" enforcement or a "pedestrian crosswalk sting" operation to help enforce some of traffic laws that help protect pedestrians. Here are some ideas to use to improve enforcement:

Corner Captains are parents or citizens who agree to be stationed in a certain location along a school route each day. Corner captains provide an adult presence in the neighborhood and monitor the safety of children as they walk to and from school.

Spot Enforcement or occasional enforcement can be helpful in reinforcing traffic safety laws and new rules such as a new traffic pattern around the school. Talk to local police about providing enforcement occasionally.

Speed Trailers help to reduce speeds. Speed trailers can be parked near a school to show passing motorists their current speed in comparison to the posted speed limit. This encourages motorists to drive the speed limit; however, it usually only has a temporary effect. To be effective, speed trailers must be used along with active traffic enforcement. For example, the speed trailer should be displayed for three days, on the fourth day, police check speeds using RADAR. Therefore, schools must first coordinate with local law enforcement if they want to use speed trailers. Due to DelDOT's limited resources and high demand, schools may be able to contract through DelDOT's Division of Planning, to receive SRTS grant funds to have a speed trailer set up by an outside agency.

What to Do if You Think There Is A Speeding Problem

Talk to your neighbors and community leaders and find out if they agree that speeding is a problem. If others support your concerns, you are more likely to be heard when you ask for help solving the problem.

Ask local police to monitor speeds in the area. Local police can ticket speeders. DelDOT can also work with you to locate a speed display trailer in your neighborhood to indicate to motorists when they are speeding.

Let people in your community know that speeding is not acceptable. Include messages in community and school newsletters, and on signs throughout the neighborhood (in some cases, school and church marquees have been used to display messages about speeding).

Streets can also be redesigned to slow motorists. If your community feels that a larger capital project is needed, DelDOT has an established process that a community can work through to determine if physical measures are needed to reduce vehicle speeds or the number of vehicle traveling on that particular street. However, this type of improvement requires an extensive public participation process and studies to determine if the measures are needed and desired by the community.

Photo: www.pedbikeimages.org / Dan Burden

Photo: James T. O'Brien, DelDOT Photographer

Paperwork Patrol—Police often spend time in their vehicles completing paperwork. Several communities have started programs where police will park on the street in front of local schools to complete their paperwork. Even though they may not actively ticket, their presence often helps reduce speeding. Request that your school be one of these locations.

Cops on Bikes programs render high visibility enforcement and provide added safety and security for children walking or bicycling to and from school.

▸ The presence of law enforcement near schools encourages travel at reduced speeds.

Pedestrian Crosswalk Sting

In a "pedestrian sting," local law enforcement focuses on ticketing motorists who fail to follow laws that help protect pedestrians, such as stopping at stop signs, driving the speed limit, and yielding to pedestrian in crosswalks. Section 4142 of Title 21 of the Delaware Code states, "When traffic-control signals are not in place or not in operation or when the operator of a vehicle is making a turn at an intersection, the driver of a vehicle shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk when the pedestrian is upon the half of the roadway upon which the vehicle is traveling, or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger" (21 Del. C. § 4142).

Enforcement Strategies in Rural Communities

Rural locations present challenges that can hinder SRTS efforts that would otherwise work in urban areas. East Millsboro Elementary School, located on Iron Branch Road outside of Millsboro in Sussex County, provides an example of a rural school with a unique issue. East Millsboro has a problem with motorists speeding along Iron Branch Road. The school also needed general speed control improvements around campus grounds. However, East Millsboro's location places it beyond the reach of key local public services that other schools take for granted, such as a local police department, and a local department of public works.

East Millsboro's SRTS Committee addressed this challenge by developing a plan to address speed control by having staff (wearing safety vests) control traffic flow on the school campus during student drop-off and pick-up periods. Due to the school's location outside of Millsboro, the school can not receive support from the Millsboro Police Department. To make matters worse, Sussex County does not have a police department. In order to ensure traffic follows the posted speed limit, the committee will petition their locally-elected officials for assistance in organizing a police presence at the school during drop-off and pick-up times. They may also request that DelDOT evaluate the posted speeds to determine if speed limits should be lowered.

5. Engineering/Physical Improvements

You may have ideas about what type of physical improvement would solve a particular problem (e.g., a new sidewalk), but if you do not know how to solve a problem, do not worry—either way, you will want to get a local engineer or planner involved in helping you find the right solution to the problems in your area. In addition to local planning and engineering departments, the T^2 Center at the University of Delaware's Delaware Center for Transportation offers local technical assistance.

Among other things, physical improvements include installing new sidewalks, adding bike lanes to streets that surround the school, providing curb ramps, improving the visibility of pedestrian crossings at intersections, and changing drop-off patterns on the school grounds. Whatever you decide to pursue, make sure you coordinate with the agencies that have

jurisdiction over the facility (i.e., the road, property, or building) that you are interested in improving and enlist their support.

Changes to the Roadway System Around the School

Making improvements to streets surrounding the school may help to make your SRTS program safe and effective! Some inexpensive and quick improvements include updating or installing signage; improving markings at crosswalks and in school zones; and installation of new school zone flashing signals. Sometimes, engineering activities involve adjusting school and local jurisdiction operating policies. This may include addressing matters of on-street parking, and traffic signal timing. Larger projects that can improve the pedestrian environment include building or improving sidewalks, creating safer street crossings, and providing bike lanes and new pathways in the neighborhood.

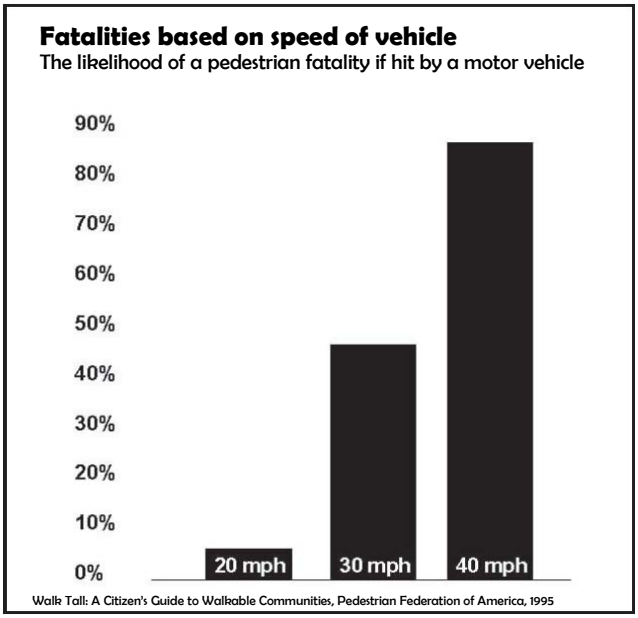
Do not overlook obstructions such as brush, trash-cans, snow and ice, and wires that force pedestrians to step out into the street instead of using the existing sidewalk. These problems are particularly challenging to students with mobility impairments. Addressing matters of snow-removal and clearance of overgrown vegetation can take considerably less time than larger infrastructure projects, which makes them rewarding because you can quickly see the results of your efforts. However, they are often reoccurring problems that your SRTS committee must be persistent in eliminating.

Depending on the nature of the problem, you can employ different measures to resolve it. You may need to simply inform the community to be aware of these types of problems in order to promote the safety of the children who travel along the route. In other situations you may wish to contact the local government, they are either responsible for this maintenance or will know who to contact to address the problem.

The end of the school day at W.B. Simpson Elementary in Camden
Photo: James O. Pernol, DelDOT Photographer

Improving Safety Conditions by Reducing Speeds

Other types of physical improvements include traffic calming projects on streets where there is a need to reduce cut-through traffic or to slow down automobiles. **Traffic calming** describes physical improvements that enhance pedestrian comfort and safety by forcing drivers to slow down and be more aware of pedestrians and by reducing the volume of traffic. Slowing speeds makes a big difference in safety: while pedestrians hit by a vehicle at 40 miles-per-hour have only a 15 percent survival rate, those hit by a vehicle moving at 20 miles-per-hour have a 95 percent survival rate.



DelDOT adopted the *Traffic Calming Design Manual* in 2000. The Manual provides a comprehensive approach to implement traffic calming measures. It also outlines the procedures for citizens to submit requests for community traffic calming projects.

Traffic calming involves changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and cut-through volumes to create more of a balance between cars, pedestrians, and bicyclists. Traffic calming helps pedestrians and bicyclists feel less threatened and intimidated by traffic, and also helps drivers become more aware of the presence of pedestrians.

Examples include: roundabouts, raised intersections, chicanes (which are extensions that alternate from one side of the street to the other, forming S-shaped curbs), narrowing streets that are unnecessarily wide, and adding trees to create the illusion of narrower streets which may cause drivers to slow down.

Appendix C provides more information on traffic calming measures, a summary of physical improvements, and rough cost estimates that can be used to help identify the appropriate kinds of solutions.

Changes to Traffic Circulation on School Grounds

Often the drop-off and pick-up patterns at the school are the root of a number of different conflicts between children who walk to school, parents who drop-off their children, and buses that are discharging students. When all of these activities converge at the same driveway, dangerous conflicts could result. Take some time to watch the interaction of arriving and departing students, buses, and automobiles. There maybe obvious conflicts that could be addressed by segregating some of these activities. Look for solutions that make it safe for kids who walk or bicycle to and from school!

Setting Priorities for Goals

At this point in the process, there is likely to be some consensus on your committee about which projects are needed most. The next step is to prioritize your needs lists; that is, decide which projects and activities are needed the most and should be pursued first.

Keep in mind that some projects will take longer to put in place than others; it is therefore important to create three lists. One list should be of adjustments and enhancements. Another list should be of complex changes and additions. You should also create a separate list of the planned evaluation activities and how frequently you will collect the information.

Adjustments/Enhancements—Your list of adjustments and enhancements projects and activities is likely to include such things as increasing community awareness about the importance of walking and bicycling, and getting some of the education and encouragement activities started.

There may also be opportunities to make "quick fix" type improvements that are not as costly as major physical improvements, but that would yield great benefit for a relatively low-cost and will not take much time to plan and start. These may include reducing pedestrian-vehicle conflicts at the school entrance by changing drop-off patterns or adding painted crosswalks. These "quick fix" opportunities should be given a high priority, allowing the community to see immediate results. This will help build support for larger, more complex projects.

Complex Changes/Additions—The list of complex changes and additions is likely to include some high-priority physical improvements that will require time to gather political support and funding, such as redesigning an intersection, constructing new sidewalks, or installing neighborhood traffic calming projects. These projects take longer to put in place since they require planning and design plus coordination and cooperation among multiple agencies and different levels of government. Due to limited funding these types of projects (capital projects) are usually placed on a list of similar projects, that communities have asked for. It may be several years before your project will be constructed. Other complex changes may include pursuing policy changes, such as seeking changes to legislation or local jurisdictional procedures. Although this list consists of actions that are not going to occur immediately, it is never too early to start building community support and looking for funding. You may want to consider contacting your local council member or state legislator to make sure that he or she is informed of the need and support the project.

Example Case Study: Changing Drop-Off Patterns

Parents at P.S. duPont Elementary School in Wilmington were dropping off children directly in front of the school. This drop-off pattern conflicted with the bus drop-off in front of the school and with walkers on their way to the school door. The result was congestion and confusion; children often darted between parked and moving cars and buses.

To solve this problem the SRTS committee at the school worked to create a "quick fix" solution. A parking lot behind the school became the new parent drop-off and pick-up area, and the bus loop in the front of the school was used exclusively for buses. Bus riders were dismissed from the front of the school, but everyone else — including walkers and bicyclers — were dismissed from the rear. The changes were announced in a mailing before the start of the new school year and at back-to-school night. On the first day of school, the principal stood outside greeting students and handing out flyers to parents who were not following the new procedures. By the second week, traffic congestion and confusion in front of the school were reduced. This solution was simple but effective. No signs, paint, or engineering were required, yet the safety of all students was increased.

Enacting the Plan

5

DURING THE IMPLEMENTATION PHASE, you will put into full effect the programs and activities that you have identified in your SRTS Plan. To do this you will work closely with the other members of your SRTS committee.

Implementing your SRTS program will likely occur on several levels with the SRTS committee taking the lead in organizing a variety of partners to get the work done. You may ultimately work with the State, the local county and municipal governments, local community groups or neighborhood associations, the local business community, a local law enforcement agency, or with a variety of other organizations throughout Delaware that support safety-based programs. There are many potential partners for SRTS projects—which is a particular strength of the SRTS program.

Approaching Potential Partners

It is a good idea at this stage in the process to make some phone calls to those people who you have been keeping informed of the SRTS program, but may not have been actively involved. Now that you have a list of programs and improvements, you will want to make sure that everyone knows what they are and what the planned next steps are.

Many of the educational and encouragement activities will require little or no funding, but lots of volunteer time from parents, teachers, and community members. Talk to local businesses about the program and solicit their help in providing incentives such as small prizes and bumper stickers. Be sure to contact organizations such as bike shops, AAA, and fire, police, and health departments. They often have incentives they can provide to you at little or no cost. Talk with your local law enforcement about steps that can be taken to provide added enforcement for streets with high traffic volumes or speeding problems.

Pursuing a SRTS Grant

DelDOT has established SRTS Program Guidelines, which can be viewed on the SRTS page on the DelDOT website. The Guidelines provide information regarding eligible recipients of funding, the availability of funds, and the project selection process. If you are interested in applying for SRTS Program funding for the projects and activities that you identified in your SRTS Plan consult the Guidelines.

Students walking home from Linden Hill Elementary School in Wilmington

Incorporating Your Project Into the Capital Transportation Program

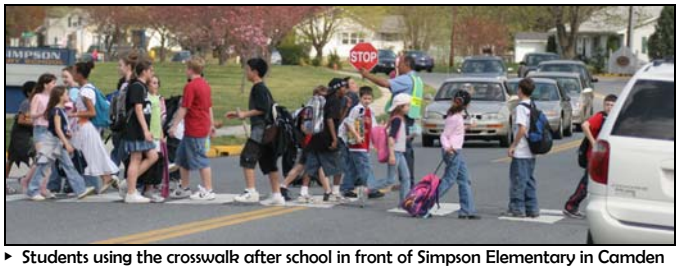
During the early phases of the program, you will have identified whether any road improvements are scheduled near your school in the immediate future. As you begin the implementation process, you will want to go back to those sources to request assistance in getting your projects built—either independently or in conjunction with other road improvement projects that have already been planned.

Within the state of Delaware, the vast majority of roadways are owned and operated by DelDOT. However, the metropolitan planning organizations (MPOs) are responsible for coordinating transportation planning and funding for metropolitan areas. MPOs develop long-range transportation plans, including a prioritized Transportation Improvement Plan (TIP), plus programs, projects, and monitoring efforts that involve federal funding within their jurisdiction. DelDOT coordinates closely with the MPOs to assure that their long range plans complement DelDOT's long-range plans, and that MPO Transportation Improvement Plans align with the first three years of Delaware's Capital Transportation Program (CTP).

If you live in Kent County or New Castle County, it is best to submit your project to the Dover/Kent County MPO and Wilmington Area Planning Council (WILMAPCO), respectively, to be considered for inclusion in the Transportation Improvement Program (TIP) and prioritized with other regional needs. The TIP includes all projects that involve federal funding for the upcoming three-year period. Contact information for the MPOs is listed in *Appendix A*.

Residents of Sussex County do not belong to an MPO. Schools should submit their requests to Sussex County government instead. Sussex County then provides DelDOT with a prioritized list of projects.

In some situations, Delaware state legislators may sponsor projects within their districts and can provide limited funding for projects. They can also act as a liaison with DelDOT to identify the appropriate funding source for your project. These funds may include capital funds, Transportation Enhancements funds, bicycle and pedestrian funds, and Highway Safety Improvements funds.



▸ Students using the crosswalk after school in front of Simpson Elementary in Camden

Following Up on Your Goals

Implementation of some goals will be complex and will take many years to complete, therefore, it is important to maintain momentum over a period of years. The best way to do this is to work on building a broad base of community support (the more people who support the project, the more energy your project will have) and to focus on small successes along the way. Work closely with the neighborhood and community groups and regularly follow-up with the local engineers and planners involved in the physical improvement projects. It is also important to have a teacher at the school who champions the program—he or she will be able to sustain the program over a period of several years.

Appendices

PROVIDED HERE ARE USEFUL RESOURCES…including contact information for different organizations in Delaware, websites from SRTS programs and related organizations across the nation that offer great ideas and stories, and sample surveys you can use for your SRTS program!

Appendices

Appendix A: Contact Information

A

Contacts are listed topically.

Education

Delaware Department of Education
John G. Townsend Building
401 Federal Street, Suite 2
Dover, Delaware 19901
(302) 735-4000
dedoe@doe.k12.de.us
http://www.doe.k12.de.us

Delaware Parent Teacher Association
925 Bear-Corbitt Road, Room 101
Bear, Delaware 19701-1323
(302) 838-8770
de_office@pta.org
http://www.delawarepta.org

Health

American Heart Association
Janice B. Parker, Strategic Health Alliance Director
Pennsylvania Delaware Affiliate
Casho Mill Professional Center, Suite 1
1501 Casho Mill Road
Newark, Delaware 19711
(302) 454-0613
janice.parker@heart.org
http://www.americanheart.org

Delaware Division of Public Health
Fred Breukelman, Director of Public Health Education
Department of Health and Social Services
Blue Hen Corporate Center
Suite 201B, Room 15
655 Bay Road
Dover, Delaware 19901
(302) 741-2900
fred.breukelman@state.de.us
http://www.dhss.delaware.gov/dhss/dph/index.html

Safety

American Automobile Association (AAA) Safety Programs
Chris Massaferi
Mid-Atlantic Foundation for Safety and Education
875 AAA Boulevard
Newark, Delaware 19713
(302) 292-6625
cmassaferi@aaamidatlantic.com

Community Traffic Safety Coordinators
Cindy Genau (New Castle County)
University of Delaware Cooperative Extension
Newark, Delaware 19716
(302) 831-4973
cgenau@udel.edu

Mike Love (Kent and Sussex Counties)
University of Delaware Cooperative Extension
16684 County Seat Highway
Georgetown, Delaware 19947
(302) 856-7303
mlove@udel.edu

Delaware Office of Highway Safety
Post Office Box 1321
Dover, Delaware 19903
(302) 744-2740
http://www.state.de.us/highways/default.shtml

Safety *(continued)*

Delaware Risk Watch
Kim Robinson, Assistant EMSC Coordinator
655 South Bay Road, Suite 4H
Blue Hen Corporate Center
Dover, Delaware 19901
(302) 739-4773
kim.robinson@state.de.us

Delaware Safe Kids Coalition
Kathy Myers, State Coordinator
655 South Bay Road, Suite 4H
Dover, Delaware 19901
(302) 744-5400
kathy.myers@state.de.us
http://www.usa.safekids.org

Transportation

Delaware Bicycle Council
Doug Mills, Chairperson
Post Office Box 778
Dover, Delaware 19903
(302) 760-BIKE (760-2453)
wvcykel@comcast.net
http://www.deldot.gov/static/bike/index.html

Delaware Department of Transportation
Safe Routes to School Coordinator
Statewide and Regional Planning
Post Office Box 778
Dover, Delaware 19903
(302) 760-2121
http://www.deldot.gov/static/Community_programs_services/srts

Delaware T^2 Center, Delaware Center for Transportation
Larry Klepner, T^2 Center Program Coordinator
Local Technical Assistance Program
360 DuPont Hall, University of Delaware
Newark, Delaware 19716
(302) 831-6241
lklepner@ce.udel.edu
http://www.ce.udel.edu/dct

Metropolitan Planning Organizations
MPOs are responsible for planning and coordinating the investment of federal transportation dollars. The Transportation Improvement Program (TIP) includes the transportation projects to be funded for the next three years. Delaware has two MPOs: the Dover/Kent County MPO and the Wilmington Area Planning Council (WILMAPCO). The Dover/Kent County MPO covers all of Kent County and the entire incorporated areas of Milford and Smyrna. WILMAPCO represents New Castle County and Cecil County, Maryland. Urban areas of Sussex County have less than the required 50,000 permanent population needed to establish an MPO.

Dover/Kent County MPO
Post Office Box 383
Dover, Delaware 19903
(302) 760-2713
http://www.doverkentmpo.org

Wilmington Area Planning Council (WILMAPCO)
850 Library Avenue, Suite 100
Newark, Delaware 19711
(302) 737-6205
http://www.wilmapco.org (includes an on-line TIP submission form)

Appendix B: Related Resources

B

Appendix B provides a list of related resources on children, physical fitness, and Safe Routes to School. These websites may help provide creative ideas for your SRTS program.
(Resources are listed alphabetically.)

American Heart Association
The American Heart Association is a national voluntary health agency whose goal is to help reduce disability and death from cardiovascular diseases and stroke. The American Heart Association and Nickelodeon have teamed up and created the Let's Just Play Go Healthy Campaign to spread the word about good health and motivate kids to join the healthier generation.

http://www.americanheart.org
⇢ SRTS

Bikes Belong Coalition
The Bikes Belong Coalition works to make bicycling safe, convenient, and fun. They host the Safe Routes to School National Partnership website.

http://bikesbelong.org

The **Safe Routes to School National Partnership** is a network of groups and professionals organized to speak with a united voice regarding the need and means for developing and sustaining successful Safe Routes to School programs.

Safe Routes to School National Partnership
Deb Hubsmith
Post Office Box 663
Fairfax, California 94978
(415) 454-7430

http://www.bikesbelong.org/page.cfm?PageID=250
⇢ education / encouragement / evaluation

Centers for Disease Control and Prevention
The Centers for Disease Control and Prevention (CDC) seeks to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. CDC recognized for conducting research and investigations and for its action oriented approach.

http://www.cdc.gov

The **KidsWalk-to-School** program was developed by the CDC's Nutrition and Physical Activity Program to support the national goal of better health through physical activity. KidsWalk-to-School is a community-based program that aims to increase opportunities for daily physical activity by encouraging children to walk to and from school in groups accompanied by adults. KidsWalk-to-School activities are similar to SRTS.

http://www.cdc.gov/nccdphp/dnpa/kidswalk

Healthy Youth, a program by the CDC's Division of Adolescent and School Health (DASH) seeks to prevent the most serious health risk behaviors among children, adolescents, and young adults. The website provides information for teachers, parents, students, and administration about making healthy changes at schools.

http://www.cdc.gov/HealthyYouth

Demonstrating Your Program's Worth: a primer on evaluation for program's to prevent unintentional injury is a document developed by the CDC that will help you determine how to plan for evaluating your program.

http://www.cdc.gov/ncipc/pub-res/demonstr.htm
⇢ SRTS

Federal Highway Administration
The Federal Highway Administration (FHWA) administers the federal SRTS program. The FHWA website has information on the federal program and offers guidance on how the program is to be administered.

http://safety.fhwa.dot.gov/saferoutes
⇢ SRTS / education / encouragement

Go for Green
Go for Green is a Canadian non-profit, charitable organization encouraging Canadians to pursue healthy, outdoor physical activities while being good environmental citizens. The organization promotes the Active & Safe Routes to School program.

http://goforgreen.ca

Kids Health
The Nemours Foundation's Center for Children's Health Media site provides doctor-approved health information about children from birth through adolescence.

http://kidshealth.org
⇢ SRTS / education / encouragement / evaluation

Marin County Safe Routes to School Program
The Marin County, California SRTS program was one of the first in the nation and has achieved great success. The program's website offers ideas for promotional and educational activities. The Marin County Bicycle Coalition website also provides some great information on what made the Marin County SRTS Program so successful!

http://www.saferoutestoschools.org
http://www.marinbike.org/campaigns/SafeRoutes

Key

When you see the following next to the title of a resource, the website will provide information on that topic:

SRTS—website provides information on SRTS programs.

education—website provides information on education activities that can be used in a SRTS program.

encouragement—website provides information on encouragement activities and events.

evaluation—website provides information on evaluation activities that can be used in administering a SRTS program.

Maryland Bicycle and Pedestrian Safety Curriculum ⇢ education
As described on page 11, the Maryland Bicycle and Pedestrian Safety Curriculum is an excellent educational resource. It has found its new home on the web at:

http://www.walktoschool.org/resources/safety-education.cfm

National Center for Bicycling and Walking ⇢ SRTS / education / encouragement / evaluation
The mission of the National Center for Bicycling and Walking (NCBW) is to create bicycle-friendly and walkable communities. They run the Active Living Resource Center, which is funded by the Robert Wood Johnson Foundation to provide information and resources to communities and professionals working to create more activity-friendly communities.

http://www.bikewalk.org

National Highway Traffic Safety Administration ⇢ SRTS / education / encouragement / evaluation
The National Highway Traffic Safety Administration's (NHTSA) mission is to save lives, prevent injuries, and reduce economic costs due to road traffic crashes, through education, research, safety standards, and enforcement activities.

http://www.nhtsa.dot.gov

NHTSA has been a leader in the SRTS movement in the US. They have several publications that may be helpful to your program.

The NHTSA Safe Routes to School Toolkit

http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2002/

Practice and Promise

http://www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2004/index.html

The Art of Appropriate Evaluation

http://www.nhtsa.dot.gov/people/injury/research/ArtofAppEvWeb/

Pedestrian Bicycle Information Center ⇢ SRTS / education / encouragement / evaluation
The Pedestrian Bicycle Information Center (PBIC) is a clearinghouse for information about health and safety, engineering, advocacy, education, enforcement, and access and mobility. The PBIC also hosts other websites that relate to SRTS.

http://www.pedbikeinfo.org

PBIC also hosts the National SRTS Clearinghouse. They offer an extensive amount of resources for all aspects of the SRTS program on their website. The PBIC also offers the national course in SRTS, which is designed to help communities create sound programs that are based on community conditions, best practices, and responsible use of resources.

http://www.saferoutesinfo.org

PBIC also hosts the USA site for international walk to school day and the international walk to school day site. International Walk to School Day is held in early-October each year. If your school participates in the event, you will want to visit the site for information.

http://www.walktoschool.org
http://www.iwalktoschool.org

Rivers, Trails, and Conservation Assistance Program
The Rivers, Trails, and Conservation Assistance Program by the National Park Service has a Community Tool Box specific to the that Program that is similar to this *Sourcebook*. It offers a great resource of techniques that can help you get organized to turn your vision into reality. You may find success in applying the tools and suggestions from the Community Tool Box to your SRTS program.

http://www.nps.gov/phso/rtcatoolbox

Safe Kids Coalition ⇢ education / encouragement
The mission of the Safe Kids Coalition is to prevent accidental childhood injury. It is founded by the Children's National Medical Center.

http://www.usa.safekids.org

SafeKids Walk This Way is a program to bring national attention to pedestrian safety issues. They host walk to school events among other things.

http://www.usa.safekids.org/tier2_rl.cfm?folder_id=3124

Sustrans ⇢ SRTS
Sustrants—the sustainable transport charity—works on practical projects to encourage people to walk, cycle, and use public transport in order to reduce motor traffic and its adverse effects in the United Kingdom. Sustrans works on Safe Routes to School, Safe Routes to Stations, home zones, and other responses to transport and environmental challenges.

http://www.saferoutestoschools.org/uk/index.php

Transportation Alternatives ⇢ SRTS
Transportation Alternatives are advocates for bicyclists, pedestrians, and sensible transportation in New York City. They have helped win numerous improvements for cyclists and pedestrians and have been the leading voice for reducing car use in NYC. Their SRTS program endeavors to reduce the number of children and other pedestrians and motorists who are injured or killed in traffic and to keep the number of children walking to school at 80 percent by making the walking routes safer.

http://www.transalt.org

Appendix C: Solutions for Physical Improvements

C

Appendix C provides an overview of typical solutions to improve physical conditions. These solutions will complement the educational and promotional programs, and, in many cases, they will help reinforce existing speed limits and pedestrian rights-of-way. Brief descriptions of various traffic calming techniques and good crossing treatments are provided along with photos to illustrate their use. These descriptions are followed with a table of rough cost estimates.

It is important to consult with a traffic engineer or a public works agency in developing design solutions (i.e., speed humps, bulb outs, etc.) or operational solutions (i.e., signal timing changes or the use of crossing guards). In some cases, a location may need to meet certain criteria to qualify for a specific treatment such as a traffic signal or stop sign. A planning professional can help you understand these types of guidelines as well as propose alternative solutions.

Traffic Calming Measures [1]

Traffic calming is a combination of mainly physical changes to a street that reduce the negative effects of motor vehicle use and alters driver behavior, as well as improves conditions for pedestrians and bicyclists. Traffic calming includes both speed reduction and volume control measures.

Speed Reduction

- **Speed Humps**—Speed humps are raised, rounded sections of pavement designed to slow vehicles on a roadway. They are most appropriate for use on residential streets rather than major streets or state roads. Many communities have found speed humps to be controversial. They should be implemented only when a large degree of public support exists.
- **Speed Tables**—Speed tables are similar to speed humps, however they have flat tops rather than rounded ones. They often have colored or textured pavements on the flat top and are generally longer than speed humps.
- **Center Islands, Neckdowns, Bulbouts, and Chokers**—Center islands, neckdowns, bulbouts, and chokers are various methods for slowing traffic by narrowing the curb-to-curb width of the roadway. These measures are often combined with crosswalks to increase pedestrian visibility and create more comfortable pedestrian crossings.
- **Chicane**—Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curbs, which produces a traffic slowing effect.
- **Narrowing by Restriping and Landscaping**—In addition to the measures above, striping and landscaping can be used to visually narrow the roadway and help reduce vehicle speeds.
- **Modern Roundabouts**—Modern roundabouts are an intersection control device, like a traffic signal or stop sign; however, they function quite differently. At a roundabout, vehicles move counterclockwise around a circular center island that is designed to slow traffic. Entering vehicles yield to circulating vehicles. Splitter islands at each entry point serve as pedestrian refuges where pedestrian only have to cross one direction of traffic at a time.

Volume Control

Volume control measures are physical designs that prevent vehicles from entering certain streets. While these measures can be very effective in reducing traffic volumes, they often result in diverting traffic to parallel streets with less restrictive volume control measures. For this reason, their use should be considered very carefully.

- **Full Closures**—Full street closures use physical barriers or landscaping to block vehicular traffic from entering a particular roadway while maintaining access for pedestrians, bicyclists, and emergency vehicles. This method of volume control is a highly restrictive method of controlling high volumes. It should be used only on roadways where a large number of short cuts and conflicts with pedestrians occur. Full closures are not appropriate for major roadways. Full closures involve a great deal of public outreach and must involve emergency management professionals in the decision-making process.
- **Half (Partial or One-way) Closures**—Half closures use physical barriers of landscaping to block vehicular traffic in one direction for a short segment of roadway that is otherwise open to two directions of traffic. This measure is also used to eliminate cut-through traffic.
- **Semi-Diverters and Diagonal Diverters**—Two half closures placed across from one another at an intersection are called semi-diverters. A physical barrier placed diagonally across an intersection achieves the same effect of closing lanes of opposing traffic and is called a diagonal diverter.
- **Median Barrier Islands**—Raised median islands that extend through an intersection can also be used as a volume control device. Median islands also provide a place for landscaping and a refuge for pedestrians who are trying to cross wide streets.
- **Forced Turn Islands**—Forced turn islands are physical barriers that direct vehicles to turn at a certain location thus preventing access to the remainder of the street.
- **Driveway Consolidation and Access Management**—In some areas, numerous commercial driveways open onto a roadway and increase the potential for conflicts with pedestrians and drivers on the main roadway. If these driveways can be consolidated into fewer driveways and internal circulation among businesses improved, pedestrians will have fewer driveways to cross.

Footnote
1. Ewing, Reid. *Traffic Calming: State of the Practice.* US Department of Transportation. Federal Highway Administration. Washington, DC: 1999.

Pedestrian Crossings

- **Raised Crosswalks and Intersections**—Raised crosswalks and intersections raise the pavement surface to slow traffic and increase pedestrian visibility.
- **Colored, Stamped, or Textured Pavements**—Colored, stamped, or textured pavement can help define pedestrian space and improve visibility by increasing the contrast between pedestrian space and the roadway. Reflective markings are necessary to make crosswalks visible at night.
- **Zebra Crosswalks**—Zebra crosswalks (also called piano keys) have white longitudinal strips on the road, parallel to the flow of traffic. They provide another way of increasing the visibility of pedestrian crossings.
- **Pedestrian Refuges**—Pedestrian refuges are small islands where pedestrians can stop or rest between crossing two directions of traffic. They are especially helpful to old and young pedestrians who may have difficulty crossing a road quickly.
- **Other Physical Improvements**—
  - ⇢ Sidewalks
  - ⇢ Bike lanes
  - ⇢ Side paths and trails
  - ⇢ Vegetation strip to separate sidewalk from street
  - ⇢ Lighting
  - ⇢ Accessible curb ramps
  - ⇢ Removal or relocation of physical barriers such as utility poles
  - ⇢ Strong yellow warning signs at crossings
  - ⇢ Flashing beacon school zone signs
  - ⇢ Driveway consolidation
  - ⇢ Bike Racks

Note

DelDOT's *Traffic Calming Design Manual* is available on the Internet at:
http://www.deldot.gov/static/pubs_forms/manuals/traffic_calming/DelDotFinal.pdf

For more information on traffic calming, the Project for Public Spaces' (PPS) website offers great information in the section called *Traffic Calming 101* at:
http://www.pps.org/info/placemakingtools/casesforplaces/livememtraffic

Summary of Physical Improvements and Rough Cost Estimates

The table below lists typical physical improvements, summarizes their effects, and provides rough cost estimates. This table is provided for informational use only. Costs may vary significantly based on the location of the improvement, and whether the project will require the purchase of right-of-way, and if it involves drainage, engineering, utility relocation, or environmental permitting.

Measure	Reduces Speed	Reduces Traffic	Noise	Loss of Parking	Restricts Access	Emergency Impacts	Maintenance	Approximate Cost*
Neighborhood Sign	Possibly	Minimal	No change	None	No	None	No	$
Speed Limit Signing	Possibly	No	No change	None	No	None	No	$
Stop Signs	Possibly	No	Increases	None	No	None	No	$
Signing Restrictions	No	Yes	No change	None	Yes	None	No	$
Speed Display	Yes	No	No change	None	No	None	No	$
High Visibility Crosswalks	Possibly	No	No change	None	No	None	Yes	$–$$
Narrowing Lanes	Yes	Possibly	No change	None	No	None	Yes	$–$$
Speed Hump	Yes	Possibly	Increases	Possibly	No	Yes	Yes	$–$$
Movement Barrier	Possibly	Yes	Decreases	None	Yes	Yes	Yes	$$
Choker	Yes	Possibly	No change	Yes	No	Some	No	$$
Curb Extension	Possibly	No	No change	Yes	No	Some	Yes	$$
Entrance Barrier	Possibly	Yes	No change	Possibly	Yes	Possibly	No	$$
Raised Crosswalk	Yes	Possibly	Increases	Yes	No	Some	Yes	$$–$$$
Creek Bridge (short)	No	No	No change	None	No	None	Yes	$$$
Diagonal Diverter	Yes	Yes	Decreases	Possibly	Yes	Possibly	No	$$$
Bicycle Lane	Possibly	No	No change	Possibly	No	None	Yes	$$$–$$$$
Sidewalk	No	No	No change	Possibly	No	None	Yes	$$$–$$$$
Chicane	Yes	Possibly	Possible	Yes	No	Yes	Possibly	$$$–$$$$
Median Island	Possibly	Yes	Decreases	Possibly	Yes	Yes	No	$$$$
Raised Intersection	Yes	No	Increases	Yes	No	Yes	Yes	$$$$
Roundabout	Yes	Possibly	No change	Yes	No	Some	Yes	$$$$
Intersection Channelizing	Yes	Possibly	No change	Yes	No	None	Possibly	$$$$
One-way Streets	No	Yes	No change	None	Yes	Yes	No	$$$$
Street Closure	Yes	Yes	Decreases	Yes	Totally	Yes	No	$$$$

*Where estimated costs of projects are as follows: $ = up to $10,000; $$ = $10,000–$100,000; $$$ = $100,000–$1,000,000; and $$$$ = over $1,000,000.

▸ Table compiled by David Parisi and Associates, Marin County Bicycle Coalition Safe Routes to School Toolkit

Appendix D: Information for Getting Started

D

Appendix D includes information on getting started—a sample invitation letter—and information on legislation for Safe Routes to School, pedestrians, bicyclists, and more.

You will certainly want to include teaching children good pedestrian and bicycle skills in your SRTS education programs. However, the message needs to be heard at home, as well. Included in Appendix D is information on Delaware's laws. These will be helpful in educating the SRTS committee and parents. Remember, education programs can be targeted at both students and their parents.

The Delaware SRTS logo is included here for you to use on flyers and other outreach materials that you create—let people know that your school is a part of this exciting movement. Use a photocopier to enlarge or shrink the logo as you need.

Sample SRTS Committee Invitation
(On School Letterhead)

DATE

NAME
ADDRESS
CITY, DE ZIP

Reference: Northwest Elementary School's *Safe Routes to School Program* Committee Formation

Dear Mr/Ms. _____:

You are invited to join a small team of people in an exciting new program here at Northwest Elementary School—the *Safe Routes to School Program*. The purpose of the Safe Routes to School (SRTS) Committee is to ensure that safer walking and cycling routes to school are provided for our children, as well as to provide safety and education training to them about walking and bicycling. Through this program, it is our desire to (1) improve the environment around the school to encourage bicycling and walking to and from school, and (2) expand the school's curriculum and activities to include safety and education programs that will teach our children pedestrian and bicycling safety, as well as holding events to encourage walking and bicycling.

We have scheduled a SRTS Committee Kick-off meeting on (DATE), at (TIME). The meeting will be held at (LOCATION). Refreshments and childcare will be available, and we look forward to seeing you there! Please RSVP to me at (PHONE NUMBER), so I can plan accordingly. Thank you in advance for your help with this important program.

Sincerely,

NAME

cc: Principal _____

SRTS, Pedestrian, and Bicycle Legislation

Safe Routes to School Legislation

Delaware Legislation

Delaware's Safe Routes to School legislation is Title 17 of the Delaware Code, Sections 1021 and 1022 (17 Del.C. §1021 et seq.). The legislation is available on-line at:

http://www.delcode.state.de.us/title17/c010/sc02/index.htm

Federal Legislation

Section 1401 of the *Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users,* (Pub. Law 109-59), also known as SAFETEA-LU is the authorizing legislation for the federal Safe Routes to School program. It is Public Law 109-59. The following website links to the SAFETEA-LU legislation:

http://www.fhwa.dot.gov/safetealu/legis.htm

The Federal Highway Administration's Safe Routes to School website has just the portion of the legislation that relates to Safe Routes to School:

http:// safety.fhwa.dot.gov/saferoutes/legislation.htm

Delaware Pedestrian and Bicycle Laws

Delaware's pedestrian laws are located in Title 21 of the Delaware Code, Chapter 41, Subchapter V, *Pedestrians' Rights and Responsibilities* (17 Del. C. c. 41). You can find this online at:

http://www.delcode.state.de.us/title21/c041/sc05

Delaware's bicycle laws are located in Title 21, Chapter 41, Subchapter XII, *Operation of Bicycles and Other Human-Powered Vehicles; Operation of Electric Personal Assistive Mobility Devices* of the Delaware Code (17 Del. C. c. 41). The web link is:

http://www.delcode.state.de.us/title21/c041/sc12/

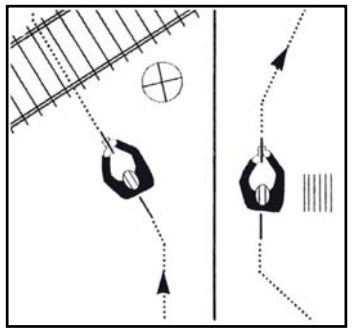
A brochure of the *Delaware Bicycle Laws* follows on the next two pages (pages 31-32).

A brochure of *Child Pedestrian Safety Information* follows on the next two pages (pages 33-34).

21. When riding at night, a bicycle shall be equipped with reflective material visible from both sides for at least 600 feet, or a lighted lamp visible from both sides for at least 500 feet, from a motor vehicle with lawful low beam head lamps.

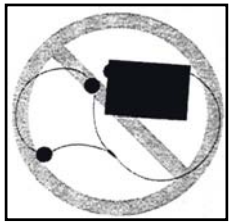
22. A bicycle and its rider may be equipped with additional lights and reflectors.

23. A bicycle shall be equipped with brakes that are capable of stopping the bicycle within 25 feet from a speed of 10 mph on dry, clean, level pavement.



Watch for road hazards. Avoid riding over parallel-bar sewer grates, slippery manhole covers, oily pavement, gravel and ice. Cross railroad tracks and speed bumps carefully and at right angles.

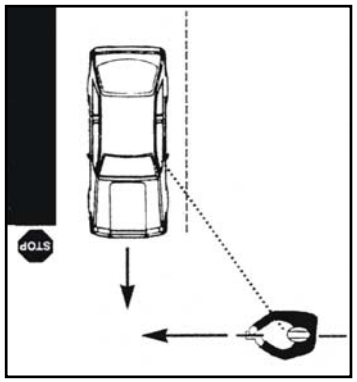
24. A bicycle sold at retail shall have a permanent identification number stamped or cast on its frame.



Do not cover both ears with a headset. It's against the law.

25. Persons riding a bicycle shall not wear ear or a headset covering both ears. Persons who are hard of hearing should wear a hearing aid while riding a bicycle.

26. Human powered vehicles are activated by means of foot pedals and the driver normally rides astride. Adult cycles are included but all children's cycles are excluded as are all toys and all vehicles that require the driver to place a foot on the ground to cause motion.



Watch for cars that may cross your line of travel. Make eye contact with drivers. Don't assume they see you until you are SURE they do. When in doubt, yield.

27. Persons shall not ride a bicycle on a highway while under the influence of intoxicating liquor and/or narcotic drugs to a degree which renders such a person a hazard.

28. Bicycle racing on a highway shall only be permitted when approved by DelDOT or local authorities.

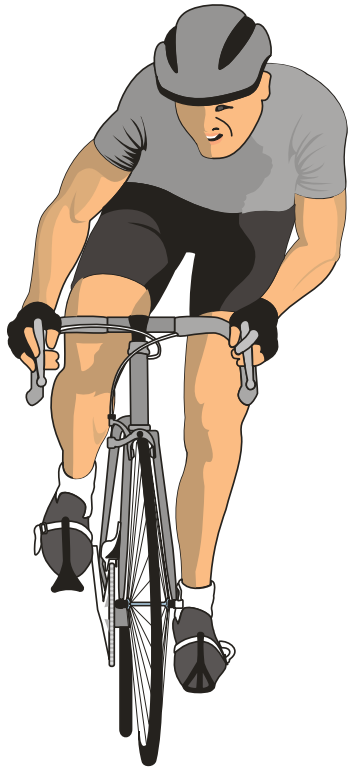
29. Persons involved in a bicycle race that has been approved by DelDOT may be exempted from compliance with traffic laws provided that traffic control is adequate to assure the safety of all highway users.

Other Considerations

Bicyclists should be aware of their surroundings and the effect their travel might have on others. For example, if a bicyclist notices that a line of vehicles has formed behind the bicycle because it is moving more slowly than other vehicles using the road, the bicyclist should turn off the roadway at a safe location in order to permit the other vehicles to proceed.

For More Information please contact:
The Delaware Department of Transportation
Statewide and Regional Planning
P.O. Box 778
800 Bay Road
Dover, DE 19903
(302) 760-2121

Or visit the Delaware Bicycle Council website at
www.deldot.gov/static/bike

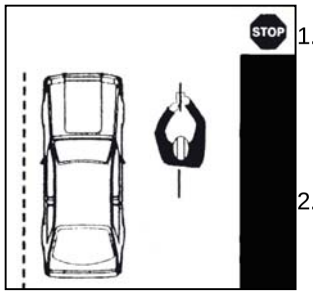


Delaware Bicycle Laws

Delaware Department of Transportation

October 2003

Title 21. Delaware Code, Chapter 41, Subchapter XII



Obey traffic signs and signals. Bicycles must behave like other vehicles if they are to be taken seriously by motorists.

1. Parents and guardians shall not authorize or permit violation of these laws by the child or ward.

2. Persons riding a bicycle shall have all the rights and responsibilities as drivers of other vehicles.

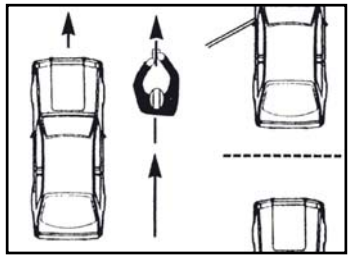
3. No bicycle shall carry more persons than it was designed to carry, except an adult rider which may carry a child securely attached in a backpack or sling.

4. Persons under 16 years of age must wear a properly fitted and fastened bicycle helmet while operating or riding upon a bicycle on any property open to the public or used by the public for vehicular or pedestrian purposes.

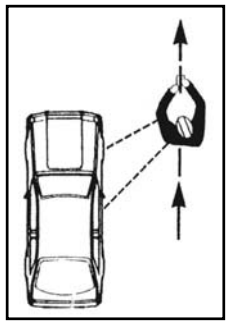
5. A trailer or semi-trailer may be securely attached to a bicycle.

6. Persons riding a bicycle, coaster, roller skates, sled or toy vehicle shall not cling to another vehicle upon the highway.

7. **A bicycle shall be ridden "as close as practicable" to the right-hand edge of the roadway except:**
   - When passing another bicycle or vehicle going in the same direction,
   - When making a left-hand turn,
   - When avoiding parked or moving vehicles, fixed or moving objects, animals, surface hazards, etc.,
   - When the lane is too narrow for a bicycle and a vehicle to travel safely side by side within the same lane.



Ride in a straight line whenever possible and ride with traffic. Keep to the right, staying about a car door width away from parked cars.



Scan the road behind. Learn to look back over your shoulder without losing your balance or swerving left. Some riders use rearview mirrors. Always look back before changing lanes or changing positions within your lane and only move when no other vehicle is in your way.

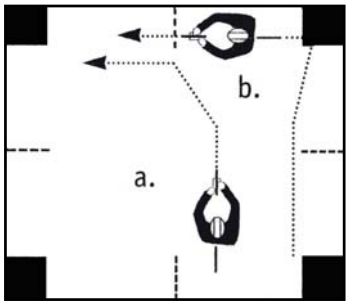
8. A bicycle may be ridden near the left-hand edge of the roadway only on one-way highways with two or more lanes and a less than 30 mph posted speed limit.

9. Riding two abreast is allowed when it does not impede the normal and reasonable movement of traffic. On a laned roadway bicyclist shall ride within a single lane. Riding two or more abreast is permitted on paths or parts of the roadway set aside for the exclusive use of bicycles.

10. Persons riding a bicycle shall have both hands available to operate the bicycle. At lease one hand shall be kept on the handlebars at all times. A one-armed person may ride a bicycle and must use mechanical turn signals.

11. Left turns shall be permitted according to:
    - Normal motor vehicle left turn procedures,
    - Approach the turn on the right edge of the roadway, cross the intersecting roadway, stop out of the way of traffic, yield to all vehicles and pedestrians, obey all traffic control devices and then proceed in a new direction,
    - Special traffic control devices,
    - While not specified in the law, another important option, especially for children, is to dismount and cross the intersection as a pedestrian.

12. Right and left turn signals shall be used not less than 100 feet from turn and while stopped waiting to turn. Such signals may be used intermittently, rather than continuously, if the hand giving the signal is needed to control the bicycle.



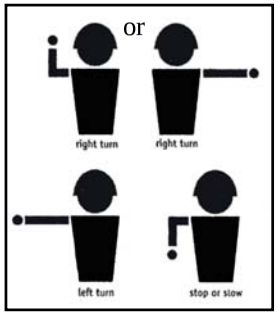
There are two ways to make a left turn:

a. Check for traffic behind you, then signal and move to the left lane on four-lane roads or to the left side of your traveling lane on two-lane roads. Yield to oncoming traffic and then turn left.

b. Approach the turn on the right edge of the roadway, stop out of the way of traffic, yield to all vehicles and pedestrians, obey all traffic control devices and then proceed across intersection.

13. Turn and slow/stop signals shall be given as shown in the diagram.

14. Persons shall not ride a bicycle on a sidewalk or crosswalk where prohibited by official signs or markings. A person riding a bicycle on a sidewalk or in a crosswalk shall yield to pedestrians and give an audible signal before overtaking. In addition, Subchapter III-A states that bicycles cannot be operated or driven on controlled-access highways, except where appropriately marked by the Department of Transportation.



15. Persons riding a bicycle on a sidewalk, or pushing a bicycle across the road at a crosswalk shall have all the rights and responsibilities of a pedestrian.

16. A bicycle may be parked on a sidewalk except when prohibited by official signs or when impeding the normal, reasonable movement of sidewalk traffic.

17. Bicycles may be parked where vehicle parking is allowed, but may not be parked in such a way as to obstruct the movement of a legally parked motor vehicle.

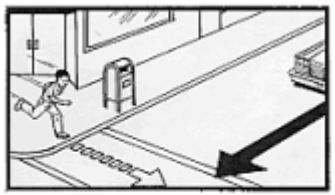
18. A uniformed police officer may stop, inspect and test a bicycle that is suspected to be unsafe or to have improper equipment.

19. When riding at night, a bicycle shall be equipped with a front, white light visible for at least 500 feet from a motor vehicle with lawful low beam head lamps.

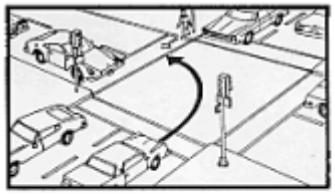
20. Every bicycle shall be fitted with a rear, red reflector visible from at least 600 feet from a motor vehicle with lawful low beam head lamps.

Ride a well-equipped bike. Use a bright headlight, taillight, reflective material and light colored clothing at night and when visibility is poor. White headlights and red rear reflectors are required by law. Never carry anything in your hands that prevents you from riding with both hands on the handlebars.

Common Crash Situations



Child darting out into street at corner or mid-block



Vehicle turning into path of child

Child hidden by ice cream truck

Child hidden by bus and driver does not stop

Vehicle backing up in roadway, driveway, or parking lot

Recommendations for safety

Do not allow children under 10 years old to cross the street alone.

Teach children to recognize and obey all traffic signals and markings.

Teach children to stop and cross the street at a corner or crosswalk.

Teach children not to enter the street from between parked cars or from behind bushes or shrubs. Darting into the street accounts for the majority of child pedestrian fatalities.

Make sure children know the safest route to their destination. Look for the most direct route with the fewest street crossings. Walk the route with children until they demonstrate traffic safety awareness. They should take the same route every time and avoid shortcuts.

Demonstrate proper pedestrian safety by being a good role model. Parents, caregivers and older peers should set good examples for younger children. Children need you to not only tell them, but also show them how to be safe pedestrians. If there are older children in your home or neighborhood, express to them how important it is to be good role models.

Make sure children look in all directions before crossing the street. Teach them to look left, right, and left again for traffic before and while crossing the street.

Children should always wear retro-reflective materials and carry a flashlight if walking at dawn and dusk. Remember, nearly half of all child pedestrian deaths occur between 4 and 8 PM.

Do not allow children to play in driveways, unfenced yards, streets, or parking lots.

Do not overestimate your children's capabilities. It is easy to assume that if you were able to walk by yourself at a specific age, that your children should be able to do the same. However, children today have less experience as pedestrians then previous generations, and therefore, need more time to learn these skills.

For more information please contact::
Delaware Department of Transportation
Statewide and Regional Planning
P.O. Box 778
Dover, DE 19903
(302) 760-2121
Visit the Safe Routes to School website at:
http://www.deldot.gov/static/community_programs_services/srts

SRTS

DELAWARE SAFE ROUTES TO SCHOOL PROGRAM

Child Pedestrian Safety Information

for Parents of Elementary School Children

Delaware Department of Transportation

May 2006

Common Myths

Below are some common myths that children believe about being a pedestrian. Make sure your child knows the facts.

Myth A green light means that it is safe to cross.

Fact A green light means that you may stop and search for cars. Before you step off the curb, look LEFT–RIGHT–LEFT, and if is safe to do so, cross and keep looking left and right as you do so. Be alert for vehicles making a right turn on red.

Myth You are safe in a crosswalk.

Fact You may cross at a crosswalk, but before you do, you must stop at the curb. Look LEFT–RIGHT–LEFT for cars. When it is clear, cross and keep looking left and right.

Myth If you see the driver, the driver sees you.

Fact The driver may not see you. Make certain the driver sees you and stops before you cross in front of the car. Try to make eye contact with the driver.

Myth The driver will stop if you are in a crosswalk or at a green light.

Fact The driver may not see you. The driver's view may be blocked. The driver may run a traffic light illegally. The driver may turn without looking for pedestrians.

Myth Wearing white at night makes you visible to drivers.

Fact Even if you and your child wear white clothes, drivers will have a difficult time seeing you at night. Carry a flashlight. Wear retro-reflective clothing. Walk facing traffic.

Remember, when crossing a street your child should always:

- ★ Stop at the edge of parked cars, the curb, or other vehicles.
- ★ Look LEFT–RIGHT–LEFT for moving cars.
- ★ Cross when clear, and keep looking left and right.
- ★ Walk, not run or dart, into the street.
- ★ Look for signs that a car is about to move (e.g., rear lights, exhaust smoke, sound of motor, wheels turning).
- ★ Walk alertly.

Some Relevant Delaware Pedestrian Laws You Need to Know as a Parent

This provides a partial list of Delaware's Pedestrian Laws

Title 21. Delaware Code, Chapter 41, Subchapter V

A pedestrian shall obey the instructions of a traffic-control device specifically applicable to the pedestrian.

Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway.

A pedestrian crossing a roadway at a point where pedestrian tunnel or overhead pedestrian crossing has been provided shall yield the right-of-way to all vehicles upon the roadway.

Between adjacent intersections at which traffic traffic-control signals are in operation pedestrians shall not cross at any place except in a marked crosswalk.

No pedestrian shall cross a roadway intersection diagonally unless authorized by official traffic-control devices; and, when authorized to cross diagonally, pedestrians shall cross only in accordance with the official traffic-control devices pertaining to such crossing movements.

Pedestrians shall move, when practicable, upon the right half of crosswalks.

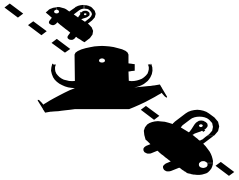
Where a sidewalk is provided and is accessible, it shall be unlawful for any pedestrian to walk along and upon an adjacent roadway.

Where a sidewalk is not available, any pedestrian walking along and upon a highway shall walk facing traffic only on a shoulder, as far as practicable from the edge of the roadway.

Where neither a sidewalk nor a shoulder is available, any pedestrian walking along and upon a highway shall walk as near as practicable to an outside edge of the roadway, and shall walk facing traffic.

No pedestrian shall walk upon any roadway or shoulders of any roadway of this State that is used for motor vehicle traffic, beyond the corporate limits of any city of town, without carrying a lighted lantern, lighted flashlight or other similar light or reflector type device during the period of time from sunset to sunrise and at any other time when there is not sufficient light to render clearly visible any person or vehicle on the highway.

Relevant Delaware Pedestrian Laws Continued

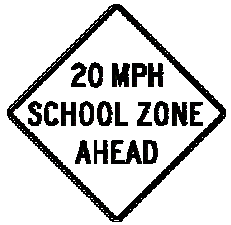


When traffic-control signals are not in place or not in operation or when the operator of a vehicle is making a turn at an intersection, the driver of a vehicle shall yield the right-of way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk when the pedestrian is upon the half of the roadway upon which the vehicle is traveling, or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger.

Whenever any vehicle is stopped at a marked crosswalk or at any unmarked crosswalk at an intersection to permit a pedestrian to cross the roadway, the driver of any other vehicle approaching from the rear shall not overtake and pass such stopped vehicle.

Every driver of a vehicle shall exercise due care to avoid colliding with any pedestrian upon any roadway.

The driver of a vehicle shall yield the right-of-way to any pedestrian on a sidewalk.



Specific Speed Limits

Where no special hazard exists, speeds shall be lawful:

20 miles-per-hour at all school crossings where 20 MPH regulatory signs are in effect during specific periods.

Delaware's Safe Routes to School Logo

Appendix E: Site Audits

E

Appendix E is the site audits. There are two different site audits—the School Site Audit and the Neighborhood Site Audit.

School Site Audit

The *School Site Audit* will help determine walking and bicycling conditions on or adjacent to school property. By looking closely at such things as the student drop-off, bus loading zones, sidewalks, crossing guard locations, signage, and adjacent intersections, it will help you discover potential areas for design improvements and increased safety. The principal and members of the SRTS committee should fill out the audit during the prime school hours in order to see how the children get to and from school. It will be useful to have a map of school grounds on hand for note taking. If a map is unavailable you can construct a map as you go.

Neighborhood Site Audit

Similar to the *School Site Audit*, the *Neighborhood Site Audit* is designed to help you evaluate the walking and bicycling conditions by inventorying neighborhood intersections, streets, and sidewalks used by the students. There are separate forms for evaluating intersections or mid-block crosswalks and roadway segments. Use the base maps and some of the information you have already collected such as traffic counts and the rough locations of where students live.

School Site Audit

The following site audit should be conducted to help determine walking and bicycling conditions on and adjacent to school property. This audit will help in discovering potential areas for design improvements and increased safety at the school. Members of the School Traffic Safety Team and the principal should fill out the following audit during prime school hours in order to see how students get to and from school. Please take a map of the school grounds with you on the audit for orientation and note taking. If a map is unavailable, please construct one as you go to help you identify areas for improvements later on in the Safe Routes to School process.

Date: _____ Day: _____ Time: _____ Weather Conditions: _____

1. Sidewalks and Bicycle Routes	Yes	No	NA
a. Are current pedestrian and bicycle routes separated from motor vehicles by the use of sidewalks or separated pathways?	❑	❑	❑
b. Do signs indicate the bicycle route?	❑	❑	❑
c. Are marked bicycle lanes present?	❑	❑	❑
d. Are sidewalks and bicycle paths regularly maintained?	❑	❑	❑
e. Are the sidewalks continuous and without gaps?	❑	❑	❑
f. Are there accessible ramps for wheel chair access?	❑	❑	❑
g. Do the ramps have tactile warning strips or textured concrete?	❑	❑	❑
h. Are the sidewalks lighted?	❑	❑	❑
i. Are the sidewalks used regularly?	❑	❑	❑
j. Are there obstructions in the sidewalk (e.g., utility poles, mailboxes, etc.)?	❑	❑	❑

k. Please describe any other problem areas regarding the school's sidewalk system and existing bicycle routes in the space provided below.

2. Student Drop-off Areas	Yes	No	NA
a. Are they designed so that students exiting and entering cars are protected from other vehicles?	❑	❑	❑
b. Do they have a continuous raised curb separating vehicles from pedestrians?	❑	❑	❑
c. Are there accessible curb ramps for wheel chair access?	❑	❑	❑
d. Do the ramps have tactile warning strips or textured concrete?	❑	❑	❑
e. Are there posted vehicular signs?	❑	❑	❑
f. Are there posted pedestrian signs?	❑	❑	❑
g. Is the area lighted?	❑	❑	❑
h. Does traffic seem to move freely without congestion and backup?	❑	❑	❑

i. Please describe any other problems within the student drop-off area in the space provided below.

3. Bus Loading Zones	Yes	No	NA
a. Are bus driveways physically separated from pedestrian and bicycling routes by raised curbs or bollards?	❑	❑	❑
b. Are bus driveways physically separated from parent pick-up/drop-off areas?	❑	❑	❑
c. If the buses are "double-stacked" for loading areas, are measures taken for safety of students needing to cross in front or behind the bus?	❑	❑	❑
d. Is traffic in the bus-loading zone one-way?	❑	❑	❑
e. Does the bus zone meet the minimum width of 24' for drop-off/pull-out lanes?	❑	❑	❑
f. Is there a continuous curb and sidewalk adjacent to the drop-off/loading area leading into the school site?	❑	❑	❑
g. Is the bus-loading/-unloading zone lighted?	❑	❑	❑

h. Please describe any other problem areas regarding the bus loading zone in the space provided below.

4. Adjacent Intersections (Intersections near school property)	Yes	No	NA
a. Are there high volumes of automobile traffic?	❑	❑	❑
b. Are there high volumes of pedestrian traffic?	❑	❑	❑
c. Are there painted crosswalks for all crossing directions?	❑	❑	❑
d. Are there curb ramps located at all adjacent intersections?	❑	❑	❑
e. Is there appropriate vehicle signage?	❑	❑	❑
f. Is there traffic control, such as a stoplights or stop signs?	❑	❑	❑
g. Are there pedestrian walk signals?	❑	❑	❑

h. Please describe additional problems within the student drop-off area in the space provided below.

5. Sight Distance (Clear views between motorists and pedestrians)	Yes	No	NA
a. Are desirable sight distances (visibility is free of obstructions) provided at all intersections within the walking zone?	❑	❑	❑
b. Do cars park or wait blocking the vision of other motorists, bicyclists, and pedestrians?	❑	❑	❑
c. Have the placement of fences, walls, dumpsters, and the location of parking areas for service vehicles been carefully considered in view of sight distance requirements on the school site?	❑	❑	❑
d. Are there any barriers present that block the viewing of pedestrians and bicyclists (i.e., dumpsters, utility boxes, landscaping, parking areas, ground mounted signage, or building walls)?	❑	❑	❑

e. Please describe any other problem areas that have sight distance obstructions in the space provided below.

6. Traffic Signs, Speed Control, Signals, and Pavement Markings	Yes	No	NA
a. Are there any School Advance signs, School Crossing signs, School Speed Limit signs, flashing beacons, and No Parking or No Standing signs?	❑	❑	❑
b. Is there an effective law enforcement program targeted at the school?	❑	❑	❑
c. Is there a specified school zone?	❑	❑	❑
d. Are there any school pavement markings located on roadways adjacent to or in the vicinity of the school grounds?	❑	❑	❑
e. Are there currently traffic/speed control measures used, such as different pavement surfaces, non-white paint, speed bumps, and speed tables?	❑	❑	❑

f. Please describe any other information regarding traffic signs, speed control, signals and pavement markings in the space provided below.

Neighborhood Site Audit

The following N*eighborhood Site Audit* is designed to help you evaluate walking and bicycling conditions in your school's neighborhood by taking an inventory of intersections, streets, and sidewalks. There are separate forms for evaluating intersections and mid-block crosswalks versus roadway segments. Please use only one form for each intersection of roadway segment. Make extra copies of the audit sheets to evaluate all of the neighborhood streets. Some information will need to be collected beforehand, such as average daily traffic counts provided by the local municipality and a base map of neighborhood streets.

Instructions:

Step 1: Establish a boundary for assessment

On your base map, identify the school location and outline an area (or perimeter) from which children could walk or bicycle to school. A good rule of thumb is one mile in all directions from the school.

Step 2: Identify where students live

On your base map, identify where students live. This could be done by having students mark their home locations on a large map with pushpins, by using a Geographic Information System (GIS) database if available, or by using best estimates of parents and school staff.

Step 3: Identify projected walkable routes to the school

Draw on the map and identify possible routes that children may follow to walk or ride their bikes to school. Try to identify a major route in each direction (north, south, east, and west).

Step 4: Inventory of existing facilities

Locate and inventory all major features within the one-mile radius. Locate streets, intersections, sidewalks, problem areas, and other security and safety items. Identify all of these items on the map with either text or symbols.

Step 5: Fieldwork

Now that you have completed the base mapping and initial analysis, it is time to go in the field. Using your initial analysis you can map an efficient course to evaluate all of the streets and major routes that you identified. Use the audit sheets (that follow on the next page) to begin collecting information.

Step 6: Compile, prioritize and rank finds

When your fieldwork is complete, organize your audits by highlighting the most important aspects noted by the audit team. List and rank these potential improvements in order of importance by safety and immediate need.

Neighborhood Site Audit: Intersection and Crosswalk Evaluation

Please use only one form for each intersection/crosswalk evaluation. Make extra copies of this page to conduct a thorough analysis of all necessary streets.

Date: _____ Day: _____ Time: _____ Weather Conditions: _____

North-South Street

Name: _____
Curb-to-curb width: _____ feet
Number of Lanes Northbound: _____
Number of Lanes Southbound: _____
Posted Speed Limit: _____
Observed Speed (if available): _____
Average Daily Traffic (ADT): _____

East-West Street

Name: _____
Curb-to-curb width: _____ feet
Number of Lanes Eastbound: _____
Number of Lanes Westbound: _____
Posted Speed Limit: _____
Observed Speed (if available): _____
Average Daily Traffic (ADT): _____

How is the intersection controlled? (circle one) Two-Way Stop Four-Way Stop Traffic Signal
Other (please describe): _____

How is the crosswalk controlled? (circle one) Flashing Light Pedestrian Activated Signal Yield Sign
No Control Other (please describe): _____

Intersection and Marked Crosswalk Evaluation

	Circle One	Comments and Potential Solutions
Do drivers yield to pedestrians at the crosswalk?	Yes No	
Do drivers run red lights or increase speed to catch green lights?	Yes No	
Are there a high percentage of turning movements and right turns on red?	Yes No	
Is there a high volume of truck traffic (~more than 1 in every 20 vehicles)?	Yes No	
Are there blind curves approaching the intersection?	Yes No	
Are there places where pedestrians are not visible to drivers at the intersection crossings?	Yes No	
Do parked cars, junction boxes, or vegetation block the pedestrian's view of traffic while waiting to cross?	Yes No	
Have crashes occurred at this location? If yes, note if pedestrians or bicyclists were involved.	Yes No	
Are school zone signs, flashers, or overhead signs present	Yes No	
Are there pedestrian crossing signals?	Yes No	
Are there marked crosswalks?	Yes No	
Does the intersection have a sidewalk leading up to it on all sides?	Yes No	
Do the intersection sidewalks have accessible curb ramps?	Yes No	

(Intersection and Crosswalk Evaluation continued)

	Circle One	Comments and Potential Solutions
Is the road too wide to cross during the 'walk' phase (WALK + flashing DONT WALK) of the traffic signal?	Yes No	
Are there crossing guards during school drop-off and pick-up hours? If yes, please note on which part of the intersection.	Yes No	
Is there a raised median where pedestrians can wait in the middle of the intersection?	Yes No	
Are there traffic calming facilities, such as speed humps or speed tables?	Yes No	
If there is a crossing guard present, does the crossing guard control the traffic signals manually?	Yes No	

What do you consider to be the biggest problem at this intersection?

Please sketch this intersection below and indicate specific problem areas.

Please note any other comments about conditions and possible solutions for this intersection in the space below.

Neighborhood Site Audit: Roadway Segment Evaluation

Please use only one form for each roadway segment evaluation. Make extra copies of this page to conduct a thorough analysis of all necessary streets.

Date: _____ Day: _____ Time: _____ Weather Conditions: _____

General Roadway Segment Information

Name of street: _____ Between: _____ and _____

Length of segment: _____ feet Curb-to-curb width: _____ feet

Posted Speed Limit: _____ MPH No. of Lanes: _____

Observed Speed (if available): _____ MPH Average Daily Traffic (ADT): _____

Roadway Segment

	Circle One	Comments and Potential Solutions
Are there a large number of driveways intersecting the roadway?	Yes No	
Do drivers yield to pedestrians at marked mid-block crossings and driveways?	Yes No	
Is there a high volume of truck traffic (~more than 1 in every 20 vehicles)?	Yes No	
Are there blind curves?	Yes No	
Are there locations where pedestrians are not visible to drivers at crosswalks or other places? If yes, indicate locations.	Yes No	
Have auto crashes occurred on this road? If yes, indicate locations.	Yes No	
Have auto-pedestrian collisions occurred on this road? If yes, indicate locations.	Yes No	
Are there school zone signs, flashers, or overhead signs present?	Yes No	
Are there locations along the roadway where students cross that are not marked by crosswalks? If yes, indicate location.	Yes No	
Is the road too wide to cross during the walk phase of the signal (WALK + flashing DONT WALK)?	Yes No	
Are there raised medians where pedestrians can wait in the middle of the roadway?	Yes No	
Are there features such as speed bumps or speed tables to slow traffic?	Yes No	

Sidewalks

	Circle One	Comments and Potential Solutions
Are there any sidewalks on this roadway?	Yes No	
Are the mid-block crosswalks served by an accessible sidewalk and curb cut?	Yes No	
Are there segments of the sidewalk that are missing, i.e., not continuous? If yes, please indicate location.	Yes No	
Do the sidewalks have accessible curb ramps?	Yes No	
Are the sidewalks less than 5' wide?	Yes No	
Are there poles, signs, shrubs or other items that physically and/or visually block the sidewalk?	Yes No	
Is there litter or debris on the sidewalk?	Yes No	
Is the sidewalk located directly next to the street?	Yes No	
Is there a cement or natural buffer between the sidewalk and street? Not the width of the buffer.	Yes No	
Is the sidewalk located on a steep grade?	Yes No	
Are there street trees along the sidewalk?	Yes No	
Does the sidewalk have major cracks or other signs of disrepair?	Yes No	

Security Issues

	Circle One	Comments and Potential Solutions
Are school fights a problem on this segment? If yes, indicate location.	Yes No	
Is loitering a problem along this section? If yes, indicate location.	Yes No	
Is there adequate lighting? If no, indicate location.	Yes No	
Is this segment isolated from houses or commercial areas?	Yes No	
Is this segment located in an industrial or commercial zone? Which?	Yes No	
Do crime and/or drug activity occur on this roadway?	Yes No	
Do dogs frighten children along this section of the road? If yes, indicate location.	Yes No	

What do you consider to be the biggest problem along this section of the roadway? Write any other comments below.

Appendix F: Surveys

F

Appendix F provides the surveys—one for students and one for parents. These surveys will be most helpful in obtaining information for evaluation purposes.

Student Travel Survey

As discussed in *Chapter 3* (page 11), the *Student Travel Survey* is a before-and-after survey that documents changes in student travel behavior. It is essential that this survey be given on fair-weather days. The *Student Travel Survey* should be given periodically. A good recommendation is to administer the survey towards the beginning of the school year and then again near the end of the school year, when weather conditions are similar. You may also want to try to give the survey on the same day of the week because children sometimes have different routines for different days. However, do not allow this to trump the importance of administering the survey on a fair-weather day. The weather strongly affects people's walking and bicycling behavior.

Parent Survey

The *Parent Survey* provides information not only on the behavior of students, but also on the parents' perceptions and opinions of conditions near the school. This survey is different from the *Student Travel Survey* because it is a form that is to be filled out by the parent. The survey can be sent home with students or distributed by direct mail. Some schools have also found success by administering the survey on the Internet through an online survey.

Survey software is available on the Internet through services that host the survey for you for a fee, making the process fairly simple. However, while this is convenient and may increase the number of surveys you receive back, it is important to still distribute paper surveys to all for those people who do not have access to the Internet at home. Income, education, and age impact Internet use. Furthermore, race is a factor in Internet use: it is substantially higher for whites than nonwhites [1]. If you do offer Internet surveys through the Internet, it is easiest to post the link to the survey on the school's website or through the school listserv, because copying a long URL from a paper letter or the school's newsletter can create problems, which could result in frustration, leading to people giving up on even taking the survey. Posting the availability of the survey in the school newsletter is a good idea—it would be best though, if people could access the school's website (presumably a short URL that the parent probably already has bookmarked in their 'favorites') to find a link to the survey.

Footnote
1. Streib, Thomas. (1996). The New Face of Government. Journal of Public Administration Research and Theory. 6:2; 261-276.

Sample SRTS Student Travel Survey Cover Letter
(On School Letterhead)

DATE

Dear (SCHOOL NAME HERE) Teachers:

We need your help to make our community a safer place to walk and bicycle to school. This is a travel survey that will help assist our Safe Routes to School project committee in evaluating the current walking and bicycling conditions in our neighborhood school community.

The survey should only be conducted on a fair-weather day. When you receive this survey, please take a few minutes to ask your homeroom students the following questions and record the appropriate responses. If the weather is poor or overcast, please hold the survey until the next fair-weather day. Please send the results back to me in the office when completed.

Thank you,

NAME

Enclosure: Safe Routes to School Student Travel Survey

Safe Routes to School Student Travel Survey

Survey Date: _____ Day: _____

Teacher's Name: _____ Grade: _____

Total Number of Students Present: _____

The weather this morning was (please circle all that apply):

Fair-weather (good for walking) Windy (+15 miles-per-hour)
Extreme heat and/or humidity Rain/Snow

Today's temperature is (circle one): > 65 degrees 45-65 degrees < 45 degrees

	Number of Students
1. Raise your hand if you walked to school today:	_____
2. Raise your hand if you rode a bicycle to school today:	_____
3. Raise your hand if you rode a scooter or skateboard to school today:	_____
4. Raise your hand if you roller-bladed to school today:	_____
5. Raise your hand if you came to school in a car today:	_____
6. Raise your hand if you came to school on a school bus today:	_____
7. Raise your hand if you came to school on a city bus today:	_____

Safe Routes to School Parent Survey

(SCHOOL NAME) School

As a member of our school community, you may have heard about the development of a Safe Routes to School Program. This program will enable us to identify ideas for both educational (student education, parent education, community education, etc.) and physical improvements (sidewalks, crosswalks, traffic signals, etc.), in order to provide safer walking and bicycling conditions for our students. It is vital that we receive as much feedback as possible so that we can have a clear view of the improvements needed in order to make our community safe.

The purpose of this survey is to get your input on these matters. In order for the school traffic safety team to compile accurate results, we are asking for as many parents as possible to fill out the survey and return it to the school. You may be assured the complete confidentiality of your answers.

Feel free to contact me with any questions or concerns about this program and survey. My phone number is XXX-XXXX. Thank you for your assistance.

Sincerely,

NAME

---

1. Please provide the gender, age, and grade of each of your children attending our school.

Gender M F	Gender M F	Gender M F	Gender M F
Age _____	Age _____	Age _____	Age _____
Grade _____	Grade _____	Grade _____	Grade _____

2. In your opinion, do you live within walking distance to the school? (circle one)
   a. Yes b. No

3. About how far do you live from the school? (use your best guess, circle the closest answer)
   a. ½ mile or less
   b. ½ mile to a mile
   c. between 1 and 1½ miles
   d. between 1½ and 2 miles
   e. more than 2 miles

4. How many days each week, on average, does(do) your child(ren) get to school in the morning using each of the following modes? (please fill in the blank with a number)
   a. School bus _____
   b. Car _____
   c. Car Pool _____
   d. Walk _____
   e. Bike _____
   f. City Bus _____
   g. Other (please list) _____

5. How many days each week, on average, does(do) your child(ren) get home in the afternoon using each of the following modes? (please fill in the blank with a number)
   a. School bus _____
   b. Car _____
   c. Car Pool _____
   d. Walk _____
   e. Bike _____
   f. City Bus _____
   g. Other (please list) _____

6. If your child(ren) walks or bikes to school, please list the primary streets he/she(they) use to get to and from school.
   List Streets:

7. How do you feel about the following statements pertaining to the walking and bicycling conditions in your neighborhood? (check one box per statement)

		Strongly Agree	Mildly Agree	No Opinion	Mildly Disagree	Strongly Disagree
a.	There are too many high-speed vehicles in my neighborhood.	❑	❑	❑	❑	❑
b.	There are high amounts of vehicle traffic in my neighborhood.	❑	❑	❑	❑	❑
c.	There are broken sidewalks in my neighborhood.	❑	❑	❑	❑	❑
d.	There are gaps in the sidewalk network in my neighborhood.	❑	❑	❑	❑	❑
e.	There is poor lighting in my neighborhood.	❑	❑	❑	❑	❑
f.	There is a crime problem within my neighborhood.	❑	❑	❑	❑	❑
g.	There are not enough crosswalks in my neighborhood.	❑	❑	❑	❑	❑
h.	There are not enough crossing guards in my neighborhood.	❑	❑	❑	❑	❑
i.	It is dangerous to walk or bike to our school.	❑	❑	❑	❑	❑
j.	I feel comfortable having my child(ren) walk or bike to school.	❑	❑	❑	❑	❑

k. Please write below any other factors that describe your neighborhood's walking and bicycling conditions. Please list specific locations where poor conditions exist.

8. Which of the following statements would influence your decision to consider letting your oldest child walk or bicycle to school? (check one box per statement)

		Yes	No	Maybe
a.	If they were accompanied by an adult.	❑	❑	❑
b.	If they were accompanied by other children of the same age.	❑	❑	❑
c.	If they were accompanied by an older child.	❑	❑	❑
d.	If new sidewalks and crossings were installed.	❑	❑	❑
e.	If police patrols and crossing guards were along school routes.	❑	❑	❑
f.	If they received walking/bicycling safety education from the school	❑	❑	❑
g.	If we lived closer to the school.	❑	❑	❑

9. How important are the following factors in influencing your decision to allow your child(ren) walk or bicycle to school? (check one box per statement)

	Very Important	Somewhat Important	Not Important
a. Crossing guards at all busy intersections.	❑	❑	❑
b. Continuous sidewalks from your house to the school.	❑	❑	❑
c. Clearly marked walking and bicycling routes (with signs).	❑	❑	❑
d. Separated trail connecting your neighborhood to the school.	❑	❑	❑
e. Slower traffic in the neighborhood.	❑	❑	❑
f. Better lighting.	❑	❑	❑
g. Emergency call boxes and designated safe houses (safer community).	❑	❑	❑
h. Increased police presence in the neighborhood.	❑	❑	❑
i. Secure places to park bicycles (bike racks).	❑	❑	❑
j. School education programs on walking and bicycling safety.	❑	❑	❑

10. Please list below the nearest street intersection next to your home.
    List Streets:

Please provide your name and telephone number or email address if you would like to be contacted about the volunteer opportunity you checked above. Hopefully you will be able to participate.
To remain anonymous please leave this section blank.

Name _____

Telephone _____ Email _____

Please return this survey to:

Thank you for your help and support!

If you have any questions about this survey please call XXX.XXXX