Safe Routes to School Guidebook
For the Genesee-Finger Lakes Region

Genesee Transportation Council
Rochester, New York

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Part I

INTRODUCTION

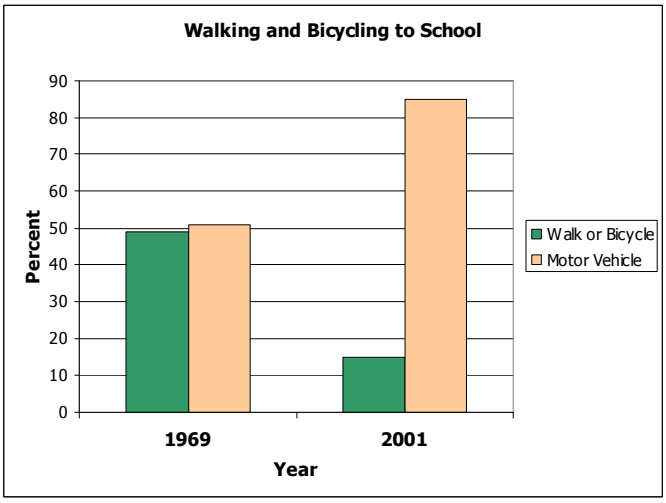
Safe Routes to School (SRTS) programs promote deliberate efforts to increase and encourage children to walk and bicycle to school by improving safety to and from schools. The focus on improving bicycle and pedestrian safety between home and school stems from the fact that even in an auto-dependent era, children should have safe and convenient opportunities to walk and bicycle to school. In addition, children are especially vulnerable to being struck and injured or killed by a motor vehicle due to their smaller stature and still-developing judgment and perceptual abilities. SRTS programs represent an outstanding opportunity to improve child transportation safety and lifelong health.

Purpose of the Guidebook

The purpose of this SRTS Guidebook is to provide a resource for school and municipal officials, parents, and others to improve student safety and encourage students to walk and bicycle to school. It provides information on engineering, education, enforcement, and encouragement strategies intended to meet the needs of the nearly 220,000 students in the urban, suburban, and rural school districts in the Genesee-Finger Lakes Region. Five SRTS Site Assessments and Action Plans for schools throught the region are included as local case studies.

Trends in Walking and Bicycling to School

According to the US Department of Transportation, Federal Highway Administration's (FHWA) 1972 *Nationwide Personal Transportation Survey*, 49 percent of elementary school children walked or bicycled to school in 1969, while 12 percent traveled by passenger vehicle. By 2001, FHWA reported that the tables had turned: fewer than 15 percent walked or bicycled to school, and the percentage that traveled by passenger vehicle had increased to approximately 50 percent (FHWA, 2008).



Trends in Walking and Bicycling to School

Although regional level data on student trips to school are not available, the travel characteristics of the 1.2 million residents of the Genesee-Finger Lakes Region are similar to the rest of the country (New York Household Travel Patterns, 2007). Similarly, the population dispersion cited as one of the contributing factors to the decline in nationwide walking and bicycling to school has also occurred in the Genesee-Finger Lakes Region (Pendall, Goldsmith, and Esnard, 2000). The nationwide decline in walking and bicycling to school is reflected locally by the long lines of vehicles dropping off

students and traffic congestion that can be observed around many of the region's schools on school days.

Consequences of the Decline in Walking and Bicycling

The decline in walking and bicycling to school contributes to unintended and undesired consequences, including traffic congestion and traffic safety concerns near school sites, air pollution, and increased childhood obesity.

In a 2002 study, the National Highway Traffic Safety Administration reported that up to 20 percent of morning rush hour traffic in some areas can be attributed to parents driving their children to school (Kallins, 2009). Not only can this congestion be frustrating to parents and discourage many from allowing their own children to walk to school, it also makes it more difficult for those students who do currently walk or bicycle to school to reach the school site safely.

Less children walking and bicycling to school also contributes to increased air pollution because the walking and bicycling trips foregone are often replaced by passenger vehicle trips that contribute to air pollution near school sites. Children are especially susceptible to the effects of air pollution (Environmental Protection Agency [EPA], 1999) and increased air pollution near school sites may result in adverse effects to their health.

While not the sole cause, the declining trend in walking and bicycling to school corresponds to a dramatic, long-term increase in childhood obesity. A 2005 article in the *Journal of the American Medical Association* reported that since 1974 the percentage of 6- to 19-year old children considered severely overweight had tripled (Martin, 2005). The Office of the Surgeon General (U.S. Department of Health and Human Services, 2001) states that obesity can result in negative health consequences including premature death, diabetes, heart disease, high blood pressure, asthma, and various cancer types.

Safe Routes to School can be Part of the Solution

To address the issues described above, the federal government established the SRTS Program in 2005. Parallel to the federal efforts, numerous jurisdictions nationwide are establishing SRTS programs intended to make walking and bicycling to school a safe and routine activity once again. Encouraging students to walk and bicycle to school is an important component to many SRTS Programs, but their initial and sustained focus should be toward protecting and improving safety for all bicyclists and pedestrians including children independent of trips to and from schools.

Consistent with the Genesee Transportation Council (GTC) *Long Range Transportation Plan for the Genesee-Finger Lakes Region* and incorporating a broad view of transportation, this Guidebook provides direction to school districts and municipalities within the nine-county Genesee-Finger Lakes Region to develop SRTS programs. It provides information resources and case studies to assist school districts and municipalities in improving and protecting student safety and encouraging students to walk and bicycle to school, while recognizing the diversity of urban, suburban, and rural areas within the region.

Benefits of Safe Routes to School Programs

Increasing the number of children that can safely walk and bicycle to school can provide many benefits to children and to their local communities. Reductions in traffic congestion can lead to improved air quality around schools. The United States Environmental Protection Agency (US EPA) estimated in 2003 that walking and bicycling to school can offer potential reductions in air pollution levels near school sites of at least 15 percent when compared to passenger vehicle and school bus drop off.

In addition to improved air quality, SRTS programs can lead to significant improvements in the health and wellness of children using "active transportation" to get to school. Although the decrease in walking and bicycling to school is not the sole cause of increased obesity, allowing more students to walk and bicycle to school can make it easier for students to meet the U.S. Department of Health and Human Services recommended 60 minutes of physical activity for children on most, preferably all, days of the week (2005).

In addition to providing health benefits, walking and bicycling to school also can increase a child's sense of independence and self-reliance, strengthen the bond between the school and the community, and provide the opportunity for students to socialize in a healthy way while on the way to school. Increasing the number of students that walk and bicycle to school can also help schools to reduce system-wide energy and petroleum use and as such reduce their carbon footprint.

Improving air quality, increasing children's health and self-reliance, and strengthening the bonds between schools and their neighboring communities are all important benefits that can result from SRTS programs. However, the key benefit of SRTS programs is increased child safety. Through implementing SRTS strategies, schools can improve safety within the school zone.

Since traffic-related danger (actual or perceived) was the second most common reason, after distance, cited by parents for not allowing their children to walk to and from school (US Centers for Disease Control, 2004), improved safety resulting from SRTS programs can encourage parents to allow their children to walk to school.

Limitations

It is important to note that SRTS programs can offer many benefits, but the number of students that can walk and bicycle to school is limited by the distance between the student's home and the school that he or she attends. In 1969, approximately 45 percent of students lived within one mile of their schools. By 2001, reflecting increased suburbanization in many areas and state-adopted school siting policies, only 25 percent of children lived within a mile or less from the schools that they attended (FHWA, 2008).

The nationwide data cited above suggest that there will be some schools where increasing the number of children that walk and bicycle will be more difficult due to a dispersed student population. Other schools may benefit from a relatively high population density nearby. However, SRTS programs can be helpful to all schools, regardless of population density, by providing instruction in safe walking and bicycling skills to all students.

Coordination is the Key

For SRTS programs to be successful, all affected stakeholders need to be involved early and often. Schools, state and local transportation agencies, parents, law enforcement, and students play important roles in designing and implementing the SRTS components that will improve the safety of children walking and bicycling to school.

Part II

FIVE ELEMENTS OF A SAFE ROUTES TO SCHOOL PROGRAM

Effective SRTS programs include five elements referred to as the 5 E's. These include education, encouragement, enforcement, engineering, and evaluation strategies. They can range from "easy wins" such as teaching children basic walking and bicycling safety skills to investing in new infrastructure such as sidewalks, pedestrian paths, and pedestrian crossing signals. Each school should determine the appropriate mix of elements, keeping in mind that needs may change as conditions change with time.

The Action Plans included as an appendix provide specific recommendations for five schools located in the Genesee-Finger Lakes Region. Along with the SRTS program implementation discussed in Part IV, Part II presents a framework for developing SRTS programs at urban, suburban, and rural schools in the region.

1. Education

Education strategies aim to inform parents, teachers, motorists, and students about transportation choices and, most importantly, safety skills for walkers, bicyclists, and drivers. Education strategies and encouragement strategies can be mutually supportive because educating students about the benefits and the fun of walking also encourages them to do so. Similarly, encouragement strategies (intended to motivate students to walk and bicycle to school) should be preceded by and include education in safety skills.

Informing parents and children about safe walking and bicycling habits and encouraging children to walk and bicycle to school supports the development of lifelong habits that benefit the entire community. These educational efforts should emphasize that walking and bicycling is a normal, legitimate, and fun way to get to and from school.

An important aspect of education and encouragement strategies is that they can often be implemented quickly and for a relatively low cost compared to infrastructure improvements, which may require a year or more to design and build. These efforts can also support school wellness policies and can enhance existing health and physical education curriculum.

Initial Emphasis for SRTS Programs

Where to place the initial emphasis for a SRTS program depends on the characteristics of the school and its surrounding neighborhoods. At some schools there may already be significant numbers of students walking out of necessity in spite of parental concern over their safety due to crime, traffic congestion, and incomplete sidewalks. For these schools, the initial emphasis should be placed on educating students about basic safety skills, while encouragement strategies may receive less emphasis until safety needs have been met.

At other schools, the infrastructure may already be present for at least some students to safely walk and bicycle to school, but relatively few do. While these schools must ensure that students

are well versed in safety skills, they may wish to implement encouragement efforts sooner than schools with other needs.

Education begins with safety

SRTS Education should begin with the children and should discuss walking and bicycling safety as well as the health and environmental benefits of active transportation (walking and bicycling). The key goal, initially, is to *teach students at an early age how to be safe as pedestrians.* As students become older, safe bicycling skills should be introduced. These safety skills will benefit children immediately and will provide community-wide benefits when today's students become tomorrow's drivers and parents.

The three basic safety skills include:

1. Crossing the street safely
2. Choosing where to walk
3. Bicycle skills

The fundamental concept that children need to remember when crossing the street is to "look left, look right, and look left again." Children should be taught how to cross at traffic signals and that signalized intersections are the best place to cross when one is available nearby. It is important to keep in mind that children typically do not develop the skills and judgment necessary to cross the street alone until age eight or nine, and children ages five to seven should be encouraged to always cross with an adult's help. However, since many young children do in fact walk alone, these safety skills are very important even for the youngest school-age children.

Choosing where to walk is the second critical skill that children need to acquire to walk safely. Children should be taught to use sidewalks whenever possible, and to walk facing traffic when sidewalks are not available. One technique used by many schools, including those within the Rochester City School District, is to develop school walking route maps, which can be reviewed and discussed by parents with their children to reinforce safe crossing and walking skills. The discussion of safe walking skills should also emphasize reducing negative behaviors such as darting into the roadway from between cars and not following crossing guard or traffic signal instructions.

Older children should learn bicycling skills so that, if they choose to ride, they can do so safely. Bicycling is an important skill for children because it can increase their independence and their confidence by allowing them to travel further distances to school, and help them later in life as drivers by increasing their awareness of bicyclists on the road. Schools may wish to require students (and school personnel) that ride bicycles to school to attend a bicycle safety class/activity and should also require that all students (and school personnel) that ride bicycles to school wear a helmet.

Students should be taught two key requirements for riding a bicycle: 1) always wear a properly fitted helmet and 2) always follow the rules of the road. Instruction in bicycle safety and traffic laws governing bicyclists is best handled by local experts such as certified bicycle safety instructors (if available) or local law enforcement personnel trained in traffic safety. This instruction should also address reducing negative behaviors such as riding into the roadway

without looking left, right, and left again, riding the wrong way in the roadway, and swerving or turning left without looking.

Although most authorities strongly recommend that bicyclists ride in the roadway and not on the sidewalk, schools need to consider the concerns of parents and local practice on sidewalk riding when they teach students bicycle safety skills. If students are encouraged to ride on sidewalks, or do so as the local norm, they should be taught potential dangers such as pedestrians and motorists exiting intersections and driveways not looking for wrong-way cyclists on the sidewalk.

Bicycle riding is a skill and as such requires practice, which can be provided through events such as bicycle rodeos. If children choose to ride to school, it is helpful if a knowledgeable parent accompany the child the first few times to reinforce good riding habits.

Other Safety Skills

In addition to teaching children walking and bicycle safety skills, schools that educate students on "stranger danger" may wish to include that topic within the safety skills curriculum. Doing so will help assuage fears of assault and abduction which prevent some parents from allowing their children to walk to school. Additional information is available from the Center for Missing and Exploited Children at www.missingkids.com and through many local governments with respect to individuals identified as registered sex offenders.

Another common safety issue is parental fear of bullying. Similar to addressing "stranger danger," many schools can address concerns about bullying by integrating school bullying policies into the school's SRTS program. The "walking school bus" described under "Encouragement" below, which encourages children to walk in groups with an accompanying adult, may help to allay parental fears of "stranger danger" and bullying.

There are many resources available to help in teaching basic safety skills. Schools may wish to contact:

- Automobile associations
- Law enforcement organizations
- SRTS websites and publications
- County Traffic Safety Boards and/or Offices of Traffic Safety
- New York State Department of Transportation

A key resource for parents, teachers, and students to learn about safe walking and bicycling is www.safeny.com, sponsored by the New York State Governor's Traffic Safety Committee (GTSC).

Health and Environmental Benefits

In addition to safety skills, SRTS educational programs should also teach children about the health and environmental benefits of walking and bicycling to school. These benefits include incorporating physical activity on a routine basis, invigorating students before they begin the school day, and providing the opportunity to "wind down" on the way home. Walking and

bicycling at a comfortable pace is an excellent low impact exercise that can help children and adults to address the increasing obesity documented during recent decades.

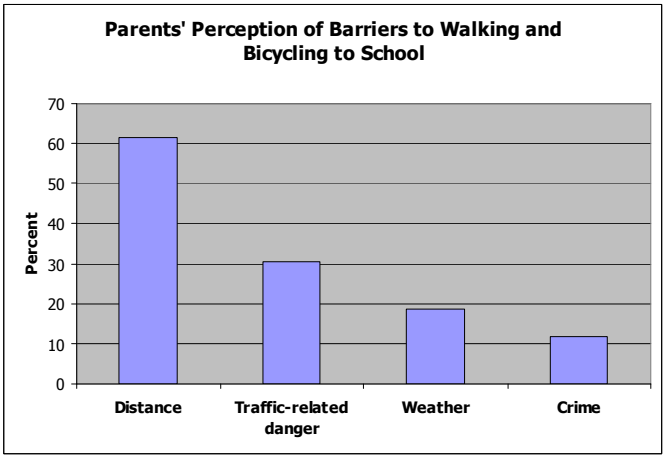
Environmental benefits include improved air quality (which also benefits public health) and a reduction in the use of non-renewable petroleum resources. As such, SRTS can help schools to reduce their overall energy use and their carbon footprint.

Teaching children about the health and environmental benefits of walking and bicycling to school can provide the opportunity for children to learn about their own health and the environment, empower them by showing that as individuals they can have a positive impact on their health and on the environment, and serve to encourage active transportation by providing a multifaceted basis for their efforts.

Educational Strategies

The following strategies can be used to inform children and adults about basic safety habits, health benefits, and the environmental benefits of walking and bicycling to school: 1) classroom instruction, 2) assemblies, 3) media releases, and 4) practice sessions including bicycle "roadeos." Walking and bicycling can be addressed in physical education classes (practice safety skills, bike riding), mathematics (determine average walking speed, distance, and calories burned), biology (read about the environment and take field trips that involve active transportation), language arts (read about walking, write about walking to school, and make posters to encourage others to walk), and geography/social studies (track mileage walked on a map, discuss historical and modern-day routes and trails).

Schools that have implemented successful SRTS programs have found that the support of the school principal is crucial to success on a school-wide basis for several reasons. First, the principal's support encourages teachers to devote time toward the task because they know that their efforts are consistent with the school's overall mission. Second, the principal's support demonstrates to parents that the health and safety of their children is important to the school and may open avenues of communication between the parents and the school. Third, the principal is in a position to help to develop a curriculum that lightens the burden for teachers, to ensure that a consistent message is provided to the children, and to ensure that critical components of the program are not inadvertently omitted.



Parents' Perception of Barriers

Informing Parents

It is important that parents be informed through SRTS educational efforts because they decide in many cases whether or not their children will walk to school. In 2004, the Centers for Disease Control reported that distance was perceived by parents as the most significant barrier to their children walking to school (61.5 percent), followed by concerns about traffic-related danger (30.4 percent), weather (18.6

percent), and crime (11.7 percent). While it may be difficult (but not impossible) to address parents' concerns about distance to school, other barriers such as traffic-related danger, weather, and crime are areas that SRTS programs can more readily address.

Parents are essential partners in successful SRTS programs because they can model appropriate and safe behavior when they walk or bicycle with their children and on those occasions when they need to drop off or pick up their child at school. Schools can provide SRTS information to parents with the beginning-of-school-year information packages, through school newsletters, at open houses and other events such as Parent Teacher Association (PTA) meetings, through parking signage, and on the school web site.

Law enforcement personnel can assist in informing parents and others about safe driving behaviors by issuing warnings to parents that exhibit unsafe behavior and by their presence near the school during drop-off and pickup times.

The three main lessons that parents and all drivers need to know are: 1) watch for bicyclists and pedestrians (especially in the school area), 2) yield to bicyclists and pedestrians, and 3) slow down.

Neighbors can be key allies

Residents living near the school can be key allies in creating and maintaining a safe walking and bicycling environment. When initiating SRTS programs, schools should try to anticipate concerns that the neighbors might have and should reach out to them early in the process. By doing so, schools can ensure that the neighbors hear about SRTS plans and programs from the school or its SRTS committee, rather than through the news media after the fact. Inviting neighbors to open houses, or sending a SRTS representative to attend neighborhood group meetings can help to create lines of communication between the neighbors and the school. Neighbors can also be reached by distributing flyers describing the purpose and need for the SRTS program.

If conflicts develop over tree trimming, snow removal, aggressive dogs, or issues such as refuse disposal containers or parked vehicles blocking the sidewalk, the school should contact local officials and work toward a resolution that maintains a good relationship between the school and neighborhood. Some schools have installed informational signs (similar to Neighborhood Watch) near the school to help create a safe and pleasant environment and publicize that there are "eyes on the street." Before placing signs on public roads or rights-of-way, schools should check with the responsible highway department to ensure that proper permits are obtained (if needed) and that sight distance/regulatory warning signs are not obstructed.

2. Encouragement

As previously discussed, educating children about the benefits of walking and bicycling to school also tends to encourage that behavior. In addition, there are a number of strategies that focus on making walking and bicycling fun that can generate even more enthusiasm and increase the number of children walking and riding to school. These can include:

- Special events
- Walking school bus

- Mileage clubs
- Contests
- Park and walk
- Walkability check list
- Safe School Maps

Special events are usually single day events that encourage walking and bicycling by increasing community awareness through education and participation. During October each year, International Walk to School Day involves schools from 30 countries worldwide and all 50 states. This event can serve to kick-off a SRTS program by bringing people together, getting them involved, and re-acquainting them with walking. For programs already underway, walk to school days can help to re-energize the participants and, by involving local elected officials, can attract additional media coverage to better publicize the benefits of walking and bicycling to school.

For many schools, *International Walk to School Day* has been expanded to "walk to school week" or "walking Wednesdays" in order to maintain the momentum and enthusiasm for walking and bicycling to school. Special events also provide the opportunity for students to be recognized with prizes and awards to further encourage their participation.

A *walking school bus* consists of adult volunteers that accompany children on foot or bike along specific routes to school. It addresses parental concerns about "stranger danger," bullying, and traffic safety and provides the students and parents a chance to socialize as they travel to school. Walking school buses can be informally started by parents in the neighborhood or can be formally organized by the school with designated routes, stops, and schedule. Some schools even require background checks for (non-parent) volunteers to assure non-participating parents that their children will be safe.

Many schools have initiated *mileage clubs* that keep track of a child's or class's total mileage in order to encourage continued participation in walking and bicycling to school. The cumulative mileage can be compared with goals such as 100 miles or with real world distances, such as from Buffalo to Albany with prizes awarded and children recognized for their accomplishment. An example of a mileage club is the "Healthy Steps to Albany" program initiated in March 2009, where students compete by class in accumulating steps on program-issued pedometers. The winning class is awarded a trip to Albany to have a healthy lunch with the New York State Governor and First Lady.

Mileage clubs show children that their individual and collective efforts can, over time, produce significant results. They should be structured so that there is competition between children and all student participants can be "winners." Mileage can be tracked with punch cards, stickers, posters, or on a map of the United States linked to geography lessons to reinforce classroom concepts while increasing the fun of walking.

Contests can be stand-alone or be linked to other riding and walking events. Poster contests where the winning submission is prominently displayed for a period of time or competitions where the winners have their artwork included in a school calendar are two examples that can increase enthusiasm and participation in SRTS programs. One school in California has instituted

the "golden sneaker" award where the classroom with the most participation in walking and bicycling to school each month gets to display the trophy (a sneaker spray painted gold on a gold pedestal) in their classroom for the following month.

Park and walk locations can be identified between one-half to one mile from the school where parents or school buses can drop the children off and allow them to walk the last part of their trip. This allows children that live too far from school to be involved in walk to school days, walking school buses, mileage clubs, and contests such as the "golden sneaker award." These park and walk programs can help to reduce congestion in the school zone while allowing students that would otherwise not be able to walk due to distance to participate in walking to school. With permission, nearby church or shopping center parking lots which are typically little-used during the commute to school may be used for this purpose. Efforts such as the Healthy Steps to Albany discussed above can also be structured to allow children that take the bus to school to walk during the school day. A related concept is school bus consolidation, where an area is served by a single bus stop that people walk to, rather than the stop being close to each home. This can have benefits similar to the park and walk locations, but places the walking at the other end of the trip.

A *walkability checklist* is a way to assess what's good and what's not so good about the sidewalks, crosswalks, and other pedestrian facilities within a neighborhood. Using a checklist allows parents, teachers, and even students to document needed improvements in the area around the school, while helping to ensure a consistent and complete evaluation. While the design and construction of infrastructure will require professional services, time, and money, the identification of the major challenges can be completed relatively quickly by laypeople with the checklist and provides a practical method to gain an overview of conditions around the school as seen by the users. The findings from the walkability checklist can be considered when routes to school are mapped, when assessing and selecting the most effective encouragement strategies, and when considering whether additional school zone signage (described below under Engineering) may be needed.

Safe Routes to School Maps can serve as a valuable encouragement tool by identifying the best way for children to walk and bicycle to school, making it easier for parents and children to feel comfortable about their decision to walk and/or ride to school. These maps can identify crosswalks, pedestrian signals, areas where adult crossing guards are routinely assigned and potential areas that children should avoid, such as streets with multiple lanes and high traffic volumes.

The City of Rochester and the Rochester City School District (RCSD), in a program with roots that date back to 1965, has published Safe Walking Route Maps for each RCSD elementary school and middle school since 1984. The program, which includes participation by the Monroe County Department of Transportation, the Rochester City Police Department, Automobile Club of Rochester/AAA, and the Roman Catholic Diocese of Rochester, has been recognized as a "best practice" by the Pedestrian and Bicycle Information Center, a national umbrella organization for bicycle and pedestrian safety and encouragement funded by the Federal Highway Administration.

3. Enforcement

The role of enforcement in SRTS programs is to increase safety for children walking and bicycling to school by helping to reduce unsafe behaviors by all roadway users. Stakeholders include students, motorists, parents, school administrators, crossing guards, and law enforcement officials. Enforcement efforts should be tailored toward specific user groups in order to spur the most needed behavioral changes by that group of users to improve safety.

Key messages for enforcement

For students, pedestrian enforcement efforts should focus on reducing three key negative behaviors:

1. crossing the street without looking left, right, and left-again
2. darting into the roadway from between cars
3. not following crossing guard or traffic signal instructions

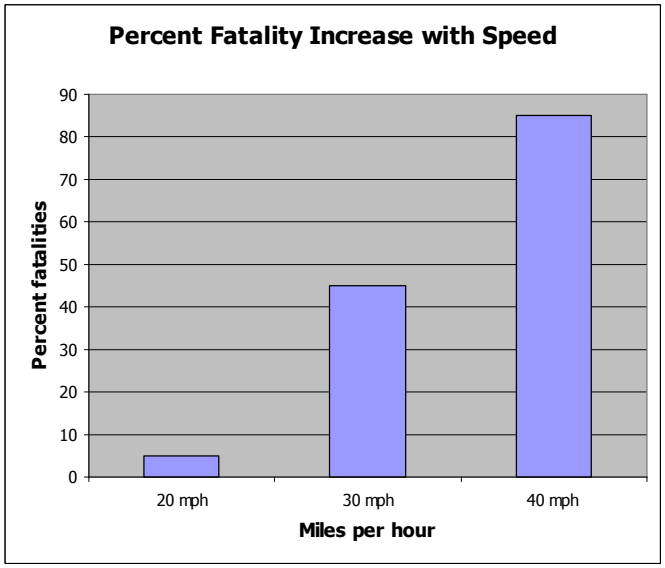
Reducing these behaviors is essential to protecting children's safety because they can place themselves at risk of being struck by a motor vehicle through a moment's inattention. Negative student bicyclist behaviors that should be targeted include:

1. riding into the roadway without looking left, right, and left again
2. riding the wrong way (i.e., facing oncoming traffic)
3. swerving or turning left without looking
4. disobeying traffic signals and signs

Enforcement efforts for drivers should focus on the following behaviors:

1. speeding through streets in the school zone
2. failure to yield to children walking/bicycling
3. running red lights and/or stop signs
4. illegally passing stopped school buses
5. parking in crosswalks

Drivers may be accustomed to driving a few miles over the speed limit, but in school zones it is especially important that they realize that a 10 mile per hour increase in speed can mean the difference between life and death to a pedestrian. For example, at 20 mph about 5 percent of pedestrians struck by a car will die at 30 mph, the percentage that will die jumps to 45 percent and at 40 mph 85 percent will not survive (DOT, NHTSA, 1999).



Fatalities Increase with Speed

In addition to the driving behaviors identified above enforcement partners should seek to decrease the following activities by parents and caregivers in the drop-off zone:

1. illegal parking
2. parking in the bus zone
3. dropping off children from the driver's side of the vehicle (into the street)
4. any other violations of school drop-off policies

Partners in enforcement

Although issuing citations and enforcing traffic laws is the duty of designated law enforcement officials, schools and community members can assist in these efforts within the school zone. In addition to adult crossing guards, other partners can play important roles in enforcing applicable rules and regulations. Student safety patrol members can model appropriate behavior and can remind students of the rules for crossing the street and the need to obey crossing signals and crossing guards. Adult crossing guards can help students to cross the street while they enhance their visibility to motorists. Neighborhood groups, such as Neighborhood Watch, can assist by providing "eyes on the street" and providing a means for the school to contact neighborhood residents to spread the SRTS message. Parents can ensure that their children follow the designated safe route to school and do not deviate from it.

Schools with adult crossing guards and student patrols (safety patrol) should consult the Manual of Uniform Traffic Control Devices (MUTCD) chapter 7.E., Crossing Supervision and the New York State Supplement to the MUTCD (NYS Supplement to the MUTCD) for additional guidance and procedures related to adult crossing guards and student patrols.

Role of law enforcement officials

Law enforcement officials can be a critical partner in SRTS because they see the results of automobile crashes and they are familiar with the behaviors and errors of judgment that often precede these events. As such, they know what to look for and, by virtue of their experience and legal authority, are able to take swift action to reduce unsafe behaviors.

Areas where law enforcement officers can assist SRTS programs include:

1. teaching safety skills to children
2. evaluating traffic patterns and behavior
3. providing additional insight to school officials seeking to implement a SRTS program
4. providing an enforcement presence near the school during dropping-off and/or pick-up times monitoring crossing guards to ensure that they are being obeyed by motorists
5. ensuring that the crossing guards do not overstep their responsibilities.

Preparing for law enforcement

Before beginning a SRTS law enforcement program, schools should take steps to ensure that doing so doesn't create community relations problems for the school. These should include efforts to increase public awareness and "buy-in" to the need for safe walking and bicycling conditions in the school neighborhood. Efforts can include hosting press conferences prior to

beginning an enforcement campaign, preparing presentation packets that include a who and why message, preparing press packets to inform local news makers of the need for enforcement, identifying and making available informed parents and educators for the press, informing neighbors through flyers and email, and involving students as communicators in the educational process (e.g., students take newsletters that describe SRTS programs home to their parents). Although law enforcement officers are familiar with traffic safety principles, school officials may wish to discuss pedestrian and bicycle safety issues and SRTS program concepts with them before beginning an enforcement campaign to ensure that a consistent message is provided by both law enforcement and school officials.

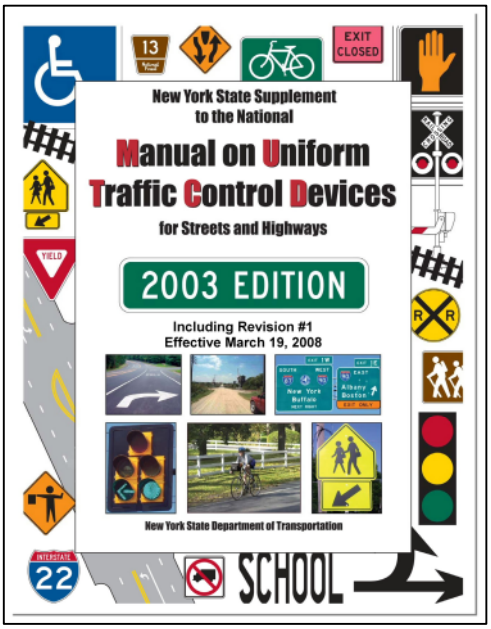
Law enforcement methods

One method that has been used to phase in enforcement campaigns is the installation of a portable speed radar within the school zone that displays the driver's current speed in real time, and which can serve to put local drivers "on notice" that speeds in the school zone are being monitored. This feedback can be followed up by law enforcement officers educating first-time violators, warning second-timers, and issuing tickets to third time violators. This is referred to as "progressive ticketing."

Additional techniques for enforcement include telephone hotlines (for residents/parents to notify police officials of traffic safety issues) and pedestrian sting operations. As noted above, if enforcement efforts are expected to succeed, the school should prepare the public ahead of time to ensure that these efforts are better received.

4. Engineering

Engineering measures for SRTS programs include the design, construction, and maintenance of infrastructure to improve the safety and convenience of students walking and bicycling to school. Examples include installing sidewalks, painting crosswalks, installing school speed limit signs, and many other strategies. Installation of any traffic control device must be preceded by a study identifying that the warrants for the installation are met.



Manual on Uniform Traffic Control Devices

For discussion purposes, engineering strategies are divided into the school zone, pathways to and from the school, crossings, and roadway strategies. Many of these strategies are discussed within the MUTCD and the NYS Supplement to the MUTCD, which provide detailed guidance for the installation of signs, road markings, signals, and crosswalks.

Although engineering solutions include higher-cost infrastructure improvements, such as sidewalk construction and the installation of pedestrian crossing signals, they also include less-costly solutions such as posting signs and painting crosswalks. Many of the strategies described can be used throughout

the community to improve bicycle and pedestrian safety. The Walkability Checklist previously discussed can help to identify issues to address through engineering efforts.

Coordination between the school and state, county, and town/village/city agencies responsible for transportation is critical to the success of any SRTS program. Since these agencies own, operate, and maintain the transportation facilities both inside and outside of the school zone, they must be involved from the very beginning in the development of a school's SRTS program. This coordination will also ensure that decisions affecting these transportation facilities balance the needs of all transportation system users.

Traffic control within the school zone

The school zone includes the school site (i.e., the school building and its property) and the adjacent area.

Traffic control devices are an important part of SRTS strategies, especially within the school zone, because they slow traffic and/or improve driver awareness of pedestrians and bicyclists. Before installing traffic control devices (including but not limited to signs), interested persons should consult with the person responsible for traffic engineering at the agency that owns the roadway, and should be aware that traffic studies have shown that unnecessary control measures (e.g., signs) tend to lessen the effectiveness of those controls that are truly needed. Effective traffic control is best achieved through the uniform application of policies, practices, and guidelines developed through properly conducted engineering studies and consistent with the MUTCD and the NYS Supplement to the MUTCD.

Following their installation, traffic control devices must be properly maintained to ensure continued functionality. If found to be ineffective or non-operational, devices should be removed and/or repaired. Devices needed for only a part of the day (i.e., during the school day only) including warning flashers should be in operation only during the time needed, otherwise they risk being ignored by motorists who believe they are improperly functioning. Limiting the information provided to motorists to include only *what they need to know, when they need to know it* is known as providing "positive guidance," and is an important principle of traffic control.

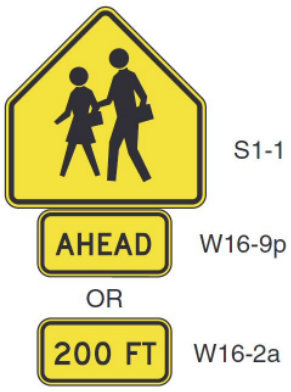
The MUTCD and the Part 7 of the NYS Supplement to the MUTCD discuss Traffic Controls for School Areas in detail, including specific siting requirements. Although professional assistance will usually be required to install the signs described below, a working knowledge of their intended purpose will allow the interested parent or school official to identify potential opportunities to improve school zone safety that can be acted on following an engineering study.

The following discussion includes MUTCD codes for each applicable sign plaque for identification purposes. The following signs and sign assemblies (multiple signs on one sign post) can be used approaching, within, and leaving the school zone:

- School Advance Warning Assembly
- School Crosswalk Warning Assembly
- School Speed Limit Assembly

- End School Zone Sign

The *School Advance Warning Assembly* warns motorists that they are approaching a school zone. It is used in advance of the School Crosswalk Warning assembly or the first installation of the School Speed Limit Assembly discussed below. This sign assembly is installed between 150 feet and 700 feet in advance of the school grounds or school crossings. The sign assembly includes the warning sign (MUTCD Code S1-1), supplemented with a plaque with the legend AHEAD (W16-9p) or XXX FEET AHEAD (W16-2).



School Advance Warning Assembly

The *School Crosswalk Warning Assembly* includes the warning sign (S1-1) supplemented with a diagonal downward pointing arrow plaque (W16-7p) to show the location of the crossing. This assembly is used only at uncontrolled crosswalks on established school pedestrian routes that meet the criteria specified in the MUTCD and the NYS Supplement to the MUTCD.

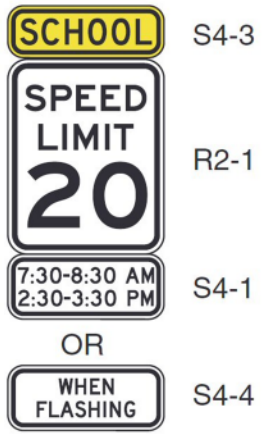
The *School Speed Limit Assembly* consists of a SPEED LIMIT (R2-1) sign with a SCHOOL sign (S4-3) mounted above it and one of the following: a time period or day of the week panel, or a WHEN FLASHING sign if flashing beacons are installed. The School Speed Limit Assembly may include a changeable message device which displays the speed limit when in effect and no message at other times or be combined with speed limit flashing beacons.

School Crosswalk Warning Assembly

The school speed limit should be approximately 10 MPH below the normally prevailing 85th percentile speed on the roadway or at approximately the actual 85th percentile speed within the zone during school crossing periods. The 85th percentile is defined as the speed at or below which 85 percent of all vehicles are observed to travel under free flow conditions past a nominated point. The New York State Vehicle and Traffic Law states that school speed limits shall not be set below 15 mph.

The end of an authorized and posted school speed zone shall be marked with a standard SPEED LIMIT sign showing the speed limit for the section of highway that follows or with an END SCHOOL ZONE (S5-2) sign.

Existing installations of the school warning signs described above will in many cases have a standard yellow background with a black legend and border. However, it is recommended, and will soon be required, that new and replacement warning signs within the school zone use a fluorescent yellow-green (FYG) background for greater visibility. This is permitted (soon to be required) within the MUTCD and the NYS Supplement to the MUTCD. If FYG background signs are used within the school zone, then *all* of the eligible warning signs within the zone should be FYG to unify the signage and distinguish from surrounding (non-school zone) areas that may continue to use the standard yellow background warning signs.



School Speed Limit Assembly

Pavement marking is used to guide, warn, or regulate traffic without diverting attention from the roadway. Within a school zone, the SCHOOL pavement marking may be used. If used, the letters should be at least 6 feet in height if the marking covers one lane and 10 feet if the marking covers two lanes as permitted for the SCHOOL pavement marking only. One consideration with pavement markings is that they must be repainted regularly to maintain their reflectivity, which often deteriorates before their visibility. Also, they are frequently covered in winter by snow and ice.

Parking signs – no parking, no standing, no stopping – may be used to prevent parked or waiting vehicles from blocking pedestrians' views, driver's view of pedestrians, and to control vehicles as a part of a school traffic plan. These can also include signs limiting the loading period and can be used to manage student pickup and drop-off zones. While colored curbs are used in some cases to delineate the curb, they are not permitted to convey parking regulations per the NYS Supplement to the MUTCD. The use of standard signs is required because in winter curb markings are frequently covered by snow and ice and can be difficult to distinguish by some users with visual deficiencies (including colorblind people), especially at night.

The signs and markings described above are intended to get motorists to slow down and/or to be aware of and yield to pedestrians and bicyclists within the school zone. Although general principles and requirements are addressed, the installation of regulatory signs must meet the warrants in the MUTCD and be supported by the agency responsible for the roadway.

<u>Along the school route</u>

As children walk and bicycle along the route to school, they depend on safe sidewalks, shared use paths, and bicycle accommodations to complete their journey. To be most useful, sidewalks should be complete (i.e., no gaps), should meet Americans with Disabilities Act (ADA) guidelines, and should be well maintained year round.

Complete sidewalks are important because they provide a safe space for pedestrians to walk, separate from vehicular traffic, and have been shown to reduce the pedestrian's risk of being struck by a motor vehicle by 88 percent (FHWA, 2008). Walking in the roadway places pedestrians in potential direct conflict with motor vehicles, especially in the winter season when roads are slippery and pedestrians may be trapped by berms of plowed snow. While some individuals can successfully navigate gaps in the sidewalk network, people with disabilities, the elderly, and parents pushing strollers often cannot. Schools that work with their partner municipalities to identify needs, and prioritize, repair, or install the sidewalks that are or could be utilized by children to walk to school will also benefit the larger community.

The condition of sidewalks is an important consideration. Offsets between the sidewalk's concrete panels and cracks within the panels caused by tree roots, frost heaving, or age can make it impossible for some individuals to use the sidewalk. ADA Guidance recommends that sidewalks be stable, firm, and slip resistant, and that they be relatively smooth (less than ½ inch offsets) to accommodate people using wheelchairs. These same qualities are important for all pedestrians and even communities with nearly complete sidewalk systems can often need to repair existing sidewalks to good condition. In addition to sidewalks, curb ramps are especially

important for people with disabilities and the retrofitting of curb ramps at crosswalks is another way in which communities can facilitate pedestrian access to schools, parks, and public spaces.

Temporary obstruction of the sidewalk can occur in several ways and, if it causes pedestrians to have to walk in the street, will discourage walking and decrease safety. During the winter season, sidewalks should be cleared of snow by the local government, the property owner, or a private contractor. During the summer, trees and bushes often obstruct the sidewalk and pruning should be undertaken on a regular basis to remove obstructions and increase pedestrian safety. Other common sidewalk obstructions that may make it less safe for children to walk and bicycle to school can include rubbish receptacles left out for pickup and parked automobiles blocking the sidewalk.

In many communities, it is the property owner's responsible to maintain sidewalks and to keep them clear from obstructions. However, these rules can be difficult to enforce. If issues related to the neighbor's maintenance of the sidewalk occur, schools may wish to notify the local jurisdiction, but every effort should be made to address the issues in a cooperative manner that leaves the door open for future cooperation between the neighbor and the school. Aggressive dogs can also inhibit walking where the fence is immediately adjacent to the sidewalk and should be addressed in a similar manner.

In order to improve safety for early-morning and late-afternoon/evening pedestrians, sidewalks should be provided with street lighting. Traditional "cobra" style street light fixtures are better than no lighting at all but, if new lighting is to be installed, more pedestrian-scale fixtures should be considered.

Well-lit, well-designed, complete, and well-maintained sidewalks can provide pedestrians with safe routes to school but bicyclists (who should be educated about the safety issues of sidewalk riding) may wish to ride on the street to get to school. Communities should consider bicycle riders' needs and schools should provide bicycle parking on the school site for those that choose to ride. Local streets with low traffic volumes travelling at low speeds may not require additional bicycle accommodations. However, roads with higher traffic speeds and volumes require, at a minimum, a paved shoulder and possibly a designated bike lane to accommodate young riders. Several organizations can provide design guidance for bicycle accommodations, and further information can be obtained at www.pedbikeinfo.org.

Street crossings

Many children will need to cross the street on their way to school and street crossings are an important component to SRTS programs. Street crossings can be divided into two types: intersection crossings and mid-block crossings.

Some crosswalks include pedestrian signals which provide feedback on the remaining crossing time (countdown signals) or they may provide only the traditional WALK/DON"T WALK [MAN/HAND symbol] message. Pedestrian signals may be "actuated" by requiring the pedestrian to press a button to gain a crossing. The WALK [MAN] signal is intended to inform pedestrians that they may initiate a crossing. A flashing DON'T WALK [HAND] signal indicates that pedestrians may continue to cross the street, but should not begin a crossing if they have not yet left the curb. The required crossing time is provided by the flashing DON'T WALK

[HAND] time interval. When the flashing time is completed, the indicator will change to a solid DON'T WALK [HAND]. Pedestrians should be clear of the crosswalk at this time. Some additional time is provided before the conflicting traffic is given a green indication.

Given the several varieties of crossing types and the importance of crossing safely, schools need to be aware of the types of controls that children will encounter on their way to school so that they can teach children what to do in each situation. Transportation and law enforcement agencies will know the location of crossing signals and should be familiar with the type of signal most commonly used in the community.

Mid-block crossings can be provided when they are the only practicable way to cross the street, but need to be carefully evaluated to determine the best location(s) and their effect on traffic flow before they are installed. An unsignalized mid-block crossing should only be installed after a valid engineering study. An In-Street Pedestrian Crossing Sign (described below) may be appropriate, along with an adult crossing guard, at a mid-block crossing. However, care needs to be taken because some pedestrians may feel a false sense of security and become less careful.

Crosswalks can be marked in a variety of ways. The standard marking utilizes two white lines, at least six but not more than 24 inches in width, with a gap between the lines at least 6 feet wide. Diagonal or longitudinal lines may also be used to mark the crosswalk, with or without the transverse lines, at areas such as mid-block crossings where more emphasis is desired. Care should be taken to ensure that the emphasis of one crosswalk does not de-emphasize another that does not use the same treatment. In order to be effective, crosswalks need to be periodically repainted and children (and adults) should be advised that pavement marking materials can be slippery when wet.

Crosswalks should be marked at all intersections on established routes to school where there is a substantial conflict between motorists, bicyclists, and pedestrian movements, where students are encouraged to cross between intersections (mid-block crossings), and where students would not otherwise know the best place to cross. Since crosswalks are subject to wear from weathering and by vehicle tires, their marking should be periodically reapplied. Municipalities should consider "high visibility" and/or enhanced crosswalks when the potential for conflicts between pedestrians, bicycles, and motorists is high.

One low-cost, high-visibility improvement that might be considered for pedestrian crossings is the installation of the In-Street Pedestrian Crossing Signs (MUTCD R1-6). These signs can only be used after approval of a municipal highway permit. This sign, which is not to be used at signalized intersections because it stands in the roadway, can help to ensure that motorists are aware of the crossing and the potential presence of pedestrians. This sign must be used seasonally (removed during winter to facilitate snow plowing) and must be removed at night, on non-school days, and during non-school commute hours. Because they are often not present in the winter, they are limited in usefulness for school situations.

In-Street Pedestrian Crossing Sign

Physical enhancements are also possible for street crossings, including raised crosswalks, the installation of bump-outs to reduce the crossing distance for pedestrians, and the installation of a refuge island (median) that breaks the crossing into two shorter legs. These measures are considerably more expensive than placing warning signs, but can be useful in some situations to address acute traffic conditions. Again, the transportation agency responsible for the roadway must be consulted and agree to the proposed modification.

Slowing down traffic

The designation of the school zone, provision of advance warning, reduced speed limit, crosswalk warning signs, and the use of flashing beacons within the school zone can assist in alerting drivers and/or slowing down traffic in the immediate vicinity of the school. In addition, a number of techniques are available within the larger community that can slow down traffic and thereby improve pedestrian safety outside the school zone. These techniques include the installation of roundabouts (which are for right-of-way traffic control, but may slow traffic as a secondary effect), raised crosswalks, bumpouts, speed humps, "road diets," driver feedback signs, and other improvements under the general category of "traffic calming." Further information on traffic calming is available at www.walkinginfo.org.

Schools and communities that seek to improve conditions for pedestrians and bicyclists, improve traffic safety, and support active transportation should review these traffic calming techniques. While some may be significantly more expensive than signs and paint, they will benefit the entire community. A school's success in improving and protecting student safety and encouraging and supporting walking and bicycling to school may inspire such efforts elsewhere in the community.

5. Evaluation

Selected SRTS program activities should be periodically evaluated to document their success and provide direction for their improvement. This should be done through the collection of data before and after implementation.

The data collected will vary depending on they type of strategy being implemented and its goal but, if possible, quantitative results should be developed. Some examples include:

- Number of students walking and riding to school before, during, and after SRTS implementation
- Number of pedestrian and bicycle injuries/fatalities before and after
- Vehicular speeds through the school zone
- Number of safety classes taught and number of students reached
- Number of parents and neighbors reached through distribution of newsletters and flyers
- Measurement of student health, air quality, congestion, or other metrics
- Improvements to the built environment (number of new facilities, miles of new sidewalk, bike racks installed)

This chapter has discussed the five E's included in an effective SRTS program. The following chapter will discuss specific issues and opportunities that affect the ability of children to walk and bicycle to school in the Genesee-Finger Lakes Region.

PART III

OPPORTUNITIES AND BARRIERS

The Genesee-Finger Lakes Region stretches south from the shores of Lake Ontario to the low rolling hills of the Appalachian Highlands. The 4,700 square mile region is home to approximately 1.2 million residents including nearly 220,000 students attending more than 250 schools in 71 school districts. It includes diverse environments that vary from rural farmland to villages to suburban towns to densely populated urban settings such as the City of Rochester.

Factors such as population distribution, crime, and traffic congestion reflect the region's diversity, creating opportunities in some areas and barriers in others that affect the ability of children to safely walk and bicycle to school. This chapter will discuss these factors, including how to recognize and take advantage of the opportunities while overcoming barriers that may be present.

Overview

A walkable school must meet two criteria: 1.) enough students need to live close enough to the school for walking to be a reasonable option and 2.) the appropriate infrastructure (usually sidewalks) must be present within the walking zone. These factors are critical because, if not met, they are dependent on larger land use polices and market forces to be overcome. If met the remaining barriers, including traffic, crime, and the fear of inclement weather, can be more easily overcome at a reasonable cost utilizing the strategies discussed in Part II (the five E's).

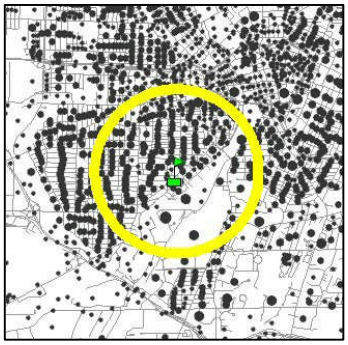
School siting, transportation, and attendance area policies can also affect the feasibility of children to walk and bicycle to school. The ability of communities to address these issues is affected by limited resources, as well as, the need to consider competing factors when policy decisions are made.

Geographic Distribution of School Sites and Student Population

In 2005, the US Centers for Disease Control (CDC) reported that parents cited distance as the primary barrier preventing their children from walking or bicycling to school: 61.5 percent stated that they lived too far away for their child to do so. The identification of distance as the primary barrier to students walking and bicycling to school is supported by data showing that, in 2001, approximately 75 percent of children travelled a mile or more to school compared to just over fifty percent thirty years earlier (FHWA, 2008).

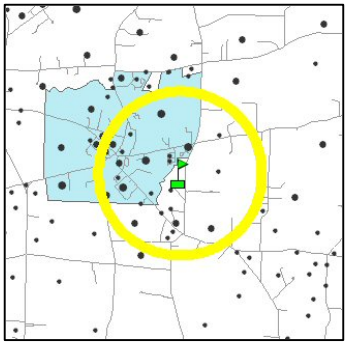
It is important that proponents of SRTS programs understand the significance of population distribution in order to manage expectations and to tailor SRTS programs and projects to the conditions affecting each school. Other factors being equal, a school located in a densely populated area will be within walking or bicycling distance for more students than one serving a more dispersed population. However, even in locations where the population density supports walking and bicycling to school other factors can make it difficult to do.

A rough guide to estimating the number of students that could walk or bicycle to a particular school can be provided by comparing the adjacent population density to benchmarks that would support a neighborhood-based elementary school (McDonald, 2008). Assuming the U.S. average of 12 percent of the population being elementary school age, an enrollment of 300 for the typical neighborhood-based elementary school, and a one-half mile walking distance, the population density required to support a walkable elementary school would be approximately 1,500 persons per square mile. If a one mile walking distance is assumed, the required population density drops to approximately 1,000 persons per square mile.



Elementary School #19
Population Density

An analysis of the population density adjacent to more than 250 elementary and middle schools located in the 71 school districts serving the Genesee-Finger Lakes Region shows that many schools have sufficient population nearby to support at least some students walking and bicycling to school. These schools tend to be located within the region's cities of Rochester, Batavia, Canandaigua, and Geneva, many of its villages, and some of its suburban towns, particularly the inner ring suburbs adjacent to the City of Rochester.



Honeoye Falls-Lima Middle School
Population Density

In rural areas and some of the region's suburbs, it is likely to be more difficult for children to walk or bicycle to school because the distance (on average) is simply too far. However, even at these schools, efforts should be made to support the safety of those students that do walk or bicycle to school and all schools should include walking and bicycle safety in their curriculum regardless of district-wide population density.

The five schools studied in the site assessments undertaken during the preparation of this Guidebook illustrate the range in population density near the schools in the Genesee-Finger Lakes Region:

School	Population within 1 mile	Population Density per square mile
Attica Middle School	1,559	496
Elementary School #19, Rochester	27,712	8,825
Honeoye Falls-Lima Middle School	2,139	681
Johanna Perrin Middle School, Fairport	8,102	2,580
Palmyra Elementary School	3,832	1,220

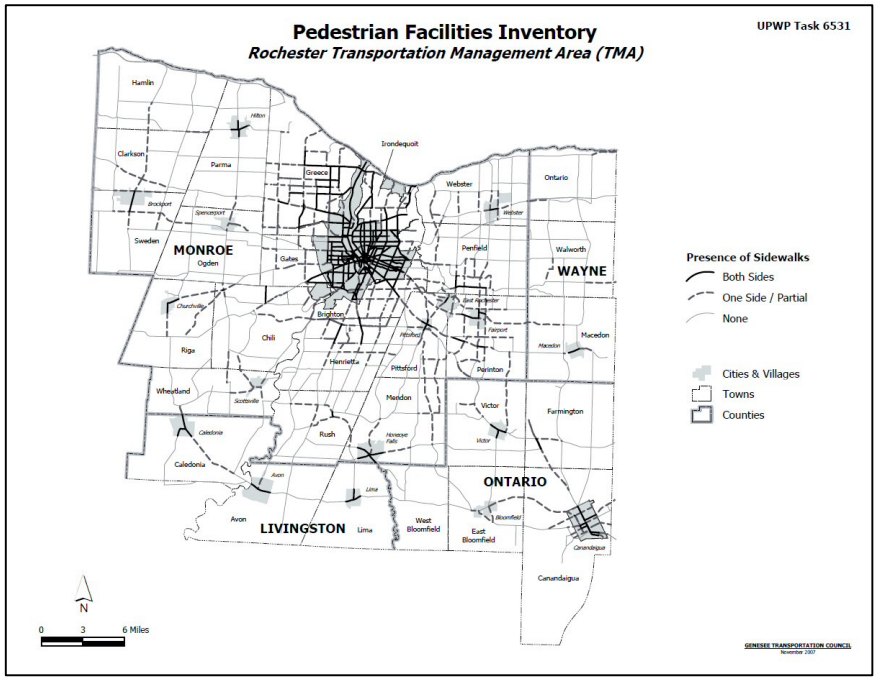
Parents, teachers, and administrators that seek to improve the safety and numbers of children walking and bicycling to school need to consider the population density within walking and bicycling distance of their schools early on as they develop their SRTS programs. This will allow a better understanding of the potential for success and likely challenges to be addressed. For those schools with fewer students within walking and bicycling distance, some measures such as consolidating school bus pickups and dropping off students that ride the bus one-half to one mile away from the school would allow them to walk at least part of the way to school. However, these strategies may be difficult to sustain over time and might be viewed by some as

unnecessary "gimmicks". As such, the benefits of walking and bicycling should be impressed on parents, neighbors, and the community.

Schools within more densely populated areas have an excellent opportunity to support safe walking and bicycling to school, providing they can address their own, (sometimes considerable) limiting factors.

Infrastructure

The presence of infrastructure, such as sidewalks, crosswalks, and school zone warning signs, discussed in Part II of this guidebook can improve the opportunity for students to safely walk and bicycle to school; The absence of this supportive infrastructure can reduce or even preclude this option for many students. It should be noted that in rural areas and along some low volume residential streets, sidewalks may not be always be necessary (i.e., paved shoulders can provide adequate safe walking space in some circumstances), but in more densely populated areas with higher traffic volumes, they are needed.



Inventory of Pedestrian Facilities

Sidewalks are most often available in medium-to-high density residential and commercial areas developed before approximately 1970 (e.g., cities, villages, and inner ring suburbs) and in select suburban communities that have and continue to require that sidewalks be provided within residential developments. Although schools located in these areas can benefit from population density and the local sidewalk system, they may face additional hurdles such as lack of sidewalks along collector and minor-arterial roads, actual or perceived parental fear of crime and traffic safety issues, and unintended policy barriers such as open-enrollment that undermine efforts to support safe walking and bicycling to school.

Jurisdictions that do not provide sidewalks within residential areas face significant challenges if they seek to encourage children to walk to school because the lack of sidewalks forces pedestrians to walk along roadside "goat paths", within adjacent property owners' yards, or within the roadway itself. In spite of the demonstrated health benefits of walking, schools are unlikely to encourage students to walk to school in these areas because this may be perceived by some to place the students in a hazardous position.

In these situations, until sidewalks and related infrastructure can be provided, it is likely that many parents will continue to drive their children to school or that schools will bus the affected children to school (regardless of distance) after having designated the affected areas as "hazardous zones" pursuant to NYS Education Law Section 3635-b. This designation can lead to busing children across the street to protect their safety as observed at one school during the preparation of the guidebook.

The absence of crosswalks and school zone warning signs can be a barrier to children safely walking and/or bicycling to school but as discussed in Chapter Two of this Guidebook, these improvements are relatively inexpensive to provide. Schools that already benefit from sidewalks and nearby population density can work with state, county, and other transportation agencies to add crosswalks and update school zone warning signs if needed at a sensible cost and within a short time frame. Along with adult crossing guards, these relatively inexpensive measures can support safely walking and bicycling to school.

Traffic Conditions

In the 2005 CDC report cited above, slightly more than 30 percent of parents identified traffic safety as a barrier that prevented them from allowing their children to walk or bicycle to school. As discussed in Part II, traffic safety can be improved through educational, enforcement, and engineering strategies. As an important community obligation, these efforts focused toward protecting school-age pedestrians and bicyclists should be undertaken whether or not formal SRTS programs are in place. If appropriately publicized, these efforts will assist in addressing parental concerns about traffic safety.

Crime

Parents occasionally cite their fear of crime (12 percent in the 2005 CDC report) as a factor in their decision not to allow their children to walk or bicycle to school. During the preparation of the site assessments discussed previously, this issue was raised in the City of Rochester and the Village of Palmyra. As discussed in Part II, walking school buses, the presence of school crossing guards and local law enforcement officials, and efforts to encourage neighbors to report suspicious activities can help to alleviate some of these parental concerns. While it is unlikely that communities can completely assuage the concerns of all parents for the safety of their children, efforts to reduce crime are a community-wide obligation similar to traffic safety. As such, efforts specifically directed toward protecting children on their way to and from school will assist in addressing parental concerns about crime. Addressing concerns about crime are an example of an area where schools face difficult choices in allocating limited resources.

Weather

According to the 2005 CDC report, 19 percent of parents cited weather as a barrier to students walking to school. Given that the Genesee-Finger Lakes Region is seasonally subject to wind, rain, and snow it is expected that weather may be a more significant barrier regionally than the national average and that many parents in the region would consider weather as a substantial barrier to their children walking and bicycling to school. However, if the appropriate infrastructure is available and maintained, children could walk to school even in inclement

weather. The key to walking and (to some degree bicycling) in poor weather is to be prepared including wearing appropriate clothing. A related action that needs to occur during the winter time is for the snow to be plowed from the sidewalks before children leave for school in the morning and before they are dismissed in the afternoon.

Policies

As discussed above, the feasibility of children being able to walk or bicycle to school is impacted by many factors including distance, weather, and fear of traffic and crime. In addition, the effectiveness of SRTS programs can be affected by the laws adopted by the state, local governments, and the schools themselves. In some cases, these policies can support and encourage children to walk and bicycle to school but in others they can undermine SRTS activities.

School siting policies are generally set at the state level and can have a major impact on the feasibility of whether or not children can walk or bicycle to school. In New York State, these policies are set pursuant to Section 408 of the NYS Education Law governing siting of schools. The state's siting guidelines require a minimum of three acres for an elementary school (grades K-6) and a minimum of 10 acres for grades 7-12, plus 1 additional acre for each 100 pupils or fraction thereof (NYS School Sites Reference Guide, 1990). Siting policies such as these tend to encourage new schools to be sited near the edge of the developed land in a jurisdiction where larger undeveloped parcels of land are available. Unfortunately, in these areas population density tends to be less than within the core of the community and schools located in such areas are often too distant for many children to walk.

The Environmental Protection Agency (EPA) has studied the effect of school siting policies nationwide on students' ability to safely walk and bicycle to school (EPA, 2003). It is expected that over time states may modify their siting policies to ensure that they will support and encourage (rather than discourage) walking and bicycling to school. In areas such as the Genesee-Finger Lakes Region, even if these policies were to be revised by New York State, they could require years to affect school siting due to slow rates of population growth. Even so, communities that do require the construction of new schools and/or the re-use of former schools may do well to consider walking and bicycling as relevant transportation modes when they make future siting decisions.

School transportation policies can have an effect on the numbers of children that walk or bicycle to school in two ways: 1.) when schools set policies that provide transportation to children that could otherwise walk or bicycle to school (e.g., those living within one-half mile of the school), fewer students will walk given an option to take the bus and fewer parents will be interested or concerned with pedestrian safety because their own children may be among those riding the bus and 2.) when schools bus children to school pursuant to "hazardous zone" regulations in lieu of working with local municipalities and other agencies to improve traffic safety as a permanent and sustainable response, the likelihood of improvements being made in the "hazardous zone" is diminished. As such, the school loses an opportunity to advocate for the safety of its students because the safety problems in the "hazardous zone" are no longer apparent once the children are provided a bus ride to school.

School choice policies can have a significant effect on the ability of children to walk or bicycle to school by allowing students and parents to choose the school that they will attend, regardless of whether or not the school is the closest to the student's home. Overlapping attendance zones lead to increased transportation costs for the school and decrease the strength of the ties between schools and their surrounding neighborhood. This makes it less likely that the school will be interested in working with transportation agencies to improve traffic safety because fewer parents will be engaged since their children may ride the bus several miles rather than attend the nearest neighborhood school.

Transportation policies and school choice policies can also work to support SRTS by strongly encouraging attendance at neighborhood schools, by providing transportation services only to those students beyond a minimal walking/bicycling distance (one-half mile), and by instituting policies to control the dropping off of children by their parents in private automobiles.

Summary

The Genesee-Finger Lakes Region includes nine counties comprised of 192 cities, towns, and villages. Due to the region's diversity, there is also a range in the types of schools (traditional neighborhood schools located in cities, many villages, and some inner-ring suburbs compared to larger campus facilities located on more open land that serve students from a larger surrounding area.

As such, some schools are more likely to have larger numbers of children that walk and bicycle to school. Schools located in areas less favorable to supporting a large percentage of students walking and bicycling should still support those that do and should educate all students beginning in the early grades in safety skills.

By educating young students in safe and responsible walking and bicycle skills, SRTS programs can provide substantial assistance in developing lifelong safe walking and bicycling habits. The following part of this guidebook describes how schools can implement SRTS programs adapted to any school within the Genesee-Finger Lakes Region.

PART IV

IMPLEMENTING A SRTS PROGRAM

The preceding chapters to this Guidebook discussed the purpose and need for SRTS programs, the "five E's" that comprise the strategies of effective SRTS programs, and the factors that affect the feasibility and safety of children walking and bicycling to school in the Genesee-Finger Lakes Region. In spite of challenges, there are opportunities throughout the region to improve the safety of students that choose to walk and bicycle to school and increase the number of students that do so.

The steps listed below are provided as a framework that can be adapted to fit local conditions within the Genesee-Finger Lakes Region. The steps can and should be modified as needed to reflect the conditions at each school and school district. In order to maximize the effective use of time and resources the school district-level is suggested as the appropriate level for the overall coordination and implementation of the SRTS program. The individual schools will implement many of the SRTS activities; however these actions should be guided and supported by the school district SRTS committee to avoid "re-inventing the wheel" and to enhance the program's likelihood for success.

1. **Formation of SRTS Committee**

The school district should convene a SRTS committee to coordinate its program development. It is imperative that the school district invite all affected stakeholders including state and local transportation agencies, law enforcement agencies, and parent-teacher association representatives to participate on the committee. This committee should review the school district's Wellness Policy to identify portions that could be mutually supportive with the SRTS Program.

The school district should designate an individual to coordinate SRTS committee activities district-wide and to act as a liaison with other partners and stakeholders including the SRTS point of contact at each school. Each school should designate a SRTS point of contact to work with the district-wide coordinator and the school's administration to facilitate the implementation of the SRTS program at the individual school.

2. **Provide Basic Walking and Bicycling Safety Education**

The district SRTS coordinator should contact their respective County Traffic Safety Board (TSB) with the immediate goal of seeking their assistance in providing a brief presentation to all students on Traffic Safety, specifically basic walking and bicycling skills. In the event that the County TSB is not able to assist the school in this regard, the coordinator should contact the Governor's Traffic Safety Committee (GTSC) along with the county sheriff's office or city, village, or town police department to determine if an officer can be made available to provide the requested instruction. In Monroe County, the coordinator should contact the Monroe County Office of Traffic Safety to initiate SRTS program development.

If none of the previously mentioned agencies can assist, the school should contact the New York State Department of Transportation (NYSDOT) SRTS Program, the National Center for Bicycling and Walking, or the Genesee Transportation Council for assistance in facilitating education in basic walking and bicycling skills.

3. **Inventory Existing Conditions**

The school district should survey or count students for each school to determine the number that typically walk or bicycle to school to provide baseline information for subsequent program evaluation. If possible, this information should be collected over several days representative of typical spring or fall weather conditions. The SRTS committee should work with the school administration and transportation staff to determine approximately how many students live within walking and bicycling distance of the school (even if those students currently ride the bus or are dropped off by their parents and/or caregivers).

Faded Crosswalks May Need New Paint

The committee should provide guidance and the information needed for each school to complete a Walkability Survey of the neighborhoods around the school (see Part II). This survey should evaluate the area within walking distance (one to two miles) and should note conditions that may suggest the need for potential improvements, such as faded crosswalk striping, missing sidewalks, and school zone signage discussed within Part II of this guidebook. Many, if not all, of these potential improvements will require the permission of the transportation agencies responsible for the roadways.

4. **Assess Alternatives**

Based on the results of the Walkability Survey the committee should discuss and consider potential improvement alternatives, considering those suggested within this guidebook in light of resources available to the school district and the other partners on the committee. These alternatives should include not only physical improvements but also education, encouragement, and enforcement activities necessary to provide a balanced SRTS program.

Improve and Promote Transportation Safety for all Modes and Users

5. **Recommend Preferred Actions**

Following the review of the alternatives, the SRTS committee should prepare a set of recommended actions for implementation, along with associated costs and timeframes. In some cases, this may require additional work such as the

completion of an engineering study or facility design while others such as participating in International Walk to School Day may be relatively easy to implement.

6. **Evaluate Actions Against Baseline Data**

Following the implementation of the recommended action, the SRTS committee should conduct an evaluation as described within Part II of this guidebook against baseline data. The results of the evaluation should be considered by the SRTS committee and should be utilized to continually improve the SRTS program.

GTC staff are available to assist schools in developing SRTS programs, to serve as a clearinghouse for SRTS resources and information, and to promote transportation safety for all modes and users throughout the Genesee-Finger Lakes Region including elementary and middle school students.

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Appendix

SAFE ROUTES TO SCHOOL ACTION PLANS

As part of the GTC Regional Safe Routes to School Program and to inform the development of the *Safe Routes to School Guidebook for the Genesee-Finger Lakes Region*, five SRTS Site Assessments were performed for representative urban, suburban, and rural schools located throughout the region. The SRTS Site Assessments identified and prioritized engineering strategies for each school site and the nearby area including conceptual design, cost estimates, and program activities intended to support the recommended improvements within an associated Action Plan. Site Assessments were performed and Action Plans prepared for five schools including:

- Attica Middle School
- Elementary School #19, Rochester
- Honeoye Falls-Lima Middle School
- Johanna Perrin Middle School, Fairport
- Palmyra Elementary School

The Safe Routes to School Action Plans provide specific recommendations for engineering, operational, and programmatic activities intended to improve the number of students that safely walk and bicycle to school in each of the respective schools, including planning-level cost estimates for implementation and suggested prioritization for program implementation.

The SRTS Action Plans for the participating schools are available to interested parties throughout the region as part of GTC's ongoing efforts to assist schools in developing SRTS programs, serve as a clearinghouse for SRTS resources and information, and promote transportation safety for all modes and users throughout the Genesee-Finger Lakes.