



COMPREHENSIVE
GUIDE TO
**SAFE ROUTES
TO SCHOOL**
IN PENNSYLVANIA

August 2013



PA Safe Routes to School Resource Center





The *Comprehensive Guide to Safe Routes in Pennsylvania* was developed by the Pennsylvania State Association of Township Supervisors (PSATS) and Pennoni Associates Inc. under contractual partnership to the Pennsylvania Department of Transportation.

August 2013



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Comprehensive Guide to Safe Routes to School in Pennsylvania

The *Comprehensive Guide to Safe Routes to School in Pennsylvania* is a central resource for schools, municipalities, community leaders, parents, police, and anyone else seeking information about the Safe Routes to School (SRTS) program in Pennsylvania. This guide contains information on the various resources, materials, training, and funding available through the SRTS program.

The comprehensive guide is broken down into the following sections:

- **SRTS Program Overview** – Provides information about the program in general, the program’s history, its funding, and its goals.
- **Noninfrastructure Programs and Support** – Includes information about how to develop an SRTS program and describes statewide resources, grants, education, and training. This section focuses on four of the five Es of Safe Routes to School: education, encouragement, enforcement, and evaluation.
- **Infrastructure Funding and Support** – Provides details on the funding available to schools and municipalities to enhance their existing infrastructure to create safer routes to school. This section explores the fifth E of SRTS, engineering, and reviews the steps to take to develop an infrastructure project.

Much of the information in the guide can also be found in various locations within the Pennsylvania Safe Routes to School Resource Center website, www.saferoutespa.org.

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SRTS Program Overview

What is Safe Routes to School?

Safe Routes to School is a national and international movement to create safe, convenient, and healthy opportunities for children to walk and bicycle to school. Between 2005 and 2012 in the United States, the federal government provided funding for all 50 states and the District of Columbia to implement a Safe Routes to School program. Since 2012, Safe Routes to School has become a state-focused initiative with individual states deciding how they want to fund projects that encourage and promote walking and bicycling to school.

Safe Routes to School (SRTS) is designed to encourage children to walk and bicycle to school, helping to reverse the alarming nationwide trend of increased childhood obesity and inactivity. By getting more children to walk and bicycle to school, communities are also reducing fuel consumption, alleviating traffic congestion, and improving air quality. SRTS programs are built on collaborative partnerships among many stakeholders, including educators, parents, students, elected officials, engineers, city planners, business and community leaders, police, health officials, and bicycle and pedestrian advocates.

The term “Safe Routes to School” was first coined in Denmark in the 1970s. Since that time, Safe Routes to School has spread throughout Europe and to Australia, New Zealand, Canada, and the United States.

In America, the first Safe Routes to School program occurred in the Bronx in 1997. Three years later, the National Highway Traffic Safety Administration issued funding for Safe Routes to School pilot programs in Marin County, California, and Arlington, Massachusetts. Within a year of the launch of these programs, grassroots Safe Routes to School efforts were springing up throughout the United States.

In 2005, the Safe, Accountable, Efficient, Transportation Equity Act – a Legacy for Users (SAFETEA-LU) provided \$612 million in funding for SRTS programs to be implemented in all 50 states and the District of Columbia. SAFETEA-LU, which ended on June 30, 2012, has been replaced by the Moving Ahead for Progress in the 21st Century (MAP-21) bill. The new legislation provides funding for Safe Routes to School, but this funding now competes with other project categories, including rails to trails, scenic overlooks, historic preservation, and other general bicycle and pedestrian projects.

In 1969, approximately 50 percent of children walked or bicycled to school. Today, fewer than 15 percent do. The result? Less active, less independent, and less healthy kids.

Sources: Federal Highway Administration, U.S. Environmental Protection Agency

Funds that were allocated to states (including Pennsylvania) from 2005 to 2012 remain until expended or rescinded. Those funds may still be used to construct new or enhance existing bicycle and pedestrian infrastructure around schools and to launch SRTS education, encouragement, evaluation, and enforcement campaigns in elementary and middle schools.

Safe Routes Funding Allocation

Under SAFETEA-LU, each state was required to spend between 10 and 30 percent of its SRTS funding on noninfrastructure activities, which educate, encourage, and enable students to walk and bike to school. Pennsylvania has historically spent about 10 percent of its federal allocation on such noninfrastructure activities. The remaining 90 percent of funds have been allocated to more traditional infrastructure or capital improvement projects, such as sidewalks, crosswalks, and signs.

Noninfrastructure

Noninfrastructure activities do not involve physical improvements to transportation structures, but instead serve to increase awareness and encourage safe use of existing or future facilities. Specifically, noninfrastructure support involves development, implementation, or expansion of programs that educate, encourage, enforce, and evaluate safe routes to school.

Noninfrastructure support of Safe Routes to School involves development, implementation, or expansion of programs that educate, encourage, enforce, and evaluate safe routes to school.

Noninfrastructure support to schools includes bicycle education and crossing guard training, walkability audits at schools, and safe walking and biking lesson plans for classrooms. It also promotes and provides support of Walk to School Day, which is celebrated in October, either the first or second Wednesday, and Bike to School Day, which is celebrated in May.

To help meet the noninfrastructure goals of the program, PennDOT provides grants to schools to plan, promote, educate, and encourage safe routes to school activities. In 2008 and 2009, 40 schools were awarded grants of \$5,000 each to support their noninfrastructure SRTS activities. The Pennsylvania Safe Routes to School Resource Center awarded \$66,000 to 11 schools in 2011 and \$58,500 to 11 schools in 2012 to fund a variety of activities focused on walking, biking, and safe routes, including assemblies, bike rallies and rodeos, teacher and crossing guard training, safety equipment, and promotional materials. In 2013, approximately \$40,000 in SRTS noninfrastructure minigrants (maximum of \$2,000 grant each) has been awarded to 22 schools for funding a variety of Safe Routes to School projects.

Infrastructure

Infrastructure projects involve physical additions or improvement of existing transportation facilities around a school. Traditionally, such improvements include

sidewalks, bike lanes, crosswalks, signs, and signals, although smaller improvements such as bike racks or bike lockers will qualify too.

Since the inception of the federal Safe Routes to School program in 2005, PennDOT has committed nearly \$20 million to 34 capital improvement projects that will enable and encourage children to safely walk or bicycle to school.

The SRTS Program Structure in Pennsylvania

Under SAFETEA-LU, the Federal Highway Administration (FHWA) provided SRTS funding to each state Department of Transportation. In Pennsylvania, PennDOT administers all aspects of the program, including both the infrastructure and noninfrastructure components. To help administer the Safe Routes to School program under SAFETEA-LU, PennDOT contracted with third-party entities to provide support to schools and communities for noninfrastructure activities, such as planning, education, encouragement, enforcement, and evaluation, which promote walking and bicycling to school.

Pennsylvania State Association of Township Supervisors

In February 2011, PennDOT awarded the Pennsylvania State Association of Township Supervisors (PSATS) a three-year contract to administer the noninfrastructure portions of Pennsylvania's Safe Routes to School program. PSATS assists in developing and promoting a wide array of programs and resources in an effort to expand the reach of the Safe Routes program in Pennsylvania.

PSATS is a nonprofit, service organization located in Enola, Cumberland County; it represents Pennsylvania's 1,455 townships of the second class and some 10,000 elected township officials. Since its founding in 1921, the association has existed as an information clearinghouse to help municipal officials better understand their duties and responsibilities of office and to enhance their capacity to deliver essential services to residents as efficiently and effectively as possible. In recent years, PSATS has expanded its scope to deliver and manage a wide variety of training and other programs on behalf of the commonwealth.

PSATS employees staff the Pennsylvania Safe Routes to School Resource Center, a joint venture of the association and PennDOT. The center provides schools, parents, students, municipalities, and other community members with tools necessary to develop, implement, and maintain safe, healthy walking and bicycling routes for students. Center staff members are also available to answer questions about Safe Routes to School and provide support to schools and communities interested in starting or expanding an SRTS program.

PennDOT's contract with PSATS has focused on the following SRTS projects:

- Development of an interactive **website** to promote the SRTS program in Pennsylvania. Since June 1, 2011, www.saferoutespa.org has served as the central

clearinghouse for all resources, training, and funding opportunities available in Pennsylvania through the federal SRTS program.

- Delivery of a statewide **bicycle education course** to train adults on how to teach safe bicycling techniques to school-aged children throughout Pennsylvania. Training was held at six sites across the state in the fall of 2011 and 2012. The training is scheduled once again for September, October, and November of 2013.
- Development of **bicycle education lesson plans** consistent with current Pennsylvania Department of Education curriculum standards. The series of 30-minute lesson plans target third and sixth graders and address a variety of key bicycle safety topics. Teachers may obtain the lesson plans at www.saferoutespa.org/bicycle-education-lesson-plans.
- Development, promotion, and administration of **noninfrastructure grant program** to schools for planning, promotional, educational, encouragement, and evaluative activities in support of Safe Routes to School projects. Over the three years of the contract, the Pennsylvania Safe Routes to School Resource Center has awarded approximately \$165,000 to around 40 schools to fund a variety of activities focused on walking, biking, and safe routes, including assemblies, bike rallies and rodeos, teacher and crossing guard training, safety equipment, and promotional materials.
- Administration and promotion of the annual observance of **Walk or Roll to School Day**, which is celebrated in October, either the first or second Wednesday.
- Development and administration of statewide **crossing guard train-the-trainer** that shows adults how to teach crossing guards to be more effective and safe in their duties. The training was held at six sites across the state in the late winter and early spring of 2012 and 2013.
- Administration of **walkability audits** at 63 schools that evaluated schools' walking and bicycling routes, identified barriers, and recommended solutions. Additional walkability audits will be held in the fall of 2013.

In addition, PSATS has developed a variety of other resources to promote SRTS activities. To help administer the noninfrastructure portion of the SRTS program, PSATS has joined forces with its primary subcontractor, Pennoni Associates Inc., a multidisciplinary consulting engineering firm with 20 offices throughout the Mid-Atlantic region. Pennoni engineers and technical experts provide expertise on certain aspects of the SRTS program, including leading walkability audits at schools around the commonwealth, developing and instructing crossing guard training statewide, developing bicycle education lesson plans for third and sixth grade classrooms, and instructing bicycle education courses statewide.

Penn State Hershey PRO Wellness Center

Between 2007 and 2010, the Center for Nutrition and Activity Promotion at Penn State Hershey Children's Hospital (now called the Penn State Hershey PRO Wellness Center) worked under contract with PennDOT to develop, coordinate, and administer the noninfrastructure portion of the SRTS program. During those three years, the center specifically provided the following services:

- Administered noninfrastructure grants to 40 schools across the state.
- Produced instructional tool kits and promotional materials to support the development and implementation of SRTS plans in schools.
- Provided noninfrastructure support to schools implementing infrastructure projects.
- Led statewide promotional efforts around the annual Walk to School Day observance.
- Trained school, community, and state leaders on various topics around the principles of Safe Routes to School, including how to conduct a walkability audit. Through the center's partner, Pennoni Associates Inc., 35 walkability audits were provided.

The Positive Impact of Safe Routes to School

When Safe Routes to School became part of the national conversation in the early 2000s, concerns were raised that, within the span of a single generation, fewer children were walking and bicycling to school. At the same time, childhood obesity and related diseases such as diabetes were on the rise.

The Safe Routes to School program aims to increase the number and improve the safety of children bicycling and walking to schools on a daily basis. In addition, SRTS programs benefit schools and communities by improving health and fitness, improving safety, relieving traffic congestion, reducing air pollution, decreasing fuel consumption, and expanding local infrastructure.

Increase Childhood Activity and Improve Health

In 1969, about half of all U.S. children walked or bicycled to school, including approximately 87 percent of children who lived within one mile of their school.¹ Today, fewer than 15 percent of schoolchildren walk or bicycle to school.²

This statistic reflects, in part, how dependent we have become on motorized transportation. Across the nation, people are driving more and walking less, which is contributing to more Americans becoming overweight or obese.

As a result of our increasingly sedentary lifestyles, most children today do not get enough physical activity, and it's showing in their health. Childhood obesity rates have soared over the past 40 years with more than 33 percent of children and adolescents now considered overweight or obese or at risk of becoming so.³

Most children today do not get enough physical activity, and it's showing in their health. Childhood obesity rates have soared over the past 40 years with more than 33 percent of children and adolescents now considered overweight or obese or at risk of becoming so.

Source: Journal of the American Medical Association

The Centers for Disease Control and Prevention recommends that children and adolescents participate in 60 minutes of structured and informal physical activity a day. Walking or bicycling to school helps children move closer to that goal. Walking one mile to and from school each day provides two-thirds of the recommended 60 minutes of daily activity. In fact, children who walk to school start out on the right foot because they typically exhibit higher levels of physical activity throughout the entire day than students that are driven.⁴

Safe Routes to School activities teach children why physical activity is important and why walking or biking to school can make a difference in their lives. SRTS projects strive to

make it safer for children to walk and bicycle to school, and this can lead to increased physical activity and ultimately healthier kids. By targeting children during their impressionable years (kindergarten through eighth grade), the SRTS program strives to instill good bicycling and walking habits in youth that they can carry with them into their adult lives.

Improve Safety

Motor vehicle crashes are a leading cause of death among young children. Twenty percent of fatal crashes involving children between the ages of 5 and 9 are pedestrian-related fatalities.⁵

A 2012 study by the University of Illinois at Urbana-Champaign looked at ways to improve pedestrian safety for preadolescents crossing the street, a dangerous challenge that is a leading cause of injury in children. The study examined how multitasking (using cell phones or listening to music) affected children crossing the street and found that children who were more physically fit had better success crossing the street while using a cell phone compared to lower-fit children. The results suggest that higher levels of childhood aerobic fitness may attenuate the impairment typically associated with multitasking (i.e., cell phone use) while crossing the street.⁶

By creating and promoting a Safe Routes to School program, schools will help to increase students' physical activity while teaching children about safety while walking, biking, and crossing streets. A comprehensive SRTS program will help a school to improve pedestrian safety and encourage safe walking and biking habits.

Reduce Traffic and Pollution and Improve Communities

Some communities have found that as much as 20 to 30 percent of morning traffic is generated by parents driving their children to schools.⁷ Although it's true that trends in housing and school siting may result in people living farther away from schools, in actuality, private vehicles account for half of the school trips that are between a quarter and a half mile.⁸ This is a distance that could easily be traversed on foot or by bike.

The additional cars on the road increase air pollution, which affects the community's overall health and well-being. In fact, one-third of schools in the United States are in "air pollution" danger zones.⁹ Children exposed to air pollution are more likely to have asthma, lung deficits, and a higher risk of heart and lung problems than adults.¹⁰ Such statistics clearly show a need to reduce vehicular pollution and improve the respiratory health of children.

A return to 1969 levels of walking and bicycling to school would save 3.2 billion vehicle miles, enough to keep more than 250,000 cars off the road for a year.

Source: Safe Routes to School National Partnership

If children are to walk and bicycle to school, they need safe travel routes. Pedestrians are more than twice as likely to be struck by a vehicle in locations without sidewalks.¹¹

That's why it is critical that pedestrian-friendly infrastructure be in place around a school, that crosswalks and crossing guards are present to increase intersection safety, and that appropriate road signs alert motorists to watch for pedestrians and cyclists. The bottom line is if students and their parents don't feel safe while walking and bicycling to school, they won't do it, no matter how much they believe in the numerous benefits.

Creating a Safe Routes to School program will have the added benefit of improving a community's local infrastructure network. Beyond improving student walking and bicycling routes, the addition of walking and biking paths provides residents with more choices for traveling throughout their community, whether it's by foot, by bicycle, or by vehicle. The end result is a more livable, attractive, and desirable community for all its citizens.

Save on Busing Costs

An added benefit of Safe Routes programs is the cost savings that a school district could potentially benefit from if more children were to walk and bicycle to school instead of taking buses. This cost savings is especially attractive as school districts look for ways to tighten their belts in today's tough economic times.

The more that school districts improve bicycle and pedestrian facilities around their schools and increase the number of children walking or bicycling to school, the more money they can save in busing costs. In the 2009-10 school year, the average cost a school paid to bus a student to and from school in Pennsylvania was \$447.¹² If a school can turn 50 to 60 bus riders into walkers or bicyclists and thus eliminate one bus route, a school district can expect to save between \$24,000 and \$27,000 a year, nearly half of the average teacher's salary in Pennsylvania in 2007.¹³

While walking and bicycling to school will not single-handedly stem the growing obesity epidemic, reduce greenhouse emissions, or help a school district balance its budget, it will get children moving again, and that is a step in the right direction.

Sources: Safe Routes to School National Partnership, www.saferoutespartnership.org/mediacenter/quickfacts (except ⁵, ¹², and ¹³)

¹ Federal Highway Administration, 1972

² U.S. Environmental Protection Agency, 2003

³ Journal of the American Medical Association, 2006

⁴ American Journal of Preventative Medicine, 2003

⁵ National Highway Transportation Safety Administration, 2008

⁶ www.ncbi.nlm.nih.gov/pubmed/21986808, 2012

⁷ U.S. Environmental Protection Agency, 2003

⁸ Federal Highway Administration, 2008

⁹ Journal of Environmental Planning and Management, 2008

¹⁰ *Epidemiology*, 2005, and *The Lancet*, 2007

¹¹ U.S. Department of Transportation, 1987

¹² PA Department of Education, 2009-10

¹³ PA Department of Education, 2007

The Five Es of Safe Routes to School

The SRTS program is built around the “Five Es of Safe Routes to School”—education, encouragement, enforcement, evaluation, and engineering. This comprehensive approach enables communities to establish, maintain, and continue to increase safe walking and bicycling opportunities to school by addressing students, parents, teachers, police, motorists, and other community members.

Education

This aspect of SRTS involves teaching students that walking and bicycling are healthy, fun, and sustainable transportation choices. As part of the education component, schools usually focus on stressing the many benefits of walking and bicycling: increasing physical activity, improving health, reducing fuel consumption, and improving air quality. Students are also taught how to safely travel by foot or bicycle to and from school. In addition, motorists might be educated about the rules of the road as they relate to bicyclists and pedestrians.

Teaching students that walking and bicycling are healthy, fun, and sustainable transportation choices.

Encouragement

Motivating students to take advantage of safe walking and bicycling opportunities.

Events, activities, and lessons at schools can be used to promote walking and bicycling. Encouragement is especially helpful in areas where safe walking and bicycling opportunities exist but students need motivation and leadership to take advantage of them. In communities where walking conditions are considered

unsafe, encouragement should not begin until infrastructure and other walking conditions can safely accommodate student travel. Encouragement efforts often dovetail with education to get students moving and to build support for SRTS from the community.

Enforcement

In this component, activities seek to encourage safety and to ensure that pedestrians, cyclists, and motorists abide by the rules of the road. Enforcement is essential for ensuring the safety of students, especially as walking and bicycling to school gain popularity. When planning enforcement efforts, schools should partner with local police departments.

Ensuring that pedestrians, cyclists, and motorists abide by the rules of the road.

Evaluation

Successful SRTS programs evaluate the progression of student travel habits and the evolution of parental attitudes toward walking and bicycling. Schools are encouraged to use two kinds of student/parent evaluation materials: the first helps to track the number of children walking or bicycling to school, and the second provides data on why parents do not allow their children to walk to school and what could prompt a shift in behavior.

Evaluating the progression of student travel habits and the evolution of parental attitudes toward walking and bicycling.

By conducting evaluations at both the start and the conclusion of a school year during which an SRTS program or project was implemented, a school can determine if SRTS activities held throughout the school year affected students' walking and bicycling habits. These follow-up evaluations will also help to determine if parents' attitudes toward walking and bicycling to school have been changed by SRTS promotion and activities.

Another important component of evaluation is reviewing crash data (available from PennDOT) to map where collisions are occurring and using this information to plan travel routes around these hazardous areas. (See page 66 for more information on obtaining crash data from PennDOT.)

Evaluation provides useful data as to the scope and the success of a Safe Routes to School program; this data may also help to ensure that funding is available in the future.

Planning and implementing actual improvements to the local infrastructure to make it safer for children to walk and bicycle to school.

Engineering

Infrastructure improvements (known as "engineering" in SRTS) are a critical component of the SRTS approach. Successful SRTS programs often begin with a walkability audit, which provides a thorough assessment of the barriers that keep children from walking and bicycling to school. This on-the-ground assessment will help to establish a list of recommended improvements, from short-term suggestions such as painting crosswalks, clearing overhanging tree limbs and brush, or altering traffic light timing to long-term recommendations such as installing sidewalks or reconstructing intersections. Engineering also includes the planning and implementation of actual improvements to the local infrastructure to make it safer for schoolchildren to walk and bicycle.

Noninfrastructure Programs and Support

Getting Started with Safe Routes to School

In less than a decade, Safe Routes to School has grown from a pilot program at a few select schools to a national campaign to help students across the country safely walk or bicycle to school. With this exponential growth, it can be overwhelming for schools or community groups to grasp the program. As such, the first question is commonly “Where do I get started”? Since Safe Routes is not a “one size fits all” program, there is no exact path that must be followed; however, there is a general process for developing a successful, effective and sustainable program at your school.

The Federal Highway Administration notes that successful SRTS programs should incorporate one or more of the following elements: engineering, education, enforcement, encouragement, and evaluation. Ideally, programs should integrate elements from all five approaches.

Ideally, SRTS programs should integrate elements from all five of the Es for Safe Routes to School: engineering, education, enforcement, encouragement, evaluation.

Understanding Barriers to Walking and Bicycling

Before an SRTS project is developed, it is essential to obtain a clear understanding of the true barriers to walking and bicycling and address them accordingly. Because physical, behavioral, and perceived barriers may all influence whether children walk to school, it is important to discover the unique conditions and challenges at a school. Oftentimes, the true reasons that students do not walk to school are not apparent, yet they can be discovered through the work, input, and investigation by a team made up of various members of the community.

The National Center for Safe Routes to School program advocates the use of two components to further explore why students are not walking and biking to school:

1. Walkability assessments and walkability audits
2. Parent surveys

Before an SRTS project is developed, it is essential to obtain a clear understanding of the true barriers to walking and bicycling.

Walkability Assessments/Audits: Addressing Infrastructure and Behavioral Barriers

Conducting a walkability assessment allows a school to assess the status of its walking infrastructure and to document any dangerous (or illegal) behaviors performed by motorists or walking students. Through the Safe Routes to School program, PennDOT has provided a limited number of walkability audits, which are detailed evaluations of routes led by a traffic engineer. However, a

school can conduct its own assessment using members of the community by following the same steps that the experts from the Pennsylvania SRTS Resource Center use in conducting walkability audits. (See page 48 for further descriptions of walkability audits and assessments.) The steps for conducting a walkability assessment are summarized below:

1. **Identify a team leader**, such as a local planner, engineer, or another community member with the time, energy, and appropriate knowledge to follow the recommended steps.
2. **Assemble a team**, which includes at a minimum school officials, municipal officials, local law enforcement, parents, and students, including those with disabilities and those who walk and bicycle to school.
3. **Assemble information ahead of time** to identify existing student walking routes to school and any details about incidents occurring along the routes. Crash data and other incident data for areas surrounding the school can be obtained from PennDOT. Local officials will be able to supplement this data with high crash-risk areas and “nonreportable” accidents.
4. **Hold a kickoff meeting** to discuss the most commonly used student travel routes and any known physical or perceived barriers along them.
5. **Walk the routes** to identify hazards and observe behavior. Follow students along the established walking routes as they walk to and from school. Look for things that may prevent students from walking safely, and take notes and photos along the way. These obstacles can be related to infrastructure (gaps in sidewalks, incorrect signals/signs, etc.) or noninfrastructure (no crossing guards, no planned routes or walking school buses, drivers failing to yield, overhanging branches or obstructing vegetation, etc.).
6. **Prepare a final report** that summarizes the audit findings and includes the team’s list of recommended infrastructure and noninfrastructure strategies for improving safety.

See page 39 for more detail on the steps for conducting a walkability assessment or audit. The website of the Pennsylvania Safe Routes to School Resource Center (www.saferoutespa.org/walkability-audits) also contains resource materials.

Several organizations also offer tools for analyzing and assessing the walking and bicycling environment. A good resource for exploring these tools is available at www.walkinginfo.org/problems/audits-general.cfm.

Generally, these tools guide users through the completion of an assessment of several categories, including land use, transportation environment, facilities, aesthetics, and signage. These tools are often presented as checklists that guide users through an analysis and assessment exercise as they observe their walking environment. These checklists assist users with compiling observations about the walking environment, but they do not necessarily lead to valuations of the environment or to solutions for remediating poor conditions. The best use for in-house assessments is identifying barriers and developing a project scope.

A walkability assessment allows a school to examine the status of its walking infrastructure and to document any barriers to safe routes.

Parent Surveys: Determining Perceived Barriers to Walking and Biking

The National Center for Safe Routes to School, which has collected data from around the country, has identified the top five reasons why parents do not allow students to walk to school:

1. Distance to school
2. Traffic speed along the routes
3. Traffic volume along the routes
4. Intersection and crossing safety concerns
5. Weather

Although weather cannot be altered and distance from school cannot be directly impacted by SRTS program funds, many SRTS projects would fall into the category of “traffic calming.” These projects reduce traffic speed, may limit volume, and can make intersections safer, allowing for safer bicycle and pedestrian travel in these corridors.

To get a better understanding of why students do not walk or bicycle to school, it is best to ask the people who most often make the transportation decisions for students: the parents. Obtaining parent input can be done during discussions at school meetings, such as PTO/PTA, or through take-home surveys. The National Center for SRTS has developed a parent survey for this purpose. More information about this form can be found on page 38 or at www.saferoutesinfo.org/resources/evaluation_parent-survey.cfm.

Developing Solutions

Once the team has worked to identify existing barriers to walking and bicycling, solutions can be explored and developed.

During brainstorming and proposing improvements to enhance walking and bicycling routes to school, it is important to find solutions that address the concerns that were originally identified through parent surveys and/or walkability assessments and audits.

For example, parents have reported that their children are not allowed to walk to school because of a lack of crossing guards, and the walkability team has identified a dangerous intersection during its audit. In this case, an infrastructure project that focuses on improving crossing safety at the intersection would be the most appropriate way to address the physical barrier. To complement the infrastructure upgrade, the school should plan to hire and properly train crossing guards to help mitigate the parental concern.

It is critical that solutions address concerns that were identified through parent surveys and/or walkability audits.

Most SRTS projects are divided into both infrastructure (engineering of physical improvements to routes and roadways) and noninfrastructure (education, encouragement, enforcement, and evaluation) activities. When applying for infrastructure funding, project sponsors must describe noninfrastructure activities that the school has coordinated in the past and plans for the future. Such projects and activities can serve as a “match” to the infrastructure funding. The school’s participation ensures that projects are sustainable and that the limited funding is spent on effective, sustainable programs. Ideally, the best solutions for creating safer routes to school address both infrastructure and noninfrastructure issues.

For more information on how to develop an SRTS project that is more likely to receive approval for infrastructure funding, see page 51.

Involving Children with Disabilities

The goal of Safe Routes to School programs is to make it safer to walk and bicycle to school and to encourage all students, including those with disabilities, to consider healthy, environmentally friendly transportation options. When Congress created the federal SRTS program, it emphasized that children with disabilities should also be encouraged to walk and bicycle to school.

Whether facing a physical, sensory, emotional, or cognitive challenge, children with disabilities who participate in Safe Routes programs can develop social skills and interact with peers while traveling to school, learn pedestrian and bicycle safety skills, and participate in positive experiences that encourage independent travel.

In its handbook, *Involving Students with Disabilities in SRTS*, the National Center for Safe Routes to School offers a number of strategies for ensuring that children with disabilities are involved in an SRTS program. These strategies are summarized below:

- Involve special education professionals and parents of children with disabilities in Safe Routes efforts. Their perspective and awareness of needs will prove invaluable when developing SRTS activities, such as Walk to School Day and bicycle education classes.
- Include children with disabilities in a walkability audit. They can help to identify physical barriers along routes, such as missing curb ramps, steep driveways, sidewalk gaps, and pedestrian signals that are not accessible.
- Make the school principal aware that including students with disabilities is a priority of Safe Routes to School efforts. Principals have unique authority in their schools and can help to put organizers in touch with special education teachers and parents of children with disabilities.
- Ensure that the SRTS message and images are inclusive of children with disabilities. In fact, images that represent the SRTS message should include a balance of children of all ages, genders, ethnicities, and abilities.
- Establish special programs when necessary. Most of the time, children with disabilities can be included alongside their peers, but on some occasions it may be best to work with a special education teacher on a custom-tailored program for children with disabilities.

Children with disabilities who participate in Safe Routes programs can develop social skills and interact with peers while traveling to school, learn pedestrian and bicycle safety skills, and participate in positive experiences that encourage independent travel.

For more information on this topic as well as case studies of schools around the country that include children with disabilities in Safe Routes to School and other walking and bicycling activities, visit the National Center for Safe Routes to School (www.saferoutesinfo.org/program-tools/program-development-involving-children-disabilities-srts) and review its publication, *Involving Students with Disabilities in SRTS*.

Walk or Roll to School Day

Walk to School Day is an internationally recognized day that celebrates the benefits of walking by encouraging schoolchildren to walk and bicycle to school. Held annually in October (either the first or second Wednesday), Walk to School Day promotes walking and bicycling and generates enthusiasm that lasts throughout the year. In Pennsylvania, it is celebrated as Walk or Roll to School Day. The event has drawn increased attention to the need for safe routes to school and the benefits of encouraging children to make walking and bicycling to school a regular activity.



In Pennsylvania, Walk or Roll to School Day celebrates the benefits of walking to school. It is held annually on the first or second Wednesday in October.

Ways to Celebrate Walk or Roll to School Day

Walk to School Day is not a one-size-fits-all event. Communities throughout Pennsylvania, the nation, and even the world have found their own unique ways to celebrate the day. Here are some ideas for getting a school involved in this annual event:

Start Planning

Organize a Walk or Roll to School Day committee or task force at the school. To ensure community support for the day, it is important to invite as many groups as possible to participate in the planning. Involve teachers, students, school nurses, administrators, parents, local police, municipal officials, and even local media. Ask the PTO or PTA to get involved as a partner to better generate enthusiasm for the event among parents and families.

Brainstorm Ideas

Research Walk to School Day to find out what other communities have done to create a successful event. Through its website, the Pennsylvania SRTS Resource Center provides materials and ideas for holding a successful Walk or Roll to School Day.

Other useful resources are available at the International Walk to School Day (www.iwalktoschool.org) and the International Walk to School Day in the USA (www.walkbiketoschool.org) websites.

Some ideas for celebrating Walk or Roll to School Day include:

- Decorate walking routes with banners and signs that students have made ahead of time.

- Encourage parents, grandparents, caregivers, teachers, police, and municipal officials to walk to school with the students that day.
- Initiate a “walking school bus” in which students who live within walking distance to the school walk together, accompanied by adults, and make “stops” along the route to school to pick up additional children.
- Start a “bike train” in which a group of children and parents ride bicycles to school together with other families.
- Create a festive destination when students arrive at school by decorating with banners, balloons, and flags and providing music and noise with the help of the middle or high school band and/or cheerleaders.
- Check with local grocery stores and area businesses about donating healthy snacks and giveaways for the children who participate.
- Impose a “congestion fee” of \$1 to be paid by parents who transport their children to school on Walk to School Day.

As much as 20 to 30 percent of morning traffic is generated by parents driving their children to school.

Source: U.S. Environmental Protection Agency

Promote the Event at the School and With the Local Media

Hold poster and banner contests at the school to build excitement for the event among the students. Have gym teachers use class time to focus on walking/running sessions and to highlight the health benefits of walking and bicycling. Use the school’s website, email blasts, and materials sent home to provide parents with the benefits of walking and information about how the school will be celebrating the event.

Call the local media and encourage them to promote the event before, during, and after Walk or Roll to School Day. Ask if the local weatherman can broadcast weather reports that morning from the school, or encourage a reporter to join children participating in a walking school bus in a neighborhood near the school.

Register a School’s Participation

Between 2011 and 2013, schools that participate in Walk or Roll to School Day could register their event by signing up at the Pennsylvania SRTS Resource Center to receive a Walk or Roll to School Day kit. Online kits are available at www.saferoutespa.org. Schools that sign up with the resource center are automatically registered with International Walk to School Day in the USA at www.walkbiketoschool.org.

Safety Train-the-Trainer

Under the Safe Routes to School contract, the Pennsylvania SRTS Resource Center has offered statewide train-the-trainer courses in bicycle education skills and crossing guard safety techniques. The goal of the training is for attendees to return home and incorporate what they have learned into local bicycle education sessions for children and crossing guard training for adults.

Bicycle Education

Students should be trained on helmet fitting and basic bicycle handling skills, such as signaling, turning, and stopping, so that they stay safe and feel confident while bicycling to and from school and around their communities. Before they can be comfortable riding in traffic or along trails, new and inexperienced riders benefit from practice on their bicycle in relatively quiet settings, such as parking lots.

This course, available from the PA SRTS Resource Center, trains adults how to teach safe cycling skills to elementary and middle school-aged children.

Participants learn training techniques and are given the hands-on practice (if they bring their own bikes to the training) necessary to return to their communities and set up similar training geared to youth in their area.

The curriculum used in this course is the League of American Bicyclists' *Bicycling 123-Youth* course. At on-the-bike stations, participants learn and (with their own bikes) may practice the following skills:

- Welcoming young riders
- Bike inspection
- Helmet fitting
- Basic handling skills, including starting and stopping, riding in a straight line, hazard avoidance, visual scanning, signaling, turning, and yielding
- Fun and games



Through bicycle education courses available through the PA SRTS Resource Center, adults are trained on how to teach bicycle safety to children. (Photo by Brian Ferry, Warren Times-Observer)



Participants who bring their own bikes to the training get to practice their bicycle handling skills.

This course, which is available for free, is recommended for physical education and health teachers, police officers, parents, scout leaders, and other school and community representatives who are interested in making cycling safer.

Participants are encouraged to bring their own bicycles and helmets, which they can use as they move through the on-the-bike stations. Although having this equipment at the training is not necessary, participants who bring a bicycle and helmet will enhance their training experience by being able to practice the skills taught at the stations.

The course runs from 9 a.m. to 1 p.m. and is taught by Master League Cycling Instructors (LCIs) who are experts in the Bicycling 123-Youth curriculum. Courses were held in the fall of 2011 and 2012 and are scheduled statewide in the fall of 2013. Check www.saferoutespa.org/bicycle-education-training for a listing of dates and locations.

Crossing Guard Training

Adult crossing guards provide a critical role in helping school-age children cross streets safely. Yet, many crossing guards are community, parent, or teacher volunteers who may receive little or no training on how to properly and safely fulfill their responsibilities.

Properly trained crossing guards will ensure that motorists, bicyclists, and pedestrians follow the rules of the road, thus ensuring student safety at crosswalks.

Because of the important role that crossing guards play in child safety and ensuring safe travel to and from school, it is imperative that crossing guards be properly trained. Not only will such training help to protect student walkers and cyclists on their way to and from school, but a properly trained crossing guard may help to reduce safety or liability concerns. Properly trained crossing guards will increase the likelihood that motorists, bicyclists, and pedestrians follow the rules of the road, thus improving student safety—a priority for both the school and parents.

To achieve these goals, the Pennsylvania SRTS Resource Center offered a one-day **train-the-trainer** course in 2012 and 2013 that focused on teaching adults how to be effective, efficient, and safe crossing guards. Participants learned adult training techniques and the skills necessary to return to their communities and set up similar training geared to local crossing guards. From understanding the behavior of children to knowing what to wear and where to stand, participants returned home with the information they need to teach others how to be safe, effective crossing guards.

Specifically, the course covered the following classroom and practical components:

Classroom:

- State and federal law and regulations
- Roadway hazards

- Characteristics of children—behavior, physical capabilities
- Crossing guard qualifications, roles, and responsibilities
- Crossing guard equipment and attire
- Crossing guard positioning
- Crossing guard procedures
- Review and discussion

Practical:

Following the classroom portion of the course, participants applied what they learned with role playing and practice scenarios (as time permits).

The course, available at no charge, was recommended for crossing guards, municipal police officers, fire department officers, school district transportation personnel, public works supervisors, or anyone responsible for training adult crossing guards. It was taught by nationally recognized trainers who are experts in the crossing guard curriculum.

The standardized crossing guard procedures that were developed for this course are summarized below. The standards are part of the Walk or Roll to School Day kits from the Pennsylvania SRTS Resource Center and continue to be available online at www.saferoutespa.org/crossing-guard-training.

The standardized crossing guard procedures that were developed for this training course are summarized below.

CROSSING PROCEDURE: The Essence of Crossing Guard Training

There are two primary components of the crossing procedure: 1) scanning, and 2) extending gaps in traffic for safe crossing. The scanning procedure is simple, but its importance cannot be emphasized enough:

- Look left – right – left
- Look over your shoulder
- Listen

The scanning procedure is used before entering the crosswalk, while in the crosswalk, and while leaving the crosswalk. Crossing guards should teach this procedure to children as they assemble into groups at the roadside so that they, too, might employ it whether they are crossing with crossing guards or are at unguarded intersections.

The second of the two primary components of the crossing procedure is extending gaps in traffic for safe crossing. Crossing guards do not direct traffic; they look for gaps in traffic and, if necessary, extend

those gaps to allow children to cross by stopping oncoming traffic. Following is the basic procedure for extending gaps in traffic:

- Children should wait to be crossed
 - Stand one step back from the curb or edge of roadway
 - Gather as a group
 - Socializing is okay here, but not in the crosswalk
 - Remind gathered children of the scanning procedure
 - Remind children to
 - Stay within the crosswalk markings
 - Walk their bicycles while in the crosswalk
 - Continue scanning until they are out of the roadway
 - Manage gaps in traffic
 - Lengthen by using the STOP paddle
 - Create by using the STOP paddle
 - At signalized intersections
 - Always cross when the light is red for motorists
 - Always use the pedestrian signals when available
 - Scan for traffic
 - Make eye contact
 - With the first approaching motorists
 - With motorists in each lane
 - Use a whistle to get the attention of problem motorists
 - Follow the same, proper procedure all the time, even when traffic is light
 - Do not cross children if
 - Any traffic is moving
 - Any vehicles are in the crosswalk
 - After all traffic has stopped,
 - Move to the crosswalk where you can see traffic and children
 - Signal children to cross with your free hand
 - Continue to hold STOP paddle in the correct position
 - Remain in the crosswalk until the last child in a group has moved from the roadway
 - Check the crosswalk for stragglers
 - Move from the crosswalk, continuing to display the STOP paddle
 - Signal traffic to resume after leaving the roadway by lowering the STOP paddle
 - Wait for the next group of children
-

Teacher Resources

Lesson plans that teach bicycle and pedestrian safety to elementary school-aged children are available from the Pennsylvania SRTS Resource Center and a number of other organizations devoted to safe routes and healthy children.

Classroom Bicycle Lesson Plans

Third and Sixth Grades

The following five lessons plans help teachers to provide basic bicycle safety instruction to students in third and sixth grades. Each is approximately 30 minutes in length and conforms to Pennsylvania curriculum standards for health, safety, and education (Chapter 4 of Title 22 of the Pennsylvania Code) for third and sixth grade students.

- **Bicycle handling skills** – Teaches students the basics of safe bicycling handling skills. Students will recognize the importance of a properly fitting bicycle and helmet, understand the purpose of protective items and safety practices used when riding bicycles, and practice safe bicycling handling skills.
- **Operating environment** – Teaches students the basics of safe bicycle operations. Students will practice safe bicycling handling skills and understand and practice appropriate procedures for riding on sidewalks and streets.
- **Health enhancements** – Teaches students about cycling as a healthy form of regular exercise and how to identify and understand the health benefits of cycling. Students will demonstrate understanding of the health benefits of cycling and will generate an informative “advertisement” to promote the health benefits of cycling.
- **Safety and injury prevention** – Teaches students about equipment necessary for safe cycling. Additionally, techniques for checking the safety of that equipment and proper use are discussed. This includes teaching students to effectively fit and adjust bicycle helmets and reviewing the ABC Hand Check procedure.
- **Access** – Teaches students the basics of safe bicycling practices with the use of facilities and resources in their own communities. Students will recognize that there are appropriate areas for children and families to ride bicycles and will become familiar with local cycling resources.

Each module consists of a comprehensive hands-on lesson plan with activities and student materials for reprint. The lesson plans are available at www.saferoutespa.org/bicycle-education-lesson-plans.

The lesson plans are also available on the state Department of Education’s Standards Aligned System, which provides a catalog of department-approved lesson plans at <http://pdesas.org/>. Third grade lesson plans are accessible at

www.pdesas.org/module/content/resources/22086/view.ashx and sixth grade lesson plans at www.pdesas.org/module/content/resources/22089/view.ashx.

Classroom Walking Lesson Plans

The Center for Nutrition and Activity Promotion at Penn State Hershey Children's Hospital (now called the Penn State Hershey PRO Wellness Center), with sponsorship from PennDOT and the Federal Highway Administration, developed a series of 30-minute lesson plans for elementary and middle school teachers to use in their classroom to encourage healthy living and promote walking.

The modules consist of a lesson plan with activities and student materials for reprint. Each of the five modules focuses on one of the following topics:

- **Day 1: Energy Balance** – Discusses the importance of balancing the amount of food and drink a student consumes (energy in) to provide the right amount of fuel a body needs for healthy growth, everyday living, and physical activity (energy out).
- **Day 2: Walking for Energy Balance** – Focuses on the one hour per day of physical activity (energy out), which the Centers for Disease Control and Prevention recommends for children and adolescents. Emphasis is given to everyday activities and walking as types of physical activity. Students are given an energy tracker so that they can record the number of minutes they are involved in physical activity each day for a week.
- **Day 3: Pedestrian Safety** – Provides information about walking safely, focusing on the safety that sidewalks provide and potential pedestrian hazards. Students are taught tips for safe walking in a variety of situations, including around school buses. The lesson reviews various street signs that a pedestrian may encounter while walking and what these signs mean.
- **Day 4: Walking Observations, Part I** – Applies the previous pedestrian lessons to the real world by having students go outside and practice observing their surroundings. Students are given a Pedestrian Safety Checklist and told to look for things around their school that make walking unsafe.
- **Day 5: Walking Observations, Part II** – Ties together what students learned in the previous lessons with discussion about what they observed the day before, what makes their school property safe or unsafe for pedestrians, and how they can ensure they arrive at school safely.

The walking lesson plans are available for download at www.saferoutespa.org/walking-lesson-plans.

Pedestrian and Biking Safety Lesson Plans

Second and Fifth Grades

Safe Routes Philly, produced by the Bicycle Coalition of Greater Philadelphia, has developed an assortment of pedestrian and bicycle safety lessons intended for the second and fifth grade levels. Two activity books targeting second and fifth graders complement many of the lessons.

Lessons for second graders target pedestrian safety and include vocabulary, physical education, social studies, and math lessons; a video; walking activities; and pedestrian resources. The curriculum for fifth graders focuses on bicycle education through classroom, physical education, vocabulary, science, social studies, and math lessons. Bicycle resources and suggested student activities are also included.

Safe Routes Philly, which promotes biking and walking as fun, healthy forms of transportation in Philadelphia's elementary schools, offers its materials to schools, organizations, and entities interested in promoting pedestrian and bicycle safety at no cost.

For more information about these lesson plans, visit Safe Routes Philly at <http://saferoutesphilly.org/schools/curriculum/>.

Videos

Bicycle Education Videos

PennDOT has developed a series of five bicycle education videos to provide a visual and entertaining way to educate parents, students, and motorists about bicycle safety.

Links to the videos are available at www.saferoutespa.org/bicycle-education-videos. The bicycle education videos can also be viewed or downloaded from PennDOT's Just Drive PA website, www.justdrivepa.com/Resource-Center/Multimedia/, or PennDOT's YouTube Channel, www.youtube.com/user/PennsylvaniaDOT.

In addition, the videos are available on the state Department of Education's Standards Aligned System, which provides a catalog of department-approved classroom resources at <http://pdesas.org/>. Links to the videos on the PDE SAS system are noted below.

Before You Ride

Target audience: Elementary school students and their parents.

Description: This video covers such basics as bike selection, helmet fitting, bicycle safety checks, and securely parking a bike.

PDE SAS link: www.pdesas.org/module/content/resources/22166/view.ashx



These bicycle education videos provide a visual and entertaining way to educate parents, children, and motorists about bicycle safety.

Basic Riding Skills

Target audience: Elementary school students and their parents.

Description: This video describes essential riding skills, such as braking, balancing, turning, hand signals, and selecting safe travel routes to school.

PDE SAS link: www.pdesas.org/module/content/resources/22169/view.ashx

Riding on the Road

Target audience: Middle school students and others learning to ride their bicycle on the road.

Description: This video addresses the rules of the road and demonstrates riding with traffic, yielding, stopping, turning, avoiding hazards, passing parked cars, and proper lane positioning.

PDE SAS link: www.pdesas.org/module/content/resources/22170/view.ashx

Sharing the Road

Target audience: Younger motorists, bicyclists, and others who are unfamiliar with existing bicycle laws.

Description: This video covers roadway positioning of cyclists, traffic and hand signals, safe turning, and cyclists' rights on the road. The video also discusses how motorists and bicyclists can safely share the road.

PDE SAS link: www.pdesas.org/module/content/resources/22171/view.ashx

Bicycle Driving Laws

Target audience: Motorists, cyclists, and law enforcement officials.

Description: This video demonstrates common offenses by both motorists and bicyclists. Also, common misconceptions of bicycle laws are addressed.

PDE SAS link: www.pdesas.org/module/content/resources/22173/view.ashx

Pedestrian Safety Videos

In 2013, PennDOT developed four videos to provide a visual and entertaining way to educate parents, students, and young motorists about pedestrian safety.

- **One Parent to Another** –Targets parents on how to teach their children the basics of safe walking.
- **Walk This Way** –Teaches elementary school children safety tips when walking to and from school.
- **Why Walking Rules** – Teaches middle school children safety tips when walking to and from school.
- **Close Call** – Teaches young motorists how and why to safely operate a motor vehicle in relationship to pedestrians.

Links to these videos are available at www.saferoutespa.org/pedestrian-safety-videos, www.justdrivepa.com/Traffic-Safety-Information-Center/Bicycle-And-Pedestrian-Safety/Videos/, or www.youtube.com/user/PennsylvaniaDOT.

Noninfrastructure Grants

Between 2011 and 2013, grants were available through the Pennsylvania SRTS Resource Center for activities that promote, educate, and encourage walking and bicycling to school. Schools serving one or more of the grade levels kindergarten through eighth grade were eligible to apply for noninfrastructure grant funding. During this three-year period, approximately \$165,000 were awarded to about 40 schools to fund SRTS activities and projects that met the following criteria:

Eligible Projects

Noninfrastructure items and activities are those that do not involve physical improvements to the transportation infrastructure, but instead support and enhance Safe Routes to School projects. Specifically, noninfrastructure projects involve helping schools develop, implement, or expand SRTS programs.

Noninfrastructure items and activities are those that do not involve physical improvements to the transportation infrastructure, but instead support and enhance Safe Routes to School projects.

When implementing a SRTS project, it is important for schools to be cognizant of their community's current infrastructure, especially routes used by students to travel to and from school. For that reason, grant projects should have — to the extent possible — incorporated all five Es of SRTS. However, only noninfrastructure items and activities — those that would be described as education, encouragement, enforcement, and evaluation — were eligible for grant funding.

Given the unique settings, policies, and other variables at each school, no single approach or model for SRTS activities works for all communities. It is up to the school and community to identify the needs at their school and to develop solutions to address them. One of the best sources of information for developing SRTS activities is the National Center for Safe Routes to School, www.saferoutesinfo.org/program-tools/build-and-sustain-program.

In general, nonconstruction walking and bicycling items and activities for students in kindergarten through eighth grade would qualify for noninfrastructure funding. A list of eligible expenses is noted below. (Note: This information does not include every possible item or activity that was eligible for funding through the SRTS program.)

- Short-term rental of bicycles for a bicycle rodeo, gym class, or bicycle course.
- Police — to pay hours or overtime, but only one day or appearance per activity
- Walking or biking guest speakers for assemblies or education events
- Trinkets or other items worn by students walking or biking to school (reflectors, zipper pulls, punch card/card holder, sneaker tags/reflectors)
- Awards for classroom or grade contests (bicycle helmets, locks, pedometers)

- Crossing guard items (retroreflective vests and STOP paddles that conform to Section 7D.04 MUTCD guidelines mutcd.fhwa.dot.gov/pdfs/2009/part7.pdf, ponchos, safety cones, gloves, whistles, hats)
- Student safety patrol items (safety vests, sashes, badges, ponchos)
- Gym class (reusable) items (helmets, cones, pedometers)
- Bicycle rodeo items (fee for a LAB-certified instructor, cones, literature or lessons, reflectors)
- Items for walking school buses or bicycle trains (vests for leaders, reflective items, banners or posters)

Other reimbursable costs if they directly support walking and bicycling activities were educational materials, promotion or publicity materials, planning and evaluation, associated education and training, printing and copying, and mileage reimbursement.

The Pennsylvania SRTS Resource Center has posted on its website (www.saferoutespa.org/noninfrastructure-grants, go to “Past Grant Recipients” at the bottom of the page) a listing of schools in Pennsylvania that have received grant money from the Safe Routes to School program. The listing includes information about the schools’ activities funded with SRTS grant money.

Walkability Audit

Schools that were chosen to receive an SRTS Noninfrastructure Grant were eligible for a walkability audit from the Pennsylvania SRTS Resource Center to assess nearby walking and biking routes and develop a plan for improvement.

This audit, led by a traffic expert, provided a third-party evaluation of up to three walking routes and included a detailed final report that noted existing deficiencies (both infrastructure and noninfrastructure) and solutions to improve them.



A bicycle safety rodeo was held as part of a noninfrastructure grant awarded to Jonestown Elementary School in Northern Lebanon School District in 2012. Photos courtesy of Estelle Ruppert, DCNR.

2011-2013 SRTS Grant Recipients

Between 2011 and 2013, approximately \$165,000 in **Safe Routes to School noninfrastructure grant money** was awarded to 44 schools to fund their efforts to educate and encourage students to walk or bicycle to school. The following schools were awarded grants to fund their Safe Routes to School activities:

2013 Mini-Grants

In 2013, 22 schools were each awarded a maximum \$2,000 mini-grant to fund a variety of activities focused on walking, biking, and safe routes, including assemblies, bike rallies and rodeos, teacher and crossing guard training, safety equipment, and promotional materials.

2013

- **Allegheny County, Community Day School, IU2 Mount Oliver**, \$5,150, to hold a bicycle rodeo, create themed days that encourage walking and biking, implement a walk club and a bike club, and purchase safety equipment for club members.
- **Bucks County, Grandview Elementary & Morrisville Intermediate Schools, Morrisville School District**, \$9,150, to develop a “Stop? Look? Listen?” lesson, create a “Walk Around the Block” course to teach children walking safety, and implement a walking school bus program.
- **Cumberland County, Mooreland Elementary School, Carlisle Area School District**, \$4,238, to hold a large-scale family bicycle rodeo and purchase giveaways and bicycle helmets for students and portable double-sided stop signs and traffic cone equipment for crossing guards.
- **Philadelphia County, Benjamin Franklin Elementary School, Philadelphia School District**, \$10,000, to incorporate walking and bicycle lessons into physical education classes, hold a bicycle rodeo, create mock streets for practicing pedestrian safety in the school yard, purchase bicycle helmets, hold an assembly, participate in Walk and Roll to School Day, and purchase equipment for crossing guards.
- **Philadelphia County, Gen. George G. Meade School, Philadelphia School District**, \$10,000, to help implement a bicycle repair, safety, and riding program to provide students from a low-income neighborhood the opportunity to ride bicycles and learn that they are a valuable form of transportation.
- **Philadelphia County, William Meredith Elementary School, Philadelphia School District**, \$10,000, to create a Walking and Biking Ambassador program.
- **Philadelphia County, Southwark Elementary, Stephen Girard Elementary, E. M. Stanton Elementary and Frances E. Willard Elementary Schools, Philadelphia School District**, \$10,000, to implement a walking school bus program at each of these schools.

2012

- **Berks County, Cornwall Terrace Elementary School, Wilson School District**, \$5,600, to promote and implement a Walking School Bus program and a Bike Train program.
- **Berks County, Birdsboro Elementary School, Daniel Boone School District**, \$7,925, to train crossing guards and provide them with proper safety equipment and to hold a walking mileage contest and provide pedometers so children can track their progress.
- **Cambria County, Greater Johnstown Middle School, Greater Johnstown School District**, \$2,475, to train teachers on bicycle and pedestrian safety.

- **Lebanon County, Jonestown Elementary School, Northern Lebanon School District, \$8,940,** to support “Get Moving Jonestown,” an initiative by the school and Jonestown Borough to get more students and teachers to walk and bike to school.
- **Lebanon County, Annville and Cleona Elementary Schools, Annville Cleona School District, \$2,989,** for bicycle rodeos led by local police and the Lebanon Valley Bicycle Coalition.
- **Montgomery County, Eagleville Elementary School and Woodland Elementary School, Methacton School District, \$9,325 each,** to implement a Walking School Bus in each community.
- **Philadelphia County, Carnell Elementary School, Philadelphia School District, \$9,487,** to purchase safety equipment and resources for crossing guards, hold an assembly for students, and provide training to parents.
- **York County, Edgar Fahs Smith and Hannah Penn Middle Schools, York City School District, \$10,000,** to implement an east-west “GO SAFE” walking corridor that includes “safe havens” where children can go if they feel threatened while walking or bicycling along the route.

For more information on these grant recipients and their projects, go to [www.saferoutespa.org/sites/default/files/Noninfrastructure%20grant%20recipients%20\(2008-2013\).pdf](http://www.saferoutespa.org/sites/default/files/Noninfrastructure%20grant%20recipients%20(2008-2013).pdf).

Evaluations

The National Center for Safe Routes to School has developed a set of data collection forms that measure how Safe Routes to School projects affect parental attitudes and the number of children walking and biking to school. The following two types of evaluations provide useful data when implementing a Safe Routes to School project:

- 1) **In-Class Student Tally** – conducted in the classroom by the teacher
- 2) **Parent Survey** – sent home for a parent to complete

Any school applying for a noninfrastructure grant from the Pennsylvania SRTS Resource Center in 2011 and 2012 were required to conduct two types of evaluations and submit the data to the National Center for Safe Routes to School before applying for a grant.

Schools awarded an SRTS noninfrastructure grant in those two rounds of funding were then required to do a second round of post-activity data collection using the same evaluations once all grant-related activities were completed. Analysis of the data collected from the evaluations helped to assess whether the SRTS activities had any effect on getting students to walk and bicycle to school.

Analysis of the data collected from the evaluations will help to assess whether the SRTS activities had any effect on getting students to walk and bicycle to school.

For more information about these evaluations, visit the National Center for Safe Routes to School at

www.saferoutesinfo.org/data/materials/Brief_SRTS_Data_Collection_Description.pdf.

The Evaluation Forms

In-Class Student Travel Tally

This form allows teachers to poll students and record specific information about how children arrive to and depart from school. Through time, this survey instrument allows the school to track the progress of the program and adjust its SRTS program as necessary to ensure success.

More information about this form can be found at

www.saferoutesinfo.org/resources/evaluation_student-in-class-travel-talley.cfm

Parent Survey

This questionnaire asks parents which factors affect their decision to allow (or not allow) their children to walk or bike to school, and provides an opportunity for parents to cite specific barriers or areas of concern. The survey results will identify the most prevalent parental concerns, which, if corrected, should increase the number of students walking and

bicycling. Parents should be able to complete this questionnaire, which may be completed on paper or online, in 5 to 10 minutes.

More information about this form can be found at www.saferoutesinfo.org/resources/evaluation_parent-survey.cfm.

Conducting the Evaluations

Any school implementing an SRTS project aimed to encourage children to walk or bicycle to school should conduct both evaluation forms (In-Class Student Travel Tally and Parent Survey) at two different times:

- 1) **Baseline** – Before a school initiates a SRTS project.
- 2) **Post activity** – After the SRTS project has been implemented and activities (except ongoing ones) have wrapped up.

Analysis of the data collected from the evaluations helps to assess whether the SRTS activities had any effect on getting students to walk and bicycle to school.

More information about the process can be found at www.saferoutesinfo.org/data/materials/Specific_Form_Instructions.pdf.

Walkability Audits

Walkability audits are a key planning tool that provides schools with the technical assistance necessary to assess walking conditions and create a plan for improving them. The walkability audit process is led by an independent traffic expert with a team of local school officials, municipal staff, law enforcement officials, and other community members. The following process describes how the Pa. SRTS Resource Center conducts an audit:

Over a two-day period, a team of experts and volunteers walks up to three existing or potential routes to school and identifies barriers that may prevent students from safely walking and bicycling to school along these routes. Following this analysis of hazards and barriers along the walking routes, the school is provided a comprehensive plan of action that describes short, medium, and longer term recommendations for improving student safety and increasing student participation.

Schools that participate in walkability audits are taking an important first step in making their communities safer for pedestrians and bicyclists. The final report presented by the site visit team focuses on solutions of varying levels, from low-cost recommendations to infrastructure improvements for sidewalks and crosswalks. The walkability audits also provide an important planning tool that may prove useful when schools and municipalities apply through local, state, and federal sources for funding for both infrastructure (capital improvements) and noninfrastructure (education, encouragement, and enforcement) projects and activities.



With the help of the school principal, community and other representatives, and local police, a traffic engineer from the Pennsylvania SRTS Resource Center conducts a walkability audit at Annville Elementary School in Annville Cleona School District in Lebanon County.

The Audit Schedule

Day one begins in the afternoon with a *kick-off meeting* with local key stakeholders (e.g., school and school district personnel, parents, crossing guards, municipal representatives, local police department representatives) led by the traffic engineer. At this kick-off meeting, the traffic engineer briefs stakeholders on the purpose of the site visit and gathers additional information about the walking routes as needed.

Following the kick-off, the audit team conducts an *end-of-the-day assessment* by observing students walking home from school. The team observes student behaviors, driver behaviors, existing infrastructure, and how all three interact. In addition, the team notes parent and school bus driver behaviors as they pick children up from school.

After making observations on day one, the team reconvenes at the school and debriefs.

On **day two**, the audit team conducts a ***start-of-the-day assessment*** by observing students walking and bicycling to school in the morning. Often, because pedestrian and vehicular traffic patterns shift between the afternoon and morning hours, the team will notice differences in student and driver behaviors. After this assessment, the team reconvenes at the school, debriefs, and assembles a comprehensive plan of recommended action for the school and municipality. The site visit concludes at the end of the morning with the ***final presentation*** of the team's findings to the local key stakeholder group. Schools also receive a final report of the findings and recommendations.

Walkability Audit

Tentative Schedule

Please note: The schedule is tentative and will vary based on an individual school's start and dismissal times.

Day 1

1:00 p.m.	Kick-off meeting with stakeholders
2:30 p.m.	Begin assessment of walking routes
3:15 p.m.	Debrief at school (site visit team only)
4:30 p.m.	Day one concludes

Day 2

7:00 a.m.	Begin assessment of walking routes
7:45 a.m.	Debrief at school (site visit team only)
8:15 a.m.	Prepare plan for school
11:00 a.m.	Present plan to stakeholders
12:30 p.m.	Site visit concludes

Requirements of the Participating School

To participate in a walkability audit with the Pa. SRTS Resource Center, a school must provide the following information:

- ***Site Visit Planning Tool Application*** – This document, which will be provided to the school, asks for information about the school, walking routes to school, school start and dismissal times, and other details necessary for a successful site visit. The school's SRTS contact person must complete the information requested on this document and e-mail it back to the Pennsylvania SRTS Resource Center.
- ***Aerial maps of walking routes*** – The school must provide aerial map(s) of the neighborhood surrounding the school with the appropriate walking routes identified and labeled. This can be created for free using an online mapping service. The maps must be e-mailed to the Pennsylvania SRTS Resource Center along with the Site Visit Planning Tool Application.
- ***Meeting space*** – The school must provide meeting space at various times during both days of the walkability audit. Meeting space is needed for the kick-off meeting the first afternoon, team debriefings both days, and final plan preparation and presentation on the morning of the second day.
- ***Stakeholders group*** – The school is responsible for identifying and inviting key stakeholders in the community to attend the walkability audit kick-off meeting on day one of the site visit and the final plan presentation on day two. By inviting the right people to participate in the audit, the school will help to ensure that the walkability audit succeeds. The school may also increase the chances that the recommended improvements will be pursued and implemented. A list of

stakeholders who will be attending the audit meetings must be e-mailed to the Pennsylvania SRTS Resource Center at least two weeks before the scheduled audit.

A limited number of walkability audits are available in the fall of 2013. Any school interested in obtaining a walkability audit should contact the Pennsylvania SRTS Resource Center at info@saferoutespa.org or (717) 763-0930. If a school is eligible for an audit, the center representative will work with the school to schedule a two-day site visit.

Schools may also conduct their own walkability assessment by following the same steps explained in this section. See page 18 for more on this self-assessment. The website of the Pennsylvania Safe Routes to School Resource Center (www.saferoutespa.org/walkability-audits) contains materials for conducting a walkability audit, including a sample final report.

State and National Resources

A variety of state and national organizations provide additional resources about either Safe Routes to School specifically or walking and bicycling issues in general:

- **Pennsylvania Department of Transportation**
www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/SRTSHomepage?OpenFrameSet

The Safe Routes to School program in Pennsylvania is administered by the state Department of Transportation (PennDOT). For more information, contact:

Chris Metka
PA Safe Routes to School Coordinator
PennDOT Program Center
717-787-8065
cmetka@pa.gov

- **Federal Highway Administration, U.S. Department of Transportation**
<http://safety.fhwa.dot.gov/saferoutes/>

Administration of the federal Safe Routes to School program at the federal level is assigned to FHWA's Office of Safety, which works in collaboration with FHWA's Offices of Planning and Environment (Bicycle and Pedestrian Program) and the National Highway Traffic Safety Administration (NHTSA) to guide the program.

- **Pennsylvania Safe Routes to School Resource Center** www.saferoutespa.org

The Pennsylvania Safe Routes to School Resource Center provides schools, parents, students, municipalities, and other community members with tools necessary to develop, implement, and maintain safe, healthy walking and bicycling routes for students. The center is a joint venture of the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania State Association of Township Supervisors (PSATS), the administrator for the noninfrastructure component of Pennsylvania's SRTS program.

- **National Center for Safe Routes to School** www.saferoutesinfo.org

The National Center for Safe Routes to School serves as a centralized resource of information on successful SRTS programs, strategies, and state-specific information. Through funding from the FHWA, the center develops information and educational programs on Safe Routes to School and provides technical assistance and disseminates techniques and strategies used for successful Safe Routes to School programs.

- **Safe Routes to School National Partnership** www.saferoutespartnership.org

The Safe Routes to School National Partnership is a network of hundreds of organizations, government agencies, and professional groups working to set goals, share best practices, leverage infrastructure and program funding, and advance policy change to help agencies that implement Safe Routes to School programs. The national partnership's mission is to advocate for safe walking and bicycling to and from schools and in daily life to improve the health and well-being of America's children and foster the creation of livable, sustainable communities.

- **International Walk to School in the USA** www.walkbiketoschool.org

This website, maintained by the National Center for Safe Routes to School, promotes Walk to School Day and provides resources about walking to school.

- **Safe Routes Philly** www.saferoutesphilly.org

Part of the City of Philadelphia's *Get Healthy Philly* program, Safe Routes Philly promotes biking and walking and provides pedestrian and bicycle safety programming and support to Philadelphia's elementary schools.

- **Pedestrian and Bicycle Information Center** www.walkinginfo.org

The Pedestrian and Bicycle Information Center is a national clearinghouse for information about health and safety, engineering, advocacy, education, enforcement, access, and mobility for pedestrians (including transit users) and bicyclists. The center serves anyone interested in pedestrian and bicycle issues, including planners, engineers, private citizens, advocates, educators, police enforcement, and the health community.

- **Alliance for Biking and Walking** www.peoplepoweredmovement.org

The mission of the Alliance for Biking and Walking is to create, strengthen, and unite state and local bicycle and pedestrian advocacy organizations. Starting as a grassroots effort of bicycle advocates, the alliance has grown from a coalition of 12 organizations in 1996 to more than 135 united biking and walking advocacy organizations today. Since its creation, the alliance and its member groups have established themselves as the preeminent forces for breaking down the barriers to safe bicycling and walking at the state and local levels.

- **National Center for Bicycling and Walking** www.bikewalk.org

The National Center for Bicycling and Walking is the major program of the Bicycle Federation of America, Inc., a national, nonprofit corporation established in 1977. The center's mission is to create bicycle-friendly and walkable communities by

changing the way communities are planned, designed, and managed to ensure that people of all ages and abilities can walk and bike easily, safely, and regularly.

- **Pennsylvania Walks and Bikes** www.pawalksandbikes.org

Pennsylvania Walks and Bikes is a nonprofit advocacy group that brings together organizations committed to promoting Safe Routes to School programs and removing policy barriers to allow students to safely walk and bike to school.

- **Action for Healthy Kids** www.actionforhealthykids.org

Action for Healthy Kids addresses childhood undernourishment, obesity, and prevention by working with schools to help kids learn to eat right and be active every day. The organization partners with families, community members, professionals, and businesses to support schools in this effort.

- **Penn State Hershey PRO Wellness Center**
www.pennstatehershey.org/PROwellness

Penn State Hershey PRO Wellness Center helps communities live healthier lives using evidence-based strategies for measurable and sustainable results. Historically focused on childhood obesity prevention, the center helps children and their families eat well, engage in regular physical activity and incorporate healthy habits into their everyday lives. It provides schools, communities, and like-minded organizations with educational programs, collaborative partnerships, technical assistance, and access to proven wellness interventions.

SRTS Resource Materials

A variety of organizations have created various resource materials relevant to Safe Routes to School or issues involving walking, bicycling, and infrastructure. Many of these resources may prove helpful for use or reference when developing or implementing activities and projects related to Safe Routes to School.

Safe Routes to School Toolkit – The Federal Highway Administration has developed this document to help communities initiate and implement a Safe Routes to School program.
www.nhtsa.dot.gov/people/injury/pedbimot/bike/Safe-Routes-2002/index.html

Safe Routes to School Local Policy Guide – This primer, available from the Safe Routes to School National Partnership, explores how local policies can be targeted to influence transportation and land use that benefits children’s mobility, how to go about initiating policy change, and what communities have successfully enacted policies. The guide will help local communities and schools create, enact, and implement policies that support active and healthy community environments, encourage safe walking and

bicycling and physical activity by children, and thus lead to healthier, safer, and more vibrant communities.

www.saferoutespartnership.org/media/file/Local_Policy_Guide_2011.pdf

Involving Students with Disabilities – This resource from the National Center for Safe Routes to School provides information to help SRTS organizers include and accommodate children with disabilities. The guidebook discusses practical strategies for involving children with disabilities in SRTS and provides examples of schools that have done so effectively.

www.saferoutesinfo.org/program-tools/program-development-involving-children-disabilities-srts

The Walking School Bus: Combining Safety, Fun, and Walk to School – This guide, created by the National Center for SRTS, outlines the benefits of starting a walking school bus as well as points to consider before launching it. Two general ways to conduct a walking school bus are described: 1) starting simple with a small group of friends or neighbors, or 2) creating a more structured program to reach more children.

www.saferoutesinfo.org/program-tools/there-guide-walking-school-bus-programs

Guidelines for Bike Train “Engineers” and “Cabooses” – This flyer, available from the Metro Atlanta Safe Routes to School Project, contains directions on how to conduct a bike train.

www.atlantabike.org/sites/default/files/Guidelines%20for%20WaRtS%20Bike%20Trains.pdf

Getting Results – The National Center for Safe Routes to School has developed a three-part series that highlights Safe Routes to School successes and provides examples of how successful SRTS programs have tracked their progress. The three documents examine SRTS programs that increase walking and bicycling to school, that reduce speeding and distracted driving, and that reduce traffic.

www.saferoutesinfo.org/program-tools/getting-results-srts-programs-increase-walking-bicycling

Bicycling & Walking Resources

Bicycle Parking Guidelines – This document from the Association of Pedestrian and Bicycle Professionals provides guidelines for selecting and placing bicycle racks for short-term parking. www.bicyclinginfo.org/library/details.cfm?id=6

Steps to Properly Fit a Helmet – The National Highway Traffic Safety Administration provides easy steps for properly fitting a bicycle helmet. www.nhtsa.gov/Bicycles

Cycling Skills Clinic – The National Highway Traffic Safety Administration has a resource to help schools and municipalities conduct a cycling skills clinic, sometimes called a bicycle rodeo. www.nhtsa.gov/Driving+Safety/Bicycles/CyclingSkillsClinic

Walkability Checklist – This checklist available from PennDOT provides a brief scorecard for rating how walkable a community is. www.saferoutespa.org/sites/default/files/Walkability%20Checklist.htm

Infrastructure Resources

Active School Neighborhood Checklist – This document from the Arizona Department of Transportation provides a quantitative tool for community decision makers to use to evaluate potential school sites for whether their location encourages or prevents people from walking and bicycling safely to school. www.azdhs.gov/phs/bnp/nupao/ActiveSchools.htm

Traffic Calming Handbook (PennDOT Pub 383) – PennDOT has developed a guidebook to provide information about traffic calming and how such practices can be used to make streets safer for motorists, pedestrians, and bicyclists. This Pennsylvania-specific handbook contains information on various traffic calming issues, including legal authority, liability, impacts on emergency services, and the development of traffic-calming measures. www.dot.state.pa.us/Internet/pdHwyIntHS.nsf/frnTrafficCalming?OpenFrameset

Guide for the Planning, Design, and Operation of Pedestrian Facilities – This manual for sale by the American Association of State Highway Transportation Officials provides a detailed description of the different types of treatments available, including advantages and disadvantages for each. https://bookstore.transportation.org/item_details.aspx?id=119

Traffic Calming: State of the Practice Manual – The Institute of Transportation Engineers developed this report, which contains a synthesis of traffic-calming experiences of a variety of communities in the United States and Canada. It includes information on traffic calming in residential areas and in areas where high-speed rural highways transition into rural communities. www.ite.org/traffic/tcstate.asp

Infrastructure Funding and Support

Creating a Comprehensive SRTS Project

Since its national inception in 2005, the Safe Routes to School (SRTS) program has generated interest in making walking and bicycling to school a viable option. Accordingly, states continue to receive record requests for SRTS funding. During SAFETEA-LU (2005-2012), the national ratio of requested to available funding was approximately 3 to 1. Because the funding process is competitive, effectively articulating plans for sustainable projects that efficiently remove the barriers to walking and bicycling to school is essential.

An effective SRTS project may include many components such as education, law enforcement, and infrastructure improvement. But, at a minimum, a project must address two primary categories of effort: encouraging safe and healthy behaviors, and removing barriers to those positive behaviors.

If children are not walking and bicycling to school, the fundamental question must be, “Why not?” Answering this question will establish the first steps toward encouraging safe and healthy behaviors and removing the barriers to those behaviors.

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Evaluating the Problem

Before developing an SRTS project, a school must obtain a clear understanding of the real barriers to walking and bicycling. Because physical, behavioral, and perceived barriers may all influence whether children walk to school, it is important to determine the unique conditions and challenges at a school. The real reasons that students do not walk or bicycle are often not readily apparent; however, they can be discovered with observation and analysis. Three tools are useful for evaluating local walkability conditions:

- walkability assessments
- walkability audits
- surveys

Each of these tools is briefly introduced below and explained in further detail elsewhere in the guide.

Walkability Assessments

Walkability assessments are evaluations of walking routes conducted by persons responsible for the walking corridor that is being evaluated. Typically, these persons are municipal officials, school district officials, and members of the community. An assessment conducted by a team of persons responsible for and familiar with local walking routes will provide local knowledge, but that knowledge can also lead to bias, particularly when the costs of remediation are considered. See page 18 for more information on schools performing their own walkability assessments.

Three tools are useful for evaluating local walkability conditions near a school:

- 1. Walkability assessments**
- 2. Walkability audits**
- 3. Surveys**

Walkability Audits

Walkability audits are more detailed evaluations of walking routes conducted by a multidisciplinary team of experts, some of whom do not have responsibility for the walking corridor. This team should be able to bring an unbiased perspective to the evaluations. By the end of 2013, PennDOT will have completed more than 100 walkability audits through the Safe Routes to School Program. Currently, there are only a few walkability audits available for the fall of 2013. If your community is unable to secure a walkability audit, review the materials on page 18 to learn how to conduct your own walkability assessment.

Surveys of Perceived Barriers

While walkability assessments and audits tend to focus on infrastructure barriers to walkability, other perceived barriers to walking and biking to school also exist. To better understand what these perceived barriers are, schools should survey parents, who often decide how children get to and from school. Feedback from parents can be accomplished during discussions at school meetings, such as PTO/PTA, or through take-home surveys. See page 37 for more information on these surveys, or visit the Pennsylvania Safe Routes to School Resource Center's website, www.saferoutespa.org/evaluation-materials.

Developing the Project

After barriers to walking and bicycling to school have been identified, the work of developing potential solutions can begin. Within SAFETEA-LU, funding from the federal SRTS program was made available for two kinds of projects—infrastructure and noninfrastructure—but these two kinds of projects are not mutually exclusive. In fact, PennDOT required applicants for infrastructure funding through the SRTS program to describe noninfrastructure activities that the school has coordinated in the past and plans for the future that will serve to complement infrastructure projects.

Under MAP-21, both noninfrastructure and infrastructure projects, as described in SAFETEA-LU, continue to be eligible under MAP-21. But, in terms of funding, the distinction

between the two types of projects no longer exists. However, the sustainability of a project may be improved if planners continue to recognize the importance of combining noninfrastructure and infrastructure components in their plans. More information about funding under MAP-21 is available on page 69.

For example, a project to install a new traffic signal might include an educational component to show children how to use the button for the pedestrian cycle and to understand the countdown timers, and to educate parents about the new signal and its features. The project might also include an enforcement component. The project sponsor's commitment to developing and implementing noninfrastructure activities helps to ensure that the project is sustainable and that the available funding will be effectively spent.

Once a school community begins to brainstorm and propose improvements, it is important to find solutions that address the specific barriers to walking and bicycling in the community. Infrastructure projects that directly address SRTS concerns, as identified by the community, are more likely to be funded than those that do not. For example, if a dangerous intersection could be addressed with better trained crossing guards, a project that proposes sidewalk installation might not be an effective solution.

Once a school community begins to brainstorm and propose improvements, it is important to find solutions that address the specific barriers to walking and bicycling to and from school.

Ultimately, the school and community must jointly decide which improvements would best benefit their students, and the sponsor must justify how and why these improvements will benefit students.

Infrastructure Projects

Of the five Es of a comprehensive SRTS program, engineering is perhaps the most complex and expensive. Infrastructure changes that improve walking and bicycling routes to school often involve multiple agencies and require outside sources of funding. The good news is that funding is available and procedures are already in place that may reduce the complexity.

To complete a successful SRTS funding application, a sponsor must understand the best approach for creating an effective and sustainable SRTS project and how to effectively articulate these plans. To help navigate the requirements for successful infrastructure projects, the remainder of the guide is divided into three sections:

- **Infrastructure Project Development.** This section of the guide presents the potential steps associated with developing an SRTS infrastructure project and will assist with navigating these steps toward the best possible outcome.
- **Infrastructure Resources.** This section provides information about resources available on Safe Routes to School issues and related topics.
- **Infrastructure Funding.** This section explains the potential sources of funding available for projects that improve walking and bicycling to school.

Project planning and funding are closely associated; neither stands without consideration of the other. However, to present the material with clarity, these issues are addressed separately in the guide.

SRTS Infrastructure Project Development

To develop an effective Safe Routes to School infrastructure project, a school or other project sponsor must know what information is already available for planning the project and understand the potential contributions of the industries that may be involved. The project sponsor must also be familiar with the steps necessary to plan a project, from establishing project sponsorship to understanding the specific procedures required for securing funding, such as properly registering with PennDOT. The following information will help a school or project sponsor develop an effective project:

- Partnerships: Sharing knowledge
- Project sponsors and locations
- Developing project scope: Evaluation of existing conditions
- Solutions
- Specific instructions for Pennsylvania SRTS infrastructure projects

Partnerships: Sharing Knowledge

The issues of health and safety are as complex as they are important. Considering just a small component of those larger issues—children walking and bicycling safely to school—requires integrating knowledge and practice about several components including:

- child and parent attitudes and behavior,
- driver attitudes and behavior,
- transportation facility design, and
- transportation facility construction and operations.

Combining the talents of a variety of experts and practices will yield more effective results than if the efforts for the project were limited to a single expertise. For example, an infrastructure project that targets a new sidewalk would be more effectively addressed if collaboration occurs among the school district, the municipality, individual property owners, an engineering consultant, and a construction consultant. In addition, contributions to the health and safety of children walking and bicycling to school can be made by any of the following individuals or groups:

An infrastructure project that targets a new sidewalk, for example, would be more effectively addressed if collaboration occurs among the school district, the municipality, individual property owners, an engineering consultant, and a construction consultant.

- Law enforcement representatives, including police agencies and the judiciary
- Health care personnel, including medical services providers, school nurses, and health educators
- Transportation experts, including engineers, planners, public works officials, and developers
- Citizens, including parents' organizations, schools, and local and state government

Partnerships and coalitions designed to share information from diverse industries and practices have been formed at the national level. These alliances and coalitions include the following:

- Active Living By Design www.activelivingbydesign.org
- Alliance for Biking and Walking www.peoplepoweredmovement.org
- America Walks www.americawalks.org
- Partnership for a Walkable America www.walkableamerica.org
- Safe Communities www.nhtsa.gov
- Safe Kids USA www.usa.safekids.org

These alliances and coalitions offer information through established resources and programs that can guide the development of local partnerships, where the work of improving the health and safety of children in a community will be done. An example of the partnerships that may be formed can be seen in a project to improve a badly deteriorated section of sidewalk that parents perceive as unsafe and thus do not allow their children to walk to school because of it. The school district may want the sidewalk improved, but local government owns the sidewalk and funding for a project is not immediately available. Project planning must also include the property owners along the segment of sidewalk who are typically responsible for sidewalk maintenance. Further, improving the sidewalk will require improving the curb ramps to current standards, adding to the cost.

In this example, a partnership among parents, the school district, and the local government is necessary to establish the scope of the problem, establish the best course of action to remedy the problem, and discover the best sources of funding for the project.

Developing Project Scope: Evaluation of Existing Conditions

The scope of a Safe Routes to School project must be developed at the beginning of the process. Although the scope can then be refined as the development and funding application stages progress, a baseline must be established at the very start.

Determining the scope and need for a Safe Routes to School infrastructure project can be done through an evaluation of existing conditions. Such an evaluation can be accomplished using a walkability assessment or a walkability audit, both of which review existing conditions and identify needs and barriers.

Walkability Assessment

A walkability assessment is typically conducted by those who have some responsibility for the facility or environment that is being evaluated. Typically, this includes municipal officials, school district officials, and members of the community. In the case of a partnership formed to improve the walkability or bikeability to a school within the surrounding neighborhood, an assessment is a first step toward understanding the extent of the partnership's needs. Members of the sponsoring agency's team may use this assessment tool to develop a project scope, recognize potential project partners (e.g., homeowners along a walking corridor, a local police agency, etc.), and begin to develop a funding strategy.

Members of the assessment team should be as diverse as possible. Try to include a police officer, a public works employee, a school district official, a teacher, a member of the PTA/PTO, a student with a disability, and students who walk and bicycle to school.

See page 18 for more information on how a school can perform this walkability assessment itself.

It is important to recognize that a local assessment team may show some bias in its evaluation. A public works officer, for example, may know about funding issues with a particular segment of sidewalk, while a member of the PTA/PTO may like, or dislike, certain parts of a neighborhood for reasons difficult to qualify. Bias is okay. The value of a local team's assessment is the local knowledge and experience that can lend to an evaluation, but more importantly the assessment gives the project sponsor an opportunity to distill differing opinions about walkability around a school into a project scope.

Walkability Audit

A walkability audit is an examination of a walking route or facility by an *independent* person or persons not directly responsible for the repair or maintenance of the route being audited. The distinction between an assessment and an audit is the relationship between the auditor and responsibility for the facility being audited. A disconnect allows the auditor to approach the qualities of a walking route or facility with less bias.

Therefore, like an assessment, the best uses for walkability audits include identifying barriers and developing a project scope. Generally, walkability audit tools and checklists are the same as those used in walkability assessments.

An additional benefit to a walkability audit is that once barriers are identified, the audit team can use its expertise to recommend solutions.

A formal walkability audit is conducted by a multidisciplinary team of industry experts and follows an accepted set of procedures. A formal multidisciplinary team may include the following members:

- Engineers
- Planners
- Transportation researchers
- Pedestrian and bicycle specialists

Generally, the audit team should be kept as small as possible, while maintaining the diversity of expertise necessitated by the route or facility being audited. At a minimum, the audit team members should have expertise in the following areas:

- Road safety
- Traffic operations
- Roadway design
- Pedestrian facilities and operations

Other expertise may be added to the team as the project warrants, including specialists in enforcement, emergency response, transit operations, and school-age children.

See page 39 for more information about walkability audits available from the Pennsylvania SRTS Resource Center.

Barrier Identification

A walkability assessment or walkability audit will identify barriers to walking or bicycling to school. The various kinds of impediments that children may encounter when walking or bicycling to school may be sorted into two general categories: noninfrastructure and infrastructure. Noninfrastructure barriers are those that address social, perceptual, and organizational issues. Infrastructure barriers are physical barriers and include such issues as sidewalk or walking path condition or connectivity,

The value of a local team's assessment of routes to school is the local knowledge and experience that can lend to an evaluation.

After identifying the barriers to safe walking and bicycling, the walkability audit team will recommend solutions to mitigate the barriers and will provide planning-level cost estimates.

crosswalk condition, or traffic signal operations.

Noninfrastructure Barriers – Noninfrastructure barriers can best be determined by polling parents who do not allow or encourage their children to walk to school. This kind of investigation may be conducted in several ways, including discussion groups at PTA/PTO meetings and take-home surveys. A survey for this purpose has been developed by the National Center for Safe Routes to School and is available at www.saferoutesinfo.org/resources/evaluation_parent-survey.cfm. See page 37 for more information about the survey.

Noninfrastructure barriers may also be identified by a local assessment team. Local knowledge and perceptions will surface in the assessment process and may significantly contribute to determining the components of an SRTS project such as education or enforcement. Noninfrastructure barriers to walking or bicycling include the following conditions:

- Walking not part of the local culture
- Perception of danger
- Crime
- Pedestrian behavior such as inattention or risk taking
- Motorist behavior such as speeding or not yielding to pedestrians

Infrastructure Barriers – Infrastructure barriers to walking or bicycling include the following conditions:

- Roadway design features are not conducive to walking or bicycling (i.e., no medians, lack of or inadequate sidewalks, or substandard curb ramps)
- Street crossings are not conducive to walking or bicycling (i.e., wide streets or crossings or poorly marked or absent crosswalks)
- On-street parking
- Substandard signage or traffic signals or signal timings
- Garbage, low-hanging vegetation, or other obstacles that force walkers into the street

After identifying the barriers to safe walking and bicycling, the walkability audit team will recommend solutions to mitigate the barriers and will provide planning-level cost estimates. These recommendations will solidify the project scope that began to gel during the local assessment. Armed with these recommendations, a project sponsor can select and assemble the best combination of solutions to address the walkability issues efficiently and sustainably.

Solutions

Applicability

Finding solutions that address the specific barriers to walking and bicycling in a community AND that are within the defined scope is important. For instance, if parents report that they do not allow their students to walk because of dangerous intersections and a lack of crossing guards, a project that primarily involves sidewalk installation would not be seen as an effective way to mitigate the perceived hazards. As a result, the project would be ranked lower and be less likely to be funded than other projects that directly address the SRTS concerns identified by the community. Similarly, if a project proposes to upgrade pedestrian crossing signals to include countdown timers, but these signals are not along a school walking route, the project would be less likely to receive Safe Routes to School funding.

Often, effective, valuable solutions that yield significant improvements in safety may be implemented for relatively low cost.

Cost and Value

Solutions should also be considered in terms of cost and value returned from that investment. Generally, infrastructure solutions may be categorized as having high, medium, and low costs. Often, effective, valuable solutions that yield significant improvements in safety may be implemented for relatively low cost.

Low-cost safety improvements are those that address specific risks to safety at specific locations; they may also be part of a larger, more comprehensive strategy to improve safety along public roads. Such measures may include traffic signs, pavement markings, and improving sight distance. For a Safe Routes to School project, improvements might include upgraded crosswalks, use of fluorescent yellow-green color for school-related signs, and vegetation control to improve walking sight lines. Although some of these measures may seem simple, they are proven to positively improve safety.

Keep in mind that low-cost solutions should not be considered a cheap way out but rather should be implemented for the value of their use. Medium and high-cost solutions are useful for long-term planning.

Assessing Cost/Benefit Ratio

Related to the cost and value of a project is its overall cost effectiveness. Many low-cost solutions have been proven to be quite effective for improving safety. For instance, many applicants may request sidewalk installation as part of their project, which may require design, environmental documentation, right of way acquisition, and utility relocation. By comparison, restriping a crosswalk, retiming existing signals, installing a bike rack, or upgrading outdated signs require relatively minimal preconstruction efforts. These smaller projects may be just as effective at encouraging children to walk and bike to school as projects that “turn dirt,” but they typically cost far less and may be implemented relatively quickly.

There are several ways to formulate the value of an SRTS project. One way is to consider the ratio of the cost of the project to the number of students positively affected by the project. Using this approach, however, means that projects that do not involve construction are generally viewed as more cost effective. For example, the cost of adding crosswalk painting is relatively small when compared to rebuilding a segment of sidewalk or adding a traffic signal.

Another perspective is to consider safety improvements for those children who walk or bicycle to school as a result of the SRTS project. This approach also appreciates the value of infrastructure solutions, despite their generally higher costs. Some of the solutions that traffic engineers might recommend have been so well documented that crash-reduction factors can be reliably assigned to the implementation of those solutions. Considering the costs of injuries from existing and potential crashes against the savings from expected reduction in crashes can make the costs of infrastructure solutions quite beneficial.

Right Sizing Projects

For purposes of the SRTS program, you can easily “right size” your projects by limiting them to the major routes that students in kindergarten through the eighth grade use to walk and bike to and from school. Generally, improvements on routes closest to school provide benefits to a greater number of students. That said, there may be gaps or outstanding safety hazards along student travel routes that also need to be addressed.

Timeframe

Solutions identified in the walkability audit can also be categorized by the timeframe within which they might be implemented. Typically, these recommendations are categorized as short-term, medium-term, and long-term solutions. Generally, low-cost safety solutions can be implemented more quickly than higher cost solutions. Having solutions categorized by cost and timeframe encourages the development of long-range plans that detail the completion of walkability solutions over time.

Engineering Infrastructure Solutions

A wide range of infrastructure solutions are available for improving pedestrian and bicycling routes to school. These may be grouped by the infrastructure requiring modification:

- Streets
- Street crossings
- Traffic calming
- On-street parking
- School zones

Following are brief descriptions of these categories. More information about the design of specific facilities to improve safety within these categories is available in the section Resources for Pedestrian Design and Safety of this guide on page 64.

Streets – When most people think of streets, they think of the paved area that motor vehicles use and the shoulders or curbs on either side. But, depending upon the right-of-way width and whether the street owner is the state or a municipality, streets may also include roadside ditches, embankments, sidewalks, curb ramps, and signs.

For SRTS projects, the concept of Complete Streets is applicable. Complete Streets are those that adequately provide for all roadway users, including bicyclists, pedestrians, transit riders, and motorists, to the extent appropriate to the function and context of the street. In other words, Complete Streets attempt to make cars less of a necessity, thus helping communities to create roads that accommodate all modes consistent with their surroundings. Many of the barriers and solutions to the barriers can relate back to the Complete Streets concept. For more information refer to the following FHWA resource FHWA-HRT-10-004: www.fhwa.dot.gov/publications/publicroads/10julaug/03.cfm

Improvements on routes closest to school provide benefits to a greater number of students.

Street Crossings – Like streets, crossings are more complicated than they may first appear. Pedestrian safety at crossings includes not only the most visible component—crosswalk markings—but also the curb radii, turn lanes, traffic signs, traffic signals and signal timing, pedestrian signals and pedestrian signal timing, sight distance, and curb ramps. All of these components must work in concert to guide pedestrian and vehicle driver behavior and make pedestrians as visible as possible.

Traffic Calming – Signs indicating the legal speed limit have limited effectiveness on driver behavior. The reality is that most drivers select their speed along roadways according to the design features of the roadway itself, such as its width, curves, hills, and proximity to barriers along the roadside. Traffic calming is a tool used by engineers to reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for nonmotorized street users. Traffic calming uses additional physical features of the roadway such as speed humps, traffic circles, or center islands to influence driver behavior (speeds, turning movements, etc.). By carefully employing the right mix of geometric features including traffic-calming devices, engineers can design or redesign a roadway segment or intersection that more naturally influences the speed of traffic and enhances the safety of nonmotorized road users such as bicyclists and pedestrians.

Traffic calming is a tool used by engineers to reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for nonmotorized street users.

On-Street Parking – Parking along a roadway affects the safety of pedestrians and bicyclists in a number of ways. Near intersections or at midblock crossing locations, parked cars and trucks reduce the visibility of pedestrians attempting to cross the roadway. If sidewalks are not present, parked cars may influence the location of walking pathways, even forcing pedestrians into the street. Parked cars may also reduce the safety of bicyclists along roadways with the added hazards caused by cars pulling in and out along a curb and vehicle doors opening.

School Zones – School zones require particular attention to safety issues because they are the confluence of every mode of student transport. Most children are transported to school by bus or private vehicles. School zones experience the movements of all of these vehicles, which are turning, stopping, discharging passengers, and leaving, with through traffic. If children are walking and bicycling, their presence increases as they near the school, further complicating the traffic movements at or near the school.

Resources for Pedestrian Design and Safety

It may be helpful to refer to industry standards when developing solutions to infrastructure barriers along existing walking routes or designing new pedestrian facilities to enhance likely walking routes. Resources for pedestrian design and safety are listed on page 64.

Developing Projects for Competitive Application Cycles

When developing a project, it's important to first assess the community's needs in order to create an appropriate scope for the project. A number of funding opportunities are available (see Infrastructure Funding section on page 68), and the complexity of funding an infrastructure project can be complex and somewhat daunting. Likely, the path taken to fund a project will be unique and tailored to a school's or community's needs.

Likely, the path taken to fund an SRTS project will be unique and tailored to a school's or community's needs.

The first step in any effort to obtain SRTS funding for a project is to contact the local PennDOT Engineering District office. These offices vary in terms of the staff they employ, but some districts have specialists in project planning, engineering, and funding. If a project seems appropriate and a district project coordinator is available, he or she may be able to assist and provide guidance through the project processes. For a list of Bicycle and Pedestrian Coordinator contacts in PennDOT's district offices, visit www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/SRTSHomepage?OpenFrameSet and select "Contacts" and then "PennDOT District Bicycle and Pedestrian Coordinators" at the bottom of the page.

A metropolitan planning organization (MPO) or rural planning organization (RPO) representative should also be contacted. For a list of MPOs and RPOs and their contact information, visit www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/SRTSHomepage?OpenFrameSet and select "Contacts" and then "PennDOT Planning Partner Contacts" at the bottom of the page. MPOs and RPOs are responsible for developing fiscally responsible short-range and long-range transportation plans (TIPs) for single or multicounty regions. PennDOT will work with the MPO/RPO to place a project on the appropriate funding plan. Keep in mind that the eligibility of an SRTS project is not contingent on being included on the TIP. Eligibility is determined separately and then forwarded to the MPO/RPO for inclusion on the TIP.

If an infrastructure project proposal would involve a locally owned road, the municipality should be contacted first. However, the local PennDOT district office should be contacted anytime state or federal funds are to be used.

Infrastructure/Noninfrastructure Correlations

A comprehensive SRTS program includes the five Es of SRTS: education, encouragement, enforcement, evaluation, and engineering. The fifth E, engineering, represents infrastructure projects. Projects that incorporate both infrastructure and noninfrastructure components are more likely to be selected in a competitive application cycle since these projects are more comprehensive, effective, and sustainable.

See the first part of the guide for information about noninfrastructure activities.

Registering as a Business Partner in ECMS

The sponsor and the design engineer of an infrastructure project must be registered as business partners in the Electronic Contract Management System (ECMS). This system is used to transmit bid documents and construction estimates between business partners and the state. The ECMS is different from the SAP system, so registration in both is required.

Following are instructions for registering as a business partner in the ECMS:

1. Go to www.dotdom3.state.pa.us/
2. On the left side of the screen, select “Business Partner”
3. Under Business Partner, select “Registration”
4. Select the “Government Agency” radio button on the right side
5. Select “Download or Print Instructions” for additional assistance (optional)
6. Select “Register” button at the bottom of the screen to continue with registration

For help with registration, call PennDOT’s Bureau of Design at 717-772-0566.

Registering as a Vendor in SAP

The Safe Routes to School program is a reimbursement program, which means that program funds are intended to reimburse project costs incurred by the beneficiary. Before a reimbursement agreement may be executed, the project sponsor must be registered as a vendor in SAP (the accounting system and payment mechanism for reimbursement agreements).

A sponsor may be required to register with the state as a procurement vendor if the following certain circumstances exist:

- If the sponsor will receive payments from the state under a contract;
- If the sponsor will receive requests for quotations (RFQ), purchase orders (PO), or other procurement documents; or
- If the sponsor is a construction vendor.

The Department of General Services Bureau of Procurement manages procurement vendor registration. Register or change a current registration using the PA Supplier Portal at www.pasupplierportal.state.pa.us.

Call the Department of General Services at 717-346-2676 (Harrisburg area) or 877-435-7363 (toll free) with questions about procurement vendor registration.

Project Phasing

The scope of some projects may expand to the degree that the entire project cannot be funded in one funding package. In such cases, the project must be divided into self-contained portions, or phases, with each phase receiving its own funding package. Generally, phases are implemented individually and consecutively over time with the result that the entire project as originally envisioned is accomplished over a certain period. To accomplish this, prioritize activities, or phases, that do one or more of the following:

- Correct an outstanding safety hazard
- Quickly improve safety at a relatively low cost
- Enable/encourage the most children to walk to school

Project phases of this nature will receive advanced consideration during the project selection process, as they would have the most “bang for the buck.”

Conversely, projects that have any of the following attributes may be better suited for longer range plans and/or other sources of funding:

- Require advanced design or have environmental, cultural, right of way, or utility issues
- Only impact students indirectly and are more focused on general community mobility
- Are controversial or not agreed upon by members of the school or community
- Have a high cost and/or would take years to implement

Project Reimbursement Agreements

PennDOT has developed a standard reimbursement agreement that specifies the terms and conditions required for receiving federal SRTS funds. The PennDOT district will work with project sponsors to complete the standard document, including signatures, and submit it to PennDOT’s Office of Chief Counsel for approval and execution.

A local project funded by federal SRTS funds must have the reimbursement agreement in place before any reimbursable work begins. This requirement includes any phase of the project, such as preliminary engineering, final design, right-of-way acquisition, grade crossing coordination, utility relocation, and construction activities. Project costs incurred before the reimbursement

A local project funded by federal SRTS funds must have a reimbursement agreement in place with PennDOT before any reimbursable work begins.

agreement is in place will not be eligible to receive federal SRTS funds for reimbursement. This requirement includes interest and administrative costs.

Only persons with certain positions or titles within a sponsoring agency may bind their agency to a reimbursement agreement with a signature. These persons must be senior officers with these titles:

- Chairman
- President
- Vice president
- Senior vice president
- Executive vice president
- Assistant vice president
- Chief executive officer
- Chief operating officer

Junior officers may attest the signature of a senior officer, but a junior officer may not bind the agency to a reimbursement agreement without proof that he or she has the authority to do so. Junior officers would have the following titles:

- Secretary
- Assistant secretary
- Treasurer
- Assistant treasurer
- Chief financial officer
- Comptroller

Infrastructure Resources

Resources for Pedestrian Design and Safety

It may be helpful to refer to industry standards when developing solutions to infrastructure barriers along existing walking routes or designing new pedestrian facilities to enhance likely walking routes. The following resources may be especially helpful:

- The American Association of State Highway Transportation Officials' (AASHTO) *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, which provides a detailed description of the different types of treatments available, including advantages and disadvantages for each.
- The Institute of Transportation Engineers' *Traffic Calming—State of the Practice*, which is available at www.ite.org/traffic/tcstate.asp.
- PennDOT's Publication 383, *Pennsylvania's Traffic Calming Manual*, which is available at <ftp://ftp.dot.state.pa.us/public/PubsForms/Publications/PUB%20383.pdf>. This Pennsylvania-specific handbook contains information on various traffic-calming issues, including legal authority, liability, impacts on emergency services, and the development of traffic-calming measures.

In addition, several websites offer a wide array of resources for developing solutions to infrastructure barriers along existing walking routes or designing new pedestrian facilities.

- The **Pedestrian and Bicycle Information Center** provides general walking and pedestrian facility design information on its website, www.walkinginfo.org. In addition to the general guidance found throughout the website, the PBIC offers recorded webinars on sidewalk design at www.walkinginfo.org/training/pbic/dps_webinars.cfm.
- The **National Center for Safe Routes to School** offers a variety of resources at www.saferoutesinfo.org. This site provides guidance and resources that are specific to safe routes to school. The center also hosts a variety of prerecorded webinars on SRTS-related issues. The webinars can be viewed at www.saferoutesinfo.org/training/can_webinars.cfm.

Infrastructure-Related Documents

The following list of resources may be helpful for finding information relating to infrastructure projects.

PennDOT Publication 380 – PA Bicycle Drivers’ Manual

<ftp://ftp.dot.state.pa.us/public/PubsForms/Publications/PUB%20380.pdf>

PennDOT District Offices Transportation Enhancement Contacts

<http://www.dot.state.pa.us/Internet/web.nsf/Secondary?OpenFrameSet&Frame=main&Src=/Internet/Bureaus/pdBOS.nsf/PubsAndFormsBOS?OpenForm>

Select “PennDOT Organizations” from the menu on the left, and then select “Engineering Districts and County Maintenance Offices.”

PennDOT Planning Partners Transportation Enhancement Contacts

- LTAP Technical Information Sheet #105 – Bicycle and Pedestrian Facilities
- LTAP Technical Information Sheet #126 – Manual on Uniform Traffic Control Devices and Chapter 212
- LTAP Technical Information Sheet #127 – How to Use the Manual on Uniform Traffic Control Devices and Publication 212

www.dot7.state.pa.us/LTAP/

Walkability Checklist

National Center for Safe Routes to School

www.saferoutesinfo.org/program-tools/education-walkability-checklist

Sidewalks

A Guide to Disability Rights Laws – U.S. Department of Justice

www.ada.gov/cguide.htm

Crosswalks

Manual on Uniform Traffic Control Devices, Revisions I and II Incorporated, Part 3, Chapter 3B, Section 3B.17

http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm

PennDOT Bulletin 447 – Approved Materials for Crosswalks

<ftp://ftp.dot.state.pa.us/public/PubsForms/Publications/PUB%20447.pdf>

School Zones

PennDOT Publication 212 – Official Traffic Control Devices

<ftp://ftp.dot.state.pa.us/public/PubsForms/Publications/PUB%20212.pdf>

Manual on Uniform Traffic Control Devices, Part 7, Traffic Control for School Areas

http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm

School Route Plans

Tips for Creating Walking and Bicycling Route Maps – National Center for Safe Routes to School

www.saferoutesinfo.org/about-us/newsroom/our-newsletter/article/tips-creating-walking-and-bicycling-route-maps

Manual on Uniform Traffic Control Devices, Part 7, Traffic Control for School Areas
Manual on Uniform Traffic Control Devices, Part 9, Traffic Controls for Bicycle Facilities
http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm

Hazardous Walking Routes

Chapter 447 – Hazardous Walking Routes

www.pacode.com/secure/data/067/chapter447/chap447toc.html

Crash Data

Pennsylvania Crash Facts & Statistics – PennDOT

www.dot.state.pa.us/Internet/Bureaus/pdBHSTE.nsf/BHSTEHomepage?OpenFrameset

Select “Crash Information Systems and Analysis” from the menu on the left.

Assessment of Pedestrian Intersection Safety (FHWA)

www.walkinginfo.org/pedsafe/matrices.cfm

www.bicyclinginfo.org/bikesafe/matrices.cfm

Pedestrians/Traffic Signals

Manual on Uniform Traffic Control Devices, Part 4, Chapter 4E. Pedestrian Control Features

http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm

Americans With Disabilities Act

LTAP Technical Information Sheet #130 – Roadway Construction, Pedestrian Accessibility, and the Americans with Disabilities Act (ADA)

ftp://ftp.dot.state.pa.us/public/pdf/BPR_PDF_FILES/Documents/LTAP/TechSheets/TS_130.pdf

Community-Specific Information

The community resources listed below may be useful when planning an SRTS infrastructure project. Resources specific to a community must be acquired through local sources.

Sidewalks

Local land development ordinances
Sidewalk mapping

Crosswalks

Municipal mapping
Pavement marking and sign inventory

School Zones

Municipal or school district mapping
Pavement marking and sign inventory

School Route Plans

Google Earth
<http://maps.google.com/maps?hl=en&tab=wl>

Live search
www.bing.com/maps/

Municipal or School District Mapping

Hazardous Walking Routes

Crossing guards
Locations
Times
Adults/students
Equipment
Local police
Locations
Times

Crash Data

Local crash data

Pedestrians/Traffic Signals

Municipal plans

Americans with Disabilities Act

Municipal mapping

Infrastructure Funding Sources

A variety of sources of funding are available for Safe Routes to School infrastructure projects. These sources of funding are categorized in this section by the governmental level at which the funding originates. Most federally funded projects, including the SRTS program, are administered by the state.

Under MAP-21, a funding match is required for SRTS projects, since SRTS projects now fall under the Transportation Alternatives Program (TAP). For TAP, the cost sharing is similar to other federal-aid highway program where the federal share is 80 percent and the state or local sponsor is responsible for the remaining 20 percent. However, to expedite project implementation, PennDOT typically requires the sponsor to pay for all preconstruction activities with local or other funds. Since the sponsor pays for all design phases, PennDOT funds the construction phase of the project at 100 percent. This is discussed in further detail below in the “Transportation Alternatives Program” section.

Since a match (usually in the form of providing preconstruction work) is required, other funding sources may be needed to augment the funding available for a project. Additional funding sources can come in various forms and may include federal, state, local, private, and nonprofit donations and grants. Finding matching funding shows the selection committee that the sponsor is committed to moving forward with the project even in the absence of federal or state SRTS funding.

State and federal funding sources are typically cost reimbursement programs, which come with a wide array of requirements that must be met for the funding to be used. This is typically not true of local and private grants or donations, which may be used quickly and may more cost-effectively advance an SRTS program.

This infrastructure funding section is presented in the following sections:

- Federal funding sources
- State funding sources
- Local funding sources
- Private funding sources

Federal Funding Sources

Transportation Alternatives Program

Under the Moving Ahead for Progress in the 21st Century (MAP-21) funding, the Transportation Enhancements (TE) activities defined under SAFETEA-LU have been consolidated with the Safe Routes to School, Scenic Byways, and Recreational Trails programs to form the Transportation Alternatives Program (TAP). The various activities and items from the four SAFETEA-LU programs have been condensed into a separate

Recreational Trails set aside and 10 eligible activities, which can be found at www.ta-clearinghouse.info/10_definitions.

SRTS no longer has a dedicated funding source under MAP-21. However, all SRTS items and activities defined in SAFETEA-LU remain eligible for TAP funds. Additionally, the typical project activities involved with SRTS projects are eligible for funding under TAP.

Example project activities include:

- Sidewalk improvements
- Traffic calming and speed reduction improvements
- Pedestrian and bicycle crossing improvements
- On-street bicycle facilities
- Off-street bicycle and pedestrian facilities
- Secure bicycle parking facilities
- Traffic diversion improvements
- Bike share programs

Eligible SRTS noninfrastructure-related project categories are described in this Comprehensive Guide beginning on page 33.

Since the TAP is an 80/20 cost-sharing program, PennDOT expects to administer the program in the same way as the TE program in recent years: Instead of having the sponsor apply and provide a 20 percent match for the project, PennDOT requires local sponsors to complete all preconstruction activities (such as design, right of way acquisition, utilities clearance, environmental clearance, etc.) at their own expense. Then, PennDOT funds the construction phase of the project at 100 percent.

Additional information about the MAP-21 TAP can be found online at www.fhwa.dot.gov/map21/guidance/guidetap.cfm.

An informative guide to eligible activities under the TAP, produced by the National Transportation Alternatives Clearinghouse, is available online at www.ta-clearinghouse.info/publications.

Congestion Mitigation and Air Quality

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program provides funding to reduce transportation-related air pollutants. Advancing pedestrian and bicycling activities that reduce vehicle use or improve traffic flow such as SRTS projects is certainly consistent with this purpose.

CMAQ provides funding to reduce transportation-related air pollutants; pedestrian and bicycle activities would contribute to this reduction.

The CMAQ is a cost reimbursement program, similar to the federal Transportation Alternatives Program in that funds are subject to the overall federal-aid obligation limitation. The program is coordinated in Pennsylvania through the regional planning organizations (Planning Partners).

Prior to the Energy Independence and Security Act of 2007, the federal share for most CMAQ projects has been 80 percent. Since then, the share has been at the discretion of the states with up to 100 percent of the cost of the project or program covered by federal funds. Under MAP-21, the potential for 100 percent federal share generally ended in October 2012, with 80 percent remaining the norm.

Generally, CMAQ project eligibility under MAP-21 is similar to SAFETEA-LU. Projects such as planning and design for bike and pedestrian projects, limiting areas to the use of nonmotorized vehicles or pedestrians, bicycle storage, and other facilities, and constructing bicycle and pedestrian facilities for transportation, as well as noninfrastructure projects, such as bicycle use outreach and education, should retain their eligibility under MAP-21.

The biggest change to CMAQ funding under MAP-21 is the approach to core formula program funding. The details of state apportionments are not necessary here, but generally state's apportionments will be similar to those in fiscal year 2012 under SAFETEA-LU, and program shares will be similar to those of prior years.

Additional information about CMAQ funding opportunities can be found online at: www.pacommuter.com/ridesharing/ and www.fhwa.dot.gov/map21/cmaq.cfm.

Community Development Block Grants

The Community Development Block Grant (CDBG) Program for States and Small Cities (known as federal nonentitlement areas) is administered in Pennsylvania through the Department of Community and Economic Development (DCED). Cities and urban counties known as federal entitlement areas receive funding directly from the federal Department of Housing and Urban Development and are not part of this CDBG program. DCED administers CDBG funding for smaller communities and rural areas in Pennsylvania through Act 179, Community Development Block Grant Entitlement Program for Nonurban Counties and Certain Municipalities.

The goals and objectives of the program include assisting communities with preparing a community development plan (CDP) and then administering the projects identified in those plans. The focus of the CDPs is improving economic development and commercial revitalization activities that address the needs of lower to moderate income citizens. An example of appropriate use of CDBG funding is the rehabilitation of sidewalk, including appropriate accessibility features, in an urban neighborhood that would allow children to safely walk or bicycle to their school. A sidewalk rehabilitation project would probably not

stand alone as a CDBG project but would rather be one component of a larger revitalization project comprised of several such components.

Eligible applicants are listed in the Appendix of the Community Development Block Grant Program: Program Guidelines, March 2007, which is available online at www.newpa.com/sites/default/files/uploads/CDBGGuidelines07.pdf.

Eligible projects include these pertinent categories, among others:

- Acquisition of real property for public purposes
- Disposition of real property acquired with CDBG funds
- Acquisition, construction, reconstruction, rehabilitation, or installation of public facilities
- Clearance and remediation activities
- Public services, including education
- Interim assistance, including the repairing of streets, sidewalks, and parks
- Payment of nonfederal share connected with federal grant-in-aid programs
- Urban renewal completion
- Technical assistance

Additional information about CDBG funding opportunities can be found online at www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/community-development-block-grant-cdbg.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is a federal program that provides funding to state departments of transportation for projects and programs that reduce serious injuries and fatalities on public roads. The HSIP program has been continued under MAP-21.

States are required to develop coordinated, statewide plans that define safety goals and strategies for accomplishing those goals to be eligible for HSIP funding. These plans are called Strategic Highway Safety Plans (SHSP). Pennsylvania has an SHSP and participates in the HSIP, making funding available for eligible projects that are consistent with the Pennsylvania SHSP. SRTS activities are eligible for HSIP funding as long as they meet the requirements for a highway safety improvement project. And, pedestrian and bicycling safety improvements are specified as *other* vital activities in the Pennsylvania SHSP. For more information about the eligibility of a project for HSIP funding,

Funding is available from the Highway Safety Improvement Program for projects to reduce serious injuries and fatalities on public roads.

contact the local MPO or RPO representative. Contact information for your MPO/RPO is available online at www.dot.state.pa.us/typ/Index.htm. General information about the MAP-21 HSIP is available online at www.fhwa.dot.gov/map21/hsip.cfm.

State Sources of Funding

Automated Red Light Enforcement Funding

The Automated Red Light Enforcement (ARLE) Program generates enough revenue to make funding available for safety and mobility projects around the state. The program is administered by the Pennsylvania Department of Transportation's Center for Program Development and Management and the Bureau of Highway Safety and Traffic Engineering.

The ARLE program does not require a local match, and it has no funding limit; the funding may be used for engineering services. The following may apply for ARLE funding:

- Local authorities (counties, municipalities, and other local boards or bodies having authority to enact laws relating to traffic)
- Planning organizations, such as metropolitan planning organizations (MPOs), rural planning organizations (RPOs), and county planning organizations
- Commonwealth agencies

Eligibility is established in 67 Pa.C.S. §233.3, with the intent to fund relatively low-cost safety and mobility projects. Following are some examples of the kinds of projects that are eligible for funding:

- Improvements to, removal of, or retiming of traffic signals
- Installation or interconnection of traffic signals
- Improvements to signal operations modes and detection systems
- Roadway capacity upgrades
- Implementation of LTAP Walkable Communities and Local Safe Roads Communities Programs recommendations
- Pedestrian safety improvements at signalized intersections, such as pedestrian signs, signals (including countdown signals), and markings, pedestrian-only phase or pedestrian-lead phase during signal operation, and crossing guards for schoolchildren.

Grant applications are accepted one time each year. A *Pennsylvania Bulletin* announcement is sent out in March or April indicating that the department will be accepting applications each June. In 2011, nearly \$15 million were available to grantees.

Additional information about ARLE funding opportunities including selection criteria can be found online at

www.dot.state.pa.us/Portal%20Information/Traffic%20Signal%20Portal/arle.html.

PA Infrastructure Bank

The Pennsylvania Infrastructure Bank (PIB) is a funding opportunity that extends low-interest loans for transportation projects. The PIB disperses loans for projects that are otherwise eligible for state or federal funding or for liquid fuel expenditures. Eligible projects are divided into four categories:

- Highway/bridge account
- Municipal loans
- Transit account
- Aviation account
- Rail freight account

SRTS-related projects would most likely fall under the “municipal loans” category of the Pennsylvania Infrastructure Bank, a funding opportunity that extends low-interest loans for transportation projects.

Safe Routes to School-related projects would most likely fall under the “municipal loans” category. Eligible municipal loans projects include a wide range of roadway network improvements such as bridge and culvert projects and roadway widening and resurfacing. Loans are also available for Hometown Streets/Safe Routes to Schools projects as well as traffic calming and crosswalk improvements.

PIB loans are extended at a fixed interest rate that is one-half prime set at the time the loan application is accepted by PennDOT. Some projects may be repaid with liquid fuels funds, while others may not. Your first contact regarding a PIB loan is your MPO/RPO representative.

Additional information about PIB loans can be found online at www.dot.state.pa.us/PennDOT/Bureaus/PIB.nsf/HomepagePIB?OpenForm.

Local Sources of Funding

Liquid Fuels Tax Funds for Counties is an act codified in Title 75 Pennsylvania Consolidated Statutes, Chapter 90, that provides counties with semiannual allocations for construction, maintenance, and repair of roads and bridges. Counties may also allocate funds to their municipalities for road and bridge work.

The Policies and Procedures Manual for the liquid fuels program indicates acceptable and unacceptable expenditures. The manual lists a wide range of roadway and bridge improvement projects, with those of interest for Safe Routes to School noted below:

- Erection of street name and traffic signs
- Lane and crosswalk marking
- Engineering fees
- Curb ramps

The Policies and Procedures Manual can be found online at <ftp://ftp.dot.state.pa.us/public/PubsForms/Publications/Pub%209.pdf>.

It should be noted that sidewalks that are not part of a roadway or bridge realignment project are not acceptable expenditures. However, if a run of sidewalk repair or replacement triggers the upgrade of curb ramps to current ADA standards, that curb ramp work may be covered.

Additional information about liquid fuels allocations to counties and their political subdivisions can be found online at www.dot.state.pa.us/Internet/Bureaus/pdBMS.nsf/infoMLFProgram?OpenForm.

Typically, municipalities manage their liquid fuels allocations separately from their general funds. However, municipalities may fund appropriate projects through their general funds by making a project part of its budget.

Private Sources of Funding

Infrastructure projects, by their nature, tend to be more expensive than noninfrastructure projects. As such, securing private funding for large-scale projects may be difficult. However, there are several ways that private funding may be useful to infrastructure projects. One is that private contributions may be used for the donation credits required by some forms of federal funding. Donation credit is presented below.

Another way private donors may contribute to infrastructure projects is through small-scale projects such as providing bicycle racks or through phases of a larger project such as contributing to the pedestrian signing portion of a wayfinding or pedestrian-corridor project.

When developing the scope of an infrastructure project, consider the possibility that local organizations may be willing to assist with some portion of the project. Potential funding partners or sources include the following:

- Corporations
- Foundations
- Individuals
- Events, such as bike rodeos sponsored by PTA/PTOs or by schools
- Parent-teacher organizations (PTA/PTO)
- Schools (by producing and/or distributing educational materials, or by sponsoring projects such as a vocational school making bicycle racks for use at local elementary schools)

Donation Credit

Traditionally known as a match, donation credits are the contributions to a project that funding recipients are required to provide to receive certain types of funding. In the past, the sources of these contributions were limited, but recent legislation has brought new flexibility to matching requirements. The SRTS program does not require matching funds, but other sources of federal and state funding may require some form of local match. Federal sources of funding that do require matching funds have become more flexible with what constitutes a donation credit. The following is now permitted as a donation credit:

- Certain public donations of cash
- Material
- Services

When developing the scope of an infrastructure project, consider the possibility that local organizations may be willing to assist with some portion of the project.

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