



U.S. Department of Transportation Federal Highway Administration



Creating Healthier Generations

A Look at the 10 Years of the Federal Safe Routes to School Program



September 2015



"Safe Routes to School has the potential to improve the living habits of an entire generation of schoolchildren. It provides our children with fresh air and exercise. It reduces fuel consumption and air pollution, and promotes safety."

Congressman Jim Oberstar (D-MN),

Chairperson of the House Transportation and Infrastructure Committee 2007–2011 and Sponsor of the SRTS legislation in 2005

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Executive Summary

In August 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was passed. The law included a new Federal Safe Routes to School (SRTS) Program which had the ambitious goal to improve the ability of primary and middle school students to walk and bicycle to school safely. This report examines the accomplishments of the Federal SRTS Program over the 10-year period since it was enacted.

The Federal SRTS Program provided the Federal Highway Administration (FHWA) with over \$1 billion in dedicated funding for implementation through State departments of transportation (DOTs). In July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was enacted. Under MAP-21, SRTS activities were eligible to compete for funding alongside other eligible activities under the Transportation Alternatives Program (TAP). TAP funding was apportioned to State DOTs and urbanized areas with populations over 200,000.

Benefits are Far Reaching

As of March 31, 2015:

- All 50 States and the District of Columbia have announced a total of \$1,031,465,832 in SAFETEA-LU funds to local and statewide SRTS programs which is 89.9 percent of the \$1.147 billion apportioned to States under the law.
- Nineteen States have announced a total of \$240,565,089 in MAP-21 funds to local and statewide SRTS programs.
- More than 17,400 schools have benefited or will benefit from funds announced by State SRTS programs.
- At least 6.8 million students have been reached by the program.
- Low-resourced areas are well served. Among the 8,292 schools that State SRTS Coordinators listed in SRTS project award announcements, 5,674 (68 percent) are classified as Title I schools (low-income schools), which is significantly more than the overall proportion of schools that are Title I (57 percent) in the U.S.

Interest in Walking and Bicycling Continues to Grow

Over the 10-year period, community interest in walking and bicycling to school has grown as seen through participation in Walk to School Day and Bike to School Day events.

• From 2005 to 2014, the number of Walk to School Day events has more than doubled with 1,896 events in 2005 growing to 4,783 in 2014. Approximately five percent of elementary and middle schools in the U.S. held events in 2014.

• Participation in Bike to School Day, now in its fourth year, has nearly tripled, increasing from 950 in 2012 to 2,631 in 2015.

Local Projects Benefited from Data-based Decision-making

The National Center for SRTS developed a national data system that enables databased decision making at the local level.

• As of March 2015, the data system surpassed 1.58 million data records, including 1,313,534 Parent Surveys and 267,779 Student Travel Tally questionnaires from 12,384 schools.

Data Show a Mode Shift to Walking and Bicycling to School

- Parent survey results from 2007 through 2013 indicated that walking to and from these schools increased from 12 to 15 percent in the morning (a 25 percent increase), and from about 15 to 19 percent in the afternoon (a 27 percent increase).
- A study of 801 schools—roughly half with SRTS programs and half without indicates education and encouragement activities were associated with a 25 percent increase in walking and bicycling to school over five years.
- Infrastructure projects, such as intersection improvements and sidewalk installations, were associated with a 18 percent increase in walking and bicycling over five years.

Safety Benefits Have Been Identified

- In Miami-Dade County, University of Miami researchers have documented a 63 percent decrease in the number of child pedestrians involved in car crashes after a comprehensive SRTS program.
- In New York City, researchers found that school-aged pedestrian injury rates decreased by 44 percent after infrastructure improvements were made in census tracts with SRTS interventions relative to sites without interventions.

Along with the expected benefits of improved safety and increased numbers of students walking and bicycling to school, the report found broader benefits such as reduced transportation costs, more connectivity within communities, and how SRTS could serve as a tool to help combat truancy, to improve readiness to learn, and enhance community life.

Conclusions

The Federal SRTS Program did meet the requirements of the legislation and research studies document increases in walking, bicycling and safety benefits at participating schools. Interest in walking and bicycling to school may be hitting a critical mass. "Critical mass" occurs when 15 to 20 percent of entities adopt an "innovation" like SRTS. Approximately 18.5 percent of all K-8 schools in the country have adopted SRTS programming or held walking and bicycling events at some point in the last 10 years.

The National Center is happy to report that since the program has been in existence the Safe Routes to School program has expanded the safety benefits to many communities and encouraged State DOTs, metropolitan planning organizations (MPOs), and regional planning organizations (RPOs) to prioritize safe infrastructure for walking and bicycling to school in their transportation planning. We look forward to collaborating with these entities and others advocacy organizations as we promote the goals and safety benefits of SRTS.



Introduction

This 2015 report examines the accomplishments of the Federal Safe Routes to School Program (SRTS) over a 10-year period since it was enacted in 2005. More than 17,400 schools serving kindergarten through eighth grades in all fifty States and the District of Columbia have been a part of SRTS. The program has reached more than 6.8 million students. The National Center for SRTS, the clearinghouse for the program, has collected a rich data set and examined the program's reach and outcomes. The program has demonstrated safe transportation and the health benefits of active travel for these students.

While the data, charts, and graphs contained in this report provide the numbers to document the progress of SRTS, it is the stories of what the State departments of transportation (DOTs) and the metropolitan planning organizations (MPOs) have funded in communities across the country that best show what the program has accomplished. For example, in Miami-Dade County, SRTS is part of a comprehensive program that reduced child pedestrian injuries by 63 percent. Heatherwood Elementary in Boulder, Colorado, dramatically increased walking and bicycling to school and introduced children with autism to riding tandem bicycles. In Omro, Wisconsin, a middle school physical education teacher established a bike culture that includes a bike share program, a young mechanics club and much more.

Along with the expected benefits of improved safety and an increased number of students walking and bicycling to school, the report found broader benefits such as reduced transportation costs, more connectivity within communities, and that SRTS could serve as a tool to help combat truancy, improve readiness to learn, and enhance community life. Auburn School District in Auburn, Washington, increased walking and bicycling to school and saves \$220,000 a year in transportation costs. In Springfield, Massachusetts, a walking school bus was part of a neighborhood effort to reclaim streets. Brevard, North Carolina, used a SRTS project as a springboard to create access to essential services in the community. And in Wilmington, Delaware, a SRTS project is contributing to economic revitalization in a low-resource community. Throughout this report are snapshots of these successes.

More than 17,400 schools have been a part of Safe Routes to School and the program has reached more than 6.8 million students.



The Safe Routes to School Program Legislation — Creating Healthier Generations

In August 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted and later was extended through September 2012. The legislation established the Federal SRTS Program with dedicated funding that overall provided FHWA with over \$1 billion for implementation through State DOTs. States had a chance to make it safer and easier for children to walk and bicycle to school and gradually change the way this country views walking and bicycling as a child's form of transportation. One of the goals of SAFETEA-LU was to encourage a healthy and active lifestyle from an early age. To help reach all communities, the original SRTS program did not require a non-Federal match program.

In July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was enacted. Under MAP-21, SRTS activities are eligible to compete for funding alongside other eligible activities under the Transportation Alternatives Program (TAP). TAP funding is apportioned to State DOTs and urbanized areas with populations over 200,000. Meanwhile, SRTS funds from SAFETEA-LU that were not obligated (over \$500 million) were still available for States to spend. To date, an estimated 1,943 schools in 19 out of 36 reporting States have benefited or will benefit from MAP-21 funds. Based on the remaining reporting States, four States awarded MAP-21 funds for SRTS, but were unable to specify the number of benefiting schools, and 13 States reported not using MAP-21 funds for SRTS. SRTS projects also are eligible under the Surface Transportation Program (STP) because TAP-eligible projects are eligible under STP. Most SRTS activities also are eligible under the Highway Safety Improvement Program.

Safe Routes to School Under SAFETEA-LU

As stated in SAFETEA-LU, the purposes of the program were far reaching:

- 1. To enable and encourage children, including those with disabilities, to walk and bicycle to school;
- 2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
- 3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately two miles) of primary and middle schools (Grades K-8).

Requirements of the law included: 1) a full-time SRTS Coordinator in every participating State; 2) the establishment of a clearinghouse for SRTS information; and 3) the creation of a National Task Force.

SAFETEA-LU required that not less than 70 percent and not more than 90 percent of apportioned funds were to be spent on infrastructure projects such as sidewalk improvements and pedestrian and bicycle crossing improvements. Legislation also required that not less than 10 percent and not more than 30 percent of apportioned funds were to be used to conduct noninfrastructure activities including education, encouragement, and enforcement measures.

A Full-Time SRTS Coordinator in Every Participating State

The requirement for dedicated Coordinators for a program is not unique, but most State-level Coordinators are not required by law to be full-time. MAP-21 did not change the requirement that each State have a Pedestrian and Bicycle Coordinator, and, though not required by legislation, most States have had Transportation Enhancements/Transportation Alternatives Coordinators. The majority of these positions, including State SRTS Coordinators, have been housed in State DOTs. The presence of this full-time Coordinator during the SAFETEA-LU legislation was a major strength in the implementation of SRTS and enabled this program to have the detail of data contained in this report.



School Snapshot

Multi-use Trail Increases Connectivity

Evergreen, Colorado

A new multi-use trail helps increase connectivity to three neighborhood public schools, a local recreation center and commercial destinations. The community has seen an increase in the safety of street crossings in the school zone through the installation of crosswalks, pedestrian-actuated flashers and warning signs. Walking and biking to school for grades 3-5 increased from 1.4 percent in 2010 to 7 percent in 2013, while walking and biking from school increased from 3.2 percent to 13 percent. **Federal Funds Awarded:**

\$34,000 noninfrastructure award in 2006 \$48,910 infrastructure award in 2006 \$200,000 infrastructure award in 2013

Case Study

Walking School Bus Program Joins Neighborhood Effort to Reclaim Streets, Reduce Crime

Brightwood Elementary School Springfield, MA

In Springfield, MA, a walking school bus program played a role in reducing crime and allowing residents to reclaim their neighborhood streets. The Brightwood Elementary School Walking School Bus Program was so successful,



in fact, that it spurred a city-wide task force and was part of a special on 60 Minutes.

Ninety-seven percent of the children who attend Brightwood Elementary live within a mile of the school. Eightysix percent of them are Hispanic and 96 percent of the students' families were considered low-income. The Brightwood neighborhood had the highest rates of violent crime in the city. According to a 2012 New York Times article, gang members and drug dealers cruised the streets and gunfire erupted almost daily. Change began when two Massachusetts State Troopers started the C3 (Counter Criminal Continuum) initiative, an intense community policing program. They began holding weekly community meetings. And that's where Baystate Brightwood Health Center 's Karen Pohlman and the SRTS concept of walking school buses came in.

According to Pohlman, residents were hesitant to walk on the sidewalks, get to know their neighbors, or let their children play outside and childhood obesity was a health care crisis. Pohlman began attending the C3 community meetings and the leaders challenged her to come up with a health initiative that would impact safety. What she came up with—before knowing anything about Safe Routes to School—was a Walking School Bus program with six goals: (1) daily exercise to aid in reducing childhood obesity, (2) increased safety for the children and the neighborhood, (3) decreased school absenteeism and tardiness, (4) increased learning capacity, (5) reduced carbon footprint around the school, and (6) community engagement.

Pohlman and the principal identified a highly visible walking route less than a mile long. The initial response was six to ten children walking to school every morning. "Soon, there was a small group of teachers that were dedicated to leading the walking school bus Monday through Friday and our student participation numbers increased. By the end of the first year, we had maintained our initial route every morning and had approximately 40 to 50 students participating consistently," Pohlman recalled.

Brightwood then received support from the Massachusetts SRTS Program and expanded to three walking school bus routes, all still led by teachers, and participation increased to 130 students. Parents began to walk with the children regularly. Local businesses donated large umbrellas for rainy days, and scarves and mittens for cold days.

The walking school bus also was credited with improving student attendance, reducing tardiness, and reducing crime by providing more eyes on the street. A city-wide Springfield Safe Routes to School Alliance was formed with the goal to bring walking school bus programs to all of Springfield's elementary schools and the program is being emulated across the State of Massachusetts.



The Role of the National Center for Safe Routes to School

Established in May 2006, the National Center for SRTS (National Center) is part of the University of North Carolina Highway Safety Research Center (HSRC) and receives funding from the U.S. Department of Transportation Federal Highway Administration to serve as the clearinghouse for the Federal SRTS Program.

Highlights of the National Center's Contributions

- Development and maintenance of a system of websites for varied audiences including: SRTS information (www.saferoutesinfo.org), walk and bike to school events (www. walkbiketoschool.org), and walking school bus information (www.walkingschoolbus. org). The number of yearly visits to www.saferoutesinfo.org nearly tripled from 2007 to 2014 (from 92,000 to 266,000).
- Creation and maintenance of a national database for evaluation of the Federal SRTS Program. The SRTS program is the only pedestrian and bicycle program that has been able to establish a national database of local program performance measures. The database was enabled by the National Center's development of two standardized data collection instruments, the Student Travel Tally and Parent Survey, and by supporting their use through free data processing and reporting services. The database now includes travel information submitted and used by almost 13,000 schools around the country. In 2012, the National Center received a Harvard Bright Ideas in Government award for its Student Travel Data System.
- Leadership for U.S. Walk to School Day and Bike to School Day by providing promotional materials, technical support, and resources, including online registration for events, organizing national events for dignitaries, such as the U.S. Secretary of Transportation, and promoting worldwide participation. In 10 years (2005 to 2014), the number of Walk to School Day events has increased two and one-half times and Bike to School Day participation has doubled in just three years since it began.
- Development of a menu of online and in-person training and technical assistance options to support the growth, development, evaluation, and sustainability of local and State SRTS programs. Every State SRTS program has been offered two free in-person trainings and the National Center led 19 instructor trainings around the nation, which have resulted in 262 instructors (including 24 State SRTS Coordinators). The course is updated annually in order to remain accurate and relevant as statistics, issues, and opportunities change.
- Tracking the progress of the Federal SRTS Program and the overall reach of the program through quarterly reporting briefs and a comprehensive project list, and making this information widely available and searchable online.

- Developing a plan for a national evaluation of SRTS programs and producing a progress report that described implementation of the Federal SRTS Program after five years of implementation.
- Supporting State SRTS Coordinators' efforts and communications through a Coordinators-only listserv and section of the website, and the planning and facilitation of regular conference calls and nine annual in-person meetings.

Collaboration with the Safe Routes to School National Partnership

The Federal SRTS Program benefits from a strong advocacy network. The SRTS 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 SRTS programs.

Safe Routes to School National Conference

The Safe Routes to School National Conference has been co-presented by the National Center and the Safe Routes to School National Partnership since 2007. This bi-annual event brings together a wide range of practitioners working together at the local, regional, State, and national level to make it safer and more convenient for children to walk and bike to school. The annual meeting of the State SRTS Coordinators has been held in conjunction with these conferences. Four SRTS National Conferences have been held across the country in Michigan, Oregon, Minnesota, and California with as many as 600 attending each conference. The fifth conference will be held in Ohio in 2016.



School Snapshot

Connecting Students, Residents to Services and Job Centers

Valleyview Elementary School and Westmoor Middle School, Columbus Public Schools, Ohio

Pedestrian infrastructure in low resource neighborhood now connects residents to services and community centers. In addition to creating a safer and more accessible walking environment, the new infrastructure provides safe access to a local trail, a park, and regional bikeways. It also provides a direct connection to the business district, which includes grocery shopping, doctor's offices, transit connections, and major job centers. **Federal Funds Awarded:**

\$560,000 infrastructure grant 2010

Case Study

Mayor Says Connecting Schools and Neighborhoods Keeps City Energetic

Brevard Elementary School, Brevard, NC

Mayor of Brevard, North Carolina, Jimmy Harris, believes in the impacts of Safe Routes to School. "Getting children using safe pathways to connect them to schools and other centers of activity is beneficial for any community. Having those same paths connect neighborhoods and residents keeps a city energetic," Harris said. In less than a decade, his city has embraced the Safe Routes to



School program and transformed a community into active transportation believers.

In 2006, the city adopted a Comprehensive Pedestrian Plan that recognized Safe Routes to School as an effective program to encourage and teach about safe walking and biking. In 2008, the North Carolina Department of Transportation (NC DOT) awarded the city of Brevard a \$250,000 SRTS grant to improve pedestrian and bicycle infrastructure and provide safety education and encouragement programs for 546 students at Brevard Elementary School. At the time the project was awarded, approximately 20% of students at Brevard Elementary School walked or rode their bikes to school.

SRTS funds were used to construct a mile-long multiuse path that is anchored by Brevard Elementary and Brevard High School with the Transylvania County Boys and Girls Club, residential neighborhoods, a medical facility, and two senior living communities spaced in between. SRTS funds also enabled the rehabilitation of an existing sidewalk adjacent to a highway, intersection improvements in the school walk zone, and installation of school zone signage.

The 2008 SRTS grant also supported activities to educate and encourage safe walking to school. Since then, the Brevard City Council has earmarked \$10,000 each year to continue the city's SRTS educational program beyond the initial grant. The city developed a school walking map, and provides a number of education and encouragement programs to promote active trips to school, including: a walking school bus with weekly incentives for participation, bike rodeos to teach and reinforce safe bicycling skills at a number of schools, a citywide KidsGO Festival to expose students and their families to the outdoors, and a hiking field trip to explore the City's bike/hike path system.

The new infrastructure provides residents with new connections to services through the city's existing active transportation network. For example, new access to a six mile greenway connects residents to schools, government buildings, grocery stores, and other key activity centers, not to mention the 500,000 acres of Pisgah National Forest lands. Building on the energy from these SRTS successes, in 2013, the city began funding additional active transportation projects, including additional sidewalk connections to the elementary and middle schools and the construction of the seventh mile of greenway to connect a neighborhood to the city's trail network. What's more, Brevard City Council is considering a tax increase to earmark new funds to build trails and sidewalks.



Monitoring the Impact of the Federal SRTS Program

The SRTS Program Was Set Up to Provide Data to Document Accomplishments

Under SAFETEA-LU, the Federal SRTS Program – while small compared to other transportation programs – had resources to establish systems that allowed the program to be evaluated at different levels.

The system developed by the National Center examines the program's announced funding, while the Federal Fiscal Management Information System provides information regarding obligation rates. Announced and obligated funding rates provide different looks at program uptake. When a State department of transportation (DOT) announces the decision to fund a transportation project, those funds are referred to as announced funding. Obligation of funds indicates the Federal government's commitment to pay funds for that particular project. Obligation is generally triggered by the signing of a contract with a funding recipient. State DOTs vary regarding when a project is considered obligated. For a few States, all funds for a project are obligated upon having a signed agreement. While for most States, obligation occurs in stages as the project is designed and constructed. Given the lengthy process for project construction completion, tracking only obligation rates can mislead officials regarding the popularity of and/or the need for a particular program.

Two main systems developed by the National Center:

- A tracking system and an interactive map for announced funding at the State level captures aspects such as project locations, and the number and type of applications submitted. It also provides the ability to link to other school information, such as the socio-economic status of SRTS-benefiting school populations.
- The School Travel Data System enables schools to collect data about trip mode and parent perceptions, and encourages using data to inform decision-making at the local, State, and national levels.

The National Center also collects information about participation in national events and the role these activities play in establishing and supporting walking and bicycling programs:

- Walk and Bike to School Day Event registration databases provide information about the growth and geographic spread of these events and provides contact information that enables the National Center to conduct event organizer surveys.
- Annual Post-Walk to School Day Event Organizer Surveys provide the National Center data about school communities' motivations for organizing Walk to School

Day events, and how events often lead to changes that can improve the safety and appeal of walking and bicycling to school in communities throughout the country.

In addition to National Center data, this report uses information from these sources:

- Fiscal Management Information System (FMIS) to obtain obligation rates.
- National Center for Education Statistics (NCES) to obtain school demographic information.
- Fatal Analysis Reporting System (FARS) to understand fatality rates for child pedestrians.
- The Decennial Census and American Community Surveys (ACS) to obtain population density information.

SRTS Project Tracking System

State SRTS Coordinators report announced funding to the National Center. As of March 31, 2015, States have announced \$1.03 billion in SAFETEA-LU SRTS project awards, or 89.9 percent of the \$1.147 billion apportioned to States under the law. Since the Federal program's inception through the end of the quarter, States have obligated 75 percent (\$857.1 million/\$1.147 billion) of their funding apportionments, and 83 percent (\$857.1 million/\$1.03 billion) of announced funding. An estimated 15,463 schools have benefited, or will benefit, from SAFETEA-LU funds.



School Snapshot

Benefiting from Enforcement, Education and Encouragement

Village Elementary School, Coastal Ridge Elementary School and York Middle School, York, Maine

Speed radar units helped police to enforce speed regulations around Village Elementary, Coastal Ridge Elementary, and York Middle Schools. Safe Routes to School noninfrastructure funds provided for new safety education and encouragement programs such as bike safety rodeos, helmet and bike light giveaways, and a "caught being good" ticket program in which officers gave coupons for local treats to students caught riding safely.

Federal Funds Awarded: \$4,613 infrastructure award in 2009 \$500 noninfrastructure award in 2012 As previously described, tracking announced funding has allowed stakeholders and policymakers at the local, State, and national levels to understand how quickly the Federal SRTS Program was being embraced at the statewide and local levels. It also allowed the National Center to analyze the demographics of the funded areas and report on whether the funds were being distributed equitably across areas of varying socio-economic status and according to population density. Understanding which demographic populations are affected is also important for Federal civil rights compliance. The National Center also traces the number of applications and total requested dollar amounts versus the number and dollar amount of funded applications as a way to understand demand for the program.

Interactive Project Map

The National Center developed an interactive map that enables users to view the schools that benefit from announced Federal SRTS awards. Users can search schools by State, county, congressional district, MPO, and project year. The map draws its information from a funded project database maintained by the National Center as well as from a school information database maintained by the National Center for Education Statistics. See figure 1 for screen shots of the interactive map.



Figure 1. Interactive Funded Projects Map. Left: National view, Right: View of congressional district. www.maps.saferoutesinfo.org.

School Travel Data System

Data-based decision making at the school-level

The establishment of the SRTS Clearinghouse early in the roll out of the Federal SRTS Program provided the opportunity to develop a data system with input from the States. Because collecting this information was neither mandated nor funded by Federal legislation, it was even more important to have a service that made data collection straightforward and worthwhile so that local programs would take part voluntarily. Doing so would help measurement become widely adopted, providing local programs with meaningful information, and making the identification of successful strategies and national trends possible.

To help SRTS programs gather baseline information and understand their results, the National Center offers two standardized data collection instruments. The Student Travel Tally allows programs to identify frequency of transportation modes for school travel. The Parent Survey reveals parental perceptions that may influence whether children are given the opportunity to walk or bicycle. Local SRTS programs may enter data into an online system or send data forms to the National Center for

The National Center's data system surpassed 1.58 million data records, including 1,313,534 Parent Surveys and 267,779 Student Travel Tally questionnaires from 12,384 schools. entry. Programs receive reports that summarize the results of their raw data. Data gathered from local SRTS programs are maintained in a database that also captures detailed information about the projects.

Nationally, the data service created the ability to identify trends, share successful practices and support research, providing a wealth of data on how many students walk and bike to school, which has not previously been collected by schools. It provides an understanding about what goes into a parent's decision to allow a child to walk or bike to school.

At the local level, the data service grew from serving 43 schools in six States in early 2007; to more than 7,000 schools in 2012, and to 12,845 in all 50 States and the District of Columbia as of March 31, 2015 (Figure 3). As of March 2015, the National Center's data system surpassed 1.58 million data records, including 1,313,534 Parent Surveys and 267,779 Student Travel Tally questionnaires from 12,384 schools.



Figure 3. The cumulative number of schools that have used the National Center's data system over time.

The U.S. Department of Transportation and other Federal government agencies are moving toward performance-based planning. The Federal SRTS Program, though small by transportation program standards, provides a transferable model for how to obtain and share information at local, State, and national levels. The data service provides communities with the information they need to maximize the benefits of the program and create better environments for children walking or bicycling to school.

Case Study

Building a Bike Culture for Middle School Students

Omro Middle School Omro, WI

We expect to see bike share programs in cities like New York City and Chicago, but at a middle school in rural Wisconsin? What makes the bike share program at Omro Middle School impressive is that it's just one part of a larger effort to encourage students to choose active commuting.



In 2009, Omro initiated a Safe Routes to

School (SRTS) program with funding provided by the Wisconsin Department of Transportation (WisDOT). The program was championed by Omro's physical education teacher and principal, who viewed SRTS as a way to enhance students' physical fitness and provide more opportunities for exercise.

The school developed a cycling program that uses a fleet of hybrid, mountain, and BMX bikes. The first 13 bikes were purchased from the Omro Police Department for \$3 apiece. Other bikes have been donated, salvaged from the trash, or purchased secondhand. The hybrid and mountain bikes are available to students during physical education classes, special events and trips, while the BMX bicycles can be checked out at recess to ride at the school's on-campus 2.25 mile bike trail or at Bike Skill Park, a 0.75-mile Cyclocross course that connects the existing on-campus limestone surface trail and the school forest. The bicycle fleet is maintained by the school's "Young Mechanics" who are trained middle school students that work out of Omro's fully tooled Bike Shoppe.

The bike fleet is central to the school's curriculum, which includes two weeks of bicycle curriculum in their physical education class (Bicycling Basics in September and Cyclocross in November), a safety course each May, and a three day environmental retreat for sixth graders with interdisciplinary activities in science, art, engineering, team building and more.

Omro also boasts a famous end-of-year Eighth Grade Bicycle Junto, an adventure day in which approximately 100 students take part in an eighth grade bicycle field trip with 30 teacher/parent chaperones. Students are divided into teams for a day-long scavenger hunt spanning 30 miles of bicycling. They begin by completing a bicycle safety quiz, then ride to their first stop, where a law enforcement officer judges how safely they bicycled. Throughout the day students bike 2-3 miles at a time to stations where adult "Station Masters" assign tasks and ask questions involving bicycle rules and safety, math, language arts, social studies, science, and art.

As of spring 2015, about one in six students regularly walks or bikes to school, and many more are involved in walking and biking activities while at school.



SRTS Program Reach

Funds Received by States

SAFETEA-LU provided more than \$1 billion for implementation of SRTS through State DOTs. State apportionments were based on a formula that accounted for student enrollment with no State receiving less than \$1 million per year. Table 1 shows total apportionments to States under SAFETEA-LU and the percentage of funds States obligated through March 2015.

State	Total	% Obligated	State	Total	% Oblig
Alabama	\$17,309,568	94%	Montana	\$8,156,235	93%
Alaska	\$8,478,237	99%	Nebraska	\$8,157,362	81%
Arizona	\$22,013,589	41%	Nevada	\$10,383,571	78%
Arkansas	\$10,985,371	68%	New Hampshire	\$8,007,473	52%
California	\$137,155,013	85%	New Jersey	\$31,294,169	47%
Colorado	\$16,878,549	59%	New Mexico	\$8,520,815	66%
Connecticut	\$13,122,583	67%	New York	\$63,045,487	49%
Delaware	\$8,145,330	80%	North Carolina	\$30,692,590	55%
Dist. of Col.	\$8,140,507	90%	North Dakota	\$8,074,751	88%
Florida	\$58,239,336	94%	Ohio	\$40,421,863	87%
Georgia	\$34,111,703	86%	Oklahoma	\$13,680,141	34%
Hawaii	\$8,122,668	21%	Oregon	\$13,017,098	96%
Idaho	\$8,033,682	78%	Pennsylvania	\$41,254,172	39%
Illinois	\$47,009,829	62%	Rhode Island	\$8,196,837	57%
Indiana	\$23,399,380	71%	South Carolina	\$15,506,430	60%
lowa	\$11,419,586	80%	South Dakota	\$8,135,194	49%
Kansas	\$11,031,299	91%	Tennessee	\$21,254,181	55%
Kentucky	\$15,066,292	54%	Texas	\$90,066,831	89%
Louisiana	\$16,997,800	45%	Utah	\$11,500,040	98%
Maine	\$8,186,623	71%	Vermont	\$8,360,909	80%
Maryland	\$19,911,337	91%	Virginia	\$26,451,718	93%
Massachusetts	\$21,760,232	94%	Washington	\$22,469,209	87%
Michigan	\$36,916,932	94%	West Virginia	\$8,090,697	78%
Minnesota	\$18,573,023	95%	Wisconsin	\$19,526,738	79%
Mississippi	\$12,233,113	59%	Wyoming	\$8,007,555	97%
Missouri	\$20,998,212	87%	Total	\$1,146,511,860	75%

Table 1. Total apportionments to States under SAFETEA-LU legislation from 2005 through 2012 and the percentage of funds obligated as of March 31, 2015.

Projects Funded

Every State and the District of Columbia decided to participate in this program. As of March 31, 2015:

• 50 States and the District of Columbia have announced a total of \$1,031,465,832 in SAFETEA-LU funds to local and statewide SRTS programs.

- 19 States have announced a total of \$240,565,089 in MAP-21 funds to local and statewide SRTS programs.
- More than 17400 schools have benefited or will benefit from funds announced by State SRTS programs.
- At least 6.8 million students been reached by the program.
- Of the \$1.147 billion apportioned to States under SAFETEA-LU, \$1.03 billion have been awarded for local and statewide SRTS activities since the Federal SRTS Program began.

Geographic Distribution of Funds

The spread and density of schools that were awarded or benefited from SRTS funds across the U.S. mirrors the country's school-aged population. Figure 4 compares a map of the concentration of SRTS projects with a map of concentration of school-aged population. The largest difference is seen in the least populated States which show an over-representation of SRTS, likely explained by the minimum apportionments to States with the smallest populations.



Categories of Funded Projects

State SRTS Coordinators identified 63 percent of their awarded projects as infrastructure projects. The next largest share, 23 percent of projects awarded, supported a combination of infrastructure and noninfrastructure activities. Noninfrastructure projects comprised about 12 percent of awarded projects. Finally, SRTS planning and start-up activities made up about two percent of awarded projects.

To determine the types of projects State SRTS Coordinators awarded, the National Center replicated the selection and categorization process it used for the *Federal Safe Routes to School Program Progress Report* in 2011.¹ First, the National Center reviewed a representative sample of 600 projects among the more than 12,000 projects listed in the SRTS project database.² Each project was counted in as many of the following categories as needed to capture the described project activities, ranked by percentage: (1) sidewalk improvements; (2) pedestrian and bicycle access; (3) education; (4) traffic calming; (5) encouragement; (6) plan development; (7) enforcement; (8) general statements; (9) other; and (10) evaluation. These categories are shown below with descriptions of included activities and ranked by percent. The figures on page 28 use circular charts to depict the breakdown of announced funding by category (Figure 5) and the full breakdown of types of projects (Figure 6).

Project Category	Project Description	% of Projects
Sidewalk improvements	New sidewalks, improvements to sidewalks, repairs to	21%
	sidewalks, gap closure, curb, curb ramp, ADA ramps	
Pedestrian/Bicycle Access	Bicycle racks, bicycle lanes, trails, pedestrian bridges,	17%
	pedestrian tunnels, and crosswalks	
Education	ucation Pedestrian and bicycle education, safety education,	
	education for others, workshops, outreach programs,	
	awareness campaigns, PSAs, billboards, signs, trainings	
	(including SRTS National Course), and marketing	
Traffic calming	Bulb outs, speed humps, median refuges, school zone	11%
	signs, automated speed enforcement (cameras), raised	
	crossings, flashing beacons, speed feedback signs,	
	pedestrian-activated signals, and countdown signals	
Encouragement	ncouragement Incentives, Walk to School Day, bicycle trains, walking	
	school buses, walking clubs, mileage clubs, bicycle clubs	
Plan	Any project that includes the development of an SRTS plan	9%
Enforcement	Law enforcement overtime, crossing guards and	9%
	training, crossing guard supplies, speed enforcement,	
	neighborhood watch programs	
General Statements	General statements without project description details	5%
	(e.g., "infrastructure", "noninfrastructure", "general SRTS	
	project", etc.)	
Other	Any other project types not categorized, such as needs	3%
	assessments and stipends	
Evaluation	Any project that describes an evaluation	2%

Project categories and descriptions (n = 600 projects, 1,054 project activities)



Figure 5. Announced funding by category



Figure 6. Types of projects (n = 600 projects, 1,054 project activities)

Figure 6 shows the full breakdown of types of projects. Sidewalk improvements and pedestrian/bicycle access were the largest categories with 21 and 17 percent of projects respectively.

Reaching All Populations – Serving Low-Resource Areas

SAFETEA-LU did not allow a requirement for applicants to provide a funding match. This aided communities without the necessary capital to participate in the program. SAFETEA-LU's program guidance noted that low-income communities represent a disproportionate amount of child pedestrian injuries, so this was a logical approach to improving safety. An analysis conducted by the National Center in March 2015 revealed that traditionally underserved communities are well represented in SRTS project award announcements.

As shown in figure 7, among the 8,292 schools that State SRTS Coordinators listed in SRTS project award announcements, 5,674 (68 percent) are classified as Title I schools (low-income schools), which is significantly more than the overall proportion of schools that are Title I (57 percent) in the U.S.³ Title I schools are those identified by the U.S. Department of Education as having the highest percentage of lowincome families.⁴



SRTS-awarded schools that are Title I

Figure 7. Comparison of U.S. schools classified as Title I to proportion of schools awarded SRTS funding that are Title I.

In addition, 47 percent of students enrolled at SRTS schools were eligible to receive free and reduced price meals, which is nearly identical to national figures.⁵

These findings support work by McDonald, Barth, and Steiner (2013), who analyzed 5,532 SRTS projects awarded between 2005 and 2012 and found that schools benefiting from the Federal SRTS Program were slightly more urban and had higher than average Latino populations, yet were otherwise representative of public schools in the U.S.⁶

At the State level, SRTS programs have taken strides to address challenges often confronting lower income communities. Examples of ways in which States have accommodated the needs of low-

Traditionally underserved communities are well represented in SRTS project award announcements.

68%

57%

resource communities include: developing an income-based assessment of the State's low-income schools, determining the degree to which the current Federal SRTS Program is serving those schools, conducting targeted outreach in lowerincome communities to increase awareness of the Federal SRTS Program, assisting with development of funding applications, and assigning extra points to funding applications that promise to benefit traditionally underserved school communities.



School Snapshot Creating Safe Passage to Essential Services

Harris Upper and Lower Elementary School and Carver Middle School, Meridian, MS

The City of Meridian worked with the school district and the community to identify key walking routes for students at both schools. A road diet was implemented on one of the routes to make room for new sidewalks, and throughout the project area, new sidewalks, crosswalks, and pedestrian signage created safer routes for students at all three schools. The improvements also established a safer and more direct route to the Boys and Girls Club where 200 students attended an afterschool program, and to several community services for residents, including businesses, churches and the post office.

Federal Funds Awarded:

\$800,626 combined infrastructure & non-infrastructure award in 2009





School Snapshot Linking Schools and Neighborhoods

Kearsarge Regional Elementary School New London, NH

A new sidewalk along a rural road provides a safe route for students to walk to school. Following construction, volunteers from Colby-Sawyer College organized two walking school buses, one that uses the new sidewalk, and another that meets at a remote drop off location on the college campus. Their Walk to School Day in October 2014 drew one of the largest crowds in the state. **Federal Funds Awarded:** \$96,000 infrastructure award in 2008

Case Study

SRTS Program Provides Vital Community Connections

Elbert-Palmer Elementary School Wilmington, DE

In Wilmington, Delaware, a Safe Routes to School project helps to improve the quality of life and promote economic revitalization in a low-resource community. According to Bill Swiatek, Senior Planner with the Wilmington Area Planning Council (WILMAPCO), "the Safe Routes to School Program at Elbert-Palmer Elementary has been a vital source of implementation funding for transportation



improvements in a low-resource neighborhood. Because the infrastructure improvements were initially identified and prioritized by nearby residents, I have confidence that, for years to come, the entire community will benefit from the enhanced connections between the school, housing, community centers, parks, community gardens, bus stops and shops funded through this Program."

Southbridge is a working class, African-American neighborhood of about 1,600 people. The community struggles with high poverty rates, yet maintains a strong sense of community pride. Southbridge was identified by WILMAPCO, as an Environmental Justice (EJ) neighborhood. Through their EJ Initiative, WILMAPCO's goal is to reduce transportation burdens encountered by low-resource and minority communities.

Elbert-Palmer Elementary is Southbridge's neighborhood school. Roughly 30 percent of the school's 400 students live within one mile of the school, and 94 percent of those students walk to school. During a workshop to identify ways to improve walkability, residents noted deteriorating sidewalk conditions and speeding vehicles, especially nearby the elementary school. In 2009, the Delaware Department of Transportation (DelDOT) awarded a \$203,000 Safe Routes to School grant to make the infrastructure conditions safer around the school which included improved and new sections of sidewalk, new curb ramps, re-striped crosswalks, new stop signs, and enhanced school zone signage that alerted motorists to the presence of students. These changes also improved the safety of afterschool student trips to the Neighborhood House, a community center located one block away.

In 2014 DelDOT awarded an additional \$130,000 to fund new sidewalk segments, ADA compliant curb ramps, bicycle parking at the school, and enhanced traffic control signage based on ongoing parent feedback. The combined projects improve pedestrian and bicycle connections between the school and nearby housing, parks, a community center, community gardens, and shops.

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Events as Tools for Change

Communities use two annual promotional events to spur changes that can positively impact walking and bicycling to school throughout the school year. International Walk to School Day, held every October, and National Bike to School Day, held every May, inspire students and families and bring visibility to any safety concerns that need to be addressed.

In 10 years (2005 to 2014), the number of Walk to School events has more than doubled with events held in all States and the District of Columbia. In 2014, approximately five percent of elementary and middle schools⁷ in the U.S. held events.

Meanwhile, in National Bike to School Day's fourth year (2015), participation has nearly tripled since the event began.



Walk to School Day started in the U.S. in 1997 to build awareness for the need for communities to be safe and walkable. In 2000, the event became International Walk to School Day when the UK, Canada, and the U.S. joined together for the first time. Today, thousands of schools across America and more than 40 countries celebrate walking to school every October.

Building on the success of Walk to School Day and the many spring events happening locally around the country, the National Center launched National Bike to School Day in 2012 as part of the League of American Bicyclists' Bike Month.

The continued popularity of Walk to School Day demonstrates how it has evolved into an important tradition for schools and communities around the country. Events have encouraged communities to launch ongoing walking and biking programs, walking school buses,

In ten years, communities held more than 34,000 events nationwide for Walk to School Day. In that same time period, more than 18,500 schools in more than 4,700 different cities held events.

and bike trains. At the same time, the support continues to grow, with first-time participating schools making up 35 percent of events in 2014.



Program Outcomes: Moving Forward in Informed Ways

The Federal SRTS Program, as written in the SAFETEA-LU legislation, was charged both to encourage more walking and bicycling to school, and to make active transportation safer. Therefore, the program needs to be evaluated in terms of mode shift, safety outcomes, and health benefits. Since increased physical activity through walking and bicycling contribute to healthy lifestyles and injury prevention is a primary health goal, health benefits are examined as part of both mode shift and safety outcomes.

SRTS and School Travel Mode Shift

Since launching the SRTS data system in 2007, the National Center has gathered and analyzed valuable information on students' travel patterns and parents' perceptions about active school commuting from schools across the country. This information is available to researchers upon request. Since States own their schools' information stored in the data system, researchers must first obtain permission to access the data from the States' SRTS contacts. Since September 2011, the National Center has shared school travel data with researchers on 38 occasions.

Drawing upon parent survey results from thousands of schools, the National Center has developed two *Trends* reports.^{8,9} These reports document significant increases in walking to and from these datacollecting schools. From 2007 through 2013, walking to and from these schools increased from 12 to

From 2007 through 2013, walking to and from these schools increased from 12 to 15 percent in the morning (a 25 percent increase), and from about 15 to 19 percent in the afternoon (a 27 percent increase).

15 percent in the morning (a 25 percent increase), and from about 15 to 19 percent in the afternoon (a 27 percent increase).

Trends reports also revealed that:

- Walking increased especially among students who attended low-income schools—defined as enrolling 75 percent of students who were eligible to receive free or reduced price meals
- Boys were equally as likely as girls to walk to and from school, but boys were twice as likely as girls to bicycle to school
- The percentage of elementary and middle school aged students who bicycled between home and school appears to have rebounded in 2013 to more than 2.2 percent after dipping below two percent from 2009 through 2011

- Busing decreased significantly from 2007 through 2013, from 34 to 27 percent in the morning, and from 40 to 32 percent in the afternoon
- Within one mile of school, the largest shift among travel modes occurred between busing and walking, with busing decreasing significantly and walking increasing significantly
- From 2007 through 2013, the percentage of parents who stated that their child's school supported walking and bicycling between home and school increased significantly—from 24.8 to 38 percent—with an especially pronounced increase in perceived school support in 2013.

In a study involving schools that collected travel tally data over multiple years and conducted interviews with local program Coordinators¹⁰, the National Center identified four characteristics of school SRTS programs that significantly increased walking and bicycling between home and school:

- 1. An in-school leader to champion SRTS
- 2. Frequent activities that reinforce walking and bicycling
- 3. Parent support for SRTS
- 4. Policies that facilitate walking and bicycling to and from school (e.g., earlier dismissal for students who walk or bicycle home from school).

In a separate review of the academic literature on SRTS, McDonald (2015) concluded that on average, funded SRTS programs have significantly increased the number of students who walk or bicycle to and from school. In one large study that included 801 schools¹¹—roughly half with SRTS programs and half without—education and



School Snapshot

New Infrastructure Supports Ongoing SRTS Activities

Pine Street Elementary School Spartanburg, South Carolina

Sidewalk improvements, crosswalks, and flashing pedestrian signs around the school have improved the safety for students along school walking routes. The infrastructure also supports on-going SRTS activities at the school, such as pedestrian safety education, Walking and Wheeling Wednesdays, and annual participation in International Walk to School Day, SC Walk to School Day, and National Bike to School Day. The award also provided new bike racks and a storage building for a fleet of bikes used to teach bike safety education.

Federal Funds Awarded: \$180,000 infrastructure award in 2007
encouragement activities were associated with a 25 percent increase in walking and bicycling to school over five years. Further, infrastructure projects, such as intersection improvements and sidewalk installations, were associated with an 18 percent increase in walking and bicycling over five years. McDonald also discovered that making routes safer and more appealing to families reduced parents' concerns about allowing their children to walk or bicycle to school. Not only that, SRTS has helped enhance physical and mental health among children, while reducing health care and transportation costs for families, districts, and communities.¹²

Recognizing the importance of health, the National Center convened a roundtable on transportation and health. With participation from agencies including U.S. Department of Transportation, American Planning Association, Centers for Disease Control and Prevention, YMCA, and many others, the group's input helped formulate

observations on how SRTS had advanced the shared goals of transportation and health and recommendations for further advancing shared goals.

The known benefits of physical activity encouraged researchers to

...walking and bicycling to school contributed an average of 16 minutes of moderate-to-vigorous physical activity per school day.

quantify the potential number of minutes students could attain during the trip to school. Bassett and colleagues (2013) estimated the impact of various strategies, e.g., mandatory physical activity, classroom activity breaks, physical education classes, active commuting to school, for increasing physical activity in youth. They found that walking and bicycling to school contributed an average of 16 minutes of moderate-to-vigorous physical activity per school day.¹³ Moreover, the opportunity for physical activity is just one of the health benefits offered by SRTS. Air quality, which can impact respiratory health across the lifespan, has been shown to be lower in schools surrounded by better walking and bicycling networks.¹⁴

SRTS Safety Benefits

Together with documenting shifts in walking and bicycling to school, the National Center monitors the safety effects of the SRTS programs. It appears that overall, 8- to 14-year old children were involved in significantly fewer fatal motor vehicle crashes between 2004 and 2013, from 1,182 in 2004 to 544 fatalities in 2013—a decrease of 54 percent. Among pedestrians ages 8 to 14 years, fatalities declined by 52 percent, from 181 fatalities in 2004 to 86 in 2013; and among 8 to 14-year old bicyclists, fatalities decreased by a 62 percent, from 99 fatalities in 2004 to 38 in 2013.¹⁵

Nonetheless, determining factors that may have influenced the documented reduction in fatal crashes among children is difficult to do. In 2010, the National Center produced a report called *Considerations for Conducting a Crash-based Evaluation of the Federal Safe Routes to School Program: A Feasibility Study*.¹⁶

After examining a region with a high concentration of operating SRTS programs in Minnesota, the team concluded that at the time there were insufficient data to conduct a national pedestrian and bicycle crash-based evaluation of the Federal SRTS Program. One of the reasons for the infeasibility of conducting a national crash-based evaluation is the need to include a large sample of schools—more than a hundred—to confidently conclude that the Federal SRTS Program played a role in impacting child pedestrian and bicycle crashes.

While a national evaluation was not possible, two regional studies were able to identify promising results. Perhaps most notable is the comprehensive SRTS program in Miami-Dade County, Florida, where SRTS infrastructure improvements and a pedestrian safety education program have significantly improved child pedestrian safety. Since the early 2000s, the Miami-Dade School Board and Metropolitan Planning Organization have partnered with local transportation, health, and law enforcement agenices to enhance traffic safety near schools and encourage active living. Then in 2002 the University of Miami joined the effort by developing a pedestrian safety education and evaluation program called WalkSafe. This program is designed to teach elementary school-aged children pedestrian safety skills and to promote use of safe walking facilities. Together, the pedestrian infrastructure improvements and the WalkSafe program have impacted hundreds of schools throughout the County. More than 10 years after the implementation of Miami-Dade County's comprehensive SRTS program, University of Miami researchers have documented a 63 percent decrease in the number of child pedestrians involved in car crashes in Miami-Dade County (Hantman, 2013).¹⁷



School Snapshot

New Infrastructure Reduces Speeds and Improve Walkability

Hoover Elementary School, Redwood City, California

Students at Hoover Elementary School and residents in the surrounding neighborhood benefitted from sidewalk improvements, a raised crosswalk with high visibility stripping, bulb-outs, uniform warning signage around the school, pedestrian lighting, and accessible curb ramps. The project reduced excessive vehicle speeds to promote safety for students and parents. **Federal Funds Awarded:**

\$634,000 infrastructure award in 2011.

Case Study

Child Pedestrian Injuries Reduced by 63 Percent

Miami-Dade County, FL

Safe Routes to School efforts in southern Florida indicate that comprehensive Safe Routes to School programs can reduce pedestrian injuries and save lives.

This is a big deal. Few pedestrian safety programs can be evaluated for lives saved and injuries prevented because such evaluations require a large number of people all receive the same



interventions. Miami-Dade has the numbers needed and they have documented a 63 percent reduction in the number of pedestrians aged 10-14 injured by cars.

At the 2013 Safe Routes to School National Conference, Perla Tabares Hantman presented on the successes of the Miami-Dade initiative. Ms. Hantman is the Chair of the Miami-Dade County School Board, a governing board member of the Miami-Dade MPO, and a well-known champion behind the SRTS program in Miami-Dade County.

Miami-Dade County Public Schools is the fourth largest school district in the nation, spanning over 2,000 square miles and serving 345,000 students in 392 schools. The good weather and flat terrain in Miami-Dade County make it prime for walking and bicycling to school, and large numbers of Miami-Dade students do so. Approximately 23 percent of elementary and K-8 students walked or biked in 2012-2013, but streets and neighborhoods in the county were shaped by traditional 20th century auto-oriented development patterns, and the 1990's "driving culture" created an alarming safety situation.

Between 1990 and 2000, Miami-Dade saw an average of 380 injured juvenile pedestrians and seven fatally injured juvenile pedestrians per year. The Miami-Dade Safe Routes to School Initiative was established to reduce these injuries. The school district and MPO partnered with local transportation, health agencies and law enforcement to provide a multidisciplinary approach to improve traffic safety around schools and to encourage active, healthy lifestyles. The school board endorsed SRTS infrastructure applications in 91 schools between 2007 and 2013. As of 2013, 75 schools had been awarded over \$10.6 million to fund pedestrian and bicycle infrastructure improvements.

The University of Miami spearheaded a comprehensive education and evaluation program, developing WalkSafe and BikeSafe, separate pedestrian and bicycle safety education curricula targeting elementary and middle school students, respectively. Starting with a pilot in four schools in 2002, WalkSafe is now implemented in an average of 222 public elementary schools per year in Miami-Dade County, educating nearly 130,000 students in grades K-5. BikeSafe was developed in 2010 and as of 2013 more than 5,500 middle school student have participated in the program. The school district and local police head up ongoing enforcement efforts, and all partners assist with year-round and county-wide student safety awareness campaigns such as Walk to School Day and Bike to School Day.

Today, the Miami-Dade Safe Routes to School Initiative is credited with a 63 percent reduction in the number of pedestrians aged 10-14 injured by cars.

The second place where sufficient saturation of SRTS activity took place was in New York City. In a crash-based study there¹⁸ DiMaggio and Li (2013) assessed whether the implementation of SRTS-funded engineering countermeasures at hundreds of schools in New York City was associated with a decrease in child pedestrian injury. To do this, they calculated pedestrian injury rates that occurred between 2001 and 2010 during school travel hours and compared crash rates among census tracts with and without SRTS infrastructure improvements. They found that school-aged pedestrian injury rates decreased by 44 percent after infrastructure improvements were made in census tracts with SRTS interventions relative to sites without interventions.

Considered together, these reports provide evidence for the positive impact of SRTS on student participation in walking and bicycling between home and school and the safety benefits such programs can experience. With new schools expressing interest in safe walking and bicycling as viable school commuting options each year, SRTS is poised to enhance the health and well-being of students and their communities for years to come.





School Snapshot

Creating Sustainable Walking and Biking Programs

Eugene 4j School District, Bethel School District, and Springfield Public Schools Eugene and Springfield, Oregon

The Safe Routes to School programs in Eugene and Springfield, Oregon grew to a region-wide, three district program serving 55 schools and over 20,000 students. The program has strong focuses in all of the "Safe Routes to School E's" and a diverse partnership and funding base that has increased awareness and the shift to more active transportation in the school population. Twenty-five SRTS Action Plans have been completed or are in the process of completion. **Federal Funds Awarded:**

\$163,000 infrastructure award in 2008 \$45,743 noninfrastructure award in 2008 \$69,241 noninfrastructure award in 2009 \$495,000 infrastructure award in 2010 \$60,375 noninfrastructure award in 2010 \$456,000 infrastructure award in 2012 \$200,000 infrastructure award in 2013

Case Study

Ambitious Program Increases Walking and Bicycling to School from 12 Percent to 43 Percent and Gets Children with Autism on Tandem Bikes

Heatherwood Elementary Boulder, CO

At Heatherwood Elementary School, a 2008 parent survey revealed that few students were walking or cycling to school because a rural highway bisected the school's attendance area. In 2010, Heatherwood received



\$235,000 for infrastructure improvements and \$9,000 for education and encouragement activities. Infrastructure improvements included the construction of a pedestrian refuge island, curb and sidewalk extensions, and school zone flashers with a reduced speed limit around key crosswalks. These improvements, paired with tremendous support for the program from parents and faculty and the planning and transportation staff of Boulder County, resulted in an increase from 12 percent to more than 43 percent of the school's students regularly walking and bicycling to school.

"In three short years, Heatherwood Elementary was transformed from a typical, suburban, car-centric school to a role model and leader in making 'alternative' transportation not just the norm but enthusiastically embraced by our community," said then Program Coordinator Amy Thompson. "We have more than tripled the number of kids using human-powered transportation to school, and there are far fewer cars (and their subsequent pollution) arriving at our doorstep each day. Walking and cycling is now accepted as a fun, safe and healthy mode of transportation, and it extends beyond just the trips to and from school."

What stood out most for Thompson was the inclusion of the school's children with autism in the district-wide Bike to School Day. The school has an Intensive Learning Center (ILC) focused on children with autism and has a relatively large population of students with autism. Heatherwood won a mini-grant from the National Center for Safe Routes to School to pilot test a bicycling program for children with autism. For this grant, Heatherwood created the first SRTS program for children with special needs in the State of Colorado. A fleet of specially outfitted tandems helped Heatherwood's students in the ILC participate in Bike to School Day. "We took a huge risk trying something that had never been done before, and it turned out beautifully," said Thompson. "We had lots of parents with tears in their eyes and children who had never been on a bike before not wanting to get off of the tandems."

Now, five years later, the school continues to promote a culture of active transportation. In the first five months of the 2014-2015 school year, roughly one-third of the student body reported on their trips to school. Of these, approximately 38 percent of the 15,600 trips were either by foot or bike. Heatherwood continues to host Walk & Roll to School weeks, reward classroom participation in a frequent walker competition, and continues to include children with autism in the district-wide Bike to School Day event.



Discussion: Broad Benefits and Changing the Future

The Federal SRTS Program funded through SAFETEA-LU legislation allowed for many opportunities. Data support that the outcomes are impressive:

- All States and the District of Columbia participated.
- As of March 31, 2015, announced SAFETEA-LU SRTS spending was \$1.03 billion which 89.9 percent of the \$1.147 billion apportioned to States under the law.
- At least 15,463 schools received support from SAFETEA-LU funds.
- The geographic spread of projects mirrored population spread and low-resourced areas were served.
- Projects became part of solutions to larger community issues.
- Many States continued to embrace SRTS under MAP-21 transportation legislation.
- Trends research revealed an increase in walking to school during that time period.
- A 63 percent reduction in child pedestrian crashes has been associated with a widespread comprehensive program.

In 2012, MAP-21 legislation allowed SRTS activities to compete for funding under the Transportation Alternatives Program. Since then, support for walking and bicycling continues to grow:

• The number of communities that register Walk to School Day and Bike to School Day events continues to break records each year.



School Snapshot

Connecting Schools and Community Rail

Brown Middle and Wright Middle Schools Chelsea, Massachusetts

The installation of a new sidewalk, six ft. curb extension, 20 ft. crosswalk, pedestrian crossing signs and flashers, bicycle lanes, and bicycle rack improved safety and connectivity to two schools and a commuter rail station. **Federal Funds Awarded:**

\$469,000 infrastructure award in 2010

- Schools submitting trip tally and parent survey data are increasing.
- State transportation agencies are forming partnerships with State public health agencies to advance active travel to school.

One of the most encouraging signs is how States and communities are beginning to evolve SRTS programs to serve larger needs. SRTS concepts have become integrated into larger community goals and the results are providing benefits for all. This section contains case studies and snapshots of just such SRTS projects.

These projects are embracing today's needs by connecting walking and bicycling to school with access to health care, shopping centers, grocery stores, and other essential services. These projects are excellent examples of the concept behind the Ladders of Opportunity Initiative, which has the purpose of connecting disadvantaged and low-income individuals, veterans, seniors, youths, and others with local workforce training, employment centers, health care, and other vital services. SRTS is already on that path. Interest in the program may have reached a critical point in which walking and bicycling has become a part of our collective transportation and health future.

In other words, "Is walking and bicycling reaching a tipping point in the U.S.?"

Is walking and bicycling reaching a tipping point in the U.S.?

According to a recent report by the U.S. Department of Transportation, cycling and walking will continue to grow in popularity in the coming years as more people move to

urbanized areas, investments in bicycle and pedestrian infrastructure are made, and residents demand safer, more appealing cycling and walking experiences.¹⁹ As such, demand for programs like SRTS, which appeal to communities' desires for more walk- and bicycle-friendly environments, will continue to grow at an increasingly rapid pace.

*The Diffusion of Innovations Theory*²⁰ provides a means to identify a tipping point. As seen in figure 8, innovations tend to follow an "S"- shaped pattern of adoption by members of a social system. At first, "innovators," people who like to experiment with new ideas and technologies, try out an innovation and share their experiences with "early adopters," people who are willing to try something new with a small amount of feedback on the innovation's worth, such as positive media reviews of a product or service. After trying an innovation, early adopters decide whether to endorse or discourage members of their social group to adopt the innovation. If most early adopters communicate favorably about an innovation, adoption of the innovation is likely to approach 15 to 20 percent, at which point the innovations achieves a "tipping point" or a "critical mass" of adoption. Once adoption reaches "critical mass", large-scale promotion of the innovation becomes unnecessary as existing social networks take over and "diffuse" the innovation throughout a culture.²¹





The adoption of the Complete Streets concept, in which streets are designed to enable safe access for all users including pedestrians and bicyclists, provides an excellent example of this process at work. Figure 9 shows how jurisdictions' adoption of Complete Streets policies diffused throughout the country. In its early years, from 2005 to 2009, Complete Streets policies spread across jurisdictions, including States, regional planning organizations, counties, and municipalities, at an average rate of 45 percent per year.

Yet as 2009 transitioned to 2010, the number of adopting jurisdictions ramped up by 60 percent. By 2011, the number of Complete Streets policy-adopting jurisdictions rose by a remarkable 72 percent from the preceding year.²² Between 2010 and 2011, Complete Streets policy adoption achieved "critical mass," the point at which adoption of Complete Streets became self-organizing. The National Complete Streets Coalition estimates that as of May 2015, more than 720 jurisdictions have adopted Complete Streets policies,²³ signifying a leveling-off of adoption, as predicted by Diffusion of Innovations Theory.²⁴



Figure 9. The number of Complete Streets policies nationwide, 2005-2014.

SRTS and Diffusion

Based on State reports and schools participation in Walk and Bike to School Day events, more than 17,400 schools have benefited from funding and an estimated 18,500 schools have participated in SRTS activities since the Federal SRTS Program began. Given that there are roughly 100,000 public and private elementary and middle schools in the U.S.,²⁵ this means that approximately 18.5 percent of all K-8 schools in the country have adopted SRTS programming at some point in the last 10 years. SRTS and similar programs are quickly approaching "critical mass", which occurs when between 15 and 20 percent of entities adopt an "innovation" like SRTS. According to Diffusion of Innovations Theory, once enough people—or in this case, schools—"adopt" an innovation like SRTS, the rate at which greater numbers of schools adopt the innovation increases significantly.

Moreover, SRTS programs possess all five of the elements that facilitate their spread throughout a culture: (1) by providing school communities transportation choices and making trips to and from school safer, SRTS programs show a relative advantage over the "status quo" of driving all students between home and school; (2) as a flexible set of tools to make walking and bicycling to school safer and more appealing, SRTS programs are usually compatible with communities' values; (3) considering how easy they are to start, SRTS programs are often set up by school communities using existing resources; (4) with the popularity of Walk and Bike to School Day events, which allow school communities to "test out" SRTS, these programs have a high degree of trialability; and (5) SRTS programs often produce observable results, such as more students walking and bicycling to school, parents and students feeling safer while on the trip to school, and students arriving to school energized and ready to learn. Taken together, the diffusion of SRTS programs have likely achieved "critical mass" largely because these programs possess five qualities known to help innovations spread throughout a culture.



School Snapshot

Solar Powered Beacons Slow Speeds

Happy Hollow Elementary School, Cumberland Elementary School, West Lafeyette Jr. High School, West Lafayette, IN
Solar powered school zone and crosswalk beacons help create calmer and slower driving environments around schools.
Noninfrastructure funds were used to create a SRTS Master Plan to coordinate walking school buses in surrounding neighborhoods and to establish enforcement activities in the community.
Federal Funds Awarded:
\$250,000 infrastructure awarded in 2007
\$71,500 noninfrastructure awarded in 2007

Case Study

Early SRTS Funding Still Saving School Transportation Costs

Auburn School District Auburn, WA

In 2007, one of the first grants to be awarded through the Federal SRTS Program helped the City of Auburn and Auburn School District implement a 20-year vision to increase the number of students walking and bicycling to school and to reduce school transportation costs. Fast forward to 2015 and the successes buoyed by the original funding are still in place.



Auburn received SRTS grants from Washington DOT for \$185,000 in 2007 and \$353,900 in 2010 to fund infrastructure improvements, safety education, and incentive programs in the school district. Jim Denton, the Director of Transportation at that time, reported that at Pioneer Elementary School bus use decreased from six buses to one and 85 percent of the children walked or bicycled to school. A new school in the neighborhood was designed to provide the opportunity for 95 percent of the children to walk or bicycle to school. The developer built sidewalks and worked with the City of Auburn and the school district to form a cooperative agreement to build a "walking school." The City of Auburn required installation of sidewalks by new developers and charged impact fees.

In addition, Pioneer Elementary, a low-income school, had students experiencing real academic success. Pioneer Elementary students achieved the highest scores in the school district, and Principal Debra Gary attributed part of that gain to walking and bicycling to school, Denton said.

Moving forward to 2015, the estimated transportation cost savings is still \$220,000 per year. Safe Routes to School programs begun through the original SRTS grants are still active. Each school has a Safe Walking Committee, composed of the principal, teachers and parents who evaluate neighborhoods to identify safety issues and make recommendations for improvements.

According to Dennis Grad, the current Executive Director of Transportation for the District, "The SRTS program in Auburn has not only been a great partnership with the transportation department and the various school communities but also with our civic leaders. The Auburn School District and the City of Auburn have become collaborative allies in all aspects of transportation infrastructure and safety for our students. Every improvement made on behalf of school safety has had a positive impact on our community and citizenry."



Conclusion

"The Safe Routes to School program is giving us the opportunity to change the habits of an entire generation to ensure that healthy children grow to be healthy adults." That is how the champion of the Federal SRTS legislation Congressman Jim Oberstar spoke about the program's potential in 2005.

This report documents the many successes of the Federal SRTS Program and makes a compelling case that the United States is approaching a critical mass in terms of the desire by people of all ages to safely walk and bicycle in their communities. The trip to school is an important part of this shift. One of the first concerns of the National Center back in 2005 was how to encourage more walking and bicycling while making sure that safe environments exist. The State SRTS Programs did an excellent job of addressing both. Research and case studies show that SRTS has increased walking and bicycling and improved safety.

How the SRTS legislation originally was set up and how FHWA supported the program provided many opportunities for success. The requirement of full-time coordinators was a major strength. As a group, the coordinators learned from each other. The states had flexibility in establishing their programs and this enabled the exchange of issues and solutions. Coordinators were able to establish funding processes that led to quality proposals and equitable distribution of projects. The establishment of the National Center as the clearinghouse early in the roll out of the

program gave the program a rare benefit. The National Center was in position to develop a National data system with input from the States—and its uptake was and still is impressive. The system enabled data-based decision making at

Research and case studies show that SRTS has increased walking and bicycling and improved safety.

the local level and enabled the National Center to understand how and where the funds are spent and the outcomes. The legislation contained language that established both health and transportation goals and the partnership of health and transportation professionals is still growing.

The initial Federal infrastructure funding was a great catalyst for the types of small, local infrastructure projects that are inherent to SRTS programs such as sidewalks, curb ramps, and crosswalks. The funding got communities excited about these safety improvements and now some places are funding these projects with local resources. However, rural and low income areas in particular still struggle to find resources to improve infrastructure in their communities.

While it is a time to celebrate the many accomplishments of the Safe Routes to School Program, it is also a time to understand the work that lies ahead. As we celebrate the impact on the 18,500 schools that have participated in SRTS

activities, there are roughly 81,500 public and private elementary and middle schools that did not get to participate. As we move forward, steps need to be taken to ensure that walking and bicycling to school will continue to be encouraged and that transportation infrastructure spending will continue to build safe environments for walking and bicycling in general and specifically for trips to school.

Recommendations

Expand the safety benefits. The education and enforcement activities and infrastructure improvements that have been proven to be successful at reducing child pedestrian deaths and injuries must be made available to more communities.

Advocate for walking and bicycling infrastructure improvements around schools. Improvements can be supported as part of locally-funded projects. While SRTS is no longer a stand-alone Federal program, SRTS walking and bicycling projects are eligible under the Transportation Alternative Program (TAP) in the MAP-21 legislation, as well as under many other FHWA and FTA funding programs. Infrastructure improvements need to be advocated and encouraged at the local level to make it safer for more kids to walk and bike to school in all communities. For more information, please see the Pedestrian and Bicycle Funding Table: www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm

Encourage State DOTs, MPOs, RPOs, communities and neighborhoods to prioritize safe infrastructure for walking and bicycling to school and within communities in their transportation planning. Demand for safe conditions for walking and bicycling is increasing in cities and communities across the country. Land use transportation scenario planning, a process to plan for what lies ahead and create guiding principles for future potential conditions, can be used to anticipate and accommodate this demand. According to the FHWA Scenario Planning Guidebook, the technique provides citizens with opportunities to engage in constructive dialogue about the future of their communities, and to identify and challenge assumptions and make better decisions.

Support the desire in communities to be more active through walking and bicycling. Walk and Bike to School Day events have connected with this desire and have led to long-term programs and positive outcomes. Ironically, it is the support at the national government level that helps to grow events at the grass-root level. Government support helps events maintain local identity. It is important, however, that government support is joined by private partners. For example, Schwinn's Helmets on Heads Program is currently a promotional partner for Bike to School Day and they are encouraging registration through bike giveaways and funding minigrants for schools.

Maintain support for local transportation projects in ways that make sense on a **national level.** This includes collecting data, such as through the SRTS data system, providing support for programs that are proven to reduce crashes and increase mode

shift, and providing resources that support local and State projects. The data system is at the core of goals of FHWA's Performance-Based Planning and Programming Guidebook and has supported dozens of research studies demonstrating the impact of SRTS with its 1.58 million data records.

Federal Support—Next Steps

As the US Congress works to determine what the next transportation legislation will include, FHWA has expressed interest in continuing to support SRTS in several ways. These include, but are not limited to the following:

- Provide opportunities for SRTS coordinators to network with others, such as TAP (Transportation Alternative Program) coordinators and State pedestrian and bicycle coordinators;
- Share resources, such as the TAP Performance Measure Guidance that is underway and other bicycle/pedestrian research materials.
- Share best practices and provide guidance on how future Federal transportation funding can support safe walking and bicycling projects around schools;
- Provide support for the SRTS data system, which includes but is not limited to, suggesting or recommending other means of maintaining the SRTS data system; and
- Support Walk and Bike to School Day events and the National SRTS Conference.

The National Center has served as the clearinghouse for the Federal SRTS Program since May 2006. We recognize that the clearinghouse provides resources and other functions crucial to the advancement of safe walking and bicycling to school. We are committed to continuing to provide a data system that allows data-based decision-making, to coordinate national events that serve as tools for healthy change and to provide easy access to resources that highlight proven infrastructure and non-infrastructure strategies. As we plan for the future, we recognize the need to supplement support from FHWA. We are pursuing other public and private partners who are excited about the benefits this program offers.

The success of the Federal SRTS Program over the last ten years is impressive. If walking and bicycling to school is reaching critical mass and communities continue to find ways to include safe walking and bicycling infrastructure in transportation planning, this program will achieve the grander purpose outlined in its original legislation. We must continue the momentum so that more children can share the health and safety benefits of safe routes to school.

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Photos in this report were provided by The National Center for Safe Routes to School, former and current Safe Routes to School Coordinators, and Marty Caivano at The Daily Camera News.



A lifetime of being active can begin on the way to school.



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