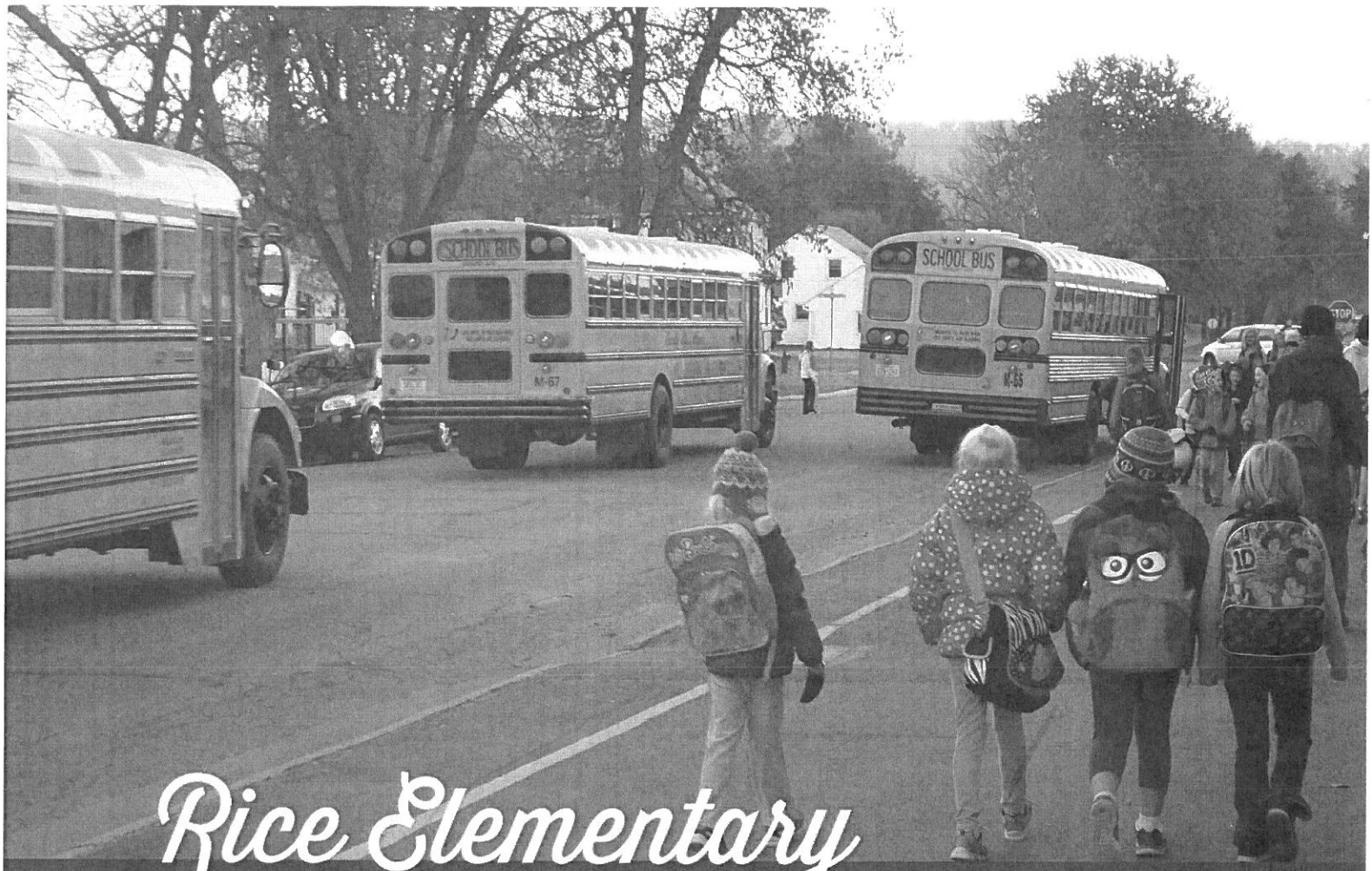

Rice Elementary

Safe Routes to School Plan

Sauk Rapids-Rice School District | Rice, Minnesota | June 2014

Funded through a MnDOT federal
Safe Routes to School Planning Assistance Grant

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The following key people/entities participated in the Safe Routes to School (SRTS) plan efforts for this Safe Routes to School Plan. Their creativity, energy, and commitment were critical to the success of this effort.

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Introduction

What is Safe Routes to School?

Safe Routes to School (SRTS) is a program with a simple goal: helping more children get to school by walking and bicycling. Envision active kids using safe streets, helped by engaged adults (from teachers to parents to police officers), surrounded by responsible drivers.

Safe Routes to School programs use a variety of strategies to make it easy, fun and safe for children to walk and bike to school. These strategies are often called the "Five Es."

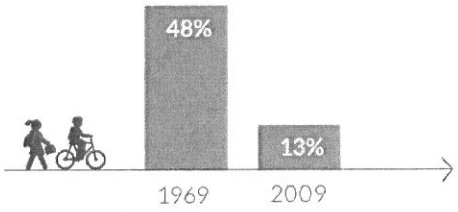
- Education: programs designed to teach children about traffic safety, bicycle and pedestrian skills, and traffic decision-making.
- Encouragement: programs that make it fun for kids to walk and bike. These programs may be challenges, incentive programs, regular events (e.g. "Walk and Bike Wednesdays") or classroom activities.
- Engineering: physical projects that are built to improve walking and bicycling conditions.
- Enforcement: law enforcement strategies to improve driver behavior near schools.
- Evaluation: strategies to help understand program effectiveness, identify improvements, and ensure program sustainability.

The Challenge

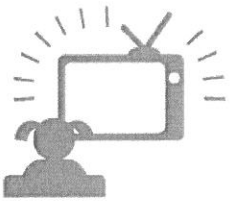
Although most students in the United States walked or biked to school pre-1980's, the number of students walking or bicycling to school has sharply declined. This decline is due to a number of factors, including urban growth patterns, school siting requirements, increased traffic, busy student schedules, and parental concerns about safety. The situation is self-perpetuating: As more parents drive their children to school, there is increased traffic at the school site, resulting in more parents becoming concerned about traffic and driving their children to school.

Why Safe Routes to School?

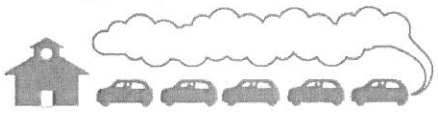
Within the span of one generation, the percentage of children walking or bicycling to school has dropped precipitously.



Kids are not getting enough physical activity.



Roads near schools are congested decreasing safety and air quality for children.



Kids who walk or bike to school:

- Arrive alert and able to focus on school
- Get most of their recommended daily physical activity during the trip to school
- Are more likely to be a healthy body weight
- Demonstrate improved test scores and better school performance
- Are less likely to suffer from depression and anxiety[1]

The downward cycle of traffic and reduced walking and bicycling

[1] More information, including primary sources, can be found at http://guide.saferoutesinfo.org.

Benefits of Walking and Bicycling to School

Safe Routes to Schools programs directly benefit schoolchildren, parents and teachers by creating a safer travel environment near schools and by reducing motor vehicle congestion at school drop-off and pick-up zones. Students that choose to bike or walk to school are rewarded with the health benefits of a more active lifestyle, with the responsibility and independence that comes from being in charge of the way they travel, and learn at an early age that bicycling and walking can be safe, enjoyable and good for the environment.

Safe Routes to Schools programs offer ancillary benefits to neighborhoods by helping to slow traffic and by providing infrastructure improvements that facilitate biking and walking for everyone. Identifying and improving routes for children to safely walk and bicycle to school is also one of the most cost-effective means of reducing weekday morning traffic congestion and can help reduce auto-related pollution.

In addition to safety and traffic improvements, an SRTS program helps integrate physical activity into the everyday routine of school children. Health concerns related to sedentary lifestyles have become the focus of statewide and national efforts to reduce health risks associated with being overweight. Children who bike or walk to school have an overall higher activity level than those who are driven to school, even though the journey to school makes only a small contribution to activity levels. Active kids are healthy kids. Walking or bicycling to school is an easy way to make sure that children get daily physical activity.

SRTS benefits children:

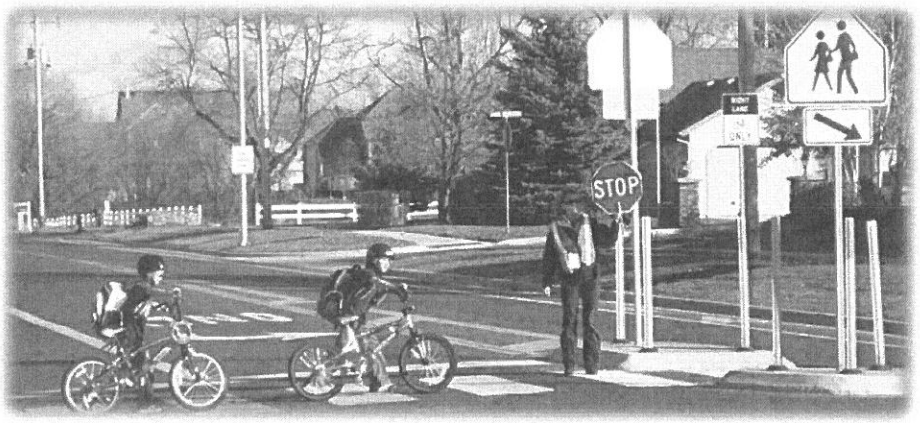
- Increased physical fitness and cardiovascular health
- Increased ability to focus on school
- A sense of independence and confidence about their transportation and their neighborhood

SRTS benefits neighborhoods:

- Improved air quality as fewer children are driven to school
- Decreased crashes and congestion as fewer children are driven to school
- More community involvement as parents, teachers and neighbors get involved and put "eyes on the street"

SRTS benefits schools:

- Fewer discipline problems because children arrive "ready to learn"
- Fewer private cars arriving to drop off and pick up children
- Opportunities to integrate walking, bicycling and transportation topics into curriculum (e.g. "Walk & Bike Across America")
- Increased efficiency and safety during drop off and pick up times

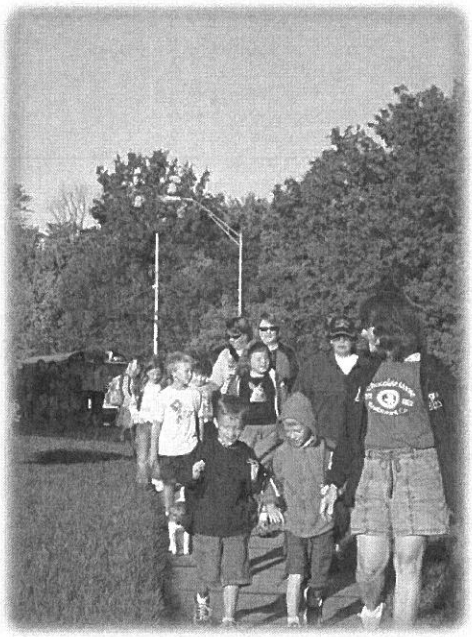


How to Use this Plan

This SRTS plan provides an overview of Safe Routes to School with specific recommendations for a 5 E's approach to improve the safety and the health and wellness of students. The specific recommendations in this plan are intended to support infrastructure improvements and programs over the next five years.

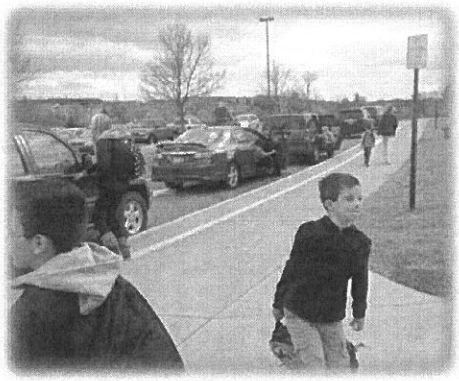
It should be noted that not all of these projects and programs need to be implemented right away to improve the environment for walking and biking to school. The recommended projects and programs listed in this plan should be reviewed as part of the overall and ongoing Safe Routes to School strategy. Some projects will require more time, support, and funding than others. It is important to achieve shorter-term successes while laying the groundwork for progress toward some of the larger and more complex projects.

This plan includes recommendations for infrastructure projects both long- and short-term, as well as programmatic recommendations. At the heart of every successful Safe Routes to School comprehensive program is a coordinated effort by parent volunteers, school staff, local agency staff, law enforcement and community advocates, such as public health. The following paragraphs highlight the unique contributions of key partners in Safe Routes to School.



Parents lead students on walking school bus from a park and walk site.

Parents can use this report to understand the conditions at their children's school and to become familiar with the ways an SRTS program can work to make walking and biking safer. Concerned parents or city residents have a very important role in the Safe Routes to School process. Parent groups, both formal and informal, have the ability and the responsibility to help implement many of the educational and encouragement programs suggested in this plan. Parent groups can also be critical to ongoing success by helping to fundraise for smaller projects and programs that are implementable without serious effort on behalf of the district or local agency.



Parents waiting in queue for students at pick up play a significant role in student transportation safety.

School district and school administrative staff can use this report to prioritize improvements identified on District property and develop programs that educate and encourage students and parents to seek alternatives to single family commutes to school.

District officials are perhaps the most stable of the stakeholders for a Safe Routes to School program and have the responsibility for keeping the program active over time. District staff can work with multiple schools sharing information and bringing efficiencies to programs at each school working on Safe Routes.

School Administrators have an important role in implementing the recommendations contained within this SRTS Plan. The impetus for change and improvement must be supported by the leadership of the school.

School administrators can help with making policy and procedural changes to projects that are within school grounds and have the responsibility to distribute informational materials to parents within school publications.

Enforcement is a key component of successful SRTS programs. Safety officers can become a key ally of students walking and cycling to school.

City and County staff can use this report to identify citywide issues and opportunities related to walking and biking and to prioritize infrastructure improvements. City staff can also use this report to support Safe Routes to School funding and support opportunities such as:

MnDOT Safe Routes to School (SRTS) grants

Federal Safe Routes to School (SRTS) grants

Statewide Health Improvement Program (SHIP)

For all infrastructure recommendations, a traffic study and more detailed engineering may be necessary to evaluate project feasibility, and additional public outreach should be conducted before final design and construction. For recommendations within the public right-of-way, the responsible agency will determine how (and if) to incorporate suggestions into local improvement plans and prioritize funding to best meet the needs of each school community.

Police Department staff can use this report to understand issues related to walking and biking to school and to plan for and prioritize enforcement activities that may make it easier and safer for students to walk and bike to school. The Police Department will be instrumental to the success of the enforcement programs and policies recommended in this plan. The Police Department will also have a key role in working with school administration in providing officers and assistance to some of the proposed education and encouragement programs.

Public health staff can use this report to identify specific opportunities to collaborate with schools and local governments to support safety improvements and encourage healthy behaviors in school children and their families.

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Vision and Background

Rice Elementary SRTS Vision

"Safe Routes to School programs will improve safety and encourage more students and families in Rice to walk and bicycle to school. Safe Routes to School will support a culture of healthy and active families that begins with safe and comfortable walking and bicycling in our community.

"The program will connect students and their families with year-round walking and bicycling opportunities through education, encouragement, and enforcement activities that start with the school and expand to the entire community."

This vision for walking and biking around Rice Elementary and in the community helped to frame the Safe Routes to School planning process and inform recommended improvements to pedestrian and bicycle infrastructure and programs.

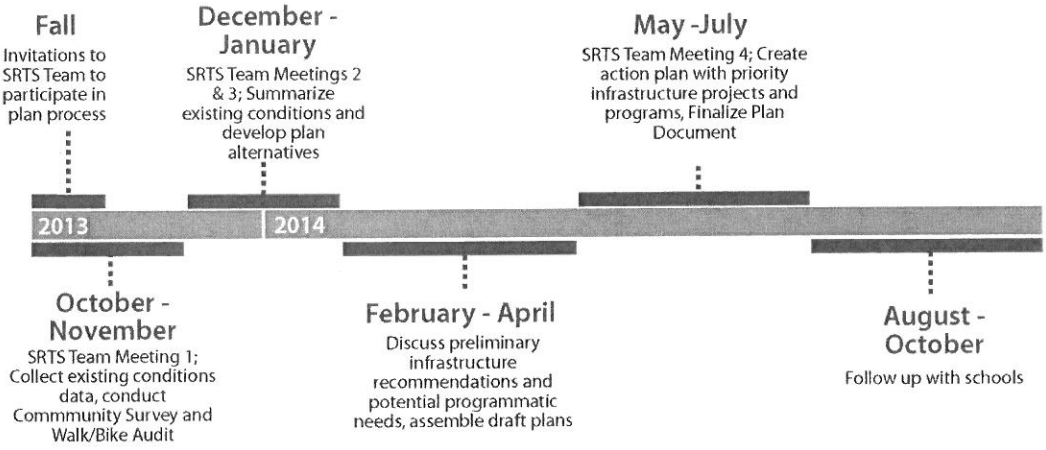
Relevant Planning Background

Concerns over previously identified barriers to safe walking and biking—such as U.S. Highway 10 to the east, Main Street/County Road 2 to the south, and the BNSF railroad to the west—have prompted leaders at Rice Elementary School to hold a series of meetings, conduct an online survey with parents, and secure support for Safe Routes to School work from the school board, PTA, Police Department, and other stakeholders.

Free busing for all students was recently reinstated in the district. Rice Elementary School has worked with Better Living: Exercise and Nutrition Daily (BLEND) in the past on nutrition and exercise programs. There is a committee that reviews district-wide issues and serves in an advisory role. Public safety is a city-wide concern.

Planning Process

The year-long planning process for this plan included building an SRTS team, gathering data and information about existing conditions, developing recommendation for the 5 E's, and developing a written document that sets forth a path for the SRTS program. The graphic below depicts key milestones in the planning process.



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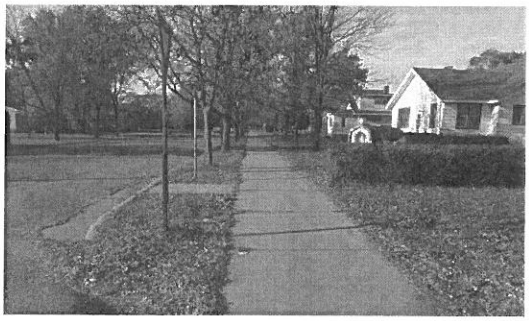
Existing Conditions

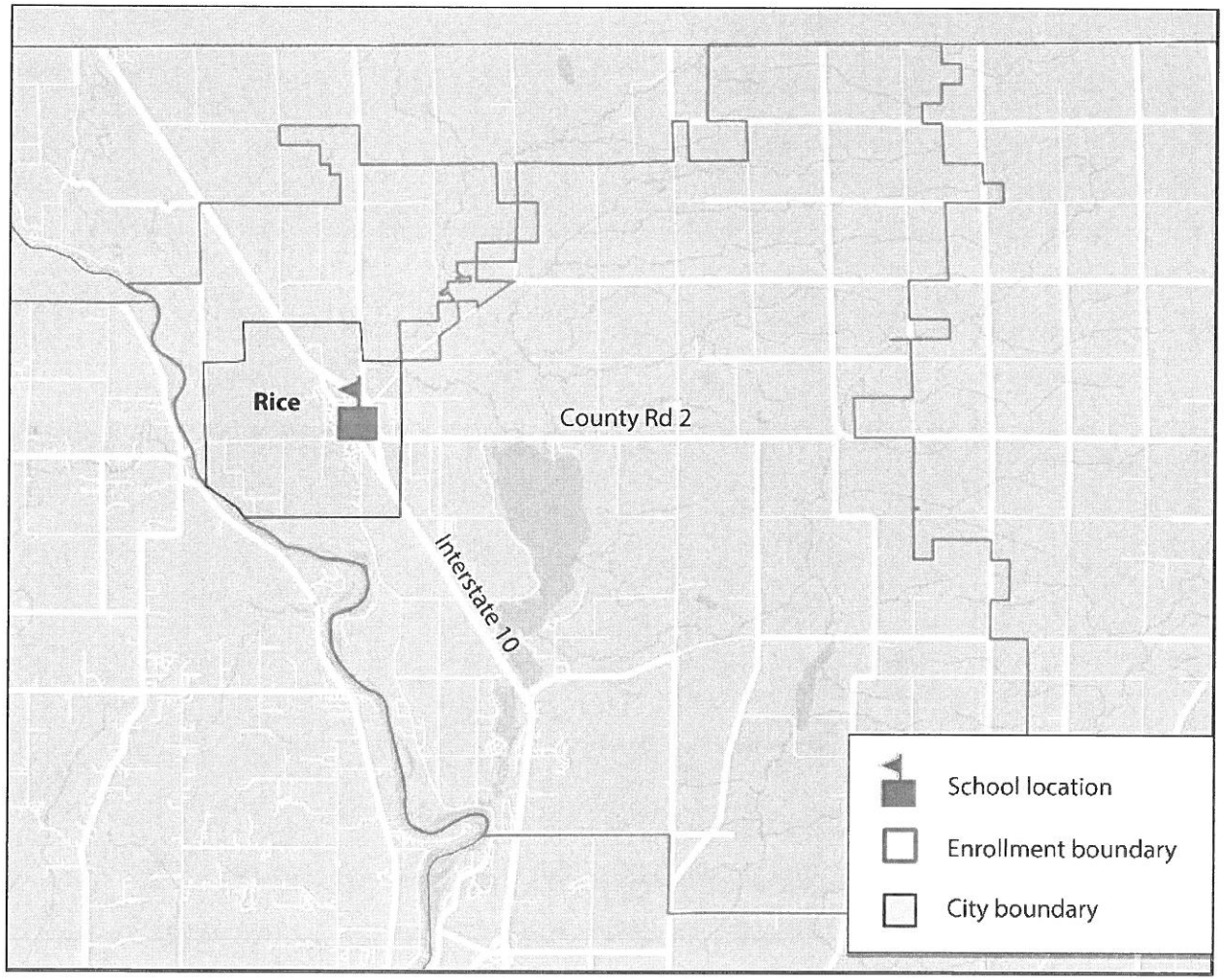
School Context

Rice Elementary School is located on Northeast 3rd Avenue in the core area of the City of Rice. School enrollment for the 2013-2014 school year was 317 students. The principal of Rice Elementary is Dr. Christina Bemboom. Arrival time for students is 8:50am, and dismissal time is 3:30pm.



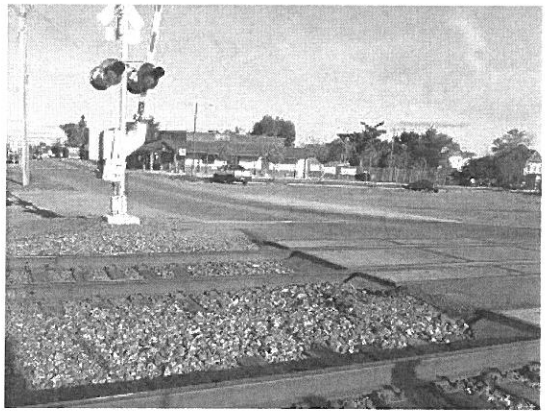
A single-family residential neighborhood is located west of the school.

School Enrollment Boundary



Surrounding Land Use

Rice Elementary School is located on Northeast 3rd Avenue in the core area of the City of Rice. The elementary school is in a low-density single-family neighborhood in the northeast part of the city, approximately one block from Main Street. A church sits immediately to the west, with the church parking lot sitting between the school and the church. The school has an agreement with the church to use the parking lot for drop-off and pick-up of students.



The BNSF Railroad to the west of the school is a significant barrier to walking/biking for students who live in the neiahborhood west of the tracks.

Commercial and industrial uses exist to the south along Main Street, and the BNSF Railroad is located to the southwest of the school a few blocks away. This railroad carries two trains per hour at fast speeds. Trains also create a lot of noise as they travel through the area. There are two primary crossings of the railroad in the city: one at NW 12th Street and one at Main Street. Neither crossing has dedicated pedestrian or bicycle facilities.

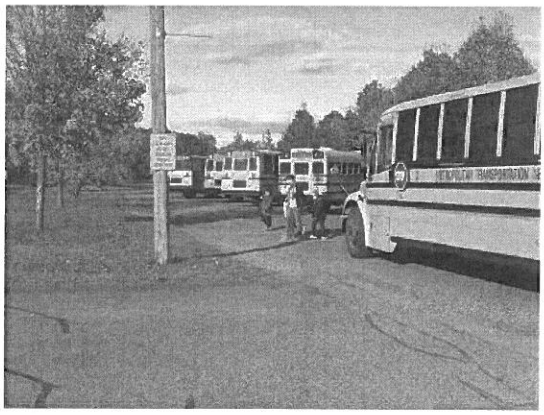
More neighborhoods with single-family housing exist south of Main Street and west of the train tracks. Some newer housing exists in the neighborhood west of the train tracks. Commercial properties sit to the east of the school, and U.S. Highway 10 is further to the east. A fence and a tree line separate the school from these properties. There is a small patch of trees and an area of single-family homes immediately to the north. Sidewalks are present in limited locations in the neighborhood surrounding the school.

Students exit on the west side of the school during dismissal where buses, staff, and student crossing guards are also present.

Student Walking and Biking

A bike rack is present at the northwest corner of the building. The bike rack is a toaster style rack, only allowing the front wheel to be parked and locked securely.

A marked crossing leads through the bus pick-up area from the west entrance of the school to the pick-up and drop-off parking lot at the church. During observations of school dismissal, 5th grade student safety patrols were present at this crossing. Additional 5th grade safety patrols were located along the sidewalk to the west of the school to assist students with bus loading.



Students and parents walk in front of a bus trying to access the bus pick-up area.

There is limited sidewalk coverage in the neighborhood immediately to the west of the school, where traffic speeds and volumes are relatively low. Sidewalks do exist on 1st Avenue NE (from Main Street to 2nd Street NE), 2nd Avenue NE (from Main Street to 1st Street NE), and Division Street (from Main Street to 1st Street NE). Division Street from 1st Street NE to Main Street is

lined with industrial buildings and vacant lots, and is not particularly inviting for pedestrians or bicyclists.

The intersection of 3rd Avenue NE, 2nd Avenue NE, and 1st Street NE immediately adjacent to the school's entrance/exit is an awkward skewed intersection with difficult sight lines. A sidewalk on the east side of 2nd Avenue NE exists. Crosswalks at this intersection are faded. Yield signs are provided on 3rd Avenue NE and 1st Street, and there is a school zone sign on 2nd Avenue NE.

Main Street has wide sidewalks from Division Street to 2nd Avenue. High visibility crosswalks and signage is present at the Main Street intersections of Division Street, 1st Avenue, and 2nd Avenue. It was observed, however, that drivers did not appear to see pedestrians crossing at these intersections along Main Street. The street's wide lanes, high traffic speeds, and high traffic volumes act as major barriers to residences to the south.

Railroad crossings at Main Street and at NW 12th Street feel unsafe and uninviting, and might not be comfortable for elementary students. No marked pedestrian or bicycle routes exist at either of these crossings. Pedestrians and bicyclists cross the railroad tracks on the road alongside passing motor vehicles or walk in the track ballast. This effectively cuts off residences to the west of the railroad tracks to walkers and bicyclists.

Students walk southwest from the school after dismissal.

School Layout

Rice Elementary School is located on NE 3rd Avenue. To the west of the school is a parking lot that is shared by the school and a church located at the corner of NE 2nd Avenue and 2nd Street. Both the school and church are connected to this shared parking lot by walkways. There are two small staff parking lots to the south of the school; one is attached to a pick-up/drop-off circle that serves the southeast school entrance. This was the primary entrance for car pick-up and drop-off before the agreement to share the west parking lot with the church was established.

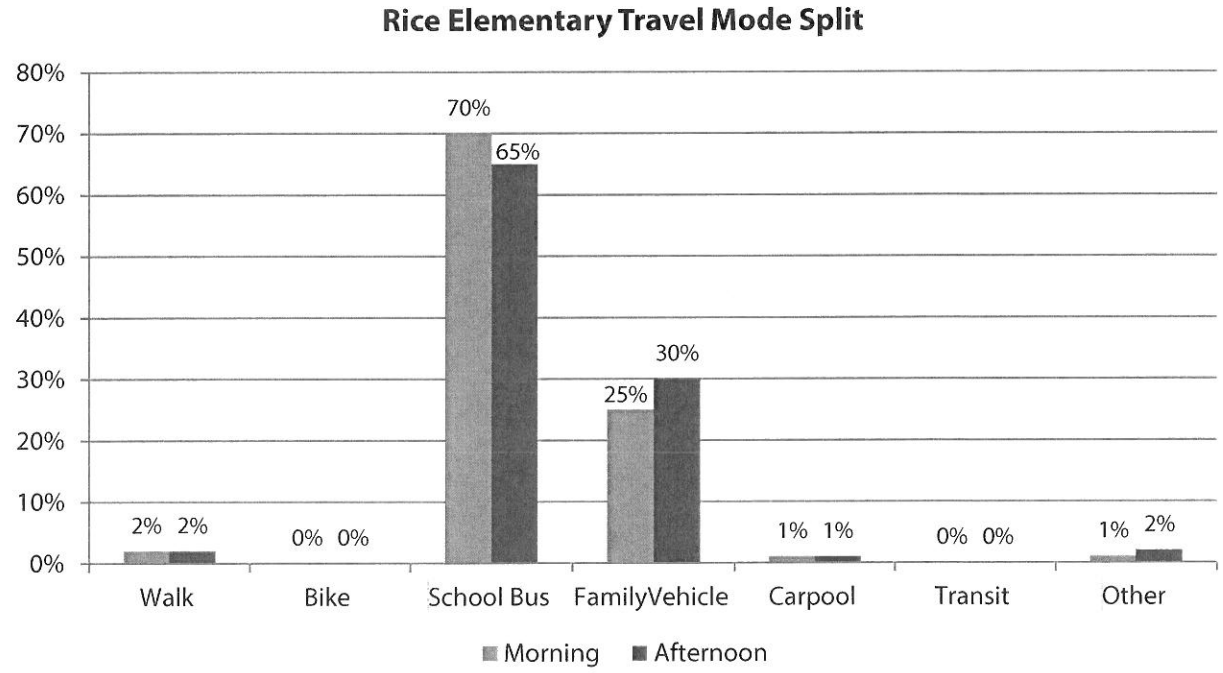
The primary entrance/exit for the school is on the west side of the building. Buses pick up and drop off students along the edge of the building in this area. Parents drop off their students in the church parking lot; parents either park and let their child out or pull forward to allow students to exit the vehicle and walk across the crosswalk to the school entrance. Some parents accompany their students to and from the school building.

A bicyclist travels south along the sidewalk to the west of the school.

School Travel Patterns

Student Travel Survey Summary

In-classroom tallies of students' arrival and departure travel modes were conducted at Rice Elementary School over three days (Tuesday, Wednesday, and Thursday) in November of 2013. A total of 903 trips were tallied in the mornings, and 1,893 were tallied during the afternoons. As shown in the chart, only about 2% of students typically walk to school, and 0.3% of students ride a bike to school on an average day. The predominant mode of transportation for Rice Elementary School students is school bus, followed by a family vehicle.



4.4.2 - Parent Survey Summary

In November 2013, Rice Elementary School parents were asked to fill out a short survey about how their children travel to and from school, perceived barriers to walking and biking to and from school, and their own attitudes related to walking and biking to and from school. Administrators received 113 total surveys relative to a school enrollment of 317 students.

Current Travel Patterns: Mode and Distance

More than half of survey respondents who live within a quarter-mile of the school reported that their children usually walk to and from school. However, at trip distances above one-quarter mile, the number of respondents who reported that their child usually walks to or from school plummets to zero. This abrupt drop in walking rates indicates that survey respondents perceive walking to or from school as appropriate only when they live in very close proximity to the school.

Since none of the parents who answered the survey reported that their child usually bikes to school, the parent surveys did not reveal a relationship between biking to school and the distance students live from the school.

Survey results indicate that students who live further than one-quarter mile from the school most commonly arrive and depart by school bus. Family vehicle is the second most common mode of transportation to or from school for trip distances greater than one-quarter mile. Overall, there does not appear to be a strong relationship between mode choice and trip distance for the parents that responded to the survey.

Proximity to School vs. Children's Walk & Bike to School Rate

19% of respondents live within a 30 minute walk of the school (up to one mile away)

5% of respondents' children "usually" walk to or from school

37% of respondents live within a 30 minute bike ride of the school (up to two miles away)

0% of respondents' children "usually" bike to or from school

Barriers to walking and biking

Despite the fact that 19% of respondents' children could walk to school in 30 minutes or less, and 37% of respondents' children could bike to school in 30 minutes or less, parents who responded to the survey rarely reported that their children usually walked to or from school and none reported that their children usually biked to school. Parents may be reluctant to allow children to walk and bike to school for a variety of reasons, although in some cases it may be that the child has not expressed a desire to walk or bike to school or has not asked permission to do so. As the distance between school and home increases, children may not consider walking or biking to school a realistic possibility.

The parent survey also asked specifically about barriers to walking and biking to school. More than half of respondents who do not allow their children to walk or bike to school reported that the following issues affected their decision:

- Distance (79%)
- Amount of traffic along route (59%)
- Speed of traffic along route (55%)

Other reasons given by respondents for not allowing children to walk or bike include concern about the safety of intersections and crossings (41%), weather or climate (55%), a lack of sidewalks or pathways (34%), the additional time required compared to other modes (25%), a lack of available adults to walk/bike with (18%), fear of exposure to violence or crime (16%), a lack of crossing guards (9%), the convenience provided by driving (5%), and child's participation in after school programs (3%).

Parent attitudes about walking and biking

The majority of parents who answered the survey (76%) think that Rice Elementary School neither encourages nor discourages walking and biking to and from school. 19% of parents responded that they believe Rice Elementary School encourages or strongly encourages walking and biking to or from school, and the remaining 5% believe that the school discourages or strongly discourages walking and biking to and from school.

The survey also revealed parent opinions about how much fun walking and biking is for their children, and how healthy walking and biking is for their children. Sixty-one percent of parents felt that walking and bicycling to school was very healthy or healthy for their children, while 11% think walking and bicycling is fun.

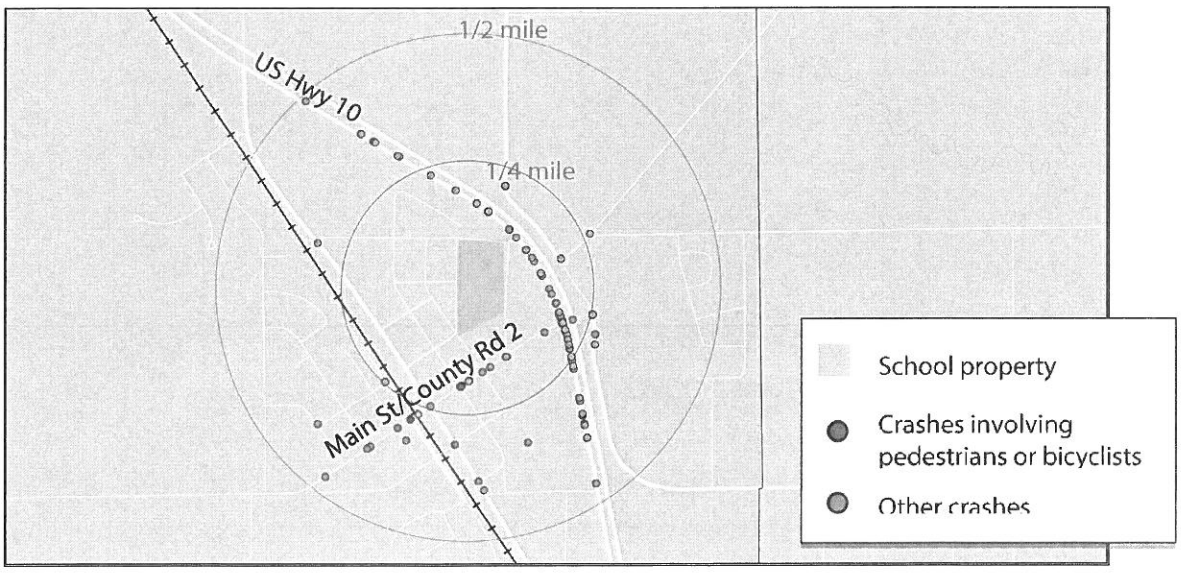
Traffic Conditions and Crash Analysis

Located a few blocks from the school, Main Street (County Road 2) carries a moderate level of traffic (2011 AADT of 3,400 motor vehicles) through the center of Rice. Many motor vehicles use County Road 2 to travel west and cross the Mississippi River, located about two miles from Rice. NE 2nd Avenue provides the most direct connection to the school from Main Street. Main Street is the primary route that provides connection west across the railroad tracks and east across U.S. Highway 10. Many students who attend the school come from beyond the core of the city.

An assessment of collisions surrounding Rice Elementary School was completed using Minnesota Department of Transportation (MnDOT) crash data from 2003 - 2013. A primary objective in analyzing this data is to identify crash patterns and particular locations or corridors that have been unsafe for pedestrian and bicyclists over a period of time.

Data from 2003 - 2013 reported a total of 205 collisions within one-half mile of Rice Elementary School. Two of these collisions involved motor vehicles colliding with bicycles. The bicyclists involved in the collisions were ages 10 and 16.

Crash Locations 2003 – 2013



Source: MnDOT

Site Audit

The audit took place in the afternoon of October 28, 2013. A total of ten individuals attended the audit, including representatives from Rice Elementary, MnDOT, the City of Rice, school board, and the general public. After observing the school dismissal process, participants conducted a thorough walking tour of the area surrounding the school, with special attention being given to conditions for pedestrians and bicyclists.

Walking and Biking

Two students were observed riding their bicycles from the bicycle rack at the northwestern corner of the school down the sidewalk along the western side of the school before traveling south on 3rd Avenue NE. The bicyclists were observed riding through the parents, teachers, and students on the sidewalk loading onto buses and exiting the school toward the car pick-up area.

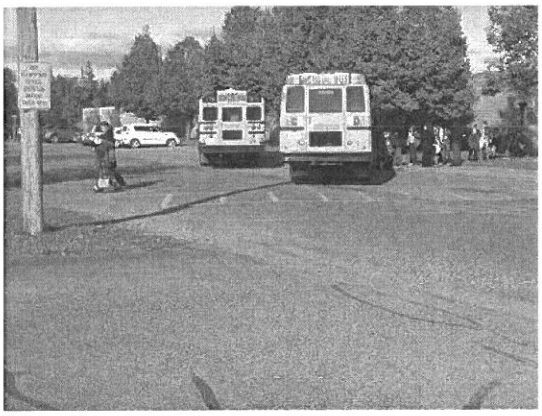
Three students were observed walking southwest from the school's exit and across grass adjacent to the school. The students were observed mixing with motor vehicles traveling into and out of the school near 3rd Avenue NE.

Bus

Buses parked diagonally along the sidewalk to the west of the school in designated spots. Student patrols and staff were present near buses to help assist students during dismissal. Most buses were in place prior to parents and others trying to cross the area to and from the school's exit.

Car

Generally, parent pick-up by personal vehicle appeared orderly. Parents parked in the shared church parking lot and many of them got out of their vehicles to pick up their students and walk them back to the vehicle. Parents and students crossed to and from the school's southwest entrance to the shared parking lot via a yellow crosswalk that is painted across the bus pick-up area. Student patrols were observed along the west sidewalk, as well as at this crossing from the school to the shared parking lot.



A student and parent walk to the shared church parking lot to the west of the school.

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Infrastructure (Engineering) Recommendations

The initial field review and subsequent meetings yielded specific recommendations to address the key identified barriers to walking and biking at Rice Elementary School. This plan does not represent a comprehensive list of every project that could improve conditions for walking and cycling in the neighborhood, but rather the key conflict points and highest priority infrastructure improvements to improve walking and cycling access to the school. The recommendations range from simple striping changes and school signing to more significant changes to the streets, intersections and school infrastructure. Short term projects that should be addressed in the 2014-2015 school year are noted as such in the Implementation Strategy section of this Plan. Some of the more significant recommendations for changes to streets and intersections may require policy changes, additional discussion and coordination, engineering and significant funding sources.

All engineering recommendations are described in Table 1 with locations shown on the Recommended Improvements Map. It should be noted that funding is limited and all recommendations made are planning level concepts only. Additional engineering studies will be needed to confirm feasibility and final costs for projects.

Maintenance

School routes and crosswalks should be prioritized for maintenance. To ensure high visibility crosswalks maintain their effectiveness, review all crosswalks within one block of the school each year. If there is notable deterioration, crosswalks should be repainted annually. In addition, crosswalks on key school walk routes should be evaluated annually and repainted every other year or more often as needed.

While walking and cycling diminish during the cold winter months, it is particularly important to prioritize snow removal and maintenance of school routes. Snow removal is a critical component of pedestrian and bicycle safety. The presence of snow or ice on sidewalks, curb ramps, or bikeways will deter pedestrian and cyclist use of those facilities to a much higher degree than cold temperature alone. Families with children will avoid walking in locations where ice or snow accumulation creates slippery conditions that may cause a fall. Curb ramps that are blocked by ice or snow effectively sever access to pedestrian facilities. Additionally, inadequately maintained facilities may force pedestrians and bicyclists into the street. Identified routes to school should be given priority for snow removal and ongoing maintenance.

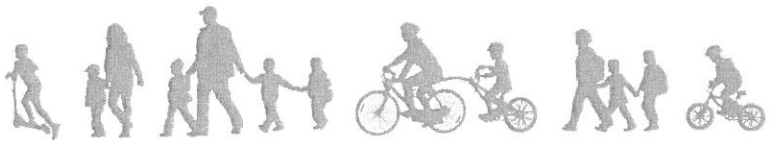
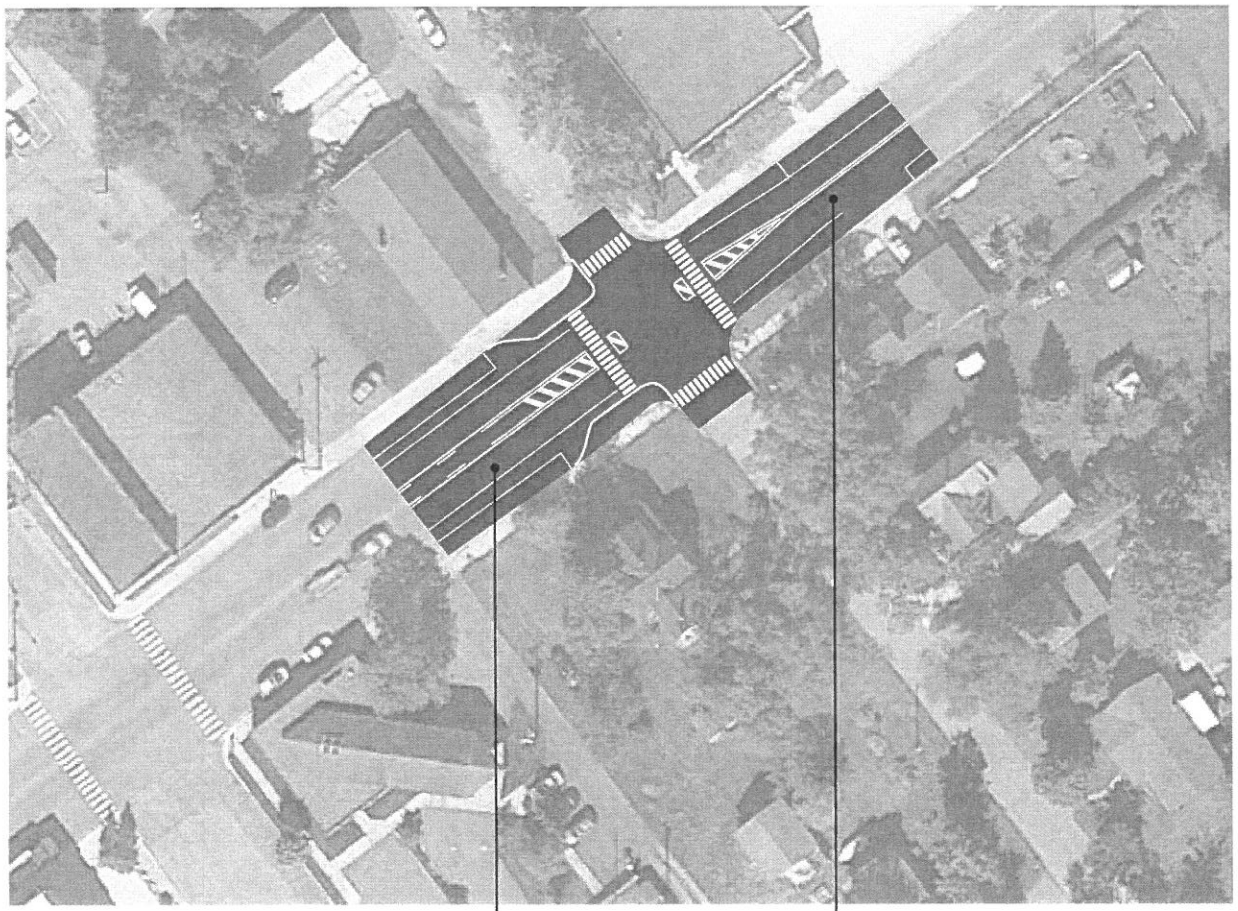


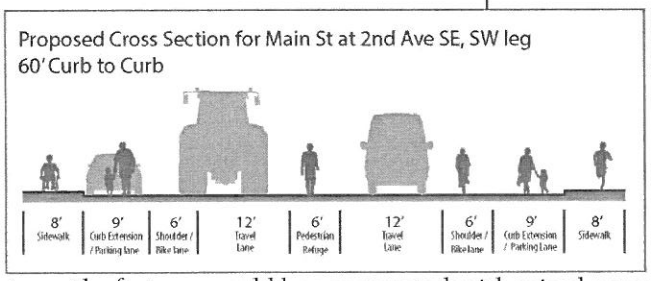
Table 1: Rice Elementary Infrastructure Issues and Recommendations

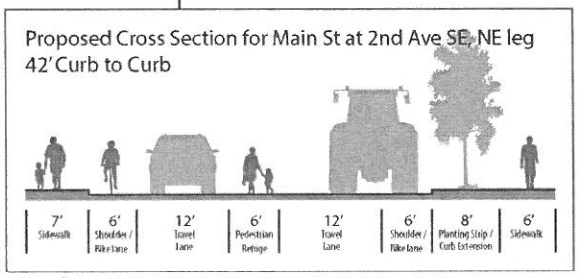
Project	Location	Problem/Issue	Solution/Recommendation	Lead Agency
A	Parent drop off loop	Students must cross 3rd Ave NE to enter the school from parent drop-off area. Parent drop-off occurs in a standard parking lot with no designated curb side loading/unloading zone(s).	Improve the connection from the parent drop-off area to the school site by installing a curb extension and restriping existing diagonal crosswalk as high-visibility. Consider re-configuration of parent drop-off loop that includes a formal curbside loading and unloading zone.	Sauk Rapids -Rice School District
B	Front and side entrances of building	Inadequate bicycle parking	Install additional bike parking close to the front and side school entrances.	Sauk Rapids -Rice School District
C	1st Street NE	Sidewalk network gap on the northwest side of the street.	Fill sidewalk gap along the northwest side of 1st ST NE.	City of Rice
D	Main St W at railroad tracks	Lack of safe pedestrian crossing creates a major barrier for students coming from the west side of railroad tracks.	Construct a bicycle/pedestrian path with at-grade rail crossing along the north side of Main St W.	Burlington-Northern Santa Fe (BNSF)
E	City/District lot near Main and Division	Congestion at school. Railroad tracks are a barrier to most students walking.	Potential drop and walk site on the school side of the railroad tracks.	City of Rice
F	Main St W	Busy street with no bicycle facilities and a series of difficult crossings.	Restripe Main Street to create safer conditions, including buffered bike lanes, and painted curb extensions to shorten crossings.	Benton County/ City of Rice

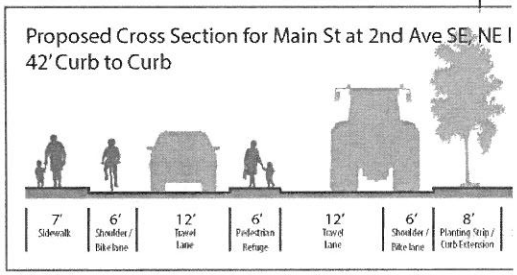
Constructing a landing and curb extension, paired with a high-visibility crosswalk, will improve the connection between the parent drop-off area and the school. (A)

Main Street is wide and acts as a barrier to walking and bicycling. Proposed restriping with buffered bike lanes will visually narrow the street and improve crossing conditions.









Long term, the features could be constructed with raised concrete. Any striping pattern or crossing treatments should maintain 18' horizontal clearances as not to restrict movements of agricultural equipment.

Programs Recommendations

The Safe Routes to School movement has been a leader in acknowledging that infrastructure changes are a necessary but insufficient condition for shifting school travel behavior. While engineering improvements like sidewalks, crosswalks, and bikeways are important, equally important are education programs to make sure children and families have basic safety skills, encouragement programs to highlight walking and biking to school as fun and normal, enforcement against unsafe and illegal motorist behavior, and evaluation of the impact of investments and non-infrastructure efforts.

The following programs were identified as priority programs for Rice Elementary School during the SRTS planning process. These programs were selected to meet the interest and needs of the school community in the near term (one to five years).

Recommended Programs for Rice Elementary School

- International Walk and Bike to School Day
- Park and Walk Program
- Trip Tracking – BLEND Pledge Program
- Walking School Bus or Bike Train
- Bike Rodeo – Continued
- School/Community Communications
- Classroom Lessons - Minnesota Walk! Bike! Fun!
- Increased Training for Safety Patrol

For each program concept, the recommendation includes the primary intended outcomes, potential lead and partners, a recommended timeframe for implementation, resources and sample programs, and a short description.

International Walk and Bike to School Day

Primary Outcomes	Increased walking and bicycling; youth empowerment
Potential Lead	Rice Elementary School District and school staff
Potential Partners	Parents; City of Rice Police Department; local groups/volunteers; students; local businesses
Recommended Timeframe	Twice a year - Annually on or around International Walk and Bike to School Day in October and in May around Bike to School Day.
Planning Resources	International Walk to School: http://www.iwalktoschool.org/ Walk Bike to School: http://www.walkbiketoschool.org/
Sample Program	Oregon Safe Routes to School: http://www.walknbike.org/schools

Walk and Bike to School Day is an international event that attracts millions of participants in over 30 countries in October. The event encourages students and their families to try walking or bicycling to school. Parents and other adults accompany students, and staging areas can be designated along the route where groups can gather and walk or bike together. These events can be held for one or more days.

International Walk to School Day draws large numbers of students and families to walk to school

Walk and Bike to School Day events are often promoted through press releases, backpack/folder/electronic mail, newsletter articles, and posters. Students often earn incentives for participating, such as healthy snacks, buttons, or stickers. The event planning team can work with local businesses, such as grocery stores, to provide donations to students participating in the events. There can also be a celebration at school following the morning event, such as an awards ceremony, lunch time party, or a raffle. This can require substantial coordination time, as well as time to develop promotional materials and secure donations. Walk and Bike to School can be combined with other programs such as Park and Walk for those students that live too far from school to walk or bike.

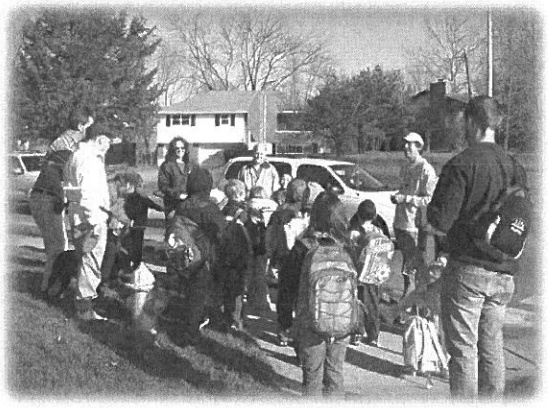
Park and Walk Program

Primary Outcomes	Increase bicycling and walking to school; reduced traffic congestion around schools
Potential Lead	Rice Elementary School District Administrator and local law enforcement
Potential Partners	School staff, parent volunteers, City of Rice
Recommended Timeframe	To begin, coordinate with walk and bike to school days. As interest grows, hold as often as capacity allows, preferably on a regular basis and as part of other walk and bike to school activities
Planning Resources	National Center for Safe Routes to School Guide: http://guide.saferoutesinfo.org/encouragement/park_and_walk.cfm Park and Walk Guide (United Kingdom) http://www.buckscc.gov.uk/bcc/transport/park_walk.page The Walking School Bus Guide: Combining Safety, Fun, and the Walk to School (SafeRoutesInfo.org) http://guide.saferoutesinfo.org/walking_school_bus/index.cfm
Sample Program	Arborfield, England: http://guide.saferoutesinfo.org/encouragement/park_and_walk.cfm

This program is designed to encourage families to park several blocks from school and walk the rest of the way to school. Not all students are able to walk or bike the whole distance to school; they may live too far away or their route may include hazardous traffic situations. This program allows students who are unable to walk or bike to school a chance to participate in Safe Routes to School programs. It also helps reduce traffic congestion at the school.

This program can also be developed to include students who are typically bused. School administration can work with local property owners to receive permission to use their parking lots for the park and walk, and recruit volunteers or parents to walk with the children. This process may require substantial coordination and recruitment time and a variety of promotional materials to increase participation.

Walking school buses can be used in combination with park and walk programs to allow students to walk to school with their peers if parents are unable to walk with their children and have concerns about them walking to school alone.



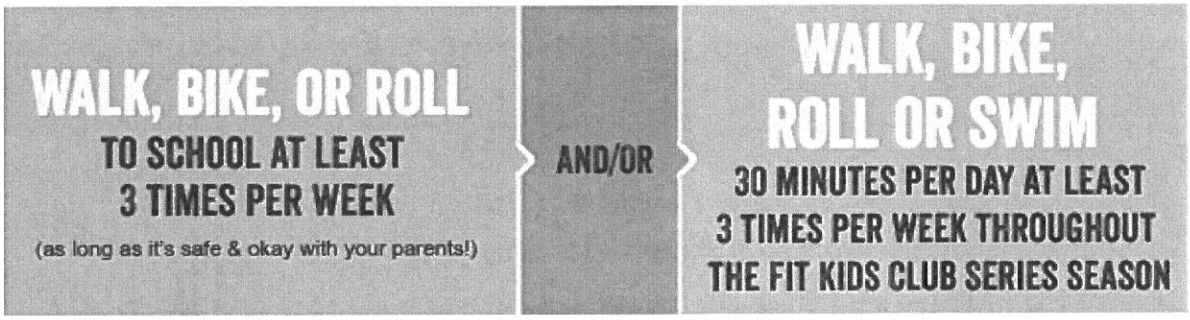
A Park and Walk program engages students who live too far away to comfortably walk or bike the whole distance to school.

Trip Tracking – Fit Kids Club Series Pledge Program

Primary Outcomes	Increased physical activity among students.
Potential Lead	BLEND Staff
Potential Partners	Parents; Teachers; Sauk Rapids–Rice Public Schools
Recommended Timeframe	Regularly when program is offered
Planning Resources	International Walk to School: http://www.iwalktoschool.org/ Walk Bike to School: http://www.walkbiketoschool.org/
Sample Program	City of Portland, Safe Routes Newsletters http://www.portlandoregon.gov/transportation/45746

BLEND (Better Living: Exercise and Nutrition Daily) is supporting a tracking program to encourage children and families to be more physically active. This program is not just specific to trips to school, but also supports the SRTS efforts. To take the Fit Kids Club Series Pledge, children (12 years and younger) must live in Central Minnesota and make a personal commitment to be more active in 2014. In return, BLEND will reward a child's pledge with a free entry into any of the 2014 Fit Kids Club Series events.

Students pledge to take an active trip to school or be active for 30 minutes per day three times per week.

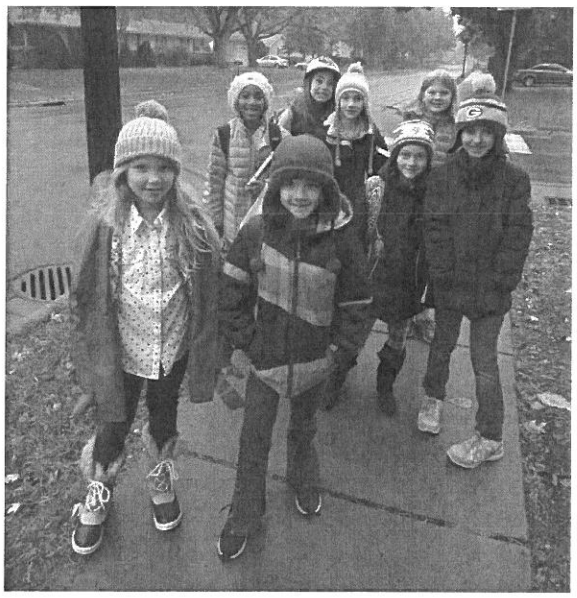


Walking School Bus or Bike Train

Primary Outcomes	Improved walking safety behavior; youth empowerment
Potential Lead	Parents or other school volunteers
Potential Partners	Rice Elementary Principal and Staff, BLEND and SHIP staff; City of Rice; law enforcement
Recommended Timeframe	Can be associated with an event to start and build to weekly and daily.
Planning Resources	The Walking School Bus Guide: Combining Safety, Fun, and the Walk to School (SafeRoutesInfo.org) http://guide.saferoutesinfo.org/walking_school_bus/index.cfm
Sample Programs	Portland, Oregon http://www.biketrainpdx.org/ http://www.portlandoregon.gov/transportation/article/232532

A walking school bus involves a group of children walking to school with one or more adults. The "bus" follows the same route every time and picks up children from their homes at designated times. Children like the walking school bus because it gives them active social time before the school day begins (or, as one participating child put it, "it's like recess before school!"). Adults like the walking school bus because they feel more comfortable when there are trained, trustworthy adults escorting their children to school. Teachers and principals like the walking school bus because it helps kids arrive ready to concentrate on school.

A bicycle "train" is very similar to a walking school bus; groups of students accompanied by adults bicycle together on a pre-planned route to school. They may operate daily, weekly or monthly. Bike trains also help address parents' concerns about traffic and personal safety while providing students a chance to socialize, be active, and develop riding skills while under adult supervision.



A walking school bus started by 4th and 5th grade students in St. Anthony Village, Minnesota.

Benefits

- Directly addresses two of the most common parental fears regarding walking or bicycling to school: stranger danger and traffic safety
- Highly convenient for parents and fun for students
- Scalable program that can increase in frequency or coverage as participation grows
- Helps develop bonds among classmates and neighbors, which can extend beyond the school day

Getting started

A walking school bus can be an informal effort begun by a few parents in one neighborhood. For a schoolwide program, however, it is important to designate a coordinator. In some cases a dedicated volunteer coordinator can be successful, but schools may want this to be a paid position to ensure consistency and reliability. The walking school bus coordinator can begin by assessing both resources (such as parent volunteers) and interest. A school-wide survey (paper and/or electronic) distributed to parents can help to identify interested households and volunteers.

Timing/Frequency

Ideally, a walking school bus or bike train program should run every day so families can count on it. However, it is possible to start small by selecting one or two days per week, or by targeting specific neighborhoods (e.g., a housing development close to the school) as a way to begin developing the program. You might even start with a special one-time walking school bus, such as for International Walk (and Roll) to School day in October. Some programs operate in the morning only, since children have after-school programs or go somewhere other than their home after school, or may not have a parent waiting for them at home.

Designating Routes and Stops

Walking routes should be sited on streets with complete pedestrian facilities, prioritizing safe crossings and lower traffic speeds and volumes, as well as low crime streets.

In many cases, these streets will also provide the best route for bicycle trains. Stops may either be at each child's house (which is more convenient for parents but may take longer) or at gathering points (e.g., one meeting place per block, as well as gathering spaces at parks). Including at least one "stop" with parking facilities is also a good way to increase participation for families who may live far from the school but can drop off children to join the walk. Finalized routes and stop locations should be mapped out for parent and volunteer reference.

Bike Rodeo

Primary Outcomes	Improved bicycling safety behavior; youth empowerment
Potential Lead	Rice Women of Today, City of Rice
Potential Partners	Rice Elementary administrator and teachers; BLEND staff; SHIP staff; local businesses
Recommended Timeframe	This is an existing program in Rice. To expand, consider coordinating with other events and providing skills training twice per year.
Planning Resources	Fire Up Your Feet Minnesota: http://mn.fireupyourfeet.org/resources/bike-rodeos Minnesota Safety Council: http://www.minnesotasafetycouncil.org/bicycle/programs/rodeo/intro.cfm
Sample Program	Bicycle Alliance of Minnesota: http://www.bikemn.org/education/courses/kids-classes

Bicycle Rodeos are events that offer bicycle skills and safety stations for children—and sometimes parents—to visit (e.g., obstacle course, bicycle safety check, helmet fitting, or instruction about the rules of the road). Bicycles rodeos can be held as part of a larger event or on their own, and either during the school day or outside of school. Adult volunteers can administer rodeos, or they may be offered through the local police or fire department.

Bicycle rodeos help teach children skills because they are allowed to continue practicing until they have mastered the station, in turn instilling a sense of confidence. By providing a hands-on approach to teaching, children are more likely to retain the information because they are engaged in the activity and with the instructor, thus more aptly preparing them for riding on the road when they are ready to do so.

If enough instructors are available for the event, children that have demonstrated a mastery of bike handling skills and hazard avoidance drills can participate in an on-street portion to experience real situations. This can take place on low-volume roadways or even a portion of the street that is closed to traffic depending on the surrounding area. Rice has an annual rodeo and should continue this program while looking for opportunties to coordinate with other SRTS efforts such as Bike to School Day in May.

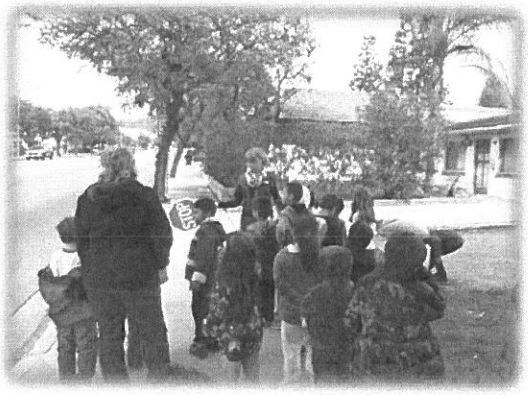
Bicycle Rodeos are events that offer bicycle skills and safety stations for children - and sometimes parents.

Classroom Lessons (Minnesota Walk! Bike! Fun! Curriculum)

Primary Outcomes	Improved walking and bicycling safety behavior; youth empowerment
Potential Lead	Teacher/administrators at Rice Elementary
Potential Partners	Sauk Rapids – Rice Public Schools; parents; City of Rice; local law enforcement; SHIP
Recommended Timeframe	Regularly integrated as viable. Safety training and skills elements twice per year.
Planning Resources	Minnesota SRTS Curriculum http://www.dot.state.mn.us/saferoutes/ http://www.bikemn.org/education/srts-education-curriculum
Sample Programs	Oregon Safe Routes to School: http://walknbike.org/pedestrian-safety/ National Highway Traffic Safety Administration: http://www.nhtsa.gov/ChildPedestrianSafetyCurriculum

A variety of existing in-classroom lessons and skills training activities are available to help teach students about walking, bicycling, health, and traffic safety. These can include lessons given by law enforcement officers or other trained professionals, or lessons delivered by teachers.

Example topics are Safe Street Crossing, Helmet Safety, Rules of the Road for Bicycles, and Health and Environmental Benefits of Walking and Biking.

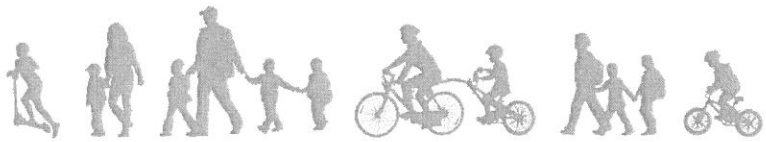


Pedestrian safety training teaches basic lessons such as, "look left, right, and left again".

Benefits

- One of the quickest and easiest ways to ensure all children receive important information on the safety basics and benefits of walking and bicycling
- Flexible activities can accommodate a variety of time and space constraints and grade levels
- Helps institutionalize pedestrian and bicycle safety as a priority life skill (similar to home economics or driver education)
- Complements environmental lessons and physical fitness/health activities with information and training on the importance of good travel habits

In-class lessons introduce the topic of pedestrian and bicycle safety to children, including what types of situations they may encounter on the road, how to follow street signs, and how to interact with drivers. Rhymes, songs, and videos can be used to help children remember how to walk and cross streets safely. Mock street scenarios allow students to practice safe pedestrian behaviors at signalized intersections, unsignalized intersections, and driveways in a controlled environment. This can be done inside the classroom or on the blacktop. Once students have mastered the mock streets, they are taken on-street to practice. A short route with as many types of crossing situations as possible should be mapped before taking students out. At least

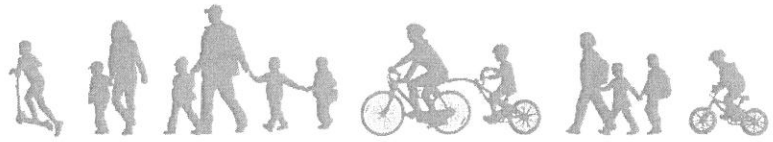


one parent/chaperone should be encouraged to attend for increased adult support, though additional volunteers are recommended. Chaperones should be given safety materials, such as high visibility vests and stop paddles.

The new Minnesota Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum is a two-part curriculum designed specifically for Minnesota's schools and is structured to meet Minnesota education standards. The Minnesota Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum was developed by the Bicycle Alliance of Minnesota in collaboration with the Minnesota Department of Transportation and the Center for Prevention at Blue Cross and Blue Shield of Minnesota.

The curriculum was designed to help children ages five to thirteen learn traffic rules and regulations, the potential hazards to traveling, and handling skills needed to bike and walk effectively, appropriately and safely through their community. This curriculum is free for anyone to download and use.

Before teaching this curriculum, it is important to certify that instructors feel confident and knowledgeable about bicycle safety skills. The Bicycle Alliance of Minnesota can conduct these trainings and is a resource for schools throughout the state.



School/Community Communications

Primary Outcomes	This will depend on the communications; however, outcomes may include increased walking, bicycling, transit, or carpooling; improved walking, bicycling, or driving safety behavior; and health and environmental connections.
Potential Lead	Teachers, administrators, or staff, parents
Potential Partners	Sauk Rapids–Rice School District; SHIP staff; BLEND staff; City of Rice
Recommended Timeframe	Ongoing throughout the school year
Getting Started	• Identify communication methods and where SRTS information can be added • Gather existing SRTS content from various resources and identify needs for Rushford specific content • Develop preliminary schedule
Planning Resources	National Center for Safe Routes to School http://www.saferoutesinfo.org/
Sample Program	City of Portland, Safe Routes Newsletters http://www.portlandoregon.gov/transportation/45746

The strongest Safe Routes to School efforts are those that, over time, begin to change the culture of school transportation by normalizing walking and bicycling. One of the ways to help promote walking and bicycling as normal, everyday activities is to disseminate consistent, ongoing communications to the school community. The most effective way to reach parents and other community members is through existing communications, through media they already see, hear, and pay attention to. For this reason, it is recommended that Rice Elementary School identify the most used communication methods and take advantage of those existing channels for sharing Safe Routes to School facts, tips, education, and encouragement. Communication channels could include parent emails, backpack mail, newsletters, community papers, websites, blogs, or social media. For example, the school may choose to feature a Safe Routes to School corner or page on their existing website if it is well used by parents and updated often.

Improved Training - Student Safety Patrol

Primary Outcomes	Improved walking/biking safety behavior; improved driving safety behavior
Potential Lead	Sauk Rapids – Rice Public Schools; Rice Elementary Administrator
Potential Partners	Police Department; parents; teachers and staff
Recommended Timeframe	Annually and refreshers throughout the year
Planning Resources	National Center for Safe Routes to School Guide: http://guide.saferoutesinfo.org/crossing_guard/index.cfm
Sample Program	Marin County, CA: http://www.tam.ca.gov/index.aspx?page=97

School safety patrols are trained student volunteers responsible for enforcing drop-off and pick-up procedures and assisting with street crossing. They do not stop vehicular traffic, but rather look for openings and then direct students to cross. Student safety patrols increase safety for students and traffic flow efficiency for parents.

Currently, student patrols get some training from adults at the beginning of the year. Students support the loading and unloading of the buses and crossing to the parent pick up area. It is anticipated that these students will be needed at crossings away from the school building in the future. Additional training is available at the Legionville School Safety Patrol training in Brainerd during the summer months.

Trained student leaders will support increased walking and bicycling traffic to the school. Crosswalk signage, safety vests, and cones could be updated with support from SHIP mini-grants or other support.

Trained student patrols help to improve safety at drop-off and pick-up times

Evaluation

Why evaluate?

Evaluation is an important component of any Safe Routes to School effort. Not only does evaluation measure a program's reach and impact on a school community, it can also ensure continued funding and provide a path forward for ongoing and future efforts. Evaluation can measure participation and accomplishments, shifts in travel behavior, changes in attitudes toward biking and walking, awareness of the Safe Routes to School program, and the effectiveness of processes or programs.

Safe Routes to School evaluation is beneficial in the following ways:

- Indicates whether your SRTS efforts are paying off. Evaluation can tell you what's working well, what's not, and how you can improve your program in the future.
- Allows you to share your program's impact with others. Evaluation can demonstrate the value of continuing your program, with school faculty and administration, the district, parents, and elected officials.
- Provides a record of your efforts to serve as institutional memory. The nature of Safe Routes to School teams is that they change over time, as parents and their children move on to other schools and as staff turns over. Recording and evaluating your efforts provides vital information to future teams.
- Tells you if you are reaching your goals. Evaluation can confirm that you are accomplishing or working towards what you set out to do. On the other hand, evaluation efforts can reveal that there is a mismatch in your efforts and your goals or that you need to correct course.
- Encourages continued funding for Safe Routes to School programs. Data collected and shared by local programs can influence decisions at the local, state and national level. In part, today's funding and grant programs exist because of the evaluations of past programs.

Basics of Evaluation

At a minimum, SRTS evaluation should include the standard classroom hand tallies and parent surveys expected in order to be consistent with the national Safe Routes to School program. Evaluating the programs can - and should where possible - delve beyond this, but it need not be burdensome. Evaluating the program can be as simple as recording what you did and when you did it, and counting or estimating the number of students who participated or were reached. Recording planning efforts and taking photos is also helpful for the legacy of the program. In most cases, it is beneficial to measure more, such as school travel mode split or miles walked and biked, from which the school, district or city can estimate environmental, health, and other impacts.

There are two kinds of information that can be collected: quantitative data (numbers, such as counts, logs, and survey results) and qualitative data (words and images, such as observations, interviews, and records). Further, there are several different ways to collect information. This includes the following:

1. Conducting tallies/counts
2. Keeping logs (such as for mileage tracking)
3. Conducting surveys and interviews
4. Conducting observations and audits
5. Keeping planning and process records

Regardless of how elaborate you make your evaluation, it is important to plan ahead for measuring and tracking results. When you are designing your program, consider how you are going to evaluate it from the beginning, so that you can build in mechanisms for collecting the necessary data. For example, if showing changes in travel behavior over time is important to your effort, you will need to start by collecting baseline data so you know how students are getting to school currently in order to be able to demonstrate any change later.

Below is a series of basic steps to take in designing and executing your program evaluation:

1. Establish your goals and plan the specific program.
2. Decide what, how, and when to measure.
3. Collect baseline information, if necessary.
4. Conduct the program and monitor progress.
5. Conduct any post-program data collection, if necessary.
6. Interpret your data.
7. Use and share your results.

More resources for evaluation can be found on the National Center for Safe Routes to School's website here: http://guide.saferoutesinfo.org/evaluation/index.cfm.

Before and After Study of Infrastructure

It's also helpful to understand the impact of the specific infrastructure projects on travel behavior and patterns. When planning to improve the built environment to serve school travel, a simple before and after study can be completed with minimal resources and in some cases little more than volunteer support.

This helps to document baseline conditions before the project and to evaluate a few months after completion.

- A complete traffic count is very helpful but may be cost prohibitive. At a minimum, complete a count of pedestrians and bicyclists and note any large vehicles. For information on how to conduct a pedestrian and bicycle count refer to the National Bicycle and Pedestrian Documentation Project, which can be found online at http://bikepeddocumentation.org/
- Document motorist compliance with traffic laws, such as yielding at crosswalks and obeying the speed limit.
- Note pedestrian and bicyclist behavior that may cause safety concerns, such as wrong way riding or crossing outside of crosswalks.

Annual Evaluation Tasks

At the beginning of each year, establish which programs and improvements will be made and what needs to be done to complete basic steps 1 to 3.

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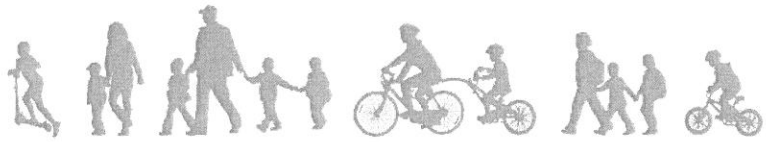


Implementation Strategy

The following section outlines an estimated implementation timeline for both the infrastructure and programmatic recommendations. This strategy identifies programs that can be started in the first year of plan implementation and summarizes the estimated timing of infrastructure improvements.

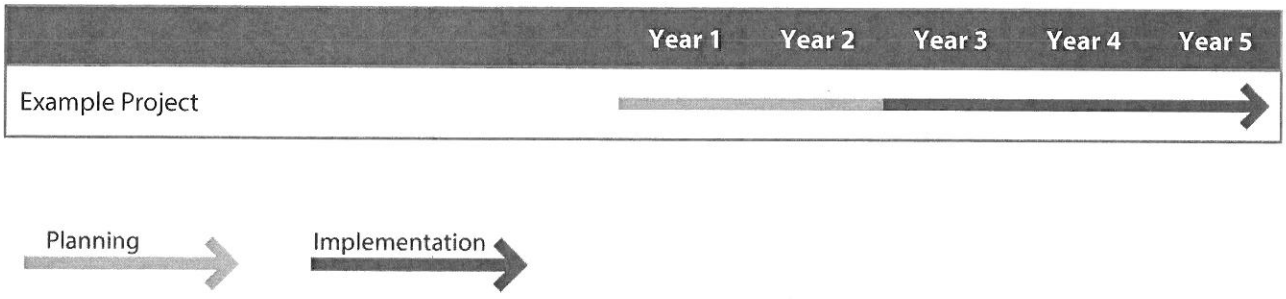
Year One

The programs identified for year one implementation will require the leading organization to take some immediate actions to make progress and follow this timeline. See the **Recommended Programs** chapter for detailed descriptions of each program.

Year one programs were selected based on existing capacity and interest identified during the planning process. Most education, encouragement and enforcement programs will be ongoing and once started can be integrated into school programs year after year.

Future Actions

While some recommendations may not be implemented in year one, it is still important to plan and prepare for future programmatic and infrastructure projects. These future actions are displayed in simplified timeline, illustrating a potential approach to phasing in certain activities.



Programs Action Plan

Planning → Implementation

Table 2. Programs Implementation

Type	Program	Potential Lead	Key Partner	Year 1	Year 2	Year 3	Year 4	Year 5
Encouragement	International Walk to School Day and Bike to School Day	Rice Park Elementary Administrator and Staff	City of Rice Police Department					
Encouragement	Park and Walk Program	Rice Elementary Administrator and Staff	City of Rice					
Encouragement	Trip Tracking - BLEND pledge program	BLEND	Parents					
Encouragement	Walking School Bus or Bike Train	Parents	SHIP/BLEND					
Education	Bike Rodeo	Rice Women of Today	City of Rice					
Education	Classroom Lessons (Minnesota Walk! Bike! Fun! Curriculum)	Rice Elementary Teachers	Sauk Rapids - Rice Public Schools					
Education	School/Community Communication	Rice Elementary Administrator and Staff	Sauk Rapids - Rice Public Schools					
Enforcement	Increased Training for Safety Patrols	Sauk Rapids - Rice Public Schools	Rice Elementary Administrator					

Infrastructure Action Plan

See the **Infrastructure Issues and Recommendations** chapter for detailed discussion of the infrastructure projects listed here.

Table 3. Infrastructure Implementation

Project	Solution/Recommendation	Lead Agency	Year 1	Year 2	Year 3	Year 4	Year 5
A	Improve the connection from the parent drop-off area to the school site by installing a curb extension and restriping existing diagonal crosswalk as high-visibility.	Sauk Rapids-Rice School District					
B	Install additional bike parking close to the front and side school entrances.	Sauk Rapids-Rice School District					
C	Fill sidewalk gap along the northwest side of 1st Street NE.	City of Rice					
D	Construct a bicycle/pedestrian path with at grade crossing along the north side of Main St W.	Burlington-Northern Santa Fe (BNSF)					
E	Potential drop and walk site at the City/District lot near Main and Division	City of Rice					
F	Restripe Main Street W to create safer conditions, potentially including bike lanes, medians and curb extensions to shorten crossings.	Benton County/City of Rice					

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Funded through a MnDOT federal
Safe Routes to School Planning Assistance Grant

Safe Routes to School Plan

Appendix: SRTS Infrastructure Glossary

June 2014

alta PLANNING + DESIGN

community design group

MINNESOTA DEPARTMENT OF TRANSPORTATION

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Appendix A:

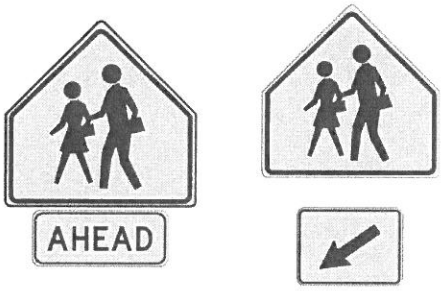
Safe Routes to School Infrastructure Glossary

This glossary is intended to provide an introduction to the specific infrastructure improvements commonly used for Safe Routes to School. It is included as an appendix to the plan in effort to make it an easily available reference point for all parties using the Safe Routes to School Plan. Not all treatments are appropriate at every school location. In all cases engineering judgement should be exercised when determining the best infrastructure solution. The glossary contains information arranged in the following topic areas:

School Area Specific Signing and Marking

School Sign (S1-1)

The School Sign (S1-1) is used to warn drivers that they are approaching a school area, or to identify the beginning of a designated school zone.



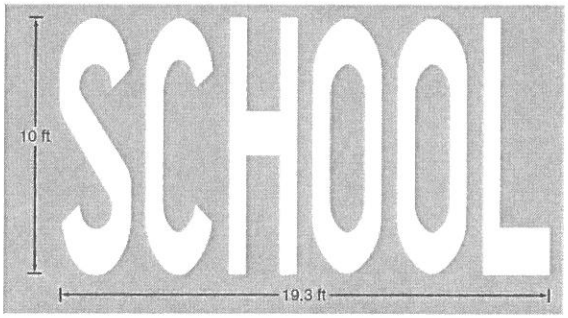
School Crossing Assemblies

The School Sign may be combined with small plaques to indicate specific crossing locations. A school sign combined with an AHEAD plaque (W16-9p) creates a *School Advance Crossing Assembly*, used to warn road users that they are approaching a crossing where schoolchildren cross the roadway.

At specific crosswalks or crossing locations, a *School Crossing Assembly* indicates the location of the crossing point where schoolchildren are expected to cross. It includes a School sign (S1-1) and a diagonal downward arrow (W16-7p) must be included.

School Zone Speed Limit Assembly

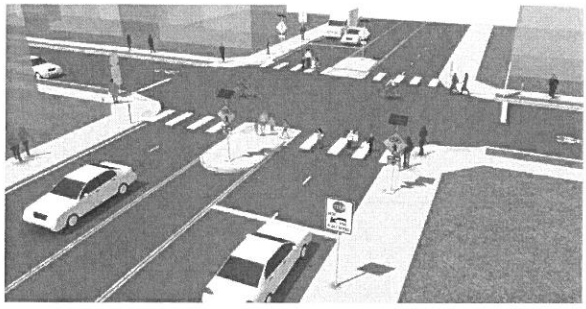
A School Zone Speed Limit Assembly identifies a speed limit for used in a specific geographic area. Speed limits may apply over limited time frames or conditions as indicated on the sign.



School Crossing Pavement Markings

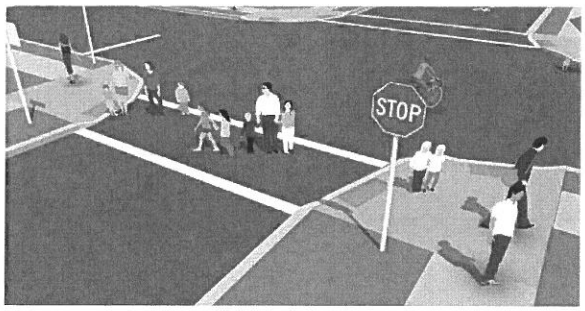
As a supplement to a marked crosswalk, the SCHOOL word marking may provide additional warning to drivers about the potential presence of school children.

Crossing Treatments



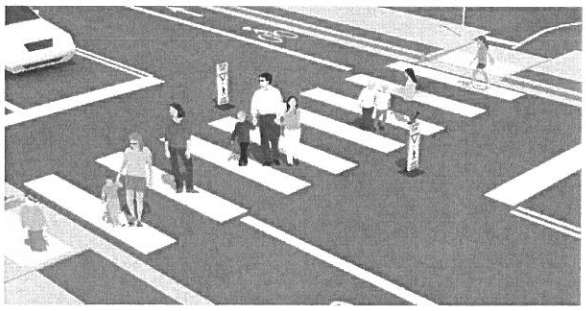
Active Warning Beacon

Active warning beacons are user-actuated flashing lights that supplement warning signs at unsignalized intersections or mid-block crosswalks. Rectangular Rapid Flash Beacons (RRFBs), a type of active warning beacon, use an irregular flash pattern similar to emergency flashers on police vehicles.



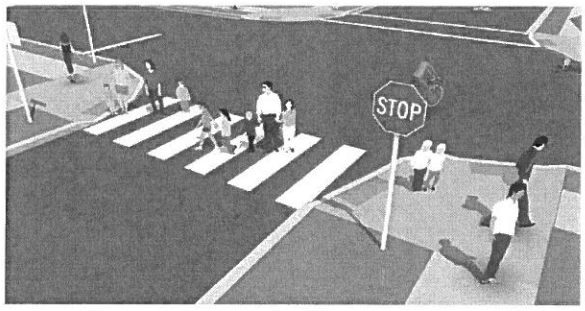
Standard Marked Crossings

The simplest form of marked crosswalk is two transverse lines, indicating the crossing area. A marked crosswalk signals to motorists that they must stop for pedestrians and encourages pedestrians to cross at designated locations. Installing crosswalks alone will not necessarily make crossings safer especially on multi-lane roadways.



In-Street Yield to Pedestrian Sign

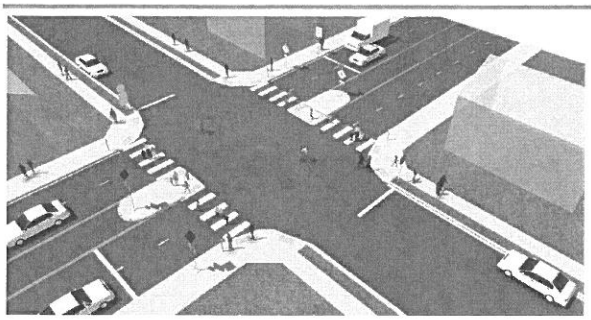
In-street pedestrian crossing signs reinforce the presence of crosswalks and remind motorists of their legal obligation to yield for pedestrians in marked or unmarked crosswalks. This signage is often placed at high-volume pedestrian crossings that are not signalized. On streets with multiple lanes in each direction, additional treatments such as median islands or active warning beacons may be more appropriate.



High Visibility Marked Crossings

A marked crossing typically consists of a marked crossing area, warning signs and other markings to slow or stop traffic.

When space is available, a median refuge island can improve user safety by providing pedestrians and bicyclists space to perform the safe crossing of one half of the street at a time.



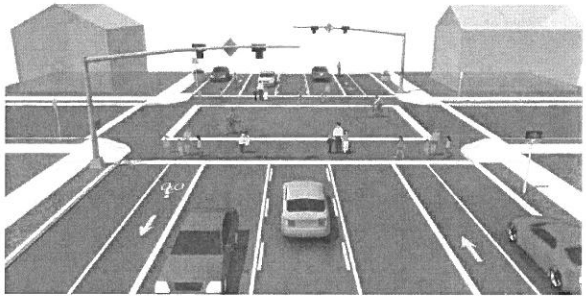
Median Refuge Island

Median refuge islands are protected spaces placed in the center of the street to facilitate bicycle and pedestrian crossings. Crossings of two-way streets are simplified by allowing bicyclists and pedestrians to navigate only one direction of traffic at a time. This may also functions as a Traffic Calming technique when configured to manage access to streets.

Raised Crosswalk

Raised crosswalks are crossings elevated to the same grade as the multi-use trail. Raised crosswalks may be designed as speed tables, and have a slowing effect on crossing traffic.

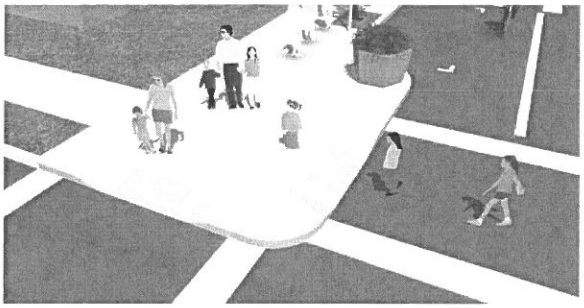
A raised crossing profile design known as a sinusoidal profile may be selected for compatibility with snow removal equipment.



Pedestrian Hybrid Beacon

Pedestrian hybrid beacon are traffic control signals commonly used to stop traffic along a major street to permit safe crossing by pedestrians or bicyclists. The signals provide very high levels of compliance by using a red signal indication, while offering lower delay to motorized traffic than a conventional signal.

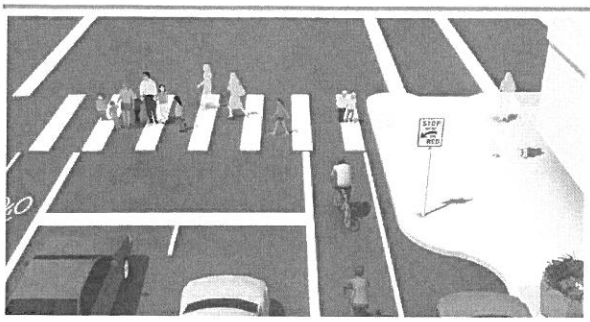
The Minnesota Manual on Traffic Control Devices permits Pedestrian Hybrid Beacon installation at both mid-block and intersection locations. (Section 4F.2) The Minnesota MUTCD says: "If installed at an intersection, appropriate side street traffic control should be considered." This may include STOP or YIELD signs as determined by a traffic engineer.



ADA Compliant Curb Ramps

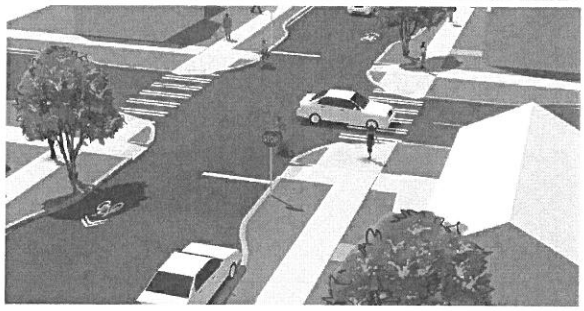
Curb ramps allow all users to make the transition from the street to the sidewalk. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access.

Although diagonal curb ramps might save money, they create potential safety and mobility problems for pedestrians, including reduced maneuverability and increased interaction with turning vehicles, particularly in areas with high traffic volumes.



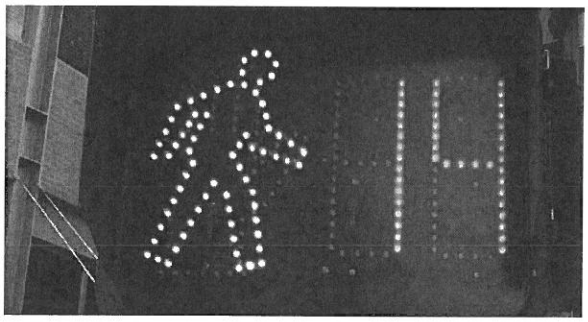
Advance Stop Bar

Advance stop bars increase pedestrian comfort and safety by stopping motor vehicles well in advance of marked crosswalks, allowing vehicle operators a better line of sight of pedestrians and giving inner lane motor vehicle traffic time to stop for pedestrians.



Curb Extensions

Curb extensions are areas of the sidewalk extended into the roadway, most commonly where a parking lane is located. Curb bulbs help position pedestrians closer to the street centerline to reduce crossing distances and improve visibility and encourage motorists to yield at crossings.



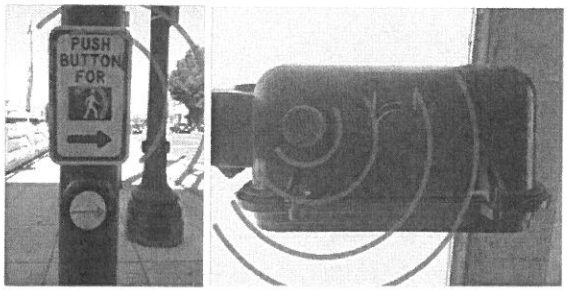
Countdown Pedestrian Signal

Countdown pedestrian signals are particularly valuable for pedestrians, as they indicate whether a pedestrian has time to cross the street before the signal phase ends. Countdown signals should be used at all signalized intersections.

Signals should be timed to provide enough time for pedestrians to cross the street. The MUTCD recommends a longer pedestrian clearance time in areas where pedestrians may walk slower than normal, including the elderly and children.

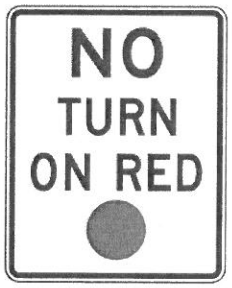
Leading Pedestrian Interval

A leading pedestrian interval is a condition where a pedestrian signal displays a WALK signal for pedestrians prior to displaying a green signal for adjacent motor vehicle traffic. This early display gives pedestrians a head start and may increase the percentage of drivers who yield to crossing pedestrians.



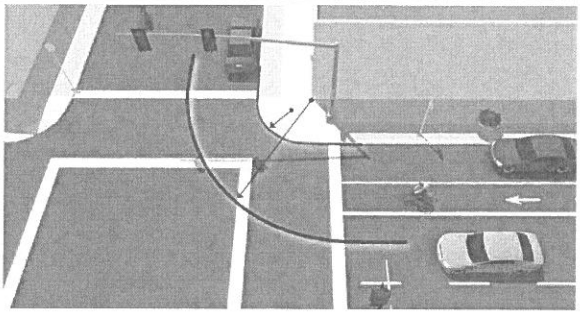
Audible Signals

In addition to the visual cues provided by signal heads, audible signals provide guidance for vision-impaired pedestrians. Different audible signals should be used for different crossing directions to inform the pedestrian which intersection leg has a walk signal. Sounds should be activated by the pedestrian push-button.



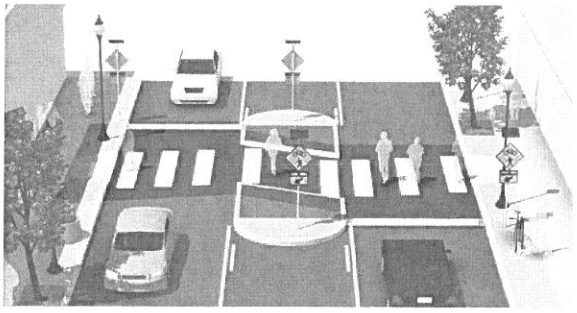
No Turn On Red

No Turn on Red restrictions prevent turns during the red signal indication to reduce motor vehicle conflicts with bicyclists and pedestrians using the crosswalk.



Minimize Corner Radii

The size of a curb's radius can have a significant impact on pedestrian comfort and safety. A smaller curb radius provides more pedestrian area at the corner, allows more flexibility in the placement of curb ramps, results in a shorter crossing distance and requires vehicles to slow more on the intersection approach. During the design phase, the chosen radius should be the smallest possible for the circumstances.

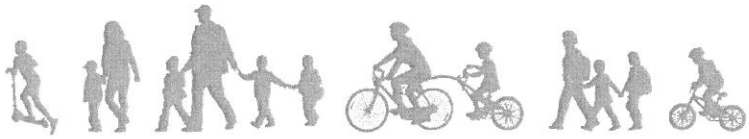


Offset Crosswalk

Offset crosswalks use staggered pavement markings and a median refuge island with a diagonal pathway to direct pedestrians' attention to oncoming traffic before crossing.

Traffic Signal Timing

Traffic lights must assume that pedestrians walk a certain speed to calculate the time needed to cross at a light, often 3.5 feet per second. However, children may require more time to cross an intersection than adults. Re-timing signals to 3.25 or even 2.8 feet per second at crossings used by large numbers of students and seniors can ensure that everyone has time to cross the intersection safely.



Traffic Calming

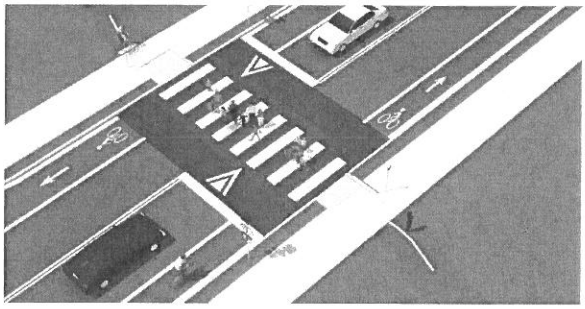
The term "traffic calming" describes a range of improvements that reduce traffic speeds or traffic volumes intended to improve safety for all road users. Treatments are mostly appropriate for local streets not meant for through traffic. Some traffic calming seeks to slow down through traffic, while other traffic calming seeks to divert through traffic and reduce traffic volumes.

Securing community support before proceeding with a traffic calming project can help to make it more successful. Benefits to local residents may include a safer neighborhood to walk and bicycle in, though sometimes at the cost of driving convenience.

Traffic calming measures in the context of a Safe Routes to School program can help reduce driving speeds near schools, discourage dangerous or illegal driving maneuvers, and encourage the use of appropriate routes when driving to or from school. They should be combined thoughtfully with the other improvements described in this glossary.

Chicanes

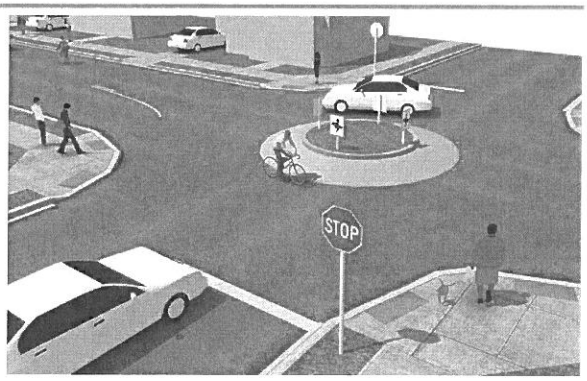
A chicane is a curb extension, usually built in alternating patterns or with intermittent median strips, that creates an S-shaped curve on a street. These minor curves require motorists to proceed with greater caution and slower speeds. They may also provide additional space for landscaping or pedestrians. Some chicanes are concrete curbs, while others are painted on the roadway.



Speed Humps & Speed Tables

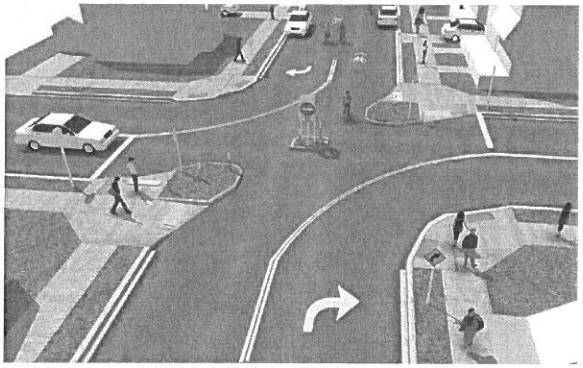
Speed humps are rounded vertical traffic calming features common on residential streets, and may be used to control speed along a corridor.

Speed tables are similar mesa-shaped features that may be configured as raised crossings, as shown above. If configured as a raised crossing, the speed table should be elevated so that it is flush with the sidewalk and/or multi-use trail.



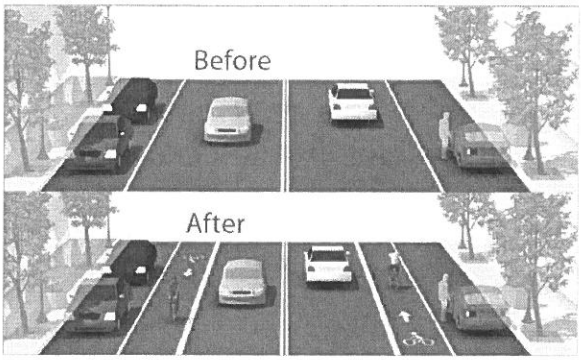
Traffic Circles

Traffic circles are generally used to replace a 4-way-stop intersection. Traffic circles can improve safety as well as travel times and intersection efficiency. Many drivers are not familiar with traffic circles so signage can help them to navigate the intersection. Many traffic circles are built with mountable curbs so that emergency vehicles may quickly and easily proceed through the intersection.



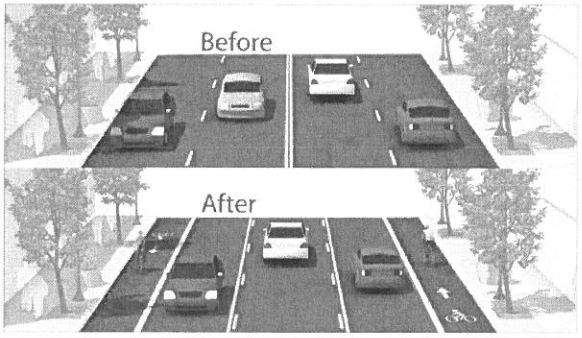
Diverters

A diverter diverts motor vehicle traffic from one street to another while allowing pedestrian and bicycle traffic to proceed normally. They are most common parallel to arterial streets where congestion may lead motorists to seek alternative routes on local streets through a neighborhood. Common on bike routes, diverters are the most intense traffic calming treatment applied and should be implemented only after study and community outreach.



Lane Narrowing

Lane narrowing utilizes roadway space that exceeds minimum standards to provide the needed space for bike lanes. Many roadways have existing travel lanes that are wider than those prescribed in local and national roadway design standards, or which are not marked.

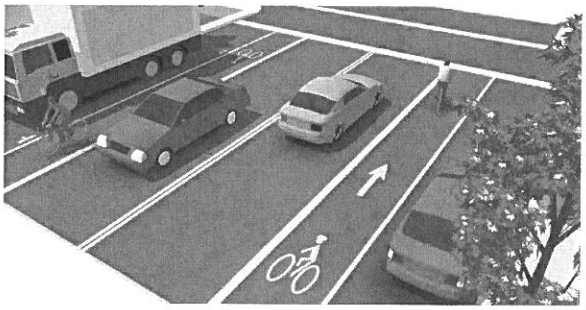


Road Diets

The removal of a single travel lane will generally provide sufficient space for bike lanes on both sides of a street. Streets with excess vehicle capacity provide opportunities for bike lane retrofit projects.

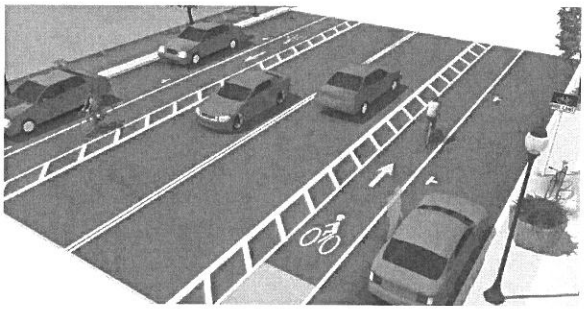
Bicycle Facilities

Bicycle facility selection depends on a variety of factors including motor vehicle speeds and volumes, topography, adjacent land use, available right of way, and expected bicycle user types. Children and their parents/guardians may prefer lower stress bikeways such as bicycle boulevards, buffered bike lanes, cycle tracks, and multi-use paths compared to shared roadways without traffic calming features or conventional bike lanes



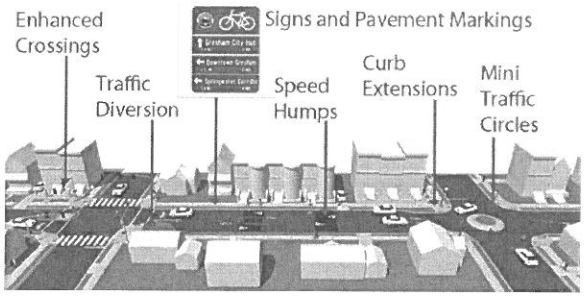
Bike Lanes

Bicycle lanes designate an exclusive space for bicyclists with pavement markings and signage. The bicycle lane is located adjacent to motor vehicle travel lanes and bicyclists ride in the same direction as motor vehicle traffic. Bicycle lanes are typically on the right side of the street (on a two-way street), between the adjacent travel lane and curb, road edge or parking lane.



Buffered Bike Lanes

Buffered bicycle lanes are conventional bicycle lanes paired with a designated buffer space, separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.



Bicycle Boulevard

Bicycle boulevards are low-volume, low-speed streets modified to enhance bicyclist comfort by using treatments such as signage, pavement markings, traffic calming and/or traffic reduction, and intersection modifications. These treatments allow through movements of bicyclists while discouraging similar through-trips by non-local motorized traffic.

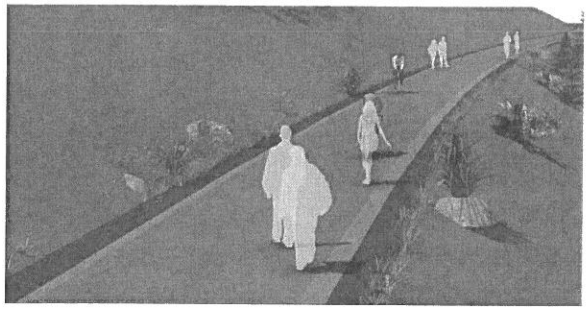
Streets should contain a minimum of three traffic calming enhancements if they are to be considered bicycle boulevards.

Additional Tools

Painted Intersections

Painted intersections, sometimes called street murals or "Intersection Repair" are volunteer driven efforts to transform an intersection into a plaza like community space by painting artistic imagery on the street.

Painted intersections generally require permission from the transportation department and majority support from the adjacent neighbors.



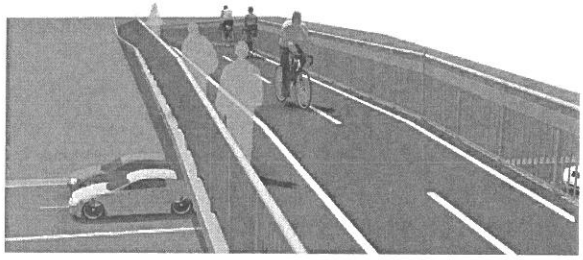
Shared Use Paths

Shared Use paths may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, or as a neighborhood cut-through to shorten connections and offer an alternative to busy streets.

Warning Signs

Warning signs call attention to unexpected conditions on or adjacent to a street or bicycle facility.

Around schools, the School Crossing Assembly is the most common type of warning sign, used to warn drivers to expect and anticipate bicycle crossing activity.



Overpass

Overpasses provide critical non-motorized system links by joining areas separated by barriers such as deep ravines, waterways or major streets or freeways. A Crime Prevention Through Environmental Design (CPTED) lens should be followed when designing the underpass.

Underpass

Underpasses provide critical non-motorized system links by joining areas separated by barriers such as railroads and highway corridors. In most cases, these structures are built in response to user demand for safe crossings where they previously did not exist.