



*Wilshire Park Elementary*

# Safe Routes to School Plan

St. Anthony - New Brighton School District | St. Anthony, Minnesota | July 2014

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

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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 incentive programs, on-going 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.



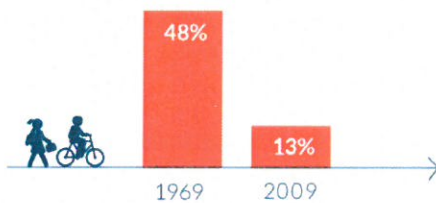


## The Challenge

Although most students in the United States walked or biked to school pre-1980's, the number of students traveling to school on foot or by bike 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.



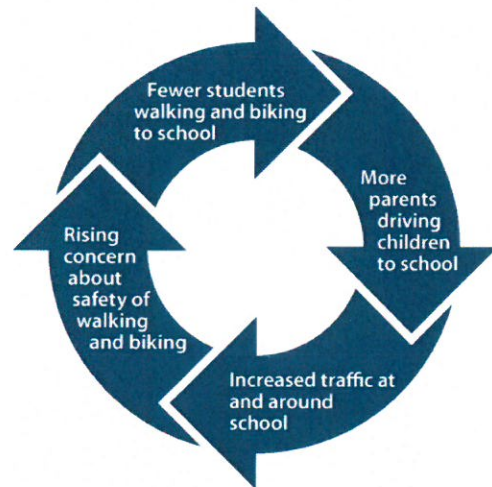
Roads near schools are congested, decreasing safety and air quality for children.



## 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 and from 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<sup>1</sup>



**The downward cycle of traffic and reduced walking and bicycling**

<sup>1</sup> 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. They 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 bicycling 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, a SRTS program helps integrate physical activity into the everyday routine of school children. Counteracting the trend towards 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



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## 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, health and wellness of students. The specific recommendations in this plan are intended to support infrastructure improvements and programs over the next 5 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 bicycling 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, such as, public health, law enforcement and community advocates. The following paragraphs highlight the unique contributions of key partners in Safe Routes to School.

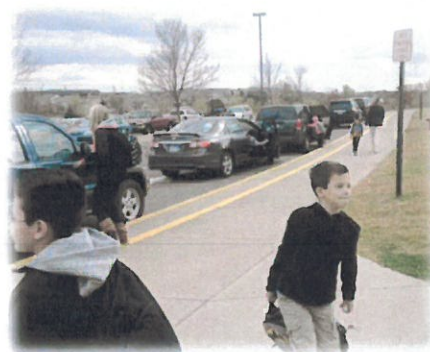
**Parents** can use this report to understand the conditions at their children's school and to become familiar with the ways a SRTS program can work to make walking and bicycling safer. Concerned parents or city residents have a very important role in the Safe Routes to School process. Parent groups, 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 significant contributions from the district or local agency.

**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 vehicle 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 to share information, bringing efficiencies to Safe Routes programs at each school. In St. Anthony Village the close proximity of multiple schools lends itself to a coordinated program.



***Parents lead students on a walking school bus from a "Park and Walk" site.***



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







## Vision and Planning Background

### City of St. Anthony Vision:

*"Our mission is to be a progressive and livable community, a walkable village, which is sustainable, safe and secure."*

### St Anthony SRTS Vision:

*"The City of St. Anthony's mission will be supported by increasing both resident and visitor awareness of the importance of safe walking and bicycling routes to school for students, and by providing a physical and social environment that supports active transportation in the community to enhance our quality of life."*

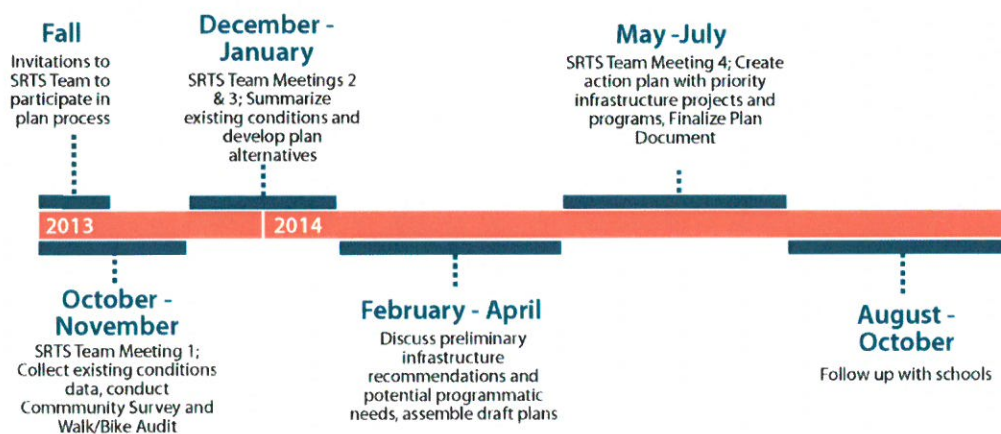
This vision helped to frame the Safe Routes to School planning process for Wilshire Park Elementary and informed recommended improvements to pedestrian and bicycle infrastructure and programs.

## Relevant Planning Background

The City of St. Anthony has a vision that values the safety of pedestrians, especially around important amenities such as schools. St. Anthony actively works to incorporate trails, sidewalks, and other pedestrian and bicycle infrastructure in redevelopment and road projects. The school district, principal, and parent association are strong supporters of efforts to create safe opportunities for walking and bicycling to school. The City's Comprehensive Plan includes a commitment to provide sidewalks and bicycling routes throughout the community.

### Planning Process

The year-long planning process for this SRTS Plan included building a 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.





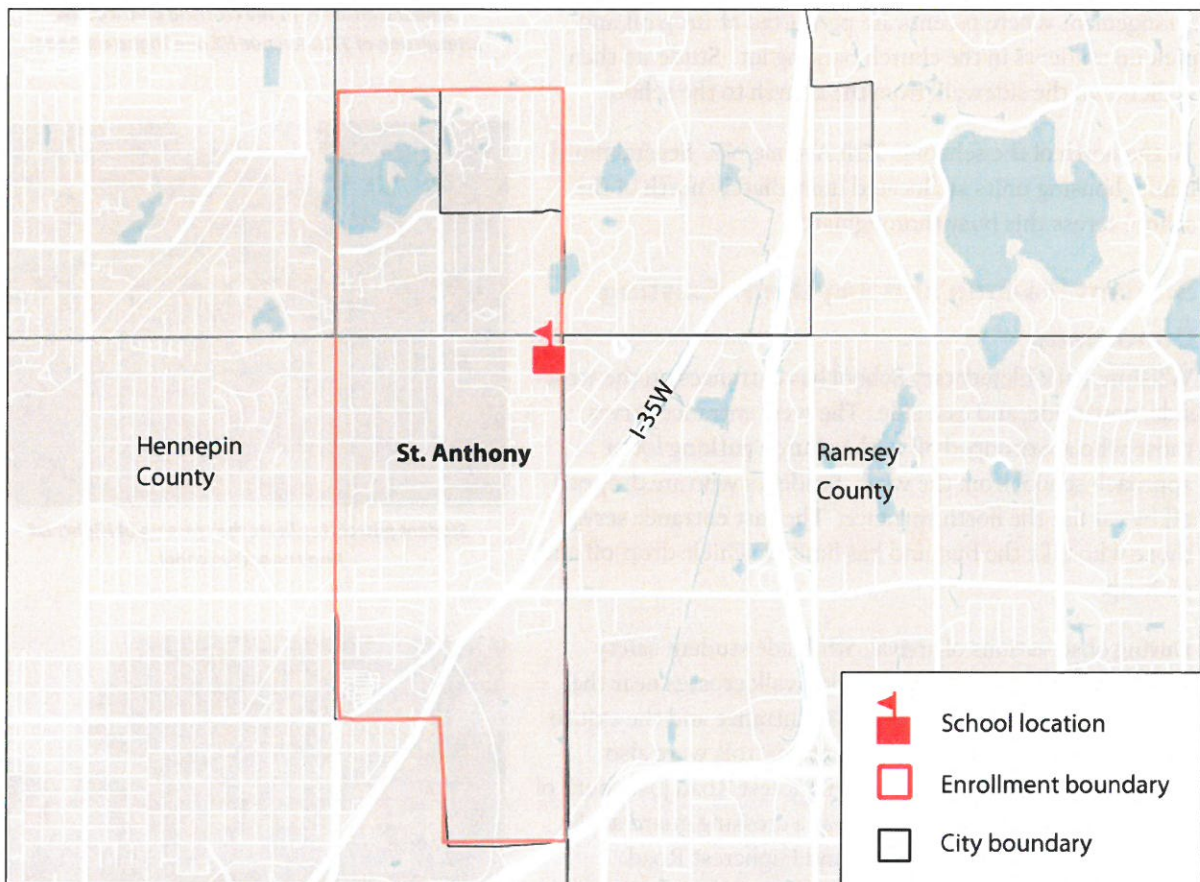


## Existing Conditions

### School Context

Wilshire Park Elementary is a K-5 school located on Highercrest Rd NE on the eastern boundary of the St. Anthony School District. Enrollment for the 2013-2014 school year was 666 students. The principal of Wilshire Park Elementary is Kari Page. Arrival time for students is 9:05am, and dismissal time is 3:35pm.

### School Enrollment Boundary







## Surrounding Land Use

Wilshire Park Elementary School is located at the corner of 37th Avenue NE (County Road D) and Highcrest Road. The school is in St. Anthony Village and Hennepin County, but the City of Roseville and Ramsey County sit just across Highcrest Road to the east. St. Anthony Village has a population just under 8,400 and borders the northeastern boundary of Minneapolis.

A low-density single-family residential neighborhood sits south of the school. A church is located just to the southwest of the school. The church and school have an arrangement where parents are permitted to drop off and pick up students in the church parking lot. Students then walk down the sidewalk from the church to the school.

To the north of the school is 37th Avenue NE. Several multi-family housing units are located immediately north of the school across this busy thoroughfare.

## Student Walking and Bicycling - Existing Conditions

Wilshire Park Elementary School has entrances on the west side, north side, and east side. The west entrance serves those who are dropped off in the church parking lot or approach school from the west. Students who are dropped off by car use the north entrance. The east entrance serves those who take the bus, and has limited vehicle drop-off and pick-up.

During observations of arrival, 5th grade student safety patrols were present where the sidewalk crosses near the convergence of the school bus loop entrance and the exit to the car drop-off area. Student safety patrols were also present at a painted crossing of Highcrest Road just south of the school. A staff person serves as a crossing guard at the intersection of 37th Avenue NE and Highcrest Road.

No sidewalks exist in the neighborhood to the south of the school and west of Highcrest Road. This neighborhood consists largely of low volume and low speed residential streets. Sidewalks are present along the western side of Highcrest Road.

The intersection of 37th Avenue NE and Highcrest Road is a major obstacle to walking and bicycling and is a primary concern among students, parents, and officials. 37th Avenue NE carries high traffic speeds and volumes. City officials and school parents also reported that some



***School staff serve as the crossing guard at the intersection of 37th Avenue NE and Highcrest Road.***



***Student patrols facilitate the crossing of Highcrest Road near the school.***



***A group of students cross near the bus loop and parking lot as they walk to the school's east entrance.***



motorists do not obey the red light at this intersection. Enforcement efforts at this intersection have only resulted in temporary improvements. High-visibility crosswalk markings are present at this intersection.

A bike rack is present near the north entrance that faces 37th Avenue NE. The rack was observed to be in fair condition, but is a comb style rack that allows only the front wheel to be easily locked.

## School Layout

Wilshire Park Elementary is located at the corner of 37th Avenue NE and Highcrest Road. The primary entrance to the school is on the north side along 37th Avenue NE, as is the school parking lot. This lot serves as pick-up and drop-off area for students in parents' vehicles. This is also a staff parking lot.

There is an additional entrance on the east side of the school along Highcrest Road to serve the bus loop area. Many students who walk to school from the north, south, and east use this entrance as well. Furthermore, an entrance exists on the southwest of the school, and some students coming from that direction, including those being picked-up and dropped-off via the shared church parking lot, use this entrance.



***Student crossing guards patrol a crossing of Highcrest Road near the school.***

## School Travel Patterns

### Student Travel Survey Summary

In-classroom tallies of students' arrival and departure travel modes were conducted at Wilshire Park Elementary School over three days (Tuesday, Wednesday, and Thursday) in November of 2013. A total of 1,472 trips were tallied in the mornings, and 1,467 were tallied during the afternoons.

As shown in the chart on the following page, only about 6% of students typically walk to school, and 0% of students ride a bike to school on an average day. The predominant mode of transportation for Wilshire Park Elementary students is school bus, followed by a family vehicle or carpool.

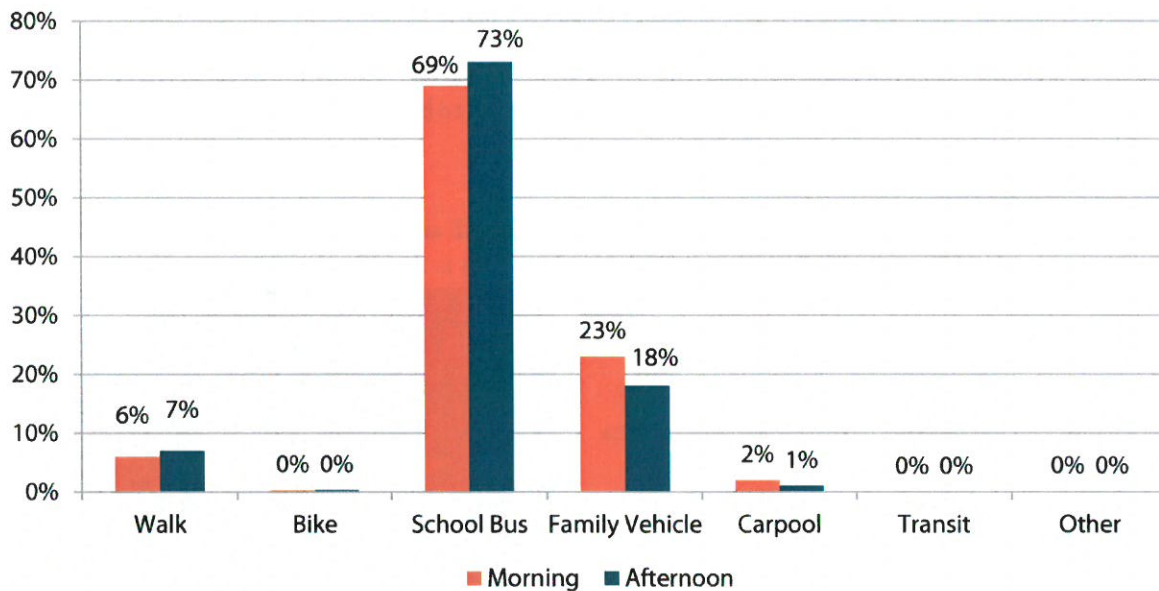


***37th Avenue NE/County Road D is a busy regional thoroughfare and is a significant obstacle for pedestrians and bicyclists coming from the north to cross.***





### Wilshire Park Elementary Travel Mode Split



### Parent Survey Summary

In November 2013, Wilshire Park parents were asked to fill out a short survey about how their children travel to and from school, perceived barriers to walking and bicycling to and from school, and their own attitudes related to walking and bicycling to and from school. Administrators received 108 total surveys relative to a school enrollment of over 650 students.

#### Current Travel Patterns: Mode and Distance

The survey results indicate that students who live closer to the school are more likely to arrive on foot. Almost half of respondents who live within a quarter mile and about 10% of respondents who live between one-quarter and one-half mile reported that their children usually walk to/from school. However, none of the respondents who live more than one-half mile away reported that their child usually walks to/from 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 bicycling to school and the distance students live from the school.

Students who live further from the school are more likely to arrive by school bus, family vehicle, or carpool, according to the survey results. The school bus is the predominant travel mode for children of those who answered the survey, regardless of trip distance.

Additionally, more than 90 percent of respondents who live between one-half mile and two miles of the school reported that their children usually take the bus to/from school. Survey responses also indicate that families who live more than two miles from the school are most likely to drive or carpool. Roughly one-third of respondents who live more than two miles from school indicated that their children typically arrived and departed from school via family vehicle or carpool.







### Parent attitudes about walking and bicycling

Most parents who answered the survey (83%) think that Wilshire Park Elementary neither encourages nor discourages walking and bicycling to and from school. Eight percent of parents responded that they believe Wilshire Park Elementary encourage or strongly encourage walking and bicycling to school, and the remaining 9% believe that the school discourages or strongly discourages walking and bicycling to school.

The survey also revealed parent opinions about how much fun walking and bicycling is for their children, and how healthy walking and bicycling is for their children. Eighty five percent of parents felt that walking and bicyclist to school was very healthy or healthy for their children, while 38% think walking and cycling is fun.

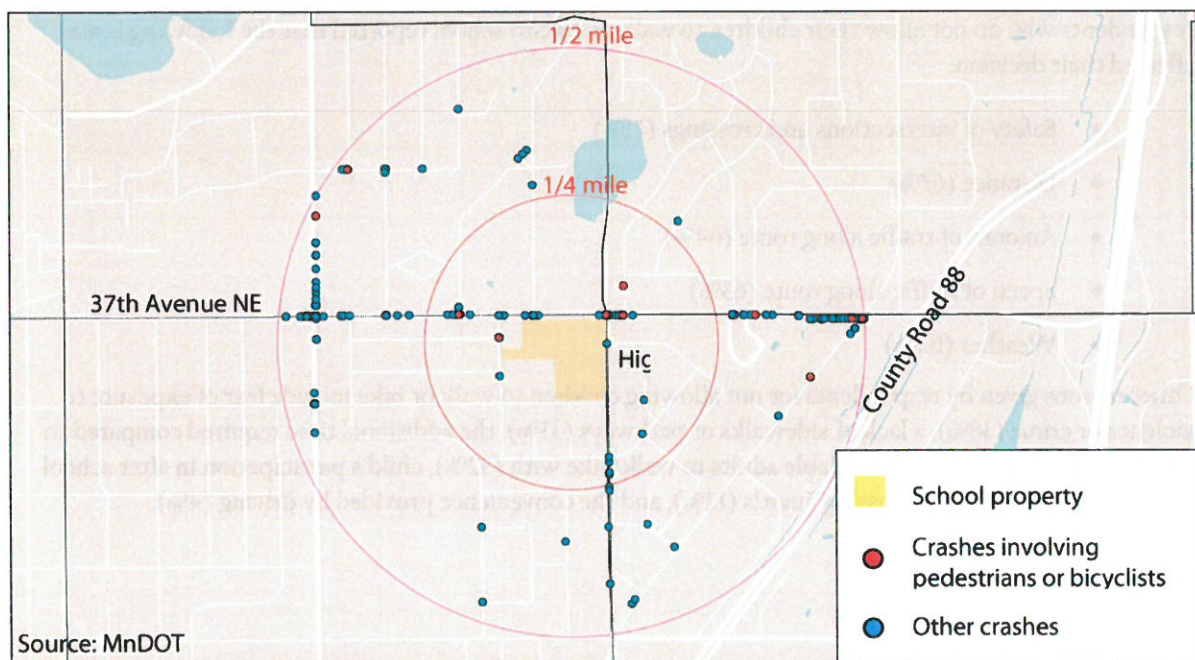
### Traffic Conditions and Crash Analysis

37th Avenue NE is a major route connecting Interstate 35W with University Avenue. According to 2012 Minnesota Department of Transportation figures, average annual daily traffic (AADT) volumes on 37th Avenue NE are 15,600 just west of the school and 18,900 just east of the school. AADT on Highcrest Road is 1,900. Highcrest Road provides connections south to Highway 8 and County Road 88, causing through-traffic past the school.

An assessment of collisions surrounding Wilshire Park Elementary School was conducted using Minnesota Department of Transportation (MnDOT) crash data from 2003 - 2013. The 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 included several collisions within 1/2 mile of Wilshire Park Elementary School. Of these collisions, 11 involved pedestrians or bicyclists.

### Crash Locations 2003 - 2013







## Site Audit

The audit took place during arrival on October 30, 2013. A total of ten individuals attended, including representatives from Wilshire Park Elementary, the City of St. Anthony Village, the school board, parents and students. In addition to observing the school arrival process, participants conducted a thorough walking tour of the area surrounding the school. Special attention was given to conditions for pedestrians and bicyclists along 37th Avenue NE and Highcrest Road, and at the intersection of these two streets.

### Walking and Bicycling

Students were observed walking to school from all directions:

- 6-8 walked along Highcrest Road from the south, including a “Walking School Bus” group that walks together regularly
- 10-15 students were seen crossing 37th Avenue NE and walking to school from the north, accompanied by parents
- About 10 students were observed crossing Chelmsford Road from the west, including 6 walkers and 4 bicyclists
- Some students were observed crossing Highcrest Road in the middle of the block and not at a crosswalk



***A group of students who frequently walk together walk along the sidewalk on Highcrest Road south of the school.***

### Bus

Buses enter the bus loop from Highcrest Road and park in a line to drop off and pick up students. They proceed to the southern point of the loop to exit back on to Highcrest Road. Buses have exclusive access to this loop during restricted bus drop-off and pick-up hours. Students have direct access to and from the east entrance from the bus loop. The entrance to the bus loop also serves as the exit to the car parking lot where parents pick-up and drop-off students. Students walking from the north must cross this entrance/exit on their way to the east entrance of the school creating a potential conflict point. Student crossing guards are present at this location.



***The parking lot on the north side of the school is used for student pick-up and drop-off and can be chaotic.***





## Car

Parent drop-off is permitted in the bus loop on the east side of the building before bus drop-off hours. Otherwise drop-off occurs in the combined staff parking lot/parent loop on the north side of the building. According to the school official who assists during pick-up and drop-off, the process can be chaotic, with as many as 60-70 cars pass through within 10-15 minutes during drop-off. Drop-off is usually more hectic than pick-up in the afternoon.

Parents are supposed to drop students off in the right lane at one of two designated areas without parked cars where an opening to the sidewalk is available. However, this does not always happen. An official reported that some students are dropped off in the left lane and then cut across the right lane of traffic. These drop-off areas are difficult to see.

School officials report that in addition to parent and student education, there needs to be clearly marked drop-off and bypass lanes, possibly with painted lanes and arrows on the pavement. The school includes educational information in parent newsletters, but improvements to traffic flow are only temporary. Traffic sometimes becomes so congested that it backs up onto 37th Avenue NE. Staff usually park on the south side of the parking lot closest to the school, while some parents pull into spaces on the north side of the parking lot and walk their students across the two lanes of traffic into school. Additionally, a sign that reads "No parking or stopping in the left lane - through traffic only" is posted at the end of the parking lot/drop-off area, but is not very visible from the parking lot entry.

Some parents drop students off in the church parking lot to the west/southwest and students walk from there. Drop-off in the church lot is less common in the winter due to the stairs and hill.

Additionally, parents were observed dropping students off along the east side of Highcrest Road. Some parents parked and exited the vehicle to walk their students to the front entrance, and some did not. Several students and parents walked to the marked crossing where student safety patrols were present near the bus loop exit. Other students cut across Highcrest Road in unmarked areas. There is no sidewalk on the east side of Highcrest Road, so students and parents often walk on the grass.



***Single-family residential land uses exist along Highcrest Road and the area south of the school.***



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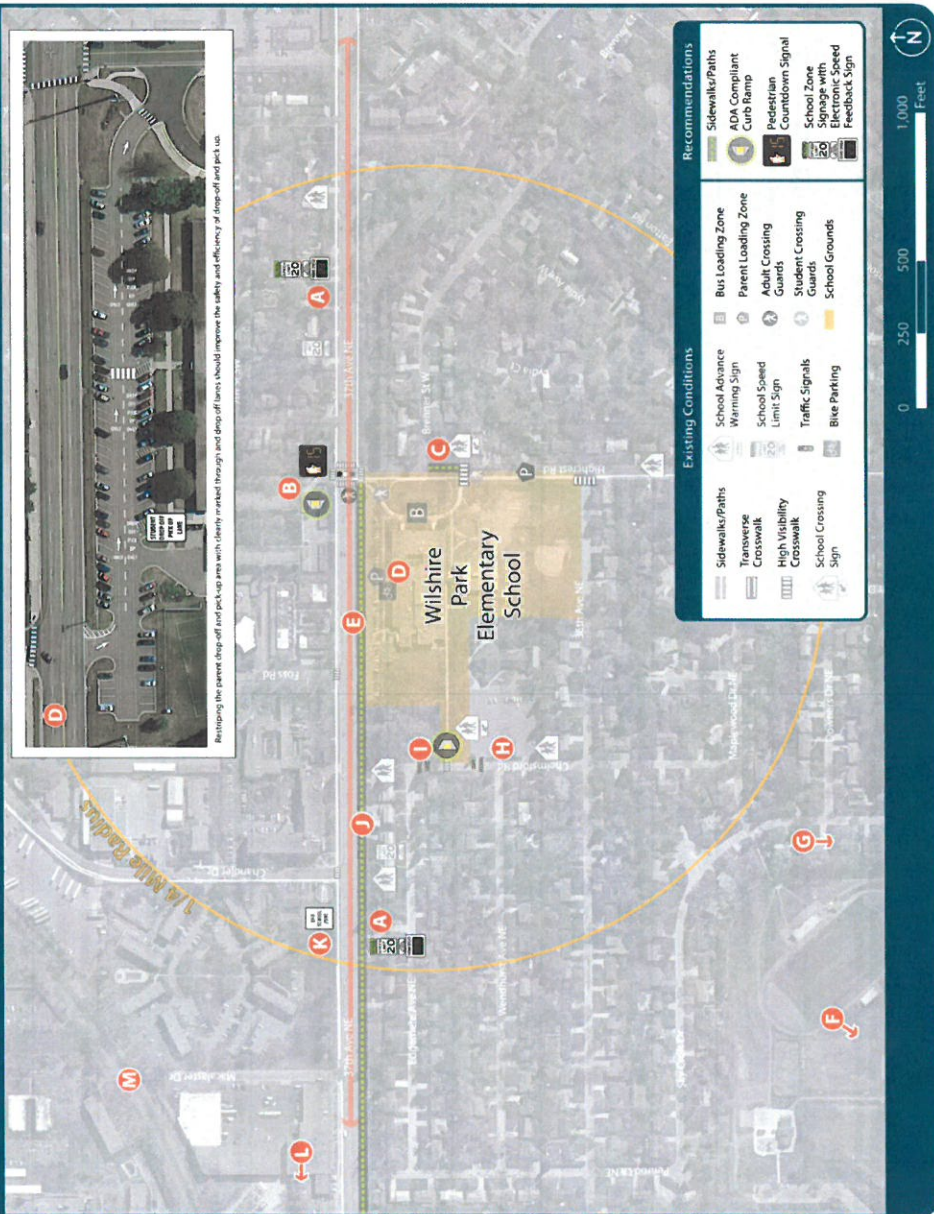


**Table 1: Wilshire Park Elementary Infrastructure Issues and Recommendations**

Project	Location	Problem/Issue	Solution/Recommendation	Lead Agency
A	37th Ave NE from Silver Lake Rd NW to McCallum Dr	Speeding observed on 37th NE.	Install speed feedback signs on 37th Ave NE at both ends of the school zone.	Ramsey County, St Anthony Police Department
B	37th Ave NE and Hightcrest Rd NE	Sidewalk and curb ramp at NW corner are not ADA compliant. Signal timing and existing hardware do not facilitate comfortable pedestrian crossings.	Upgrade sidewalk and curb ramp at northwest corner for ADA compliance. Install pedestrian countdown signal heads and adjust signal phasing to include a Leading Pedestrian Interval.	City of St. Anthony Village
C	Hightcrest Rd NE from Brenner St to existing marked crossing	Sidewalk gap creates safety issue when students are accessing the crosswalk.	Work with City of Roseville to construct sidewalk connection from Brenner St to existing marked crosswalk.	City of Roseville
D	Parent drop-off/ pick-up loop	Current design does not clearly indicate through versus drop-off/pick-up lanes. Visibility issues. Staff are concerned about students crossing in unmonitored locations.	Consider reconfiguration of parent drop-off/pick-up loop to improve flow, clarity, and visibility. Clearly mark drop-off/pick-up and through lanes. Install pavement markings and signage to guide users.	St Anthony- New Brighton School District
E	37th Ave NE from Silver Lake Rd NW to McCallum Dr	Wide, 4 lane cross section encourages high speeds and makes for difficult pedestrian crossings. Design does not support bicycle travel.	Work with Ramsey County on best traffic/lane configuration to reduce speeding and increase safety.	Ramsey County
F	St. Anthony Middle School	St. Anthony Middle School lacks bicycle parking.	Install bike parking at St. Anthony Middle School.	St. Anthony- New Brighton School District
G	Rankin Rd and 33rd Ave NE	Poor compliance with existing stop sign.	Install flashing stop sign at Rankin Rd and 33rd Ave NE.	City of St. Anthony Village
H	Chelmsford Rd NE near Elmwood Evangelical Free Church	Existing drop-off agreement with church is informal and could change if church changes over.	Per City project, install 3-4 on-street parking stalls marked as school loading only during school drop-off/pick-up.	City of St. Anthony Village
I	Chelmsford Rd NE midblock crossing between Edgemere Ave and Wendhurst Ave	No curb ramp on east side of crossing.	Upgrade this crossing to ADA standards.	City of St. Anthony Village
J	South side of 37th Ave NE	Gap in the sidewalk network.	Construct sidewalk on south side of 37th Ave NE.	Ramsey County/City of St. Anthony Village
K	37th Ave NE near Chandler Place Assisted Living	Drivers observed speeding on 37th just west of Chandler Dr NE.	Extend school zone to the west. Relocate signage as appropriate.	City of St. Anthony Village
L	37th Ave NE and Silver Lake Rd NW	Difficult crossing for pedestrians. Long crossing distances. Multiple conflict points.	Review best practices on pedestrian and bicycle-friendly intersection design for 37th Ave NE and Silver Lake Rd NW. Redesign should include protected signal phases, pedestrian countdown signal heads, and the shortest crossing distances possible.	Ramsey County
M	39th Ave NE and Fordham Dr NE at railroad tracks	Students crossing railroad tracks. No legal crossing here and no convenient alternative.	Work with railroad to create pedestrian crossing at MacAlaster Dr NE.	Canadian-Pacific Railroad



# Wilshire Park Elementary School



## Recommended Improvements

- A** Install speed feedback signs on 37th Ave NE at both ends of the school zone.
- B** Upgrade sidewalk and curb ramp at northwest corner for ADA compliance. Install pedestrian countdown signal heads and adjust signal phasing to include a Leading Pedestrian Interval.
- C** Work with City of Roseville to construct sidewalk connection from Brenner St to existing marked crosswalk.
- D** Consider reconfiguration of parent drop-off/pick-up loop to improve flow, clarity, and visibility. Clearly mark drop-off/pick-up and through lanes. Install pavement markings and signage to guide users.
- E** Work with Ramsey County on best traffic/lane configuration to reduce speeding and increase safety.
- F** Install bike parking at St. Anthony Middle School.
- G** Install flashing stop sign at Franklin Rd and 33rd Ave NE.
- H** Per City project, install 3-4 on-street parking stalls marked as school loading only during school drop-off/pick-up.
- I** Upgrade this crossing to ADA standards.
- J** Construct sidewalk on south side of 37th Ave NE.
- K** Extend school zone to the west. Relocate signage as appropriate.
- L** Review best practices on pedestrian and bicycle friendly intersection design for 37th Ave NE and Silver Lake Rd NW. Redesign should include protected signal phases, pedestrian countdown signal heads, and the shortest crossing distances possible.
- M** Work with railroad to create pedestrian crossing at MacMaster Dr NE.







## 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 bicycling 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 priorities for Wilshire Park 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 (1 to 5 years). 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.

### Recommended Programs for Wilshire Park Elementary School

- International Walk and Bike to School Day
- Walk and Bike to School Route Maps
- Park and Walk Program
- Walking School Bus or Bike Train
- Classroom Lessons
- Law Enforcement: Digital Speed Signs
- School/Community Communications





## International Walk and Bike to School Day

<b>Primary Outcomes</b>	Increased walking and bicycling; youth empowerment
<b>Potential Lead</b>	Wilshire Park Elementary Administrator and Staff, Public Health
<b>Potential Partners</b>	WPPA/parents; Wilshire Park Police/Public Safety; partnership with St Anthony Middle School; local groups/volunteers; students; local businesses; local celebrities; Hennaing County Medical Center
<b>Recommended Timeframe</b>	Twice a year - Annually on or around International Walk and Bike to School Day in October and in May around Bike to School Day.
<b>Planning Resources</b>	International Walk to School: <a href="http://www.iwalktoschool.org/">http://www.iwalktoschool.org/</a> Walk Bike to School: <a href="http://www.walkbiketoschool.org/">http://www.walkbiketoschool.org/</a>
<b>Sample Program</b>	Oregon Safe Routes to School: <a href="http://www.walknbike.org/schools">http://www.walknbike.org/schools</a>

Walk and Bike to School Day is an international event that attracts millions of participants in over 30 countries each 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 to school 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.



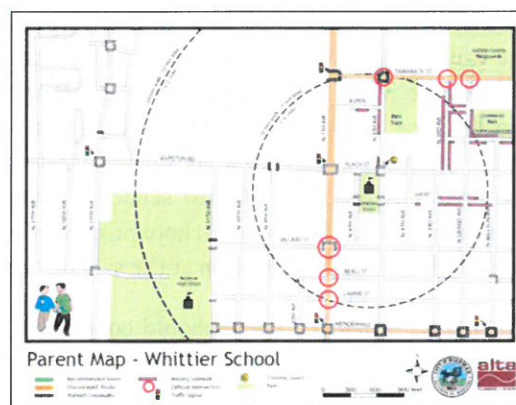


## Walk and Bike to School Route Maps

<b>Primary Outcome</b>	Improved walking and bicycling safety, knowledge of supportive infrastructure
<b>Potential Lead</b>	City of St Anthony Village Staff in collaboration with Wilshire Park Elementary administrator
<b>Potential Partners</b>	Wilshire Park Crossing Guards, students; WPPA/parents; Wilshire Park teachers, and other staff
<b>Recommended Timeframe</b>	Distribute when students and families are adjusting to new habits, e.g., back-to-school, following winter/spring break, as weather gets warmer. Revise and redistribute annually, if possible.
<b>Planning Resources</b>	National Center for Safe Routes to School's Map-a-Route Tool: <a href="http://maps.walkbiketoschool.org/">http://maps.walkbiketoschool.org/</a>
<b>Sample Maps</b>	Bozeman, MT: <a href="http://www.bozeman.k12.mt.us/schools/safe_routes/">http://www.bozeman.k12.mt.us/schools/safe_routes/</a> Santa Clarita, CA: <a href="http://www.santa-clarita.com/index.aspx?page=177">http://www.santa-clarita.com/index.aspx?page=177</a> Rochester, NY: <a href="http://www.walkinginfo.org/pedsafe/casestudy.cfm?CS_NUM=33">http://www.walkinginfo.org/pedsafe/casestudy.cfm?CS_NUM=33</a>

Walk and Bike to School Maps, sometimes called Suggested Route to School maps, help families choose the best route for walking or bicycling to school. Maps show stop signs, signals, crosswalks, sidewalks, bikeways, paths/trails, school entrances, bike parking, and/or crossing guard locations around a school. Maps may also show transit routes and stops, school enrollment areas, pick-up/drop-off zones, and important destinations, such as community centers and parks. Some more subjective elements to consider include recommended routes, and hazardous locations. These maps can be used as base maps to support other desired programs at Wilshire Park Elementary such as a walking school bus or a park and walk site.

The team leading the mapping effort should decide in advance whether the maps will be distributed electronically or in paper form, as this can inform how the map is produced. Maps may be produced using mapping or drawing technologies, such as GIS or Adobe Illustrator, but can also be as simple as hand drawn maps or marked up Google maps. Students may also be engaged in the making of maps through classroom or after school activities. The school can collaborate with the City of St Anthony Village staff to produce high quality maps.



**Walk and Bike to School Maps show the safest streets and crossings for getting to school.**





## Park and Walk Program

Primary Outcomes	Increase bicycling and walking to school; reduced traffic congestion around schools
Potential Lead	Wilshire Park Elementary Administrators and local law enforcement
Potential Partners	WPPA and parent volunteers, St Anthony Middle School; Public Health Staff; City of St Anthony Village
Recommended Timeframe	To begin, coordinate with walk and bike to school days. As interest grows, 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: <a href="http://guide.saferoutesinfo.org/encouragement/park_and_walk.cfm">http://guide.saferoutesinfo.org/encouragement/park_and_walk.cfm</a> Park and Walk Guide (United Kingdom) <a href="http://www.buckscc.gov.uk/bcc/transport/park_walk.page">http://www.buckscc.gov.uk/bcc/transport/park_walk.page</a> The Walking School Bus Guide: Combining Safety, Fun, and the Walk to School (SafeRoutesInfo.org) <a href="http://guide.saferoutesinfo.org/walking_school_bus/index.cfm">http://guide.saferoutesinfo.org/walking_school_bus/index.cfm</a>
Sample Program	Arborfield, England: <a href="http://guide.saferoutesinfo.org/encouragement/park_and_walk.cfm">http://guide.saferoutesinfo.org/encouragement/park_and_walk.cfm</a>

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 gives 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.

The team leading the effort should coordinate with St Anthony Middle School to identify parking lots within close proximity to the school that are typically vacant or underutilized during school drop-off and pick-up times.



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

This program can also be developed to include students who are typically bussed. School administration can work with local property owners to receive permission to use the parking lots as a park and walk and recruit volunteers/parents to walk with the children. This process may require substantial coordination/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. To begin the program, Wilshire Park can coordinate a park and walk effort in tandem with a walk to school day.





## Walking School Bus or Bike Train

<b>Primary Outcomes</b>	Improved walking safety behavior; youth empowerment
<b>Potential Lead</b>	Parents or other school volunteers , WPPA
<b>Potential Partners</b>	Wilshire Park Principal and Staff, St Anthony-New Brighton School District; City of St Anthony Village; law enforcement ; Public Health Staff
<b>Recommended Timeframe</b>	Can be associated with an event and build to weekly and daily.
<b>Planning Resources</b>	The Walking School Bus Guide: Combining Safety, Fun, and the Walk to School (SafeRoutesInfo.org) <a href="http://guide.saferoutesinfo.org/walking_school_bus/index.cfm">http://guide.saferoutesinfo.org/walking_school_bus/index.cfm</a>
<b>Sample Programs</b>	Portland, Oregon <a href="http://www.biketrainpdx.org/">http://www.biketrainpdx.org/</a> <a href="http://www.portlandoregon.gov/transportation/article/232532">http://www.portlandoregon.gov/transportation/article/232532</a>

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.



***An informal walking school bus started by kids at Wilshire Park.***

### 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 and/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 school-wide 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, and/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, although coordinators should also identify dedicated bicycle facilities that may lead to the school. 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.



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

<b>Primary Outcomes</b>	Improved walking and bicycling safety behavior; youth empowerment
<b>Potential Lead</b>	Teacher/administrators at Wilshire Park Elementary
<b>Potential Partners</b>	St Anthony-New Brighton School District; WPPA/parents; City of St Anthony; local law enforcement; Public Health
<b>Recommended Timeframe</b>	Regularly integrated as viable. Safety training and skills elements twice per year.
<b>Planning Resources</b>	<p>Minnesota SRTS Curriculum  <a href="http://www.dot.state.mn.us/saferoutes/">http://www.dot.state.mn.us/saferoutes/</a>  <a href="http://www.bikemn.org/education/srts-education-curriculum">http://www.bikemn.org/education/srts-education-curriculum</a></p> <p>National Center for Safe Routes to School:  <a href="http://www.saferoutesinfo.org/program-tools/NHTSA-pedestrian-curriculum">http://www.saferoutesinfo.org/program-tools/NHTSA-pedestrian-curriculum</a></p>
<b>Sample Programs</b>	<p>Oregon Safe Routes to School: <a href="http://walknbike.org/pedestrian-safety/">http://walknbike.org/pedestrian-safety/</a>  National Highway Traffic Safety Administration:  <a href="http://www.nhtsa.gov/ChildPedestrianSafetyCurriculum">http://www.nhtsa.gov/ChildPedestrianSafetyCurriculum</a>  Alameda County, CA: <a href="http://www.alamedacountysr2s.org/principals-and-teachers/educator-guides/">http://www.alamedacountysr2s.org/principals-and-teachers/educator-guides/</a>  Boston, MA: <a href="http://www.walkboston.org/resources/publications/walking-health-environment-curriculum">http://www.walkboston.org/resources/publications/walking-health-environment-curriculum</a></p>

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 topic lessons are: Safe Street Crossing, Helmet Safety, Rules of the Road for Bicycles, and Health and Environmental Benefits of Walking and Bicycling.

### 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/ 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



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





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 make sure that instructors feel confident and knowledgeable about bicycle safety skills. The Bicycle Alliance of Minnesota can conduct these trainings and are a resource for schools throughout the state.

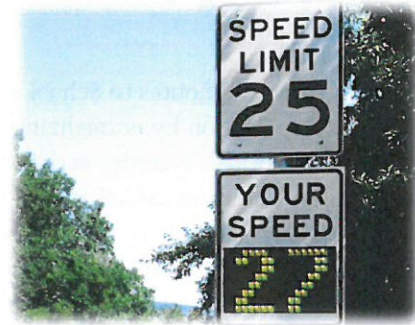


## Law Enforcement: Digital Speed Signs

<b>Primary Outcomes</b>	Improved driving safety behavior
<b>Potential Lead</b>	St Anthony Police Department, City of St Anthony Village, Ramsey County
<b>Potential Partners</b>	St Anthony –New Brighton School District; Wilshire Park teachers/administrators/staff; PTA/parents; Public Health
<b>Recommended Timeframe</b>	Periodically, perhaps quarterly, beginning at the start of the school year
<b>Planning Resources</b>	Safe Routes to School Online Guide: <a href="http://guide.saferoutesinfo.org/enforcement/index.cfm">http://guide.saferoutesinfo.org/enforcement/index.cfm</a>
<b>Sample Programs</b>	Charles County, MD: <a href="http://www.ccsso.us/index.php?option=com_content&amp;task=view&amp;id=614">http://www.ccsso.us/index.php?option=com_content&amp;task=view&amp;id=614</a> Chicago, IL: <a href="http://www.cityofchicago.org/city/en/depts/cdot/provdrs/ped/svcs/crosswalk_enforcementinitiatives.html">http://www.cityofchicago.org/city/en/depts/cdot/provdrs/ped/svcs/crosswalk_enforcementinitiatives.html</a>

Enforcement tools are aimed at ensuring compliance with traffic and parking laws in school zones. Enforcement activities help to reduce common poor driving behavior, such as speeding, failing to yield to pedestrians, turning illegally, parking illegally, and other violations. Law enforcement actions include school zone speeding enforcement, crosswalk stings, and other enforcement activities.

Speeding is a constant safety problem along County Road D/37<sup>th</sup> Avenue NE. This enforcement “wake-up call” will act as a reminder to drivers about safe school-zone driving expectations.



**Law enforcement efforts near schools, such as speed feedback signs, complement education and encouragement activities.**





## School/Community Communications

Primary Outcomes	This will depend on the communications; however, outcomes may include increased walking, bicycling, transit, and/or carpooling; improved walking, bicycling, and/or driving safety behavior; and health and/or environmental connections.
Potential Lead	Teachers, administrators, and/or staff, parents
Potential Partners	WPPA /parents; St Anthony-New Brighton School District, Public Health, City of St. Anthony.
Recommended Timeframe	Annually on or around International Walk and Bike to School Day in October
Planning Resources	International Walk to School: <a href="http://www.iwalktoschool.org/">http://www.iwalktoschool.org/</a> Walk Bike to School: <a href="http://www.walkbiketoschool.org/">http://www.walkbiketoschool.org/</a>
Sample Program	City of Portland, Safe Routes Newsletters <a href="http://www.portlandoregon.gov/transportation/45746">http://www.portlandoregon.gov/transportation/45746</a>

The strongest Safe Routes to School efforts are those that, over time, begin to make changes to 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 Wilshire Park 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, WPPA publications, 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.



## 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 bicycling and walking, awareness of the Safe Routes to School program, and/or 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 and/or miles walked/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/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.

Document baseline conditions before the project and 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 1-3.



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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 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

Table 2. Programs Implementation

Type	Program	Potential Lead	Key Partner	Planning					Implementation				
				Year 1	Year 2	Year 3	Year 4	Year 5					
Encouragement	International Walk to School Day and Bike to School Day	Wilshire Park Elementary Administrator and Staff	St Anthony Village Police Department										
Encouragement	Park and Walk Program	Wilshire Park Elementary Administrator and Staff	St Anthony - New Brighton School District										
Encouragement	Formal Walking School Bus or Bike Train	Parents	WPPA										
Education	Walk and Bike to School Maps	City of St Anthony Village	Wilshire Park Elementary Administrator										
Education	School/Community Communication	Wilshire Park Elementary Administrator and teachers	WPPA										
Education	Classroom Lessons (Minnesota Walk! Bike! Fun! Curriculum)	Wilshire Park Teachers	St Anthony - New Brighton School District										
Enforcement	Digital speed reader signs and targeted enforcement	St Anthony Village Police Department	Ramsey County										





## Infrastructure Action Plan

See the Infrastructure Issues and Recommendations chapter for detailed project discussion.

**Table 3. Infrastructure Implementation**

Project	Solution/Recommendation	Lead Agency	Year 1	Year 2	Year 3	Year 4	Year 5
<b>A</b>	Install speed feedback signs on 37th Ave NE at both ends of the school zone.	Ramsey County, St Anthony Police Department	→	→			
<b>B</b>	Upgrade sidewalk, curb ramp and pedestrian signals at 37th Ave NE and Highcrest Rd NE.	City of St. Anthony Village	→	→	→	→	→
<b>C</b>	Construct sidewalk connection from Brenner St to existing marked crosswalk.	City of Roseville	→				
<b>D</b>	Consider reconfiguration of parent drop-off/pick-up loop to improve flow and visibility.	St Anthony- New Brighton School District	→	→	→		
<b>E</b>	Consider traffic/lane configuration on 37th Ave NE to reduce speeding and increase safety.	Ramsey County (St Anthony Village as a primary partner agency)	→	→			
<b>F</b>	Install bike parking at St. Anthony Middle School.	St. Anthony- New Brighton School District	→	→	→	→	→
<b>G</b>	Install flashing stop sign at Rankin Rd and 33rd Ave NE.	City of St. Anthony Village	→				
<b>H</b>	Per City project, install 3-4 on-street parking stalls on Chelmsford Rd NE marked as school loading only during school drop-off/pick-up.	City of St. Anthony Village	→	→	→		
<b>I</b>	Upgrade the midblock Chelmsford Rd NE crossing to ADA standards.	City of St. Anthony Village	→	→	→		
<b>J</b>	Construct sidewalk on south side of 37th Ave NE.	Ramsey County (St Anthony Village as a primary partner agency)	→	→	→		
<b>K</b>	Extend school zone to the west. Relocate signage as appropriate.	City of St. Anthony Village	→	→	→	→	→
<b>L</b>	Consider bicycle-friendly intersection design for 37th Ave NE and Silver Lake Rd NW.	Ramsey County	→	→	→		
<b>M</b>	Work with railroad to create pedestrian crossing at MacAlaster Dr NE.	Canadian-Pacific Railroad	→	→	→	→	→









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



# Safe Routes to School Plan

## Appendix: SRTS Infrastructure Glossary

June 2014





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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 - p.2
- Crossing Treatments and Support - p.3
- Traffic Calming - p.7
- Bicycle Facilities - p.10
- Additional Tools - p. 11





## 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

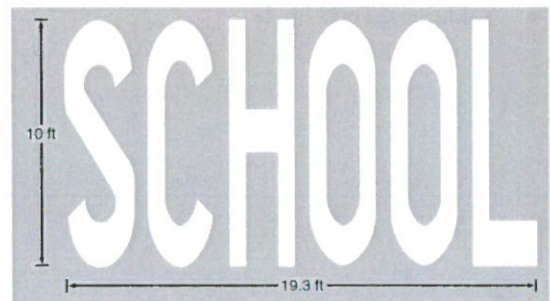
The School Sign may be combined with small plaques to indicate specific crossing locations. A school sign combined with an AHEAD plaque (W16-9p) creates a *School Advance Crossing Assembly*, used to warn road users that they are approaching a crossing where schoolchildren cross the roadway.

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 function 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.

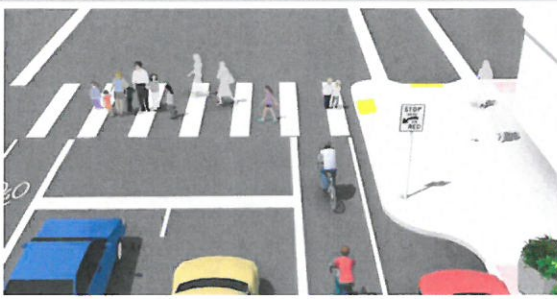
The Minnesota Manual on Traffic Control Devices permits Pedestrian Hybrid Beacon installation at both mid-block and intersection locations. (Section 4F.2) The Minnesota MUTCD says: "If installed at an intersection, appropriate side street traffic control should be considered." This may include STOP or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



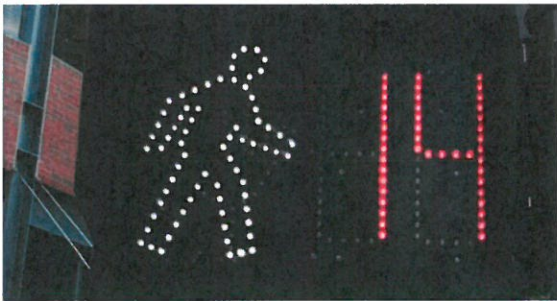
### **Advance Stop Bar**

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.

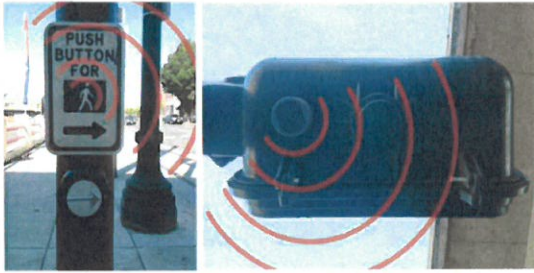
Signals should be timed to provide enough time for pedestrians to cross the street. The MUTCD recommends a longer pedestrian clearance time in areas where pedestrians may walk slower than normal, including the elderly and children.



### **Leading Pedestrian Interval**

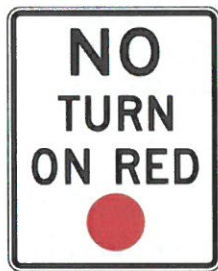
A leading pedestrian interval is a condition where a pedestrian signal displays a WALK signal for pedestrians prior to displaying a green signal for adjacent motor vehicle traffic. This early display gives pedestrians a head start and may increase the percentage of drivers who yield to crossing pedestrians.





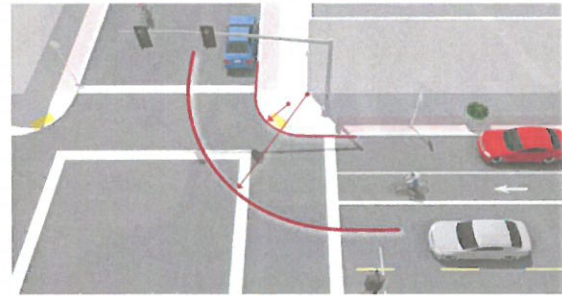
### Audible Signals

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.



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## **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

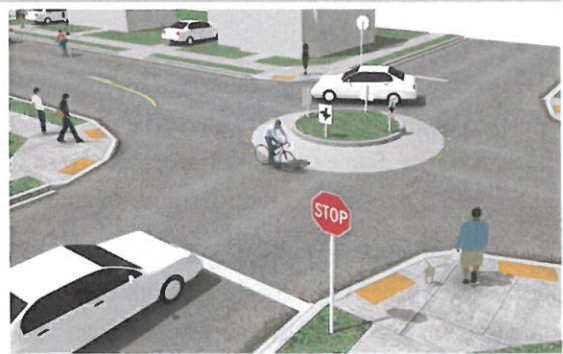
A chicane is a curb extension, usually built in alternating patterns or with intermittent median strips, that creates an S-shaped curve on a street. These minor curves require motorists to proceed with greater caution and slower speeds. They may also provide additional space for landscaping or pedestrians.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



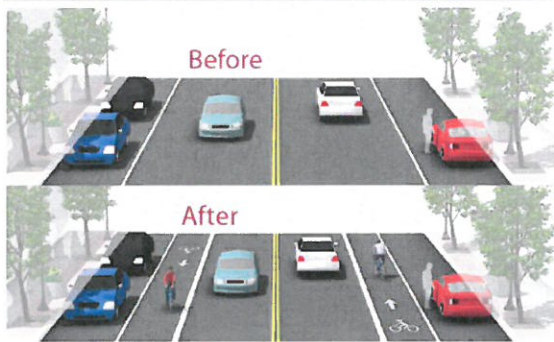
## Traffic Circles

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.



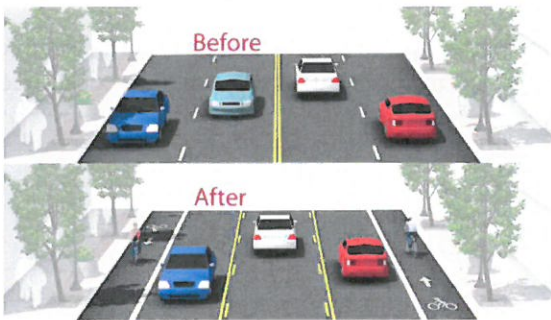
## Diversers

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**

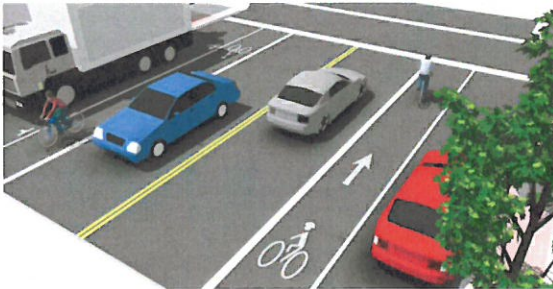
The removal of a single travel lane will generally provide sufficient space for bike lanes on both sides of a street. Streets with excess vehicle capacity provide opportunities for bike lane retrofit projects.





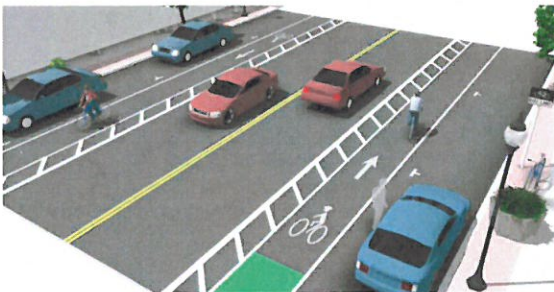
## Bicycle Facilities

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



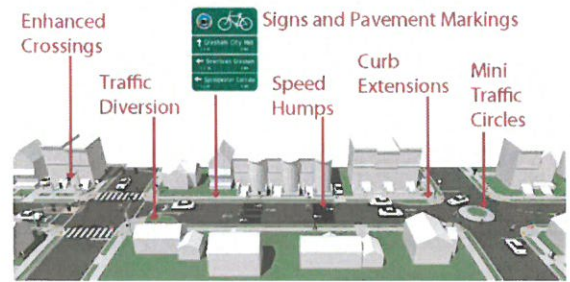
### Bike Lanes

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.



