

A photograph of a school parking lot. In the foreground, two young boys are walking away from the camera. The boy on the left is wearing a purple and white jacket and carrying a yellow backpack and a black bag. The boy on the right is wearing a dark jacket and blue jeans. In the background, a blue car is parked, and a person is walking on a path. The scene is set in a grassy area with trees in the distance.

*Pine Meadow Elementary  
& Sartell Middle*

# Safe Routes to School Plan

Sartell - St. Stephen School District | Sartell, Minnesota | June 2014

*Upon request, information in this plan is available in alternate formats by contacting the author of the plan.*

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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.



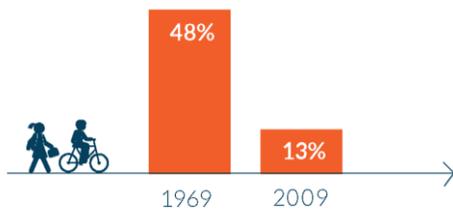


## The Challenge

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.



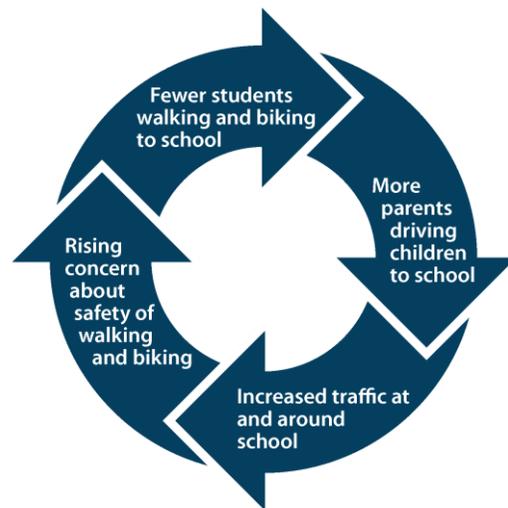
Roads near schools are congested, decreasing safety and air quality for children.



## 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<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, 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 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, 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 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 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, 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** 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 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 serious effort on behalf of 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 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.



***Parents lead students on 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***



**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.

**City and County staff** can use this report to identify citywide issues and opportunities related to walking and bicycling 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 bicycling 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 administrations 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.



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



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## Vision and Planning Background

*“Safe Routes to School initiatives will improve safety and encourage more students and families in Sartell to walk, bike or roll to school. The program will result in less traffic congestion, higher levels of physical activity, and an enhanced quality of life in our neighborhoods.*

*The program will connect students and their families with year-round opportunities for active transportation through education, encouragement, and use of a safe on-street and trail network. Safe Routes to School will foster a culture of healthy and active families by encouraging non-motorized forms of transportation as a safe, comfortable and normal way of getting to and from school.”*

The vision of walking and bicycling around Pine Meadow Elementary and Sartell Middle will help frame the Safe Routes to School planning process and inform recommended improvements to pedestrian and bicycle infrastructure and programs.

## Relevant Planning Background

The City of Sartell adopted a Park and Trail Master Plan in 1998, and has a substantial trail system that provides connections along many of the city’s roadways. The city’s comprehensive plan includes stated goals of promoting and providing for active transportation within Sartell and ensuring adequate bike and pedestrian infrastructure. The city has modified its code to require that a sidewalk or trail be included in new roadway projects. Off-road trail extensions are pursued in new residential and commercial developments, and current city and planning commission goals include identifying gaps in the trail and sidewalk network within Sartell.

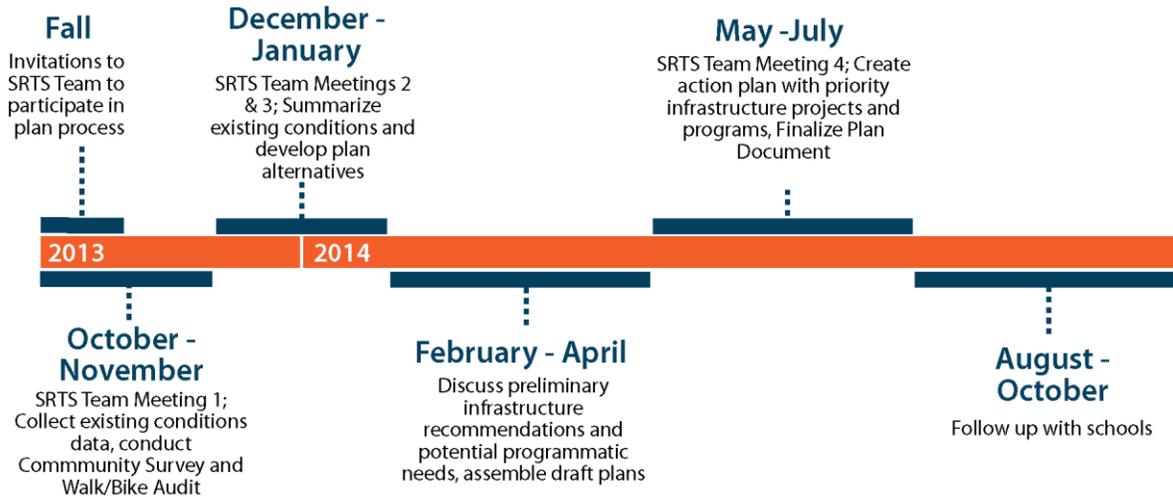
The Sartell-St. Stephen School District has a wellness policy, and conducts physical activity and bike safety activities. The Sartell Police Department conducts an annual bike rodeo, which includes bike check-ups and a helmet giveaway. The St. Cloud Area Planning Organization recently adopted a resolution supporting complete streets in the area, and the City of Sartell also recently adopted the St. Cloud Area Sustainability Framework Plan, which addresses multi-modal transportation provisions.

The City of Sartell and school officials are fully supportive and committed to the Safe Routes to School planning process. Only 15% of students living within two miles of school currently walk or bike to school. Primary concerns include gaps in the existing network, busy intersections, and roads with high traffic speeds and volumes.



## Planning Process

The year-long planning process for this SRTS 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 set forth a path for the SRTS program. The graphic below depicts key milestones in the planning process.





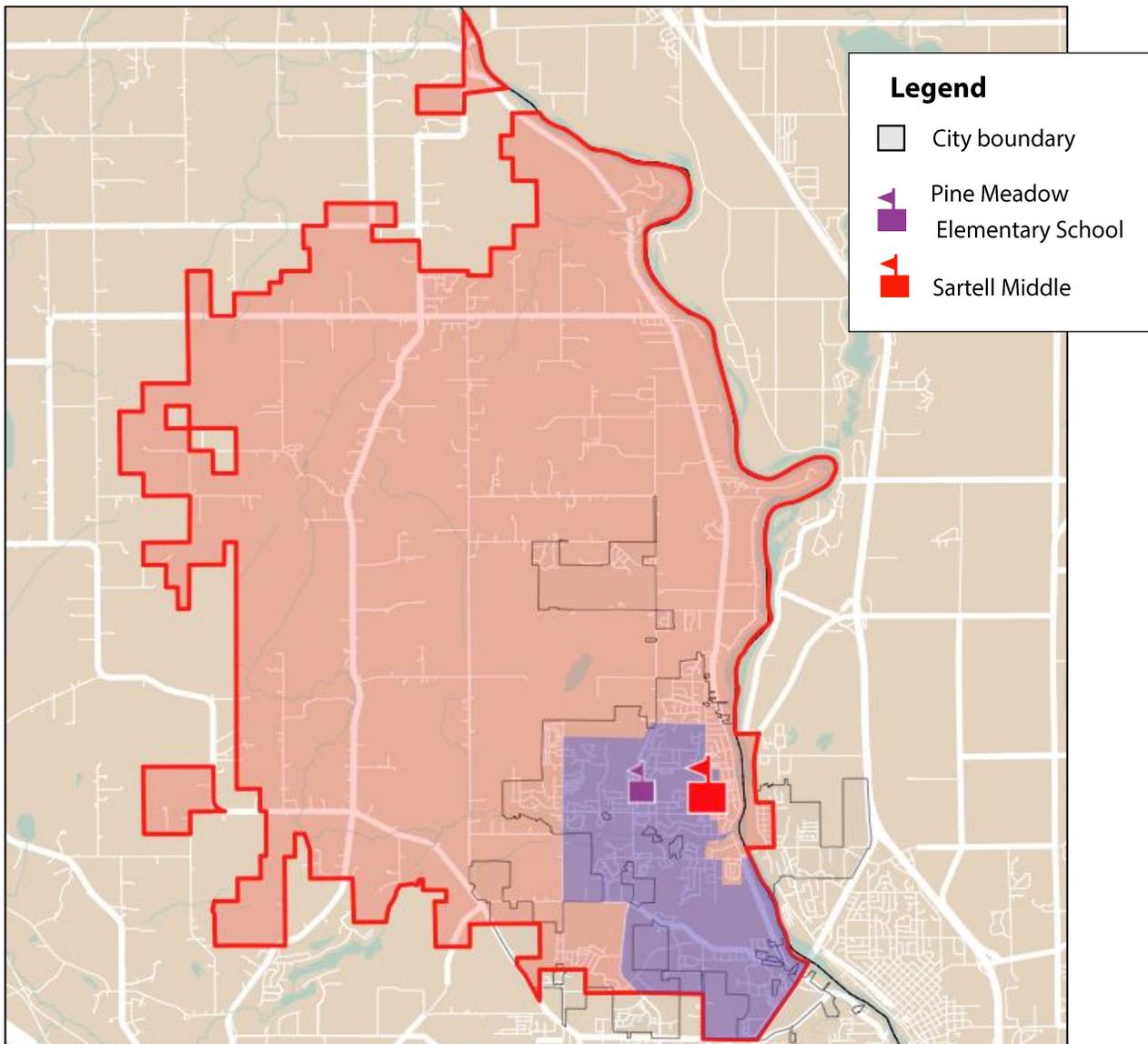
## Existing Conditions

### School Context

Pine Meadow Elementary School is located at the corner of 5th Street N and Pinecone Road N in the northern part of Sartell in Stearns County. School enrollment for the 2013-2014 school year was 702 students. The principal of Pine Meadow Elementary is Greg Johnson. Arrival time for students is 8:05am, and dismissal time is 2:35pm.

Sartell Middle School is located west of 2nd Avenue N between 5th Street N and 7th Street N. School enrollment for the 2013-2014 school year was 1,183 students. The principal of Sartell Middle is Julie Tripp. Arrival time for students is 8:40am, and dismissal time is 3:25pm.

### Pine Meadow Elementary and Sartell Middle School Enrollment Boundary





## Pine Meadow Elementary School

### Surrounding Land Use

The elementary school is on the west end of a large campus that also includes a high school and middle school. The schools are connected by natural surface walking trails. Single-family housing is located to the south across 5th Street N and west of Pinecone Road. There is an event center and multi-family residential housing unit west of the school across Pinecone Road. A Holiday Gas Station and more multi-family housing exist north across 7th Street N. To the northeast is a single-family residential neighborhood.

### Student Walking and Bicycling Conditions

School officials report that students want to walk from the north across 7th Street N, but do not feel safe crossing the street. Additionally, some students walk and bike on the grass along the one-way driveway connecting the northeast side of the school with the tennis court parking lot to the northeast. This means they are traveling against traffic on the driveway on their way home.

Although it was not observed, it was reported that some walkers use the paths on the east side of the school. Bicyclists and walkers can use either the west or the east entrance.

Crossing Pinecone Road is a major concern for parents, students, and school officials. An adult crossing guard was present at the intersection of Pinecone Road and 5th Street N during an observation of school arrival. Vehicles turning to and from Pinecone Road and 5th Street N make this crossing challenging for students. This is a concern especially at 4th Street N where students cross Pinecone Road to access the sidewalk/side path on the east side of the road from the neighborhood to the west.

Wide side paths/sidewalks are present on the east side of Pinecone Road and the south side of 7th Street N. The intersection of Pinecone Road and 7th Street N is marked with a crossing sign, flashing beacon, and painted crosswalk, but crossing here was reported as difficult.



***An in-crossing pedestrian sign is located in the intersection of 4th Street N and Pinecone Road.***



***A school staff person serves as the crossing guard at the intersection of Pinecone Road and 5th Street. Buses drop students off in the bus loop area on the east side of Pine Meadow Elementary.***



***A shared-use trail connects the school to the neighborhood to the south across 5th Street N.***



Additionally, school officials reported that crossing 7th Street N is a barrier for many students who walk to school from the north. Other crossings along 7th Street N are not well marked or well lit, and are difficult for pedestrians especially in winter months. The crossing of 7th Street N at 9th Avenue N ends at the north side of the road against the curb and grass where no sidewalk is present.



**Buses use a dedicated bus loop on the east side of the school.**

A sidewalk exists on the north side of 5th Street N. Natural surface walking trails connect the elementary school with the high school and middle school to the east.

A shared-use trail connects Lawrence Circle and the neighborhood to the south of the school across 5th Street N and to a sidewalk along 5th Street N. It was reported that this trail connection is not well maintained in the winter months.

Wave-style bike racks in good condition are present near the west (front) and east (rear) entrances.

### **School Layout**

Pine Meadow Elementary School is located at the corner of Pinecone Road and 5th Street N. There are separate bus and car driveway entrances to the school off of 5th Street N on the south. The western lot serves students who are picked up and dropped off by their parents, and as a staff parking lot. The eastern entrance serves as a bus pick-up and drop-off loop. The bus loop is large enough for buses to circulate and use a single driveway for entry and exit. A sidewalk along the north side of 5th Street N intersects the driveway used by buses. Bus service is available to all students. Students walking and bicycling to school may use either entrance.



**At Pine Meadow Elementary the parent drop-off and pick-up area is marked with a "Bypass Lane" and "Drop-off Lane."**



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## Sartell Middle School

### Surrounding Land Use

Sartell Middle School is located west of 2nd Avenue N between 5th Street N and 7th Street N in the northern part of Sartell in Stearns County. Sartell is 5 miles northwest of downtown Saint Cloud, and has a population of nearly 16,000.

The school is on the east end of a larger campus that includes Sartell High School and Pine Meadow Elementary School. A natural surface trail through the woods connects the middle school to the high school and elementary school. Athletic fields are immediately to the west and east of the school building.



***Street N to the bike rack to the east of the school.***

There is multi-family housing to the north of the school across 7th Street N and commercial strip mall to the northeast. Lower density single-family housing sits to the east and south, with the exception of a small development of four-plexes and a church immediately to the south.

### Student Walking and Bicycling - Existing Conditions

A bike rack is present on the east side of the building adjacent to the parking lot. The rack is a comb style rack with vertical slots to park bikes. Several of the rack's bars were observed to be bent and rusted.



***Ten to fifteen bicycles were parked at the bike rack at the time of observation.***

Walking paths link the school's two entrances on its east side to the parking area. A sidewalk/side path, marked in several spots also as a Bike Route, exists along 5th Street N to the south of the school, 2nd Avenue N to the east of the school, and 7th Street N to the north of the school. There is a chain link fence around the perimeter of the school on 5th Street N, 2nd Avenue N, and a portion of the site on 7th Street N. A small break in the fence exists along 5th Street N and along 2nd Avenue N.

A staff crossing guard was present at 5th Avenue N and 7th Street N at the time of observation. High visibility crosswalk markings and a crossing sign mark the crossing of 7th Street N toward the multi-family housing units to the north. Several locations along 2nd Avenue N and 5th Street N have high visibility crosswalk markings, although they are not present at all intersections.

School officials reported that students commonly cross 5th Street N at an unmarked location between the break in the school fence and the church. Students walk through the church driveway and across the property to access the neighborhood to the south. There is no pedestrian signage or painted crosswalk at this location. The proximity of the crossing to the church driveway raises traffic safety concerns as well, as there are opportunities for conflict between students and vehicles entering and exiting the church parking lot.



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## School Layout

Sartell Middle School is located west of 2nd Avenue N between 5th Street N and 7th Street N. The school's primary and alternate entrances are on the east side of the building.

There is a separate driveway entrance and exit to the school off of 7th Street N. A driveway loop is present for the school entrances and around a parking lot in the center. This driveway is available for vehicles to pick up and drop off students during certain time periods; otherwise, it is a bus-only driveway. Tennis courts and a football field are to the east of the parking lot. Sidewalks exist along the west side of the parking lot and to the two school entrances. The west side of the school has an additional parking lot and access to a school maintenance building.



***A student walks along 7th Street N near the school's entrance.***



## School Travel Patterns

### Pine Meadow Elementary

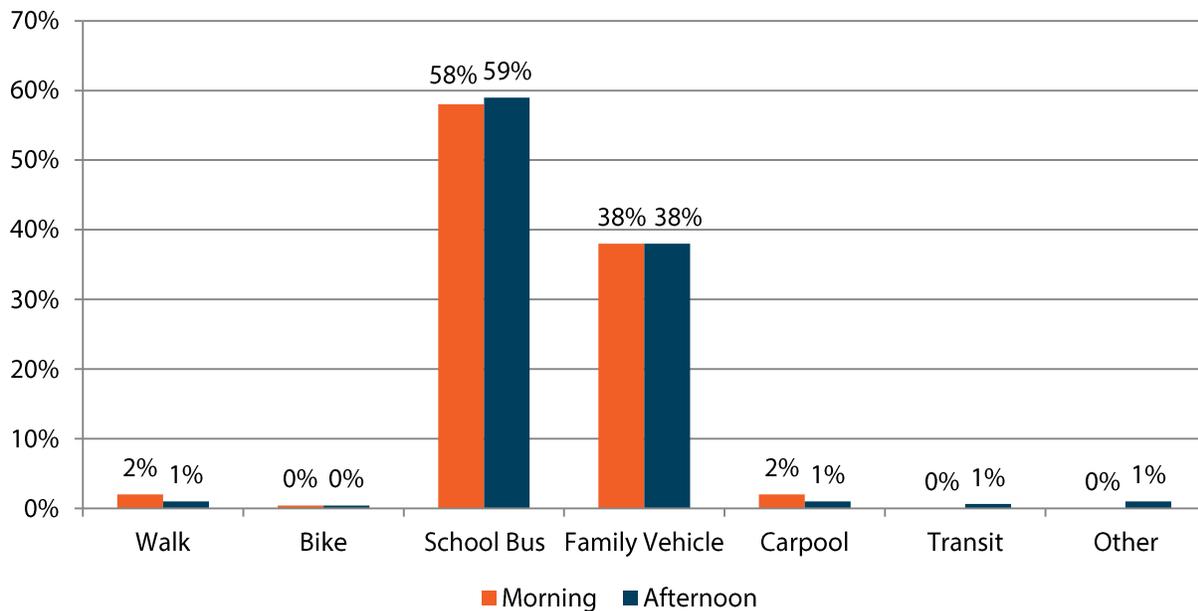
#### Student Travel Survey Summary

In-classroom tallies of students' arrival and departure travel modes were conducted at Pine Meadow Elementary School over three days (Tuesday, Wednesday, and Thursday) in October of 2013. A total of 466 trips were tallied in the mornings, and 467 were tallied during the afternoons. As shown in the chart, only 1-2% of students typically walk to school, and no students ride a bike to school on an average day. The most common mode of transportation for Pine Meadow students is school bus, followed by a family vehicle or carpool.



Looking north along Pinecone Road toward 5th Street N.

#### Pine Meadow Elementary Travel Mode Split



#### Parent Survey Summary

In October 2013, Pine Meadow 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 bicycling to and from school, and their own attitudes related to walking and bicycling to and from school. Administrators received 63 total surveys.



### Current Travel Patterns: Mode and Distance

Parent survey results indicate that in general, the distance between school and home has little, if any, impact on children's typical travel mode to school. For example, respondents who live very close to the school (less than one-quarter mile) were only slightly more likely to report walking as their children's typical mode of transportation to school compared to respondents who live further away. None of the parents who answered the survey reported that their child usually bikes to school, so the parent surveys did not reveal a relationship between bicycling to school and the distance students live from the school.

The school bus is the predominant travel mode for the children of those who answered the survey regardless of trip distance. Family vehicle was reported as the second most common mode of transportation to and from school, and also does not have a strong relationship to trip distance.

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



**45%** of respondents live within a 30 minute walk of the school (up to one mile away)

**2%** of respondents' children "usually" walk to/from school



**78%** of respondents live within a 30 minute bike ride of the school (up to two miles away)

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

### Barriers to walking and bicycling

Despite the fact that 45% of respondents' children could walk to school in 30 minutes or less, and 78% of respondents' children could bike to school in 30 minutes or less, parents who responded to the survey rarely reported that their children walked to or from school and none reported that their child biked to or from 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. While more than half of students that live within two miles of the school have asked permission to walk or bike to school, only 20% of students who live more than two miles from the school have expressed interest.

The parent survey also asked specifically about barriers to walking and bicycling 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:

- Safety of intersections and crossings (83%)
- Amount of traffic along route (77%)
- Speed of traffic along route (66%)



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Other reasons given by respondents for not allowing children to walk or bike include distance (45%), weather or climate (40%), a lack of crossing guards (34%), a lack of available adults to walk/bike with (30%), a lack of sidewalks or pathways (26%), fear of exposure to violence or crime (21%), the additional time required compared to other modes (17%), and the convenience provided by driving (4%).

### **Parent attitudes about walking and bicycling**

Most parents who answered the survey (75%) think that Pine Meadow Elementary neither encourages nor discourages walking and bicycling to and from school. 7% of parents responded that they believe Pine Meadow Elementary encourages or strongly encourages walking and bicycling to/from school, and the remaining 18% believe that the school discourages or strongly discourages walking and bicycling to/from 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 89% think walking and cycling is "fun" or "very fun."

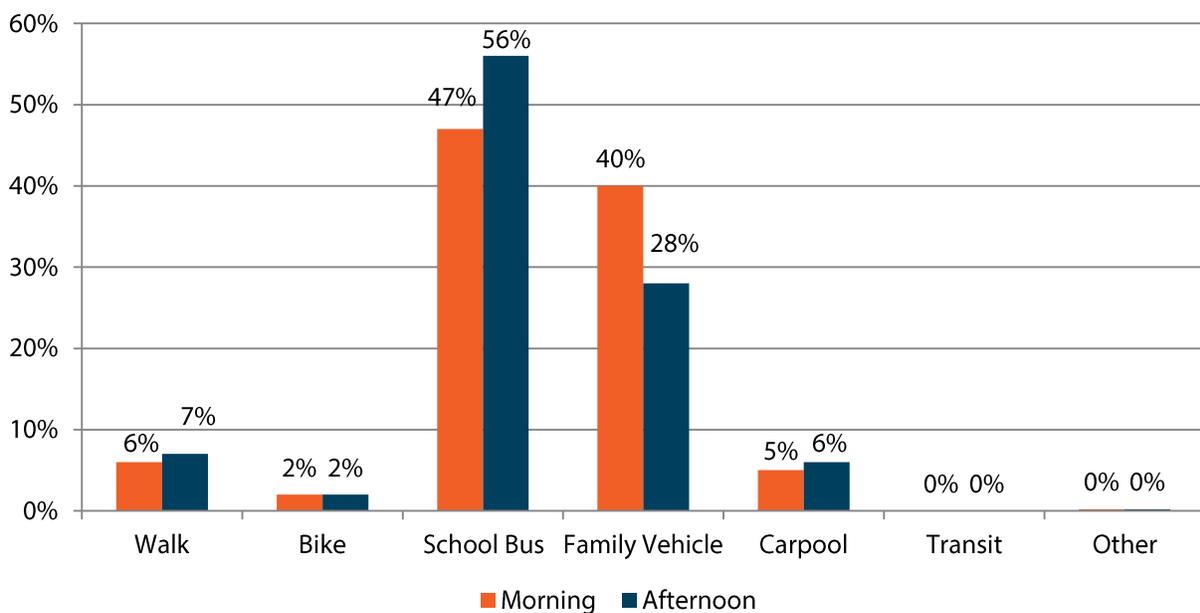


## Sartell Middle School

### Student Travel Survey Summary

In-classroom tallies of students' arrival and departure travel modes were conducted at Sartell Middle School over three days (Tuesday, Wednesday, and Thursday) in October of 2013. A total of 607 trips were tallied in the mornings, and 605 were tallied during the afternoons. As shown in the chart, about 6% of students typically walk to school, and only 2% of students ride a bike to school on an average day. The most common mode of transportation for Sartell Middle School students is school bus, followed by a family vehicle or carpool.

**Sartell Middle School Travel Mode Split**



### Parent Survey Summary

In October 2013, Sartell Middle School 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 201 total surveys.

#### 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, especially students who live very close to the school. As the distance between home and school increases, the number of respondents indicating that their children walk to/from school declines – sharply at distances greater than one-quarter mile and then gradually from one-half mile to two miles. None of the respondents who live more than two miles from the school indicated that their child walks to school.

Survey responses also suggest that students are most likely to bike to school if they live between one-quarter mile and two miles from the school. This result makes intuitive sense as the bicycle is well suited to distances of these lengths.



Students who live further than one-quarter mile from the school are more likely to arrive by school bus, family vehicle, or carpool than any other mode, according to the survey results. At trip distances greater than one-quarter mile, a strong relationship between distance and mode choice does not appear to exist.

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



**33%** of respondents live within a 30 minute walk of the school (up to one mile away)

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



**69%** of respondents live within a 30 minute bike ride of the school (up to two miles away)

**2%** of respondents' children "usually" bike to/from school

### Barriers to walking and bicycling

Despite the fact that 33% of respondents' children could walk to school in 30 minutes or less, and 69% of respondents' children could bike to school in 30 minutes or less, parents who responded to the survey rarely reported that their children walked or biked to/from 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 to beyond two miles, children may not consider walking or bicycling to school a realistic possibility.

The parent survey also asked specifically about barriers to walking and bicycling 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:

- Amount of traffic along route (69%)
- Safety of intersections and crossings (65%)
- Speed of traffic along route (62%)
- Distance (59%)
- Weather or Climate (55%)



**A break in the fence exists on 5th Street N and 2nd Avenue N. Tire tracks are evident in the grass from 5th**



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Other reasons given by respondents for not allowing children to walk or bike include a lack of sidewalks or pathways (43%), distance (45%), the additional time required compared to other modes (28%), fear of exposure to violence or crime (26%), child's participation in after school programs (22%), a lack of crossing guards (18%), a lack of available adults to walk/bike with (15%), and the convenience provided by driving (12%).

### **Parent attitudes about walking and bicycling**

The overwhelming majority of parents who answered the survey (91%) think that Sartell Middle School neither encourages nor discourages walking and bicycling to and from school. 3% of parents responded that they believe Sartell Middle School encourages or strongly encourages walking and bicycling to/from school, and the remaining 6% believe that the school discourages or strongly discourages walking and bicycling to/from 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 nine percent of parents felt that walking and bicyclist to school was "very healthy" or "healthy" for their children, while 79% think walking and cycling is "fun" or "very fun".



## Traffic Conditions and Crash Analysis

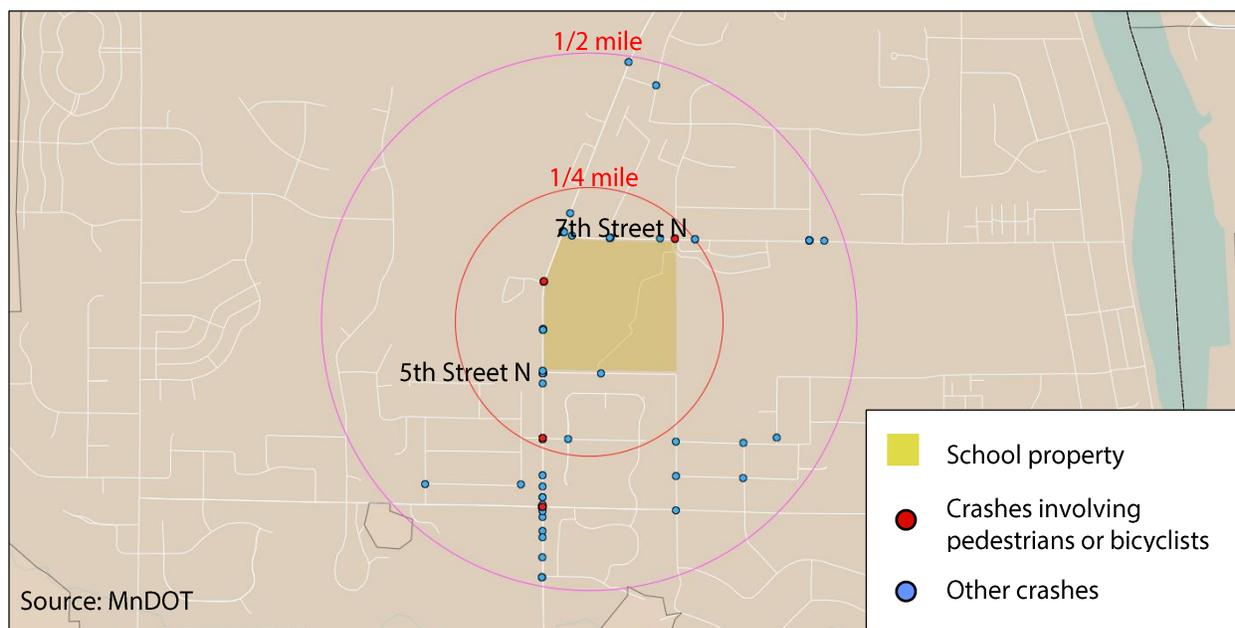
### Pine Meadow Elementary School

Pinecone Road (County Road 133) west of the school is a major thoroughfare that connects north-south through Sartell. It has an average annual daily traffic (AADT) count of 6,100 vehicles (according to 2009 MnDOT figures) south of the school and a speed limit of 40 miles per hour. 5th Street N has an AADT of 1,550 south of the school and 7th Street N has an AADT of 2,000 north of the school.

An assessment of collisions surrounding Pine Meadow 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 112 collisions within one-half mile of Pine Meadow Elementary School. Of these collisions, two involved motor vehicles colliding with pedestrians, and two involved motor vehicle collisions with bicyclists. Of the four collisions, two involved those crossing in a marked crosswalk. One of the pedestrians involved in the incidents was 15 years old, and one of the bicyclists was 17 years old. Three of the incidents occurred on Pinecone Road, while the other incident occurred at the intersection of 7th Street North and 9th Avenue North.

### Pine Meadow Elementary School Area Crash Locations 2003 – 2013





## Sartell Middle School

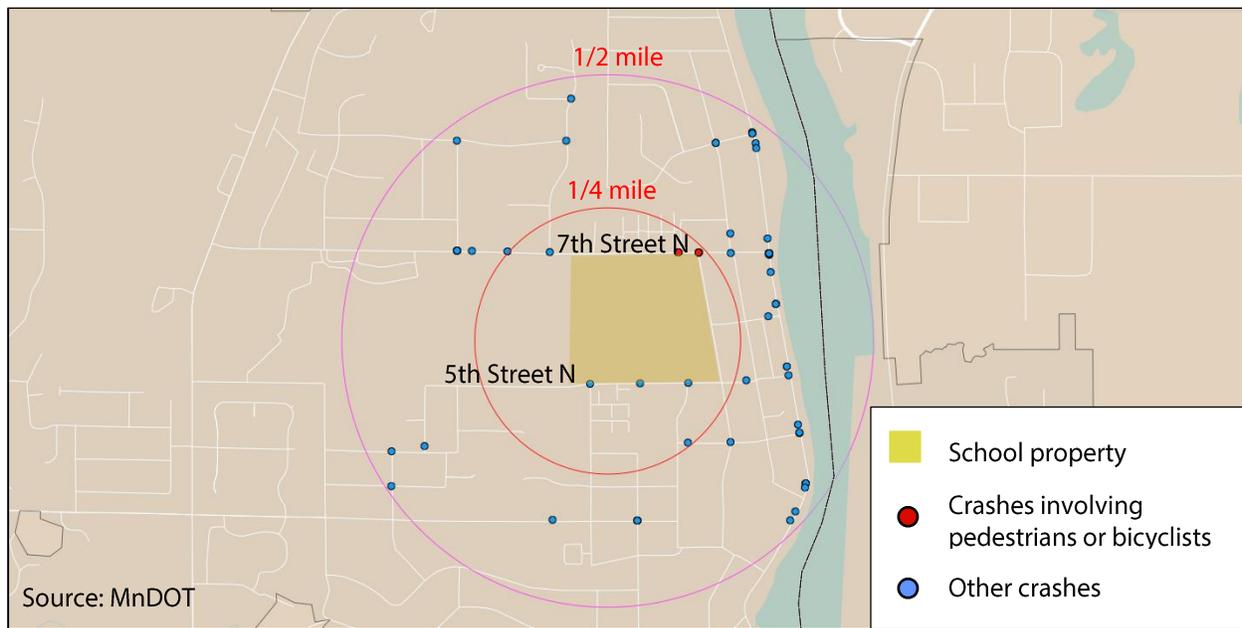
7th Street N provides an east-west connection from Pinecone Road to Riverside Avenue N (County Highway 1) in Sartell. 2nd Avenue N and 5th Street N are primarily interior residential streets as they do not offer continuous connections for through traffic.

According to 2009 Minnesota Department of Transportation figures, average annual daily traffic (AADT) volumes on 7th Street N are 2,000. 2nd Avenue N has an AADT of 450.

An assessment of collisions surrounding Sartell Middle School was completed using 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 59 collisions within one-half mile of Sartell Middle School. Of these collisions, two involved motor vehicles colliding with pedestrians. Both of the collisions happened along 7th Street North, with one of them occurring at the unmarked intersection of 7th Street North and 2nd Avenue North where a motor vehicle collided with two 17-year-old pedestrians as they were crossing through the intersection.

### Sartell Middle School Area Crash Locations 2003 – 2013





## Site Audit

The audit took place during school arrival on October 28, 2013. Representatives attended from Pine Meadow Elementary School, Sartell Middle School, the City of Sartell, MnDOT, CentraCare/BLEND, and several parents of students. Special attention was given to conditions for pedestrians and bicyclists along Pine Cone Road, 5th Street N, and 7th Street N, and 2nd Avenue N.

### Pine Meadow Elementary

#### Walking and Bicycling

A few students accompanied by parents walked across 5th Street N from the south, connecting to the school via the trail from Lawrence Circle and the neighborhood to the south.

Two bikes were parked at the bike rack near the school's west entrance. One appeared to be an adult bike. One student was observed bicycling along the sidewalk/side path on the north side of 5th Street N.

#### Bus

The bus drop-off observed was very efficient. Buses lined up along the curb and let students out. Doors on the east side of the building lock after bus drop-off is complete. It was reported that buses have designated numbered diagonal parking spaces for afternoon pick-up, and are parked in the same place every day before dismissal so that students can easily identify their bus after school.

#### Car

There appeared to be ample room for drop-off, and the process was very orderly and efficient. "Drop Off" and "Bypass" lanes were clearly marked with yellow paint, arrows, and lines on the pavement. Parents are encouraged to drop students off via the drop-off lane, but some parents park their vehicles in the lot and walk their students into school.

Yellow speeds bumps and crosswalks are painted in the parking lot. Vehicles enter and exit the parking lot using the same driveway along 5th Street N, and vehicle lanes and arrows are painted along the entire route through the parking lot. A sidewalk along the north side of 5th Street N intersects the driveway.



*Students accompanied by a parent walk along 5th Street N south of the school.*



*At the corner of Pinecone Road and 5th Street N.*



*Vehicle and bus traffic enter the school from 5th Street N. A sidewalk/side path is present on the north side of the street and a pedestrian crossing exists on 5th Street N from the neighborhood to the south.*



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## Sartell Middle School

### Walking and Bicycling

Two students were observed walking across the athletic fields from the fence entrance near the intersection of 2nd Avenue N and 5th Street N.

A few students were observed getting dropped off and walking from 5th Street N on the south side of the building and through the break in the fence across from the church. Numerous footprints and tire tracks were observed from this break in the fence, across the grass, and down to the bike rack and walkway area, indicating a need for a trail in this location.

There were ten to fifteen bikes parked in the bicycle rack at the time of the visit.



***Students walking through the bus drop-off area from the parking lot at Sartell Middle School.***

### Bus

The driveway nearest the school has a sign that reads “Bus Zone - No entering when flashing.” During designated periods of time and when the beacon signal is flashing, the driveway nearest to the entrance of the school is for buses only. Bus drop-off observed went very smoothly. During arrival, it was observed that buses pull up in a line along the curb and let students out. Bus service is available for all students who wish to use it. Buses wait for students at the end of the day to take them home.



***Students walking to school after being dropped off in the parking lot to the east of the school.***

### Car

When the bus signal is flashing, private cars must loop through the parking lot to drop students off. Buses and vehicles use the same entrance and exit from 7th Street N. The parking lot has two separate routes marked with arrows that vehicles can take. Once dropped off, students walk up paths to one of two crosswalks leading to the main entrance (on the east side of the school to the north) or the alternate entrance (on the east side of the school to the south). The observed drop-off process appeared orderly and efficient.



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## Infrastructure Issues and Recommendations

The initial field review and subsequent meetings yielded specific recommendations to address the key identified barriers to walking and bicycling at Pine Meadow Elementary School and Sartell Middle 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 Tables 1 and 2 with locations shown on the Recommended Improvements Maps. 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.

Because 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.



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**Table 1. Pine Meadow Elementary Issues and Recommendations**

Project #	Location	Problem/Issue	Solution/Recommendation	Lead Agency
<b>A</b>	Pinecone Rd north of 7th St N	No sidewalk on the west side of Pinecone Rd.	Consider constructing a sidewalk on the west side of Pinecone Rd.	City of Sartell
<b>B</b>	Pinecone Rd at 7th St N	Difficult crossing. Low yielding rates despite existing flashing beacon.	Upgrade existing flashing beacon to user-activated Rectangular Rapid Flash Beacon.	City of Sartell
<b>C</b>	7th St N and 9th Ave N	Existing marked crosswalk leads to vertical curb. Lack of sidewalks along the north side of 7th St N and both sides of 9th Ave N create a difficult crossing situation, particularly in winter where snow covers the grass along the road.	Construct a sidewalk ramp and landing that wraps around the NW corner of intersection.	City of Sartell
<b>D</b>	5th St N midblock crossing	Existing crosswalk markings are narrow and there is no signage to let drivers know that students may be present here.	Upgrade the crosswalk across 5th St N to standard width, install school crosswalk and advance school warning signs. Stripe stop bars at crosswalk.	City of Sartell
<b>E</b>	Paths between Pine Meadow Elementary and Sartell High School	Paths not maintained during winter.	Consider winter maintenance of the paths between the schools and future upgrade of trail to permanent surface.	City of Sartell
<b>F</b>	Pinecone Rd at 4th St N	Difficult crossing. Low yielding rates despite existing flashing beacon.	Install Rectangular Rapid Flash Beacons to the crossing of Pine Cone at 4th St.	City of Sartell
<b>G</b>	Pinecone Rd at 2 1/2 St N	Long signal cycle creates delays for pedestrians and leads to non-compliance.	Optimize signal timing for all modes to reduce delays. Upgrade pedestrian signal heads to modern countdown signals.	Stearns County
<b>H</b>	2nd St N from Pinecone Rd to 4th Ave	Gap in the sidewalk network on the south side. Opportunity to connect neighborhoods to school.	Construct sidewalk on 2nd St S from Pinecone Rd to 4th Ave. (see inset)	City of Sartell
<b>I</b>	Pinecone Road and 2nd St S	Challenging intersection.	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.	City of Sartell



# Pine Meadow Elementary School



## Recommended Improvements

- A** Consider constructing a sidewalk on the west side of Pinecone Rd.
- B** Upgrade existing flashing beacon to user-activated Rectangular Rapid Flash Beacon.
- C** Construct a sidewalk ramp and landing that wraps around the NW corner of intersection.
- D** Upgrade the crosswalk across 5th St N to standard width, install school crosswalk and advance school warning signs. Stripe stop bars at crosswalk.
- E** Consider winter maintenance of the paths between the schools and future upgrade of trail to permanent surface.
- F** Install Rectangular Rapid Flash Beacons to the crossing of Pine Cone at 4th St.
- G** Optimize signal timing for all modes to reduce delays. Upgrade pedestrian signal heads to modern countdown signals.
- H** Construct sidewalk on the south side of 2nd St S from Pinecone Rd to 4th Ave (see inset).
- I** Review best practices on pedestrian and bicycle-friendly intersection design for Pinecone Rd and 2nd St S. Redesign should include protected signal phases, pedestrian countdown signal heads, and the shortest crossing distances possible.





**Table 2. Sartell Middle School Issues and Recommendations**

Project #	Location	Problem/Issue	Solution/ Recommendation	Lead Agency
<b>A</b>	7th St N and 7th Ave N	Existing crosswalk leads to residents' front lawn. Especially problematic during winter, when area is used to store snow.	Add landing and corner sidewalk with curb ramps to north side of 7th St N crossing at 7th Ave N.	City of Sartell
<b>B</b>	7th St N and 5th Ave N	Existing crosswalk leads to residents' front lawn. Especially problematic during winter, when area is used to store snow.	Add landing and corner sidewalk with curb ramps to the northwest corner of intersection. Relocate marked crosswalk to the west side of the intersection due to utility constraints associated with construction of landing and corner sidewalk. Consider installing an RRFB.	City of Sartell
<b>C</b>	Parent loading/unloading loop	Existing configuration creates flow and visibility issues for students unloading.	Consider restriping the parking lot to improve circulation and safety during drop-off and pick-up. (See inset on map for specific suggestions)	Sartell-St. Stephens School District
<b>D</b>	Bike parking	Parking is open and exposed to elements.	Cover the existing bike parking.	Sartell-St. Stephens School District
<b>E</b>	School campus, between existing bike parking and gate on 5th St N	Lack of paved path from bike parking to southern entrance makes bicycling less convenient and is hard on grass. Students are currently using this route as evidenced by foot trails in grass and snow.	Construct a path from the sidewalk on 5th St N to the existing bike parking.	Sartell-St. Stephens School District
<b>F</b>	5th St N and 7th St N	Parked cars along 5th St N limit visibility at crossing.	Prohibit parking in advance of existing marked crosswalk to improve visibility.	City of Sartell
<b>G</b>	5th St N near school playground.	Narrow gate inhibits convenient bicycle access to school on south side.	Widen the gate to the school on 5th St N near the playground.	Sartell-St. Stephens School District
<b>H</b>	5th St N and 2nd Ave N	Speeding on 2nd Ave N. Low yielding rates at crossing.	Install stop signs on 2nd Ave N at 5th St N, creating a 4-way stop-controlled intersection.	City of Sartell
<b>I</b>	7th Ave N and 4th St N	Low visibility curve.	Install a warning sign at the sharp corner of 7th Ave & 4th St.	City of Sartell
<b>J</b>	2nd Ave N from 5th St N to 4th St N	Gap in the sidewalk network.	Fill sidewalk gap.	City of Sartell
<b>K</b>	5th Ave N from 5th St N to 2 1/2 St N. Also 2/12 from 5th Ave to 4th Ave.	Gap in the sidewalk network with direct connection to school	Fill sidewalk gaps	City of Sartell



# Sartell Middle School



## Recommended Improvements

- A** Add landing and corner sidewalk with curb ramps to north side of 7th St N crossing at 7th Ave N.
- B** Add landing and corner sidewalk with curb ramps to the northwest corner of intersection. Relocate marked crosswalk to the west side of the intersection due to utility constraints associated with construction of landing and corner sidewalk. Consider installing an RRFB.
- C** Consider restriping the parking lot to improve circulation and safety during drop-off and pick-up. (See inset)
- D** Cover the existing bike parking.
- E** Construct a path from the sidewalk on 5th St N to the existing bike parking.
- F** Prohibit parking in advance of existing marked crosswalk to improve visibility.
- G** Widen the gate to the school on 5th St N near the playground.
- H** Install stop signs on 2nd Ave N at 5th St N, creating a 4-way stop-controlled intersection.
- I** Install a warning sign at the sharp corner of 7th Ave & 4th St.
- J** Fill sidewalk gap.
- K** Fill sidewalk gap.



## 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 priority programs for Pine Meadow Elementary and Sartell Middle 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). Some of the programs are recommended to serve both schools and can be implemented in tandem, while others are geared towards specific issues and needs of the individual campus and school community.

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.

### Community Programs - Both Schools

- International Walk to School Day and Bike to School Day
- Trip Tracking – Fit Kids Club
- SRTS walk and bike maps
- School Safety Campaign
- Classroom lessons (Minnesota Walk! Bike! Fun! Curriculum)
- Digital speed reader signs and targeted enforcement
- Year round crossing guards

### Pine Meadow Elementary

- Walking school bus and/or bike train
- School specific trip tracking/competitions
- Drop off Valet

### Sartell Middle School

- Walking/Bicycling to School Mileage Contests – between classes, grades or school.
- Walking/Bicycling Club or Green Transportation Club - Students can plan events or trips, organize school contests or programs, lead Walking School Buses or Bike Trains, and educate their fellow students about "green" transportation



## School Community Programs

### International Walk and Bike to School Day

<b>Primary Outcomes</b>	Increased walking and bicycling; youth empowerment
<b>Potential Lead</b>	School Administrators in partnership with BLEND
<b>Potential Partners</b>	Sartell-St Stephens School; Pine Meadow PTO, Sartell Police Department, students; local businesses; local celebrities
<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>Getting Started</b>	<ul style="list-style-type: none"> <li>• Form an event planning team</li> <li>• Consider the scale and format of the event and assess volunteer capacity</li> <li>• Set a date early</li> <li>• Determine incentive structure</li> </ul>
<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> MnDOT Walk and Bike to School Day Webinar: <a href="http://www.dot.state.mn.us/saferoutes/toolkit.html">http://www.dot.state.mn.us/saferoutes/toolkit.html</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 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 to school where groups can gather and walk or bike together. These events can be held for one or more days.

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.



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



## Trip Tracking – Fit Kids Club Series Pledge Program

<b>Primary Outcomes</b>	Increased physical activity among students.
<b>Potential Lead</b>	BLEND Staff
<b>Potential Partners</b>	PTO/parents; Sartell-St Stephens School District, School
<b>Recommended Timeframe</b>	Annually on or around International Walk and Bike to School Day in October
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>• Promote the fitness tracking program through in-class announcements or school communications</li> <li>• Periodically remind students to encourage prolonged participation</li> </ul>
<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>	City of Portland, Safe Routes Newsletters <a href="http://www.portlandoregon.gov/transportation/45746">http://www.portlandoregon.gov/transportation/45746</a>

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 old and younger) must live in Central MN 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.

<p><b>WALK, BIKE, OR ROLL TO SCHOOL AT LEAST 3 TIMES PER WEEK</b> <small>(as long as it's safe &amp; okay with your parents!)</small></p>	<p><b>AND/OR</b></p>	<p><b>WALK, BIKE, ROLL OR SWIM 30 MINUTES PER DAY AT LEAST 3 TIMES PER WEEK THROUGHOUT THE FIT KIDS CLUB SERIES SEASON</b></p>
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## School Safety Campaign

<b>Primary Outcomes</b>	Will depend on campaign focus, but may include improved walking/biking safety behavior, improved driving safety behavior, and youth empowerment
<b>Potential Lead</b>	City of Sartell Police Department; Sartell-St. Stephens School District; BLEND staff
<b>Potential Partners</b>	Teachers/administrators/staff; PTO/parents; City of Sartell Planning or Public Works; local groups/advocates/volunteers; local businesses
<b>Recommended Timeframe</b>	Annual or semi-annual; when habits, traffic patterns, or seasons change: upon returning to school in the fall, when the weather gets warmer, when daylight saving time ends
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>• Form a team to lead the development of the campaign</li> <li>• Identify the key issue(s) to focus the message of the campaign</li> <li>• Decide on the preferred format (signs, posters, billboards, etc.)</li> <li>• Identify funding for promotional material production and distribution.</li> </ul>
<b>Planning Resources</b>	City of Portland: <a href="http://www.portlandoregon.gov/transportation/article/272948">http://www.portlandoregon.gov/transportation/article/272948</a>
<b>Sample Programs</b>	San Jose (CA) Street Smarts Program: <a href="http://www.getstreetsmarts.org/">http://www.getstreetsmarts.org/</a> MnDOT Share the Road (broad community focus): <a href="http://www.dot.state.mn.us/sharetheroad/">http://www.dot.state.mn.us/sharetheroad/</a>

A safety campaign is an effective way to build awareness around students walking and bicycling to school and to encourage safe driving behavior among parents and passersby. A School Traffic Safety Campaign can use media at or near schools—such as posters, business window stickers, yard signs, or street banners—to remind drivers to slow down and use caution in school zones. This type of campaign can also address other specific hazards or behaviors, such as walking or bicycling to school, school bus safety, and parent drop-off and pick-up behavior.

Campaigns may have significant costs to produce promotional materials and collateral, though these items can often be covered through grants. Advertising can also be an important part of safety campaigns to inform the community and expand the reach of the messaging. A collaborative effort between the police department, the district and BLEND can pool resources and expand the reach of the campaign. A campaign that coordinates with all schools in the area can be very effective. The location of the three schools in one area with shared transportation facilities provides a unique opportunity to support mentorship and leadership options for the high school students. School administrators can work together to develop a comprehensive campaign that targets the three age groups, their families and the broader community.



***A School Traffic Safety Campaign can use media at or near schools to remind drivers to use caution in school zones***



## 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 Pine Meadow and Sartell Middle
<b>Potential Partners</b>	Sartell-St. Stephens School District; PTO/parents; City of Sartell; BLEND (Public Health)
<b>Timeframe</b>	Regularly integrated as viable. Safety training and skills elements twice per year.
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>• Download and review curriculum</li> <li>• Identify interested teachers</li> <li>• Have a key teachers attend a Bike Minnesota training session</li> <li>• Teachers plan for integration of curriculum</li> </ul>
<b>Planning Resources</b>	Minnesota Walk! Bike! Fun! 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>
<b>Sample Programs</b>	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>

A variety of existing in-classroom lessons and skills training activities are available to help teach students about walking, bicycling, health, and traffic safety.

### 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)

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.

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.



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



## Law Enforcement: Digital Speed Feedback Signs

<b>Primary Outcomes</b>	Improved driver behavior
<b>Potential Lead</b>	Sartell Police Department, City of Sartell
<b>Potential Partners</b>	Sartell –St Stephens School District;
<b>Recommended Timeframe</b>	Ongoing, additional enforcement periodically perhaps quarterly, beginning at the start of the school year
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>• Purchase or rent speed feedback signs (under development in May 2014)</li> <li>• Install signs at areas of concern in the school zone</li> <li>• Periodically monitor compliance</li> </ul>
<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_enforcement_initiatives.html">http://www.cityofchicago.org/city/en/depts/cdot/provdrs/ped/svcs/crosswalk_enforcement_initiatives.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.

Higher speeds are a consistent issue along Pinecone Road N and 7<sup>th</sup> Street N. There are many drivers that simply don't realize how fast they are driving near the school. These digital signs will give drivers immediate feedback as they enter the school zone.



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



## Year Round Crossing Guards

<b>Primary Outcomes</b>	Improved walking/biking safety behavior; improved driving safety behavior
<b>Potential Lead</b>	Sartell – St. Stephens School District; Pine Meadow and Sartell Middle School administration;
<b>Potential Partners</b>	Sartell Police Department; PTO/parents; teachers/administrators/staff
<b>Recommended Timeframe</b>	Ongoing, every day during drop-off and/or pick-up
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>• Identify additional locations in need of crossing guards</li> <li>• Ensure all guards complete a training program</li> <li>• Train guards to report issues with snow maintenance during the winter months.</li> <li>• Revising existing policy to allow guards in January and February</li> </ul>
<b>Planning Resources</b>	National Center for Safe Routes to School Guide: <a href="http://guide.saferoutesinfo.org/crossing_guard/index.cfm">http://guide.saferoutesinfo.org/crossing_guard/index.cfm</a>
<b>Sample Program</b>	Marin County, CA: <a href="http://www.tam.ca.gov/index.aspx?page=97">http://www.tam.ca.gov/index.aspx?page=97</a>

Crossing guards are trained adults, paid or volunteer, who are legally empowered to stop traffic to assist students with crossing the street. Crossing guards can be very effective in many traffic situations, such as stop-controlled intersections where drivers do not stop for pedestrians, midblock crossings with visibility issues and a lack of traffic control, and signalized intersections with high vehicle speeds and volumes.

Crossing guards should successfully complete a training program that includes appropriate training materials and equipment, such as safety vests and stop signs, prior to beginning to assist children. Funding to pay crossing guards may be required and could come from the jurisdiction or the school district. An existing district policy currently limits the use of crossing guards in January and February. During the SRTS planning process the crossing guard policy was reviewed and as of May 2014 it is likely that funding for year round crossing guards will be instituted.



***Crossing guards are legally empowered to stop traffic to assist students with crossing the street.***



## Pine Meadow Elementary Programs

### Walking School Bus or Bike Train

<b>Primary Outcomes</b>	Improved walking and bicycling safety behavior; youth empowerment
<b>Potential Lead</b>	Parents or other school volunteers , Pine Meadow PTO
<b>Potential Partners</b>	Pine Meadow Principal and Staff, Sartell-St. Stephens School District; City of Sartell; law enforcement ; BLEND staff
<b>Recommended Timeframe</b>	Can be first associated with an event and build to weekly and daily depending on interest and volunteer capacity.
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>• Consider a simple survey to determine interest in promoting as a school-wide or neighborhood program</li> <li>• Identify a coordinator</li> <li>• Coordinate with Walk and Bike to School Maps</li> </ul>
<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.

#### 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



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## Early Steps

### Finding a Coordinator

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 for consistency and reliability. The walking school bus coordinator can begin by assessing resources (such as parent volunteers) and interest. A school-wide survey (paper 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, 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 (i.e., one meeting place per block or 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.



## Trip/Mileage Tracking Program

<b>Primary Outcomes</b>	Increased walking, bicycling, transit use, or carpooling; youth empowerment
<b>Potential Lead</b>	Pine Meadow Administration and teachers; PTO/parents
<b>Potential Partners</b>	Sartell -St. Stephen School District; local groups/advocates/volunteers; local businesses
<b>Recommended Timeframe</b>	Annually, possibly in conjunction with International Walk and Bike to School Day or Bike Month
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>Identify staff and volunteer resources available</li> <li>Determine the duration and format of the competition</li> <li>Consider coordination with other events or learning objectives at the school</li> </ul>
<b>Planning Resources</b>	National Center for Safe Routes to School Guide: <a href="http://guide.saferoutesinfo.org/encouragement/mileage_clubs_and_contests.cfm">http://guide.saferoutesinfo.org/encouragement/mileage_clubs_and_contests.cfm</a> Fire Up Your Feet Minnesota: <a href="http://mn.fireupyourfeet.org/about/fire-your-feet-minnesota">http://mn.fireupyourfeet.org/about/fire-your-feet-minnesota</a> MnDOT Encouragement Programs: Trip Tracking and Competitions webinar <a href="http://www.dot.state.mn.us/saferoutes/toolkit.html">http://www.dot.state.mn.us/saferoutes/toolkit.html</a>
<b>Sample Program</b>	Marin County (CA) Pollution Punchcard: <a href="http://www.saferoutestoschools.org/SR2Simages/Pollution-Guide-09-2.pdf">http://www.saferoutestoschools.org/SR2Simages/Pollution-Guide-09-2.pdf</a>

A trip or mileage tracking program can be implemented as an opt-in club, a classroom activity, or a collaborative school-wide event. Students track trips or mileage made by walking, bicycling, transit, or carpools with some type of goal or culminating celebration or reward. Students can work towards a certain milestone to earn a prize or raffle entry, or they can track their individual or group progress as miles across their town, the state of Minnesota, or the United States. The program should encourage all students to participate, regardless of where they live; those who live too far to walk can participate in a “park and walk” activity or students can be accommodated in PE class or during recess. Example programs include Pollution Punchcards or Walk Across America.

Pine Meadow already has an existing walking fundraiser in the spring each year. This program could be coordinated with that event to increase awareness about SRTS and active travel to school while fundraising for the school.



**Classrooms can compete for the ‘golden sneaker award’ or other that honors their walking and cycling efforts**



**Simple punch cards can be used to track trips**



## Drop-off Valet Program

<b>Primary Outcome</b>	Improved walking and driving safety behavior; youth empowerment
<b>Potential Lead</b>	Pine Meadow Administration and Teachers
<b>Potential Partners</b>	PTO/Parents, once established – older students, Sartell Police Department
<b>Recommended Timeframe</b>	Ongoing/daily
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>Organize a trial run of the valet program with the support of teachers as valet.</li> <li>Once established, older students may be trained to support teachers or to run the valet semi-independently with minimal teacher supervision</li> </ul>
<b>Planning Resources</b>	National Center for Safe Routes to School Guide: <a href="http://guide.saferoutesinfo.org/dropoff_pickup/assistants_to_help_students_in_and_out_of_vehicles.cfm">http://guide.saferoutesinfo.org/dropoff_pickup/assistants_to_help_students_in_and_out_of_vehicles.cfm</a>
<b>Sample Programs</b>	San Mateo County, CA: <a href="http://www.smcoe.k12.ca.us/Pages/default.aspx">http://www.smcoe.k12.ca.us/Pages/default.aspx</a> Santa Clarita, CA: <a href="http://www.santa-clarita.com/index.aspx?page=178">http://www.santa-clarita.com/index.aspx?page=178</a>

In a valet program, students, teachers, or volunteers are trained to assist with drop-off and pick-up procedures to expedite and standardize the process. This allows students to get in and out of cars safely and quickly, discouraging unsafe behaviors and reducing hazards for students arriving or leaving school.

During school drop-off and pick-up times, the area in the immediate vicinity of the school is often congested. To avoid this situation, parents engage in unsafe behaviors, like dropping off and picking up their children in the traffic lane, making illegal U-turns, and parking in restricted zones, all of which create potentially unsafe environments for children. In the valet program, those assisting children help with traffic control by moving vehicles through the drop-off/pick-up line, helping children into and out of the car, opening and closing doors for children and informing parents when they are being unsafe.

Students, teachers, or volunteers should be properly trained in safety techniques and equipped with safety vests so that they are easily distinguishable and highly visible to motorists. Additional supervision or oversight of those assisting may be required.

As a first step, the Pine Meadow can try drop off valet with the support of teachers. As the program is established, older students can be trained to support teachers and participate in the valet program.



***In a valet program, students, teachers, or volunteers are trained to assist with drop-off and pick-up procedures.***



## Sartell Middle Programs

Middle school students are a great audience for a Safe Routes to School program because they have more developed cognitive ability than elementary school students, allowing them to judge unsafe conditions and understand why they need to exhibit safe behavior. Children this age are also likely to have a more comprehensive understanding of road rules and have the peripheral vision development to judge the speed of cars. Further, middle school students have an expanded awareness of social, cultural, and environmental issues and are more likely to understand the values of walking and bicycling.

Planning educational and encouragement activities for middle school students presents opportunities and challenges. This age group is seeking and gaining more independence, but is vulnerable to self-consciousness and peer pressure. Bicycling and walking are viable options for many children this age and may help provide their sought-after independence, but children may perceive walking and bicycling to school as “uncool” or they may be concerned about gaining peer approval.

The success of educational and encouragement programs lies in providing middle school students with opportunities for self-expression, hands-on learning, and playing a role in the implementation of their own Safe Routes to School programs. Students can design and create outreach materials, coordinate logistics for assemblies or publicity campaigns, and use technology and other skills to understand and share their understanding of the value of walking and bicycling.



**Parents can work side by side with middle school students to develop programs and participate in events.**

## After School Program or Club

<b>Primary Outcomes</b>	Increased walking, bicycling, transit use, and/or carpooling; youth empowerment
<b>Potential Lead</b>	Sartell teachers, parents and students
<b>Potential Partners</b>	Sartell -St. Stephen School District; local groups/advocates/volunteers; local businesses
<b>Recommended Timeframe</b>	Weekly or in time segments depending on interest and capacity
<b>Getting Started</b>	<ul style="list-style-type: none"> <li>Identify a student interest to organize around, locate appropriate leaders</li> </ul>
<b>Sample Program</b>	Community Cycling Center in Portland Oregon <a href="http://www.communitycyclingcenter.org/index.php/programs-for-youth/bike-club/">http://www.communitycyclingcenter.org/index.php/programs-for-youth/bike-club/</a>

An after-school club can take many forms and address many different themes, including bike repair, sport cycling, environmental issues (green teams), and community/civic engagement. After-school programs can engage students in developing outreach materials and content for other programs such as walk to school days or a school safety campaign. Older students can mentor and provide support for younger students in bicycle maintenance and skills. SRTS themes can be built into existing program or can be developed as a standalone program.



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## 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 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 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



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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.

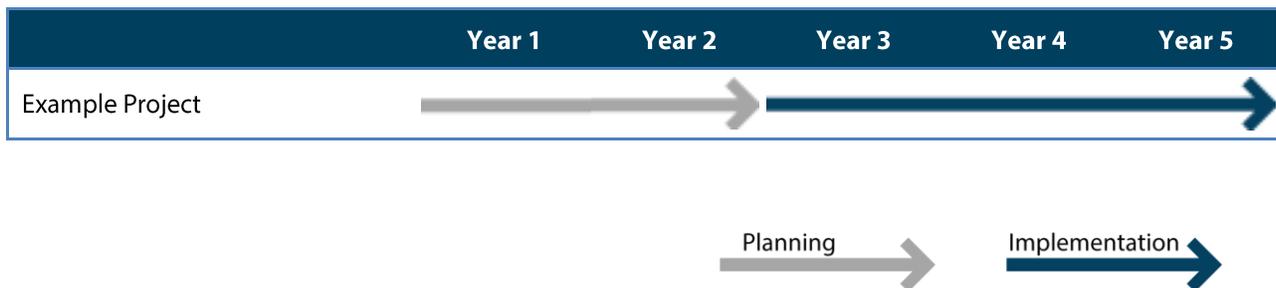
### Year One

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, including a list of steps to get started on implementation.

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 3. Programs to Implement at Both Schools**

Type	Program	Potential Lead	Key Partner	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Encouragement</b>	International Walk to School Day and Bike to School Day	BLEND	School Administrators	Implementation				
<b>Encouragement</b>	Trip Tracking – Fit Kids Club	BLEND	Parents	Implementation	Planning			
<b>Education</b>	SRTS walk and bike maps	City of Sartell	BLEND	Implementation	Implementation	Planning	Implementation	Implementation
<b>Education</b>	School Safety Campaign	City of Sartell	School Administrators	Planning	Implementation	Implementation	Implementation	Implementation
<b>Education</b>	Classroom Lessons (Minnesota Walk! Bike! Fun! Curriculum)	Sartell - St. Stephens School District	Teachers	Planning	Implementation	Implementation	Implementation	Implementation
<b>Enforcement</b>	Digital speed reader signs and targeted enforcement	Sartell Police Department	BLEND	Implementation	Implementation	Implementation	Implementation	Implementation
<b>Enforcement</b>	Year round crossing guards	Sartell - St. Stephens School District	School Administrators	Planning	Implementation	Implementation	Implementation	Implementation



**Table 4. Additional Programs to Implement at Pine Meadow Elementary**

Type	Program	Potential Lead	Key Partner	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Encouragement</b>	Walking school bus and/or bike train	Parents	BLEND	▶				
<b>Encouragement</b>	School specific trip tracking/competitions	School Administrators	Teachers/BLEND	▶				
<b>Enforcement</b>	Drop off Valet	School Administrators	Teachers	▶				

**Table 5. Additional Programs to Implement at Sartell Middle School**

Type	Program	Potential Lead	Key Partner	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Encouragement</b>	Walking/Bicycling to School Mileage Contests	School Administrators	Teachers	▶				
<b>Encouragement</b>	Walking/Bicycling Club or Green Transportation Club	Teacher/ after school lead	BLEND	▶				



## Infrastructure Action Plan

### Pine Meadow Elementary

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

**Table 6. Pine Meadow Elementary School Implementation Plan**

Project #	Solution/ Recommendation	Lead Agency	Priority	Year 1	Year 2	Year 3	Year 4	Year 5
A	Consider a sidewalk on the west side of Pinecone Rd.	City of Sartell	Medium					
B	Upgrade flashing beacon to Rectangular Rapid Flash Beacon.	City of Sartell	High					
C	Construct a sidewalk ramp and landing at the intersection of 7th St N and 9th Ave N.	City of Sartell	Medium					
D	Upgrade the crosswalk and install warning signs at the midblock crossing of 5th St N.	City of Sartell	High					
E	Potentially maintain and upgrade the paths between the schools.	City of Sartell	Low					
F	Install Rectangular Rapid Flash Beacons to the crossing of Pinecone at 4th St.	City of Sartell	High					
G	Optimize signal timing for all modes to reduce delays at Pinecone Rd at 2 1/2 St N.	Stearns County	Low					
H	Construct sidewalk on 2nd St S from Pinecone Rd to 4th Ave.	City of Sartell	High					
I	Explore a bicycle and pedestrian friendly intersection design for Pinecone Rd and 2nd St S.	City of Sartell	Medium					





## Sartell Middle School

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

**Table 7. Sartell Middle School Implementation Plan**

Project #	Solution/ Recommendation	Lead Agency	Priority	Year 1	Year 2	Year 3	Year 4	Year 5
<b>A</b>	Add landing and corner sidewalk with curb ramps to north side of 7th St N crossing at 7th Ave N.	City of Sartell	Medium	█	➔			
<b>B</b>	Relocate marked crosswalk and Add landing and corner sidewalk at 7th St N crossing at 5th Ave N. Consider installing an RRFB.	City of Sartell	High	█	➔			
<b>C</b>	Consider restriping the parking lot.	Sartell-St. Stephens School District	Low	█	➔			
<b>D</b>	Cover the existing bike parking.	Sartell-St. Stephens School District	Low	➔				
<b>E</b>	Construct a path from 5th St N to the existing bike parking.	Sartell-St. Stephens School District	High	█	➔			
<b>F</b>	Prohibit parking in advance of crosswalk at 7th Ave N.	City of Sartell	High	➔				
<b>G</b>	Widen the gate to the school on 5th St N near the playground.	Sartell-St. Stephens School District	High	➔				
<b>H</b>	Install 4-way stop signs on 2nd Ave N at 5th St N.	City of Sartell	Medium	█	➔			
<b>I</b>	Install a warning sign at the sharp corner of 7th Ave & 4th St.	City of Sartell	Low	█	➔			
<b>J</b>	Fill sidewalk gap Along 5th Ave N.	City of Sartell	Medium	█	█	█	➔	
<b>K</b>	Fill sidewalk gaps along 2 <sup>nd</sup> Ave N.	City of Sartell	Medium	█	➔			



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# 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

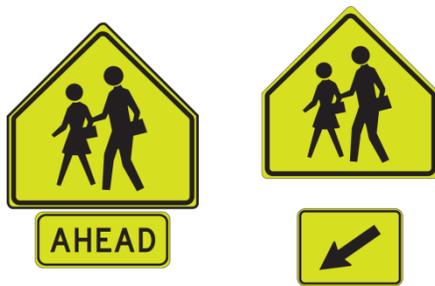


## School Area Specific Signing and Marking



### 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.



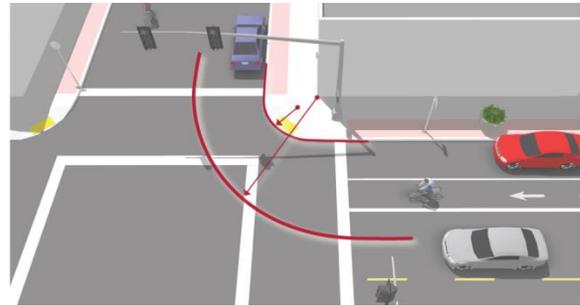
## Audible Signals

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

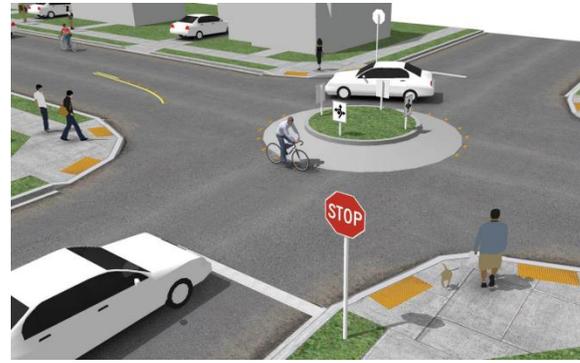
A chicane is a curb extension, usually built in alternating patterns or with intermittent median strips, that creates an S-shaped curve on a street. These minor curves require motorists to proceed with greater caution and slower speeds. They may also provide additional space for landscaping or pedestrians.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



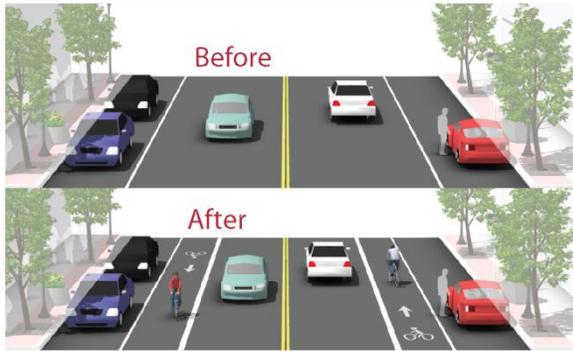
## Traffic Circles

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.



## Diverter

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.



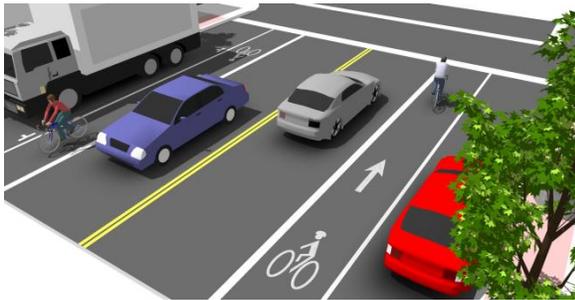
## Road Diets

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.