

JUNE 2018



Safe Routes to School

A plan to make walking and biking to school a safe, fun activity

NORTH TRAIL ELEMENTARY SCHOOL

FARMINGTON AREA PUBLIC SCHOOLS

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TABLE OF CONTENTS

01

INTRODUCTION + CONTEXT

Why Safe Routes to School.....	5
The Six E's & Navigating this Plan	6
The Vision.....	7
North Trail in Context	8

02

PROGRAMS

Introduction	11
Existing Programs	12
Program Recommendations	13

03

INFRASTRUCTURE

Introduction	21
Existing Infrastructure.....	22
Recommended Infrastructure.....	23

04

HOW TO GET INVOLVED

Using this Plan	27
Who are You?.....	28

A

APPENDICES

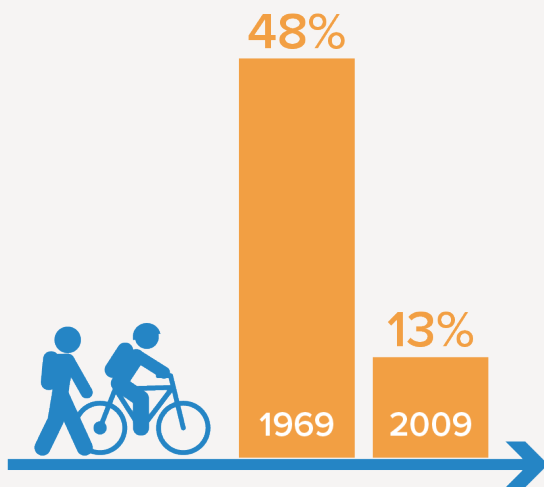
For More Information	A
Facts for School Communication.....	B
Planning Process Summary.....	C
Existing Conditions.....	D
Parent Survey.....	E
Student Hand Tally	F
Infrastructure Toolbox	G
Bike Parking for Schools	H
Maintenance Planning	I
Equity in SRTS Planning.....	J



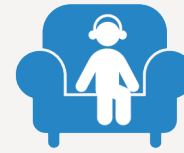
01

INTRODUCTION + CONTEXT

Why Safe Routes To School?



THE PERCENTAGE OF CHILDREN WALKING OR BIKING TO SCHOOL HAS DROPPED PRECIPITOUSLY WITHIN ONE GENERATION



MOST 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 the recommended 60 minutes of daily physical activity during the trip to and from school



Are more likely to be a healthy body weight



Demonstrate improved test scores and better school performance*



Are less likely to suffer from depression and anxiety

THE VICIOUS CYCLE OF INCREASED TRAFFIC LEADING TO REDUCED WALKING AND BICYCLING:



Fewer students walking & biking to school

More parents driving children to school

Rising concern about safety of walking & biking

Increased traffic at and around school

*More information, including primary sources, can be found at <http://guide.saferoutesinfo.org>

The Six E's

Safe Routes to School (SRTS) 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 E's." Equity, the 6th E, is an overarching part of this plan.

EQUITY

Equity is an overarching concept that applies to all of the E's. Equity in SRTS means that the SRTS program is inclusive, celebrates the diversity of students, allocates resources to overcome inequities, and supports a community where walking and biking is safe, comfortable, and convenient for every student.



EDUCATION

Programs designed to teach children about traffic safety, bicycle and pedestrian skills, and traffic decision-making.



ENFORCEMENT

Law enforcement strategies aimed at improving driver behavior near schools and ensuring safe roads for all users.



ENCOURAGEMENT

Programs that make it fun for kids to walk and bike, including incentive programs, regular events, or classroom activities.



EVALUATION

Strategies to help understand program effectiveness, identify improvements, and ensure program sustainability.



ENGINEERING

Physical projects that are built to improve walking and bicycling conditions.

Navigating this Plan

Below is a road map for navigating the way through this plan. Use it to find all the information you need for helping students be safer and more active!



PROGRAMS

Getting kids to walk and bike to school requires fun and engaging programs for schools and families. Turn to this section for recommended events, activities, and strategies that will get students moving.



HOW TO GET INVOLVED

As more people get involved in Safe Routes to School programs, the more successful they are. Use this section to find out how you can be a part of this important initiative.



INFRASTRUCTURE

Ensuring the safety of students on their trips to and from school means upgrading the streets. See this section for suggestions to improve the safety, comfort, and convenience of walking and biking, including paint, signage, and signals.



APPENDICES

There is more information available than could fit in this plan. For additional resources, turn to this section.



The Vision

This plan provides recommendations to make walking and biking to and around school a safe, comfortable, and fun activity for all students and families at North Trail Elementary School.

This plan was made possible with support from the Statewide Health Improvement Partnership and Dakota County Public Health and was developed in coordination with the city, school district, and school community. It is the product of workshops, discussion, and site visits involving city and county representatives, teachers, school staff, students, and law enforcement.

This report offers program and infrastructure recommendations based on the 6 E's model. Some recommendations may be implemented almost immediately while others will take more planning, analysis, and funding. While not all of recommendations can be implemented immediately, it is important to achieve short-term successes to build momentum and lay the groundwork for more complex projects.

EQUITY HIGHLIGHT

EQUITY IN SRTS

Equity in SRTS means that walking and biking to school is safe, comfortable, and convenient for every student, regardless of race, cultural identity, immigrant or refugee status, language, gender or sexual identity, income, religion, and whether or not a student receives special education, has a physical or mental disability, or is homeless or highly mobile.

An equitable SRTS program celebrates differences, and recognizes and overcomes avoidable inequities in opportunities for students to walk or bike to school.



North Trail in Context

North Trail Elementary School is located in the City of Lakeville at the northern boundary of Farmington Area School District. The campus is bound by 170th Street W on the north and Pilot Knob Road on the east. Surrounding land use is primarily residential, including single-family homes and a mobile home community directly west and south of campus. A campus trail connects North Trail Elementary School directly to Eventide Way on the west side of the school and to North Creek Drive and North Creek on the south side of school. A number of parks are also located near North Trail. Several are connected to the school by way of North Creek Trail, others are located northeast of Pilot Knob Road.

During the 2017-2018 school year, 590 students grades K-5 attended North Trail Elementary. The school's enrollment boundary includes the northwest edge of the district, extending roughly from Dodd Boulevard to the east city boundary and from 170th Street

W to 180th Street W. Pilot Knob Road is considered a hazardous street by the school district, so students who live east of Pilot Knob are not permitted to walk or bike and are eligible for busing.

As per Farmington Area Public School District's transportation policy, elementary students must live more than one mile from school to be eligible for District-provided transportation.

In response to a survey about walking and biking sent home in the spring of 2018, parents of students at North Trail indicated that 54 percent of students live more than one mile away from school and typically travel to and from school by family vehicle or school bus. Only two percent of parents reported their child walking to and from school. None reported their child biking to school. Of the children who live under one-quarter of a mile from school, 80 percent have reportedly asked permission to walk or bike to school.



This number decreases dramatically as distance from school increases.

According to the survey, parents most often reported distance, the amount of traffic, and the safety of intersections as reasons to not allow their children to walk or bike to school. Eighty-six percent of parents thought walking and biking to school was "healthy" or "very healthy."

In May, North Trail Elementary staff conducted student travel tallies to get a broader sense of how students travel to and from school. Tallies were taken for three consecutive days. Between 497 and 556 students participated each day. Most students reported traveling to or from school by bus or family vehicle (as high as 57 and 41 percent, respectively). Four percent of students reported walking home, one percent bike, and two percent carpool with other students' families.



APPENDIX

FURTHER READING

.....

The summary on this page takes information from more detailed existing conditions reports, which can be found in Appendix D. There you'll find a report that discusses surrounding land use, travel patterns, and a map illustrating where North Trail students live. This information helped planners and community stakeholders develop the best strategies for increasing safety and comfort for students walking and biking to school.





Introduction to Programs

The Safe Routes to School movement acknowledges that infrastructure changes are necessary for shifting school travel behavior, but are insufficient on their own. Programs are a necessary component of any successful SRTS plan.

While engineering improvements such as sidewalks, crosswalks, and bikeways are important, equally important are education programs to give children and families 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. Often, programs that help to get more kids walking and biking lead to increased public support for infrastructure projects - they can be an important first step towards building out the physical elements that make walking and biking safer and more comfortable. And relative to certain infrastructure projects, most programs are very low cost.

EQUITY HIGHLIGHT

EQUITY IN PROGRAMMING

When planning and implementing your SRTS programming, it is important to design events and activities that are inclusive of students of all backgrounds and abilities. Language and cultural barriers, physical abilities, personal safety concerns, and infrastructure barriers can all create potential obstacles to participation. Creative outreach, low-cost solutions, and flexible implementation can help overcome obstacles and enable more students and families to participate.

For more information about equity in SRTS planning, see Appendix J.



Existing Programs

North Trail Elementary School, Farmington Area School District, and the City of Lakeville have been actively working to provide safe and inviting spaces around school for students. This foundation of encouraging student travel safety is valuable for expanding programs to encourage more students to walk and bike. Here are a few programs that already exist for students attending North Trail Elementary School:

Programs already active at North Trail

- Daily physical education and recess: North Trail promotes physical activity and active living amongst students with daily physical education and recess.
- Running club: A current teacher previously led a North Trail running club to build community and increase physical activity amongst students.
- Student safety patrols: Student safety patrols are stationed at two locations on campus including in the northeast parking lot and across the school bus driveway.
- Events including family nights, Fun Run, Track and Field Day, Summer Safety Camp: North Trail hosts and participates in a variety of events that bring together families and/or have a safety or active living component. These events could be used to promote and support SRTS initiatives.
- Participate in Health and Wellness Committee: School staff participate in a district-wide health and wellness committee that supports students and staff by creating an environment that encourages healthy eating and active living.
- Parent Teacher Partnership / parent volunteers: North Trail has an active Parent Teacher Partnership and parent volunteer group. This community of engagement parents can help support and promote SRTS initiatives.
- Walking field trips: Walking field trip destinations have included the fire station and nearby parks.



Program Recommendations

The following programs were identified as priority programs by the North Trail SRTS team during the planning process. These programs were selected to meet the needs and interests of the school community in the near term (one to five years). Some were recommended to build on existing support and resources from the school and school district. During the planning process, programs were discussed with stakeholders to determine compatibility with North Trail Elementary School.

Recommended program list

- Walking and biking field trips
- Walk! Bike! Fun!
- Walking School Bus
- Bike drive
- Class or school competitions
- Walk/Bike Safety Week


- Walk and Bike to School Day
- School communication
- Parent workshop

Programs have been prioritized into implementation timelines based on stakeholder feedback, existing programs already at the school, and the readiness of the school to launch the program:

- Immediate implementation
- Short-term (1-2 years)
- Medium term (2-3 years)

Additional details about each recommended program including a brief description, suggested leads, and an explanation of why the program is being recommended are provided on the following pages.










TIPS FOR KIDS
WALK & SKATE SAFE!

USE A CROSSWALK & THE CROSSING GUARDS:
Always cross at corners or at a marked crosswalk where drivers expect to see you. Cross with the crossing guard if your school has one.

LOOK BEFORE YOU CROSS:
Look left, right, and left again before crossing a street. Make eye contact with drivers before stepping off of the sidewalk.

BE VISIBLE:
If possible, wear reflective or bright-colored clothing and walk with one or more walking buddies.

WALK WITH CARE:
If there is no sidewalk, walk facing traffic as far to the side of the road as possible, but do not weave in and out of parked cars.




TIPS FOR KIDS
BIKE SAFE!

WEAR YOUR HELMET:
It models good behavior. Helmets should fit snug, be level on your head and should always be buckled firmly under your chin.

RIDE PREDICTABLY:
Look for vehicles and signal to drivers which direction you plan to go before making turns. Ride in a straight line. Avoid the door zone, about five feet away from parked cars.

RIDE WITH TRAFFIC:
Ride on the right, in the direction of traffic. Obey all signs and signals.

LOCK YOUR BIKE:
When you get to school, lock your bike to a bike rack inside the campus. Lock both your front wheel and the bike frame to the rack.

WALK AND BIKE TO SCHOOL DAY

Walk and Bike to School Day is an international event that attracts millions of participants in over 30 countries every October. In addition, Minnesota celebrates Bike to School Day in May and Winter Walk to School Day in February. These events encourage 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 are often promoted through press releases, backpack/folder/electronic mail, newsletter articles, and posters. Students can earn incentives for participating or there is a celebration at school following the morning event.

Program Lead: School staff and administrators; support from Lakeville Police Department

Timeline: Immediate

Why we recommend it: North Trail is participating in Walk to School Day in May 2018. Walk and Bike to School Day is a great way to continue the momentum of SRTS initiatives at North Trail. Consider increasing frequency to monthly or weekly walk/bike events and partnering with local law enforcement to register bikes and encourage safe walking, biking, and driving behavior. Materials can be downloaded at the MN SRTS Resource Center.

SCHOOL COMMUNICATION

Communication could come as a paper or electronic newsletter or school social media blast describing safe transportation practices in and around school, making sure to elevate walking and biking as an option. Communication can inform parents of safe crossings and how to dress appropriately for weather. Information could describe where bike parking and other resources are located at each school. Communication can also highlight SRTS news and efforts and advertise upcoming events related to walking and biking.

Program Lead: School staff and administrators

Timeline: Immediate

Why we recommend it: North Trail has an active PTP Facebook page. Consider regularly posting about safe habits and encouraging families and students to give walking and biking a try. More detailed information about safe driving near schools can be sent home via newsletter or Facebook at the beginning of the year and after winter breaks.



WALKING AND BIKING FIELD TRIPS

A field trip made by foot or by bicycle gives students a supportive environment in which to practice their pedestrian safety or bicycling skills. Walk / bike field trips can also showcase the many benefits of walking and bicycling for transportation including health and physical activity, pollution reduction, and cost savings. The destination of the field trip may vary, or the field trip could be the ride or walk itself.

Program Lead: School administration, school staff; support from City of Lakeville Engineering, Environmental Resources, Parks and Recreation, Police and Fire staff.

Timeline: Short (1-2 years)

Why we recommend it: During the workshop, participants noted that kindergarten students previously walked to the fire station for field trips and that students currently participate in a school-wide walking field trip to East Lake Park for an end of year celebration. Potential destinations for fun, place-based, and/or science-related field trips include North Trail Creek, East Community Park, Valley Lake Park, local parks and trails, the future North Creek Regional Greenway Corridor Trail, or on-campus destinations such as the school garden or future campus loop.

WALK! BIKE! FUN!

Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum is a two-part curriculum designed specifically for Minnesota's schools. It is structured to meet Minnesota education standards and is an important part of the Safe Routes to School Program in Minnesota. Walk! Bike! Fun! helps children ages five to 13 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.

Program Lead: School staff and administrators, Farmington Area Public Schools; support from City of Lakeville Engineering, Parks and Recreation, and Police staff.

Timeline: Short (1-2 years)

Why we recommend it: There was significant interest in Walk! Bike! Fun! Curriculum at the workshop. Because North Trail has PE every day, there could be space in the existing curriculum to integrate lessons from Walk! Bike! Fun!



WALKING SCHOOL BUS

A Walking School Bus is a group of children walking to school, often with one or more adults. Parents can take turns leading the bus, which follows the same route each day and picks up children from their homes or designated bus stops at specified times. Ideally, buses run every day or on a regular schedule so families can count on it, but they often begin as a one-time pilot event. Older students or “walking buddies” could also be used once a safe route has been established with the help of a trusted adult.

Program Lead: North Trail PTP

Timeline: Short (1-2 years)

Why we recommend it: Many students live within walking distance of North Trail and near one another. With such an active parent community, a Walking School Bus has great potential. Parents could trade off being the “bus driver” throughout the week or try the event once or twice. Routes could be determined based on low-stress streets and trail/sidewalk connectivity. Bus ‘drivers’ could be provided with reflective vests to increase visibility and identify them as leaders.



BIKE DRIVE

A bike drive is an event where bicycles are donated, collected, repaired, and given away to students who do not have access to them. A bike drive can be hosted and organized by a school district, police department, or any other community group. These events can also take the form of a bike swap, where families trade different sized bicycles once one child has outgrown a certain bike. A trained bicycle mechanic should always be on site to ensure any bike is safe to ride before leaving with a family.

Program Lead: Lakeville Police Department, Farmington Area Public Schools, local bike industry champion

Timeline: Short (1-2 years)

Why we recommend it: At the workshop, the police department representative mentioned that a large number of bicycles are collected by the department each year. Some of these could be donated to North Trail or the district to be distributed to families and students who do not have access to a bike. Coordinate with Lakeville Police to register bikes through the bike drive. Explore opportunities to partner with local bike industry champions/sponsors to conduct mechanic checks and provide incentives like reflectors.



CLASS OR SCHOOL COMPETITIONS

Competitions and contests reward students by tracking walking and biking activity. Contests can be individual, classroom competitions, school wide, or between schools. Students and classrooms can compete for inexpensive prizes and bragging rights. Competitions could be held on an ongoing monthly basis or a couple times a year and incorporated into other events such as Walk to School Day or a bicycle rodeo.

Program Lead: School staff and administrators, local sponsors to provide incentives

Timeline: Short (1-2 years)

Why we recommend it: Competitions are great for elementary students. Consider combining these events with walking field trips to see which classes get the most steps in or a geocaching scavenger hunt. Displaying counts or tallies in common areas of the school that track walking will encourage other classrooms to join the competition. During the workshop, school faculty brainstormed a pizza lunch, which could be raffled off to students who walk or bike to school.

WALK/BIKE SAFETY WEEK

A safety week teaches students and families essential safety information all in one week. The information does not need to focus specifically on walking and biking, but at least one lesson should be devoted to transportation safety. Hold safety week in coordination with walk and bike to school days in fall and spring to review walking and biking skills, safety, and rules of the road. Information might include: how to safely cross streets, how to signal your turns on a bicycle, proper helmet fitting, emergency exiting from buses, and safe driving around campus.

Program Lead: Lakeville Police Department, Farmington Area Public Schools, school staff and administrators; support from City of Lakeville Engineering, Environmental Resources, Parks and Recreation, Police and Fire staff

Timeline: Short (1-2 years)

Why we recommend it: During the workshop, participants identified opportunities to organize a school-time version of the existing summer safety camp. Each day of the week could include a brief safety lesson focused on a different topic area or objective or a field trip to learn about different types of roadway infrastructure. Local law enforcement or other “local celebrities” could help lead activities.



PARENT WORKSHOP WITH PTP

Since parents are usually the ones deciding whether their children walk or bike to school, a workshop designed for them can provide the tools, resources, and support needed to being walking or biking for transportation. Topics could include starting a walking school bus, carpool matching, launching a safety campaign, how to be a responsible driver, or organizing an event such as Walk and Bike to School Day.

Program Lead: School staff and administrators, North Trail PTP

Timeline: Short (1-2 years)

Why we recommend it: North Trail has an active PTP. Leveraging their resources and communication channels would help connect parents to each other to form a walking school bus or volunteer for a walk to school day. A workshop at the beginning of the year could discuss busing, but also include conversations about walking and biking events.



EVALUATION

PARENT SURVEYS AND STUDENT TRAVEL TALLIES

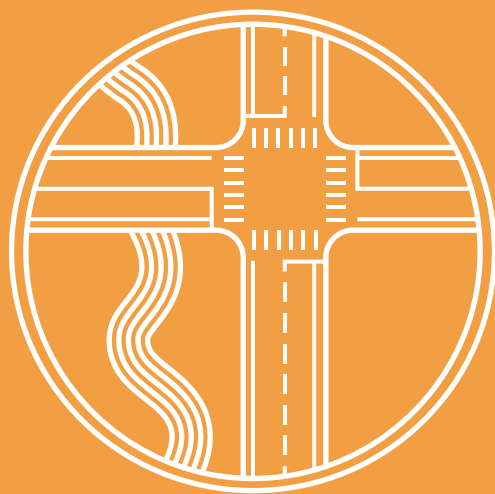
There are two great tools to evaluate all the SRTS work in the community:

Parent Surveys: Recommended once every 2-3 years. A hard copy survey or link to an online version can be sent to parents to gather their perceptions of walking and biking to school. Surveys can be distributed through newsletters, school websites, or at conferences.

Student Travel Tally: Recommended in fall and spring of every year. In-class tallies ask students how they traveled to and from school on a given day.



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Introduction to Infrastructure

In addition to program recommendations, changes to the streetscape are essential to making walking and biking to school safer and more comfortable.

The initial field review and subsequent meetings yielded specific recommendations to address the key identified barriers to walking and bicycling at North Trail Elementary School.

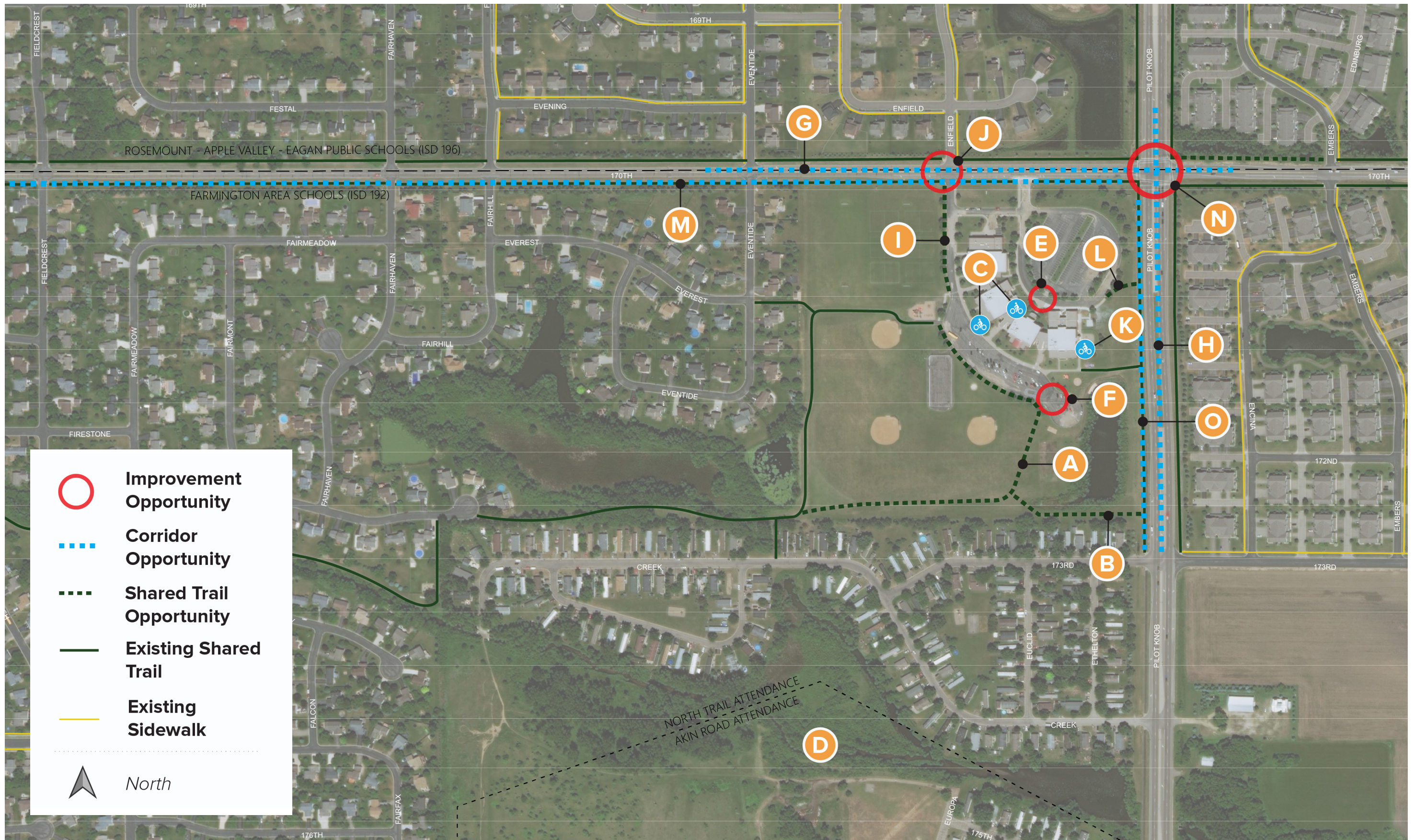
This plan does not represent a comprehensive list of every project that could improve conditions for walking and bicycling in the neighborhood. Instead, it calls attention to key conflict points: the highest priority infrastructure improvements to improve walking and biking access to school. Recommendations range from simple striping changes and signing to more significant changes to the streets, intersections, and school infrastructure.

Engineering recommendations are shown on the Recommended Infrastructure Map on page 23 and described in the table on the following page. It should be noted that funding is limited and all recommendations are planning level concepts only. Additional planning and engineering study will be needed to confirm feasibility and costs for all projects.

Existing Infrastructure



Left to right from top left: Buses circulate through the southern parking lot; parents drop off along the curb in the northern parking lot; bike racks are located near the kindergarten playground; trails and school crossing signage on 170th Street; looking north toward the school from the mobile home development; student patrols facilitate crossings in the main parking lot and across the bus driveway.



Infrastructure Recommendations

Infrastructure Recommendations

	LOCATION	PROBLEM/ISSUE	RECOMMENDATIONS	ANTICIPATED OUTCOME	LEAD	PRIORITY
A	East and south perimeter of athletic fields	Need for comfortable, reasonably direct route from North Creek Mobile Home development to school; interest in creating a campus walking loop.	Install shared use path that completes perimeter around athletic fields.	Increased walking and biking from the neighborhoods to the south; half-mile walking campus walking loop for students and faculty.	Farmington Area Public Schools	High
B	Southeast edge of school campus	Provide a walking route that minimizes the need for students to walk along Pilot Knob Rd.	Install a shared use path between Pilot Knob Rd and the future campus walking loop. Coordinate with Item A.	Increased walking and biking from the neighborhoods to the south.	Farmington Area Public Schools	High
C	North and south entrances to school	No bicycle parking at main entrances.	Install high quality bicycle parking near entrances. See Appendix H for more information about bicycle parking.	Secure, high quality bicycle parking to encourage more students and staff to bike to school.	Farmington Area Public Schools	High
D	Future development sites	Future connectivity opportunity.	Coordinate with future development to ensure people walking and biking have safe, comfortable, and efficient ways to reach North Trail including neighborhood roads, sidewalks, and trail easements. Consider shifting enrollment boundaries to increase number of students who live within walking or biking distance of their assigned school.	Future opportunities for students to walk or bike to school; increasing the number of students who live within walking distance of their assigned school.	Cities of Lakeville and Farmington, Farmington Area Public Schools	Medium
E	Parking lot crossing nearest to main entrance	Parent pick-up and drop-off traffic conflicts with pedestrian crossing between main entry and school parking lot.	Install ADA compliant raised crosswalk.	Increased visibility and comfort for pedestrians; reduce motorist speeds and discourage blocking crosswalk.	Farmington Area Public Schools	Medium
F	Crossing of south parking lot at cul-de-sac	In coordination with Item A, provide designated crossing of bus loop for students walking or biking to campus from trail extension.	Install a high visibility crosswalk, signage, or define preferred route with raised walkway. Consider involving families, students, and school staff or art classes in enhancing the crossing with bright colors and designs.	Formalize route across south parking lot and bus loop for students accessing the school from the south.	Farmington Area Public Schools	Medium
G	170th St from west of Eventide Way to east of Pilot Knob Rd	SCHOOL CROSSING AHEAD signage is inconsistent with actual conditions. 170th St is the school district boundary. There are no designated school crossings of 170th St.	Establish school zone between Pilot Knob Rd and Eventide Way. Replace existing SCHOOL CROSSING AHEAD signage with SCHOOL ZONE BEGINS / ENDS or SCHOOL SPEED LIMIT AHEAD. Replace existing school speed limit sign with one that specifies arrival and dismissal times.	Clarify school signage; look for opportunities to reduced traffic travel speeds; greater comfort for people walking and biking to school.	City of Lakeville, Farmington Area Public Schools	Medium
H	Pilot Knob Rd from north of 170th St to 173rd St	SCHOOL CROSSING AHEAD signage inconsistent with actual conditions; families who live south of school do not feel comfortable walking along Pilot Knob Rd to reach school; students are not permitted to walk from east of Pilot Knob Rd due to Pilot Knob Rd's designation as a hazardous road.	Consider school speed zone between 170th St and 173rd St. Replace existing SCHOOL CROSSING AHEAD signage with SCHOOL ZONE BEGINS/ENDS or SCHOOL SPEED LIMIT AHEADS signage. If and when trails along Pilot Knob Rd are repaved or reconstructed, explore opportunities relocated trail further west to provide additional separation between trail users and motorized traffic.	Clarify school signage; look for opportunities to reduce traffic travel speeds during arrival and dismissal; greater comfort for people walking or biking to school.	Dakota County, Farmington Area Public Schools	Medium
I	West side of driveway to south parking lot	No dedicated pedestrian walkway on west side of driveway. Opportunity to eliminate student crossing of school driveways and route them to patrolled crossing.	Install sidewalk along west side of driveway between existing school patrolled crossing at south loop and 170th St.	Reduce conflict points for students walking to school from 170th St; provide safe, separated route that utilizes existing patrolled crossing.	Farmington Area Public Schools, City of Lakeville	Medium
J	170th St & Enfield Way	No dedicated crossing of 170th St for students who live on the north side of the street and open enroll or for any residents accessing the park.	Consider lane reconfiguration and crossing improvements when 170th St is repaved. Reconfiguration could include reducing westbound through lanes to one, providing a dedicated left turn lane for school driveways, and installing a pedestrian refuge in the left turn lane shadow on the west leg of Enfield Way. Additional engineering study needed.	Improve visibility of pedestrians accessing the school or park grounds from north of 170th St.	City of Lakeville	Low
K	East entrance of school near kindergarten door	Bicycle parking provided but not ideal design or placement. Installation and design can be improved for secure, higher quality parking.	Move Inverted-U rack away from fence to allow for proper locking and replace toaster style rack with higher security design. See Appendix H for more information about bicycle parking.	Secure, high quality bicycle parking to encourage more students and staff to bike to school.	Farmington Area Public Schools	Low
L	Boulevard between Pilot Knob Rd and parking lot, north side of school	Sidewalk on school grounds terminates with no connection to shared use path along Pilot Knob Rd.	Install shared use path to connect sidewalk and shared use path.	Provide connection between main entrance and Pilot Knob Rd for people who may access the school from the north or east.	Farmington Area Public Schools	Low
M	Trail along 170th St west of Pilot Knob Rd	Trail surface is in poor condition.	Consider resurfacing trail along 170th St in coordination with planned mill and overlay of the roadway, or including in future City Capital Improvement Plan as a standalone project.	Smoother, more comfortable experience for people walking and biking	City of Lakeville	Low
N	170th St & Pilot Knob Rd	Opportunity to improve comfort and safety for pedestrians and bicyclists in the community.	While there is no official crossing allowed for school access, pedestrian crossing enhancements such as Accessible Pedestrian Signals, countdown timers, and refuge islands would provide improved pedestrian access for the area's neighborhoods.	Improved comfort and safety for people walking and bicycling along and across 170th St and Pilot Knob Rd.	City of Lakeville, Dakota County	Low
O	Trail along west side of Pilot Knob Rd	Pilot Knob Rd is currently uncomfortable for students to walk along and is a barrier to walking to school	Shift trail west to right-of-way line to maximize buffer space between trail users and motorized traffic on Pilot Knob Rd.	Increased comfort for pedestrians.	Dakota County	Low



Planned Infrastructure Projects

The City of Lakeville and Dakota County are in the planning and design phases of several infrastructure projects and studies that may impact people walking and biking travel near North Trail.

This plan supports the continued planning, engineering, and implementation of these projects, and encourages city and county staff to explore opportunities to integrate improvements for walking and bicycling in project design.

North Creek Greenway

The North Creek Greenway is a 14-mile trail corridor that will connect regional destinations including Lebanon Hills Regional Park, the Minnesota Zoo, downtown Farmington, the Vermillion River, and Whitetail Woods Regional Park. The conceptual alignment illustrated in the North Creek Greenway Master Plan passes North Trail Elementary School just east of Pilot Knob Road.

Pilot Knob Road

Dakota County is planning to repave Pilot Knob Road between 190th Street W and 170th Street W in 2018. Existing trails will be seal coated and some storm sewer repairs will occur.

Pilot Knob Road & 170th Street

The city and county are partnering to install advanced traffic management systems along Pilot Knob Road. Projects will include fiber installation, flashing yellow arrows, and traffic monitoring cameras. Pedestrian and bicycle improvements at this location are identified in Item N in this plan's infrastructure recommendations.

EQUITY HIGHLIGHT

EQUITY IN INFRASTRUCTURE

A complete, well-maintained sidewalk and bikeway network can make walking and bicycling to school safe, comfortable, and convenient. Likewise, sidewalk gaps, busy intersections, and physical barriers can deter students from walking or biking to school.

Considering equity in the way infrastructure projects are identified, prioritized, funded, built, and maintained is a key step in creating a more equitable walking and bicycling network. Equitable approaches may include identifying and prioritizing projects based on presence and quality of infrastructure and community need instead of a complaint based system, or moving away from assessing property owners for improvements.

170th Street

170th Street is identified for repaving work between Flagstaff Avenue and Pilot Knob Road in the City of Lakeville's 2018-2022 Capital Improvement Plan. Proposed improvements include reclamation, edge mill and overlay, and spot curb/gutter replacement, and restriping. This project presents an opportunity to change roadway striping and implement multimodal improvements in the corridor.





Using this Plan

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.

This plan provides an overview of Safe Routes to School with specific recommendations for a 6 E's approach to improve the safety and the health and wellness of students. The specific recommendations in this plan are intended to support improvements and programs over the next five years. These recommendations include both long- and short-term infrastructure improvements as well as programmatic recommendations.

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.



Who are you?

Successful programs are achieved through the coordinated efforts of parent volunteers, school staff, local agency staff, law enforcement, and community advocates, such as public health. Each partner has a key role to play in contributing to a plan's success. The following paragraphs highlight the unique contributions of key partners in Safe Routes to School.

I am a parent

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 key to ongoing success by fundraising for smaller projects and programs.

I am a community member

Community residents, even if they don't currently have children enrolled in school, can play an important role in supporting implementation of the plan. They can use this report to better understand where there may be opportunities to participate in programming initiatives and infrastructure improvements. Community members, including seniors or retirees who may have more flexible schedules than parents with school-aged children, may volunteer in established programs or work with school staff or community partners to start new programs recommended in this plan.

I work for the school district

School district 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 are in the best position to keep 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.

I am a school administrator

School administrators have an important role in implementing the recommendations contained within this SRTS plan. For a plan to succeed, 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 by distributing informational materials to parents within school publications. Please read the SRTS Facts for School Communication in Appendix B.

I am a teacher or other staff member

Other than parents, teachers might interact with students the most. Teachers can include bicycle and pedestrian safety in lesson plans (see Walk! Bike! Fun!). Sharing books in your classroom that promote walking and biking is a good way to get kids interested at an early age. Teachers can also arrange for field trips within walking distance of school and incorporate informal lessons about safety along the way. In general, being positive and encouraging about walking and biking is a great way to start!

I work for the city or county

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 SRTS grants
- Federal 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. 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.

I work for the police department

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.

I work in public health

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.

FOR MORE INFORMATION

MN SRTS RESOURCE CENTER

There are many great resources already available on the Minnesota Safe Routes to School Resource Center. You can find answers to many common questions, information about upcoming events, and even promotional material that can easily be customized for your community's SRTS event.

The MN SRTS Resource Center is a great way to stay engaged throughout the year!

mnsaferoutestoschool.org



A

APPENDICES



Appendix A. For More Information

This appendix provides contact information for local, state, and national SRTS program resources as well as school partners.

LOCAL RESOURCES

Amy Jones, Health Promotion Specialist
Dakota County Public Health
1 Mendota Rd
West St Paul, MN 55118
651-554-6134
amy.jones@co.dakota.mn.us

STATE RESOURCES

Dave Cowan, Minnesota SRTS Coordinator
395 John Ireland Blvd
St. Paul, MN 55155
651-366-4180
dave.cowan@state.mn.us

Mao Yang, State Aid for Local Transportation
395 John Ireland Blvd
St. Paul, MN 55155
651-366-3827
mao.yang@state.mn.us

MnDOT SRTS Educational Webinars:
<http://www.dot.state.mn.us/mnsaferoutes/training/planning/index.html>

MnSRTS Guide to Getting Started
http://www.dot.state.mn.us/mnsaferoutes/about/getting_started.html

MnDOT Safe Routes to School Resource Website
<http://www.dot.state.mn.us/saferoutes/>

Minnesota Safe Routes to School Facebook page
<https://www.facebook.com/MinnesotaSafeRoutestoSchool>

Walk!Bike!Fun! Pedestrian and Bicycle Safety Curriculum
<http://www.bikemn.org/education/walk-bike-fun>

School Siting and School Site Design
http://www.dot.state.mn.us/mnsaferoutes/planning/school_siting.html

NATIONAL RESOURCES

Safe Routes to School Data Collection System
<http://saferoutesdata.org/>

Pedestrian and Bicycle Information Center
<http://www.pedbikeinfo.org/>

National Center for Safe Routes to School
<http://www.saferoutesinfo.org/>

Safe Routes to School Policy Guide
http://www.saferoutespartnership.org/sites/default/files/pdf/Local_Policy_Guide_2011.pdf

School District Policy Workbook Tool
<http://changelabsolutions.org/safe-routes/welcome>

Safe Routes to School National Partnership State Network Project
<http://www.saferoutespartnership.org/state/network>

Bike Train Planning Guide
http://guide.saferoutesinfo.org/walking_school_bus/bicycle_trains.cfm

Tactical Urbanism and Safe Routes to School
<http://www.saferoutespartnership.org/resources/fact-sheet/tactical-urbanism-and-safe-routes-school>

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Appendix B. SRTS Facts for School Communication

The following facts and statistics have been collected from national sources. They are intended to be submitted for use in individual school newsletters, emails, or other communication with parents and the broader school community.

Except where otherwise noted, the following are based on research summarized by the National Center for Safe Routes to School. More information, including primary sources, can be found at <http://guide.saferoutesinfo.org>.

TRAFFIC: COSTS, CONGESTION, AND SAFETY

- In 1969, half of all US schoolchildren walked or biked to school; by 2009, that number had dropped to just 13 percent.
- In the United States, 31 percent of children in grades K–8 live within one mile of school; 38 percent of these children walk or bike to school. You can travel one mile in about 20 minutes by foot or six minutes by bicycle.
- In 2009, school travel by private family vehicle for students in grades K through 12 accounted for 10 to 14 percent of all automobile trips made during the morning peak travel and two to three percent of the total annual trips made by family vehicle in the United States.
- Among parents who drove their children to school, approximately 40 percent returned home immediately after dropping their children at school. If more children walked or bicycled to school, it would reduce the number of cars near the school at pick-up and drop-off times, making it safer for walkers and bicyclists through reduced traffic congestion and improved air quality.
- Over the past few decades, many school districts have moved away from smaller, centrally located schools and have instead built schools on the edge of communities where land costs are lower and acreage has been more available. As a result, the percentage of students in grades K through 8 who live less than one mile from school has declined from 41 percent in 1969 to 31 percent in 2009.
- Personal vehicles taking students to school accounted for 10 to 14 percent of all personal vehicle trips made during the morning peak commute times. Walking, bicycling, and carpooling to school reduces the numbers of cars dropping students off, reducing traffic safety conflicts with other students and creates a positive cycle—as the community sees more people walking and biking, more people feel comfortable walking and bicycling.
- Conservatively assuming that five percent of today’s school busing costs are for hazard busing, making it safe for those children to walk or bicycle instead could save approximately \$1 billion per year in busing costs.
- In 2009, American families drove 30 billion miles and made 6.5 billion vehicle trips to take their children to and from schools, representing 10-14 percent of traffic on the road during the morning commute.
- Reducing the miles parents drive to school by just one percent would reduce 300 million miles of vehicle travel and save an estimated \$50 million in fuel costs each year.
- Did you know that as more people bicycle and walk, biking and walking crash rates decrease? This is also known as the ‘safety in numbers’ principle. As more families walk and bike to school, streets and school zones become safer for everyone.

HEALTH: PHYSICAL ACTIVITY AND OBESITY

- The U.S. Department of Health and Human Services recommends that children do one hour or more of physical activity each day. Walking just one mile each way to and from school would meet two-thirds of this goal.
- Studies have found that children who get regular physical activity benefit from healthy hearts, lungs, bones, and muscles; reduced risk of developing obesity and chronic diseases; and reduced feelings of depression and anxiety. Teachers also report that students who walk or bike to school arrive at school alert and “ready to learn.”
- Researchers have found that people who start to include walking and biking at part of everyday life (such as the school commute trip) are more successful at sticking with their increased physical activity in the long term than people who join a gym.
- One recent study showed that children who joined a “walking school bus” ended up getting more physical activity than their peers. In fact, 65 percent of obese students who participated in the walking program were no longer obese at the end of the school year.
- Childhood obesity has increased among children ages 6 to 11 from four percent in 1969 to 19.6 percent in 2007. Now 23 million children and teens—nearly one-third of all young people in the U.S.—are overweight or obese.
- The 2010 Shape of the Nation report from the National Association for Sport and Physical Education found that, nationwide, less than one-third of all children ages six to 17 participate in physical activity for at least 20 minutes that made the child sweat and breathe hard.
- Children aren’t exercising enough and 78 percent of children aren’t getting the 30 to 60 minutes a day of regular exercise plus 20 minutes of more vigorous exercise that doctors recommend.
- Children are increasingly overweight. Twenty percent of children and 33 percent of teens are overweight or at risk of becoming overweight. This is a 50 percent to 100 percent increase from 10 years ago.
- According to a Spanish study of 1,700 boys and girls aged between 13 and 18 years, cognitive performance of adolescent girls who walk to school is better than that of girls who travel by bus or car. Moreover, cognitive performance is also better in girls who take more than 15 minutes than in those who live closer and have a shorter walk to school.
- One hundred calories can power a cyclist for three miles, but it would only power a car 280 feet. If you have a bowl of oatmeal with banana and milk for breakfast, you could bike more than nine miles. How far is the trip to school from your house?
- A 2004 study in the American Journal of Preventive Medicine found that, for every hour people spend in their cars, they are six percent more likely to be obese.
- Because of the health benefits, the cost of walking is actually negative.
- Childhood obesity rates have more than tripled in the past 30 years, while the number of children walking and biking to school has declined. According to the 2009 National Household Travel Survey, 13 percent of students between the ages of five and 14 walked or biked to or from school, compared to 48 percent in 1969.



ENVIRONMENT: AIR QUALITY, CLIMATE CHANGE AND RESOURCE USE

- Did you know? When you walk, bike, or carpool, you're reducing auto emissions near schools. Students and adults with asthma are particularly sensitive to poor air quality. Approximately five million students in the U.S. suffer from asthma, and nearly 13 million school days per year are lost due to asthma-related illnesses.
- Did you know that modern cars don't need to idle? In fact, idling near schools exposes children and vehicle occupants to air pollution (including particulates and noxious emissions), wastes fuel and money, and increases unnecessary wear and tear on car engines. If you are waiting in your car for your child, please don't idle – you'll be doing your part to keep young lungs healthy!
- Families that walk two miles a day instead of driving will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.
- The United States moved into the 21st century with less than 30 percent of its original oil supply remaining.
- Americans drive more than two trillion vehicle miles per year.
- Short motor vehicle trips contribute significant amounts of air pollution because they typically occur while an engine's pollution control system is cold and ineffective. Thus, shifting one percent of short automobile trips to walking or biking decreases emissions by two to four percent.
- There is more pollution inside a stationary car on a congested road than outside on the pavement.
- The transportation sector is the second largest source of CO₂ emissions in the U.S. Automobiles and light-duty trucks account for almost two-thirds of emissions from the transportation sector. Emissions have steadily grown since 1990.
- In a year, a typical North American car will add close to five tons of CO₂ into the atmosphere. Cars account for an estimated 15 percent to 25 percent of U.S. CO₂ emissions.
- Transportation is the largest single source of air pollution in the United States. In 2006, it created over half of the carbon monoxide, over a third of the nitrogen oxides, and almost a quarter of the hydrocarbons in our atmosphere.
- Disposal of used motor oil sends more oil into the water each year than even the largest tanker spill.
- Going by bus instead of car cuts nitrogen oxide pollution by 25 percent, carbon monoxide by 80 percent and hydrocarbons by 90 percent per passenger mile.
- Eight bicycles can be parked in the space required for just one car.

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Appendix C. Summary of Planning Process

The planning process for North Trail and Meadowview Elementary Schools began in October 2017 when Farmington Area School District submitted a project proposal for Smart Choices funding through Dakota County Public Health. The county awarded the school district funding for Safe Routes to School plans at both schools to assess existing conditions, identify infrastructure improvements, and promote and encourage more students to walk or bike to school, especially for students living within the district's one-mile walk boundary.

RAPID PLANNING SESSION

In April 2018, a broad group of stakeholders met for two intensive half-day Rapid Planning Workshop including a morning session at North Trail Elementary School and an afternoon session at Meadowview Elementary School. These charrette-style events brought together school, district, city and county staff, plus students, and public health professionals to discuss the challenges and opportunities for walking and biking to school.

Each half-day workshop included:

- Introduction to SRTS for all participants including programs, infrastructure, and the planning process
- Observation of student arrival at North Trail and student dismissal at Meadowview
- Meeting with student to discuss routes, experiences, concerns, and ideas for improvement
- Discussion of infrastructure issues, upcoming projects, and opportunities for improvement
- Brainstorm of existing and potential programs
- Discussion of observations, consensus-building around primary issues and opportunities

Information gathered during the day was used to develop preliminary draft infrastructure and programming recommendations for each school. County and consulting team staff conducted neighborhood walk assessments for each school community in late April 2018 following the Rapid Planning Workshop.

DATA COLLECTION

In March, parent perception surveys were distributed by schools through a link to an online survey or by sharing hard copies with parents. Surveys asked parents about how comfortable they were with their children walking and biking to school. In addition, the survey asked the distance from school families live, whether they feel like their school promotes biking and walking, and what changes would make them feel more confident about allowing their children to walk or bike.

In May, school staff conducted student travel tallies to gather information about how students traveled to and from school. This student tally collected data on travel to and from school during three weekdays in May.

Both the student tally and parent survey were designed by the National Center for Safe Routes to School. Results from both were uploaded to the Data Collection System, allowing for comparison when future surveys and tallies are completed. The results of these evaluation efforts are in Appendix E and F.



Left to right from top left: Meeting with students at North Trail Elementary School; observation of school dismissal and walking routes at Meadowview Elementary; discussing existing conditions, programs, and infrastructure with the North Trail SRTS team; staff returned for a community walkability assessment after the Rapid Planning Workshops; observation of student arrival at North Trail Elementary School; meeting with current and "could-be" walkers at Meadowview Elementary School.



Appendix D. Existing Conditions

The following is a brief summary of the existing conditions on and around school campus.

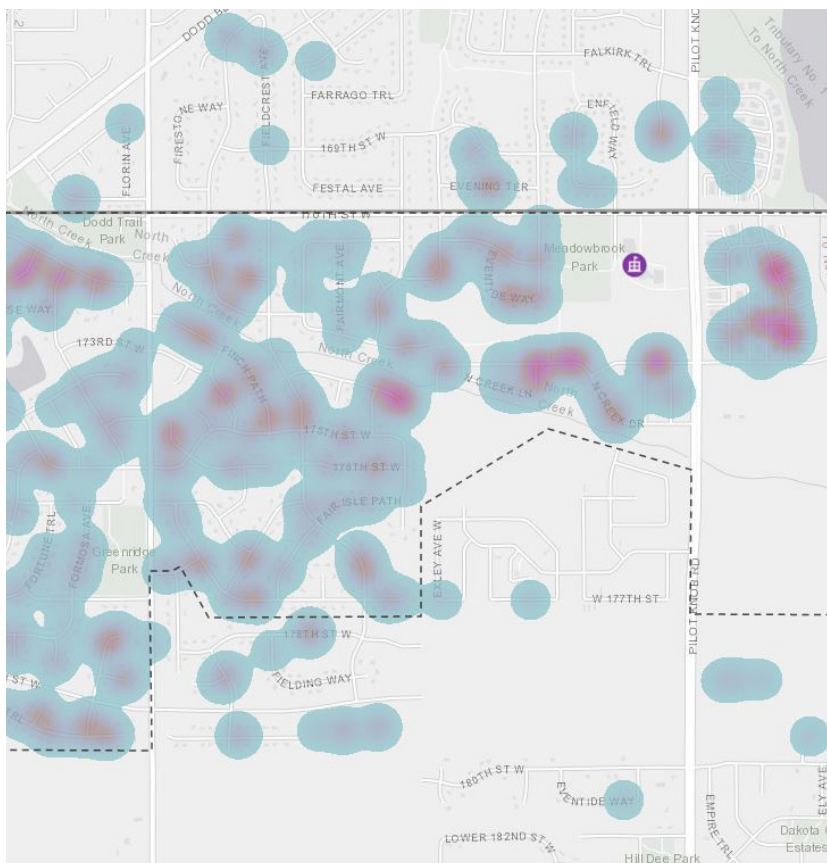
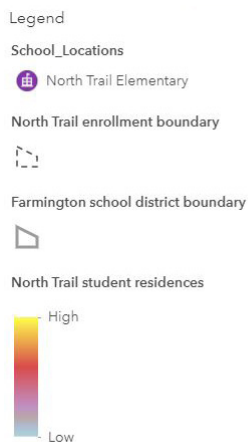
SCHOOL CONTEXT

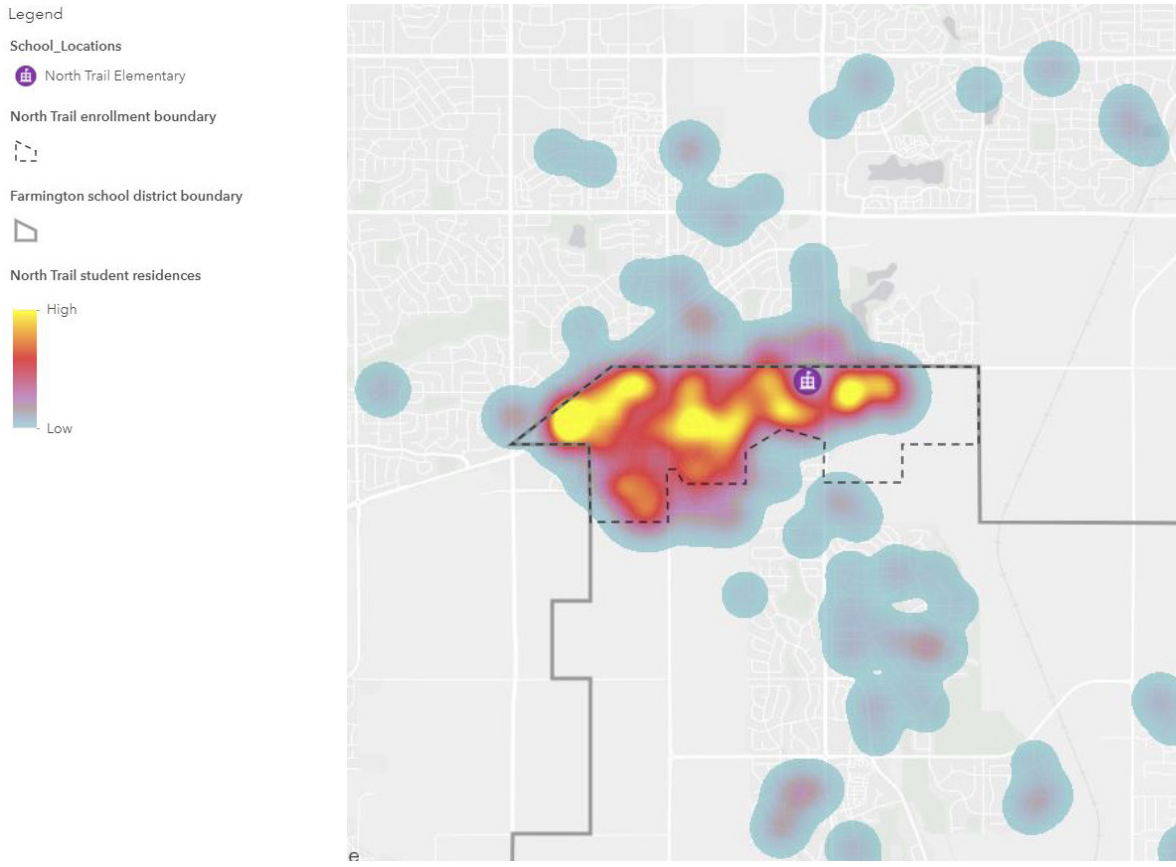
Basic Information

Principal: Dr. Steven Geis
Grades: K-5
Number of students: 590
Arrival time: 8:30 AM
Dismissal time: 3:00 PM

Student Locations and School Enrollment Boundary

The two maps below show the locations of students attending North Trail Elementary during the 2017-2018 school year. The first map shows the area immediately surrounding the school and the second map shows a wider geographic area. Warmer colors (red, yellow) represent areas with higher concentrations of students while cooler colors (blue) represent lower concentrations of students. The school location is shown as a purple marker.





School/Campus Layout

North Trail Elementary School is bound by 170th Street W on the north and Pilot Knob Road on the east. Pilot Knob Road is designated as a hazardous road by the school district so students are not permitted to walk from east of the corridor. 170th Street is the northern school district boundary so very few students attend North Trail from north of 170th Street.

The school is located on the northeast corner of the property. The campus has two parking lots: a northern parking lot, which is used for staff and visitor parking and parent circulation during student arrival dismissal and a southern parking lot, which used for bus circulation during the day. The west and south portions of the property include park property, play fields, and a school garden and nature area.

Bicycle racks are located on the eastern side of the school near the kindergarten playground.

Surrounding Land Use

North Trail Elementary School is located in the City of Lakeville at the northern boundary of Farmington Area School District. Surrounding land use is primarily residential, including single-family homes and a mobile home community directly west and south of campus. A number of parks are also located near North Trail. Several neighborhood parks are connected to the school by way of North Creek Trail. East Lake Community Park is located northeast of the school across Pilot Knob Road. Fieldstone Park is located north of the school across 170th Street.

Undeveloped land is located south and east of the school. Portions of this land is slated for residential development in the coming years.



Infrastructure for Walking and Biking

There are multiple multiuse trails that provide direct connections between North Trail Elementary's southern parking lot and the neighborhoods west of the school. Trail access points include Eventide Way to the west and North Creek Drive to the southwest. The trail then follows North Creek west toward Dodd Trail and Fairfield Parks. Trails are also located on both sides of 170th Street W and Pilot Knob Road.

Sidewalks are typically not present on neighborhood streets directly south and west of the school. Sidewalks on one side of the street are typical in new construction.

Facilitated Crossing Locations

Student safety patrols facilitate crossings at two locations on North Trail's campus. The first location is across the driveway of the southern parking lot / bus loop where students cross from the western neighborhood to the school. The second location is in front of the school's northern main entrance to facilitate crossings between the school and the parking lot across the parent pickup line.

SCHOOL TRAVEL PATTERNS

Student Hand Tallies

According to the student hand tally, the majority of North Trail students either ride to and from school by school bus or in a family vehicle (as high as 57 and 41 percent of students, respectively). Three and four percent of students report walking to school in the morning and afternoon, respectively. One percent report riding their bicycle, and around two percent report carpooling with other families. More students report riding the school bus home in the afternoon than they do in the morning (57 percent versus 54 percent, respectively), while more students are dropped off in a family vehicle in the morning than in the afternoon (41 percent versus 36 percent, respectively). There were 24 classrooms surveyed.

A full summary of data collected from the student hand tally can be found in Appendix F.

Parent Survey Summary

Sixty-four parent surveys were returned. Of those who responded, 16 percent estimated that they live within a quarter mile from school, 11 percent estimated that they live between a quarter and half mile away, 18 percent estimated living between a half and full mile from school, 34 percent estimated living between one and two miles from school, and 20 percent estimated living more than two miles from North Trail. Typical reported modes of arrival included two percent walk, 54 percent school bus, 41 percent family vehicle, and three percent carpool. Typical reported modes of dismissal included two percent walk, 53 percent school bus, 44 percent family vehicle, and two percent carpool. Sixty percent of respondents with students living less than a quarter mile from school reported that their students typically travel to/from school by family vehicle, while 10 percent typically arrive by walking. All respondents who estimated living between a quarter and half mile from school said that their students typically travel to/from school by school bus (57 percent arrive, 43 percent depart) or family vehicle (43 percent arrive, 57 percent depart). Eighty percent of respondents with students living less than a quarter mile from school reported that their students had asked permission to walk or bike.

Survey respondents reported distance, traffic speeds and volumes, safety of intersections and crossings, and weather or climate as factors that affect their decision. Eighty-three percent reported that the school neither encourages nor discourages walking or biking to North Trail. About fifty percent felt that walking or biking to school was neither fun nor boring for their students, while 39 percent said that it was fun or very fun. Eighty-six percent felt that walking or biking to school is healthy or very healthy for their child.

In open comments, parents reported traffic speeds and volumes along 170th Street and Pilot Knob Road as barriers to walking or bicycling. Lack of sidewalks, weather, stranger danger, and distance were also identified as challenges. They also reported that they would feel comfortable with their child walking or biking to school with a trusted adult or larger group of children or reported volunteering to walk with a group of students in the past.

Detailed results from the parent survey can be found in Appendix E.



Appendix E. Parent Survey

The following shows a summary of a survey sent home to parents of children in March of 2018. It asks parents their feelings about walking and biking and is a direct export from the National Safe Routes to School Data Collection System, which processed the survey responses and generated this report.

School Name: North Trail Elementary School

Set ID: 17339

School Group: Dakota County Schools

Month and Year Collected: March 2018

School Enrollment: 0

Date Report Generated: 05/07/2018

% Range of Students Involved in SRTS: Don't Know

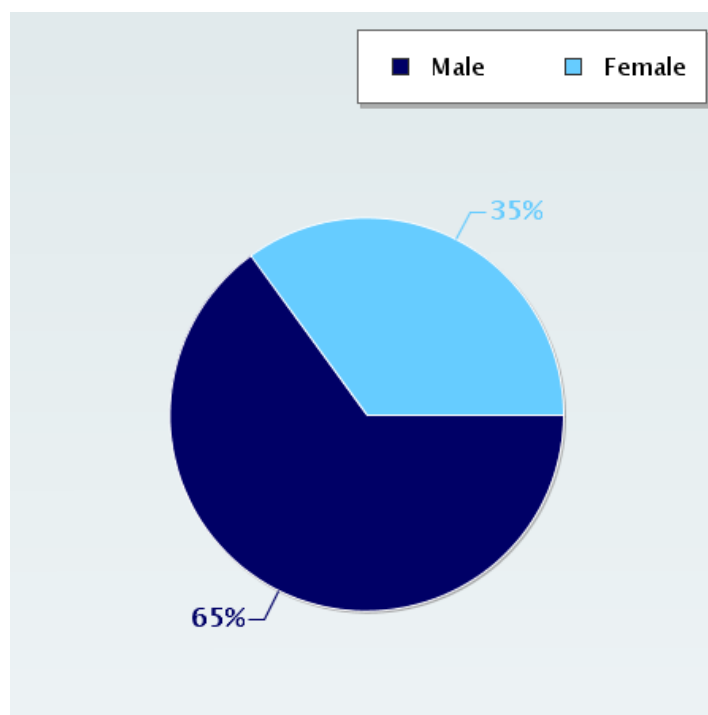
Tags:

Number of Questionnaires Distributed: 0

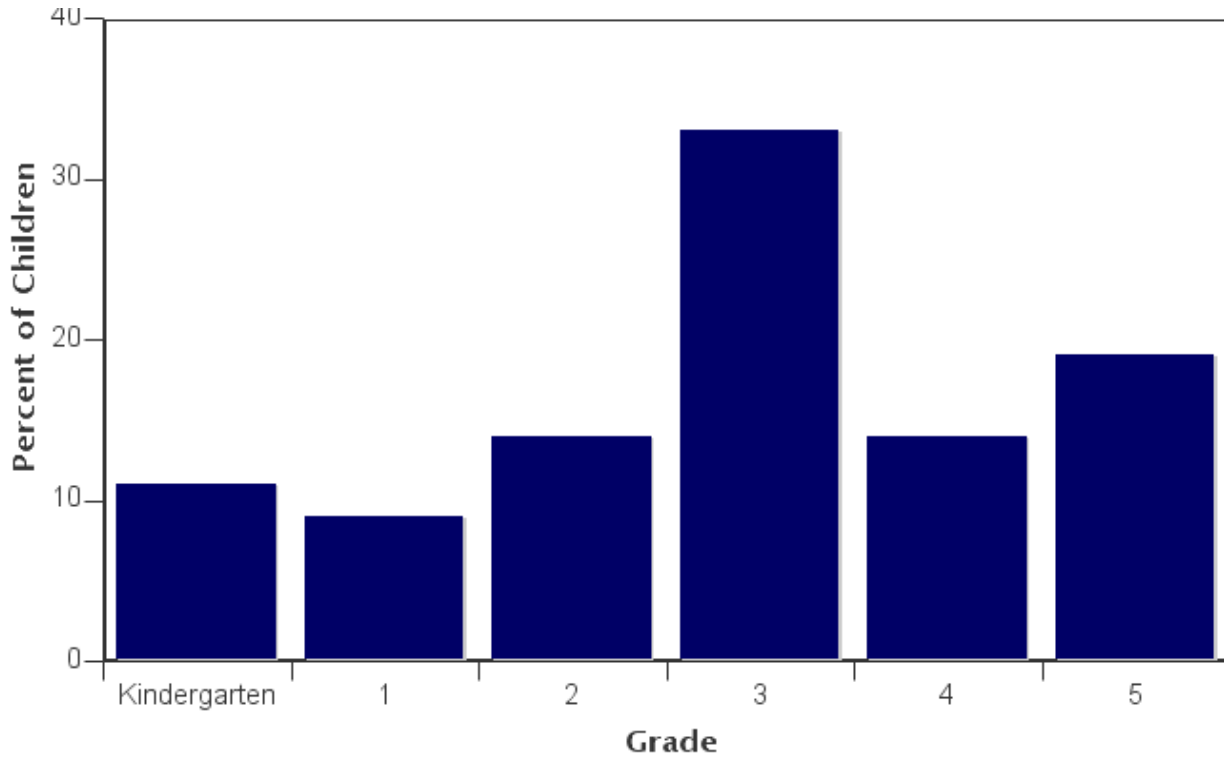
**Number of Questionnaires
Analyzed for Report:** 64

This report contains information from parents about their children's trip to and from school. The report also reflects parents' perceptions regarding whether walking and bicycling to school is appropriate for their child. The data used in this report were collected using the Survey about Walking and Biking to School for Parents form from the National Center for Safe Routes to School.

Sex of children for parents that provided information



Grade levels of children represented in survey



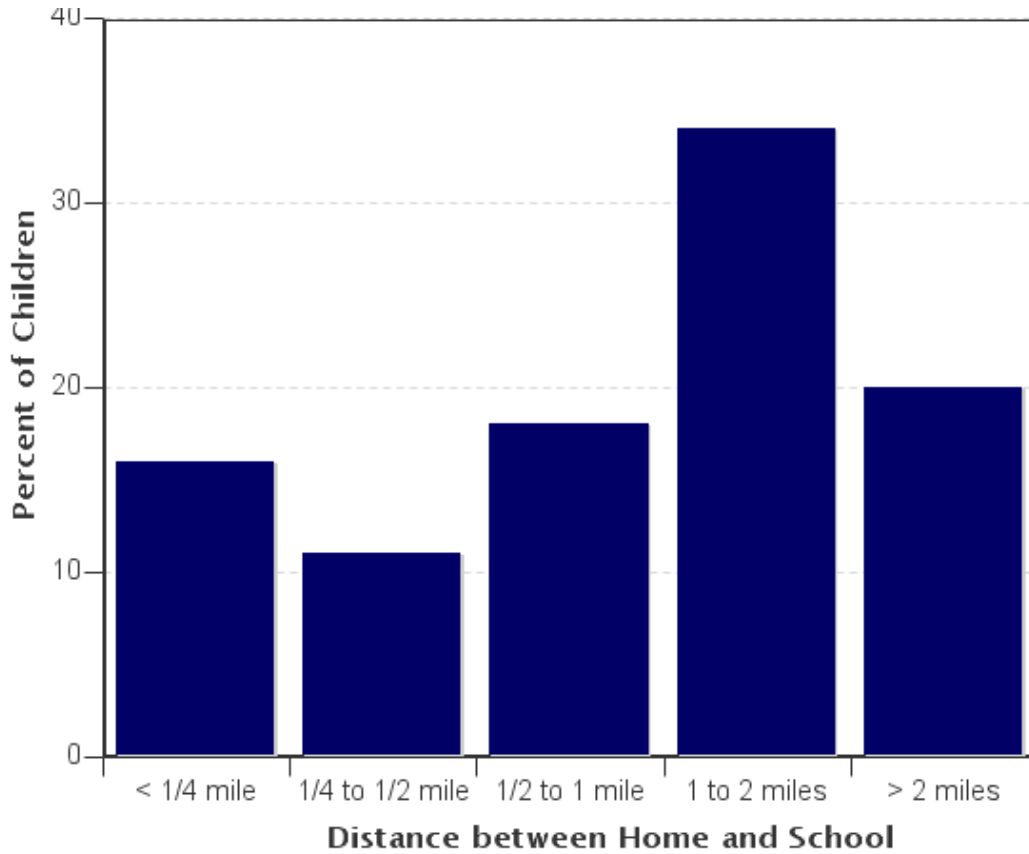
Grade levels of children represented in survey

Grade in School	Responses per grade	
	Number	Percent
Kindergarten	7	11%
1	6	9%
2	9	14%
3	21	33%
4	9	14%
5	12	19%

No response: 0

Percentages may not total 100% due to rounding.

Parent estimate of distance from child's home to school

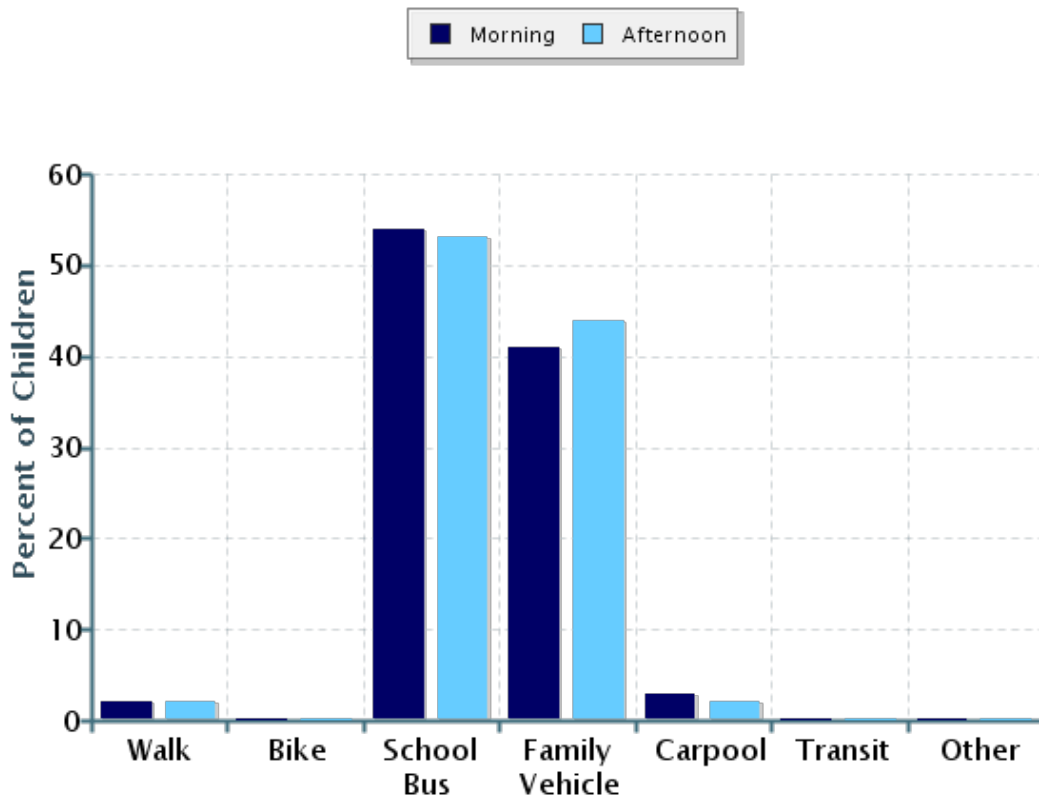


Parent estimate of distance from child's home to school

Distance between home and school	Number of children	Percent
Less than 1/4 mile	10	16%
1/4 mile up to 1/2 mile	7	11%
1/2 mile up to 1 mile	11	18%
1 mile up to 2 miles	21	34%
More than 2 miles	12	20%

Don't know or No response: 3
 Percentages may not total 100% due to rounding.

Typical mode of arrival at and departure from school



Typical mode of arrival at and departure from school

Time of Trip	Number of Trips	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Morning	63	2%	0%	54%	41%	3%	0%	0%
Afternoon	64	2%	0%	53%	44%	2%	0%	0%

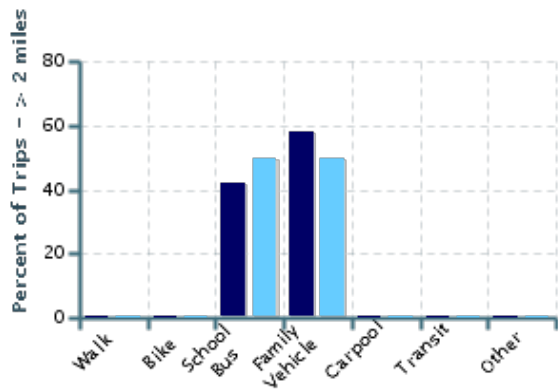
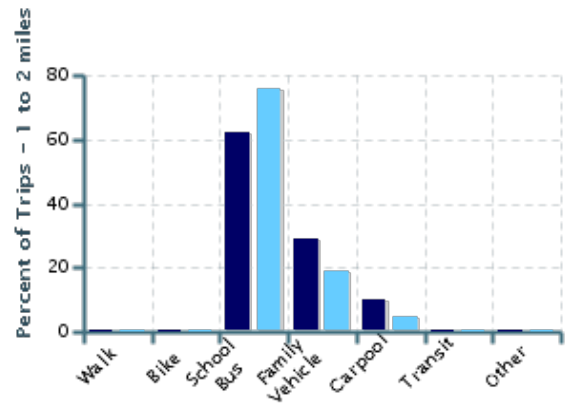
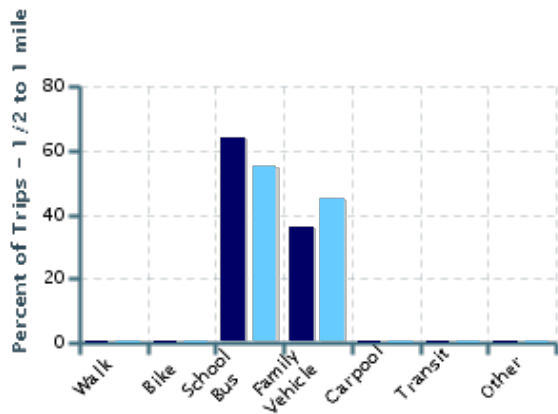
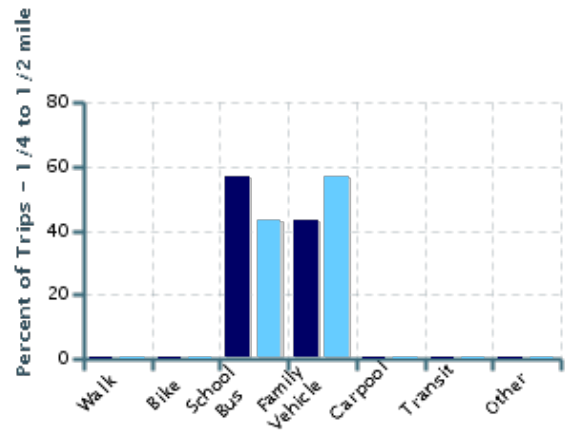
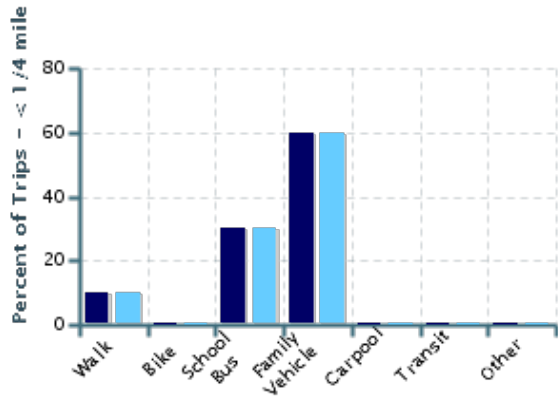
No Response Morning: 1

No Response Afternoon: 0

Percentages may not total 100% due to rounding.

Typical mode of school arrival and departure by distance child lives from school

■ Morning ■ Afternoon



Typical mode of school arrival and departure by distance child lives from school

School Arrival

Distance	Number within Distance	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Less than 1/4 mile	10	10%	0%	30%	60%	0%	0%	0%
1/4 mile up to 1/2 mile	7	0%	0%	57%	43%	0%	0%	0%
1/2 mile up to 1 mile	11	0%	0%	64%	36%	0%	0%	0%
1 mile up to 2 miles	21	0%	0%	62%	29%	10%	0%	0%
More than 2 miles	12	0%	0%	42%	58%	0%	0%	0%

Don't know or No response: 3

Percentages may not total 100% due to rounding.

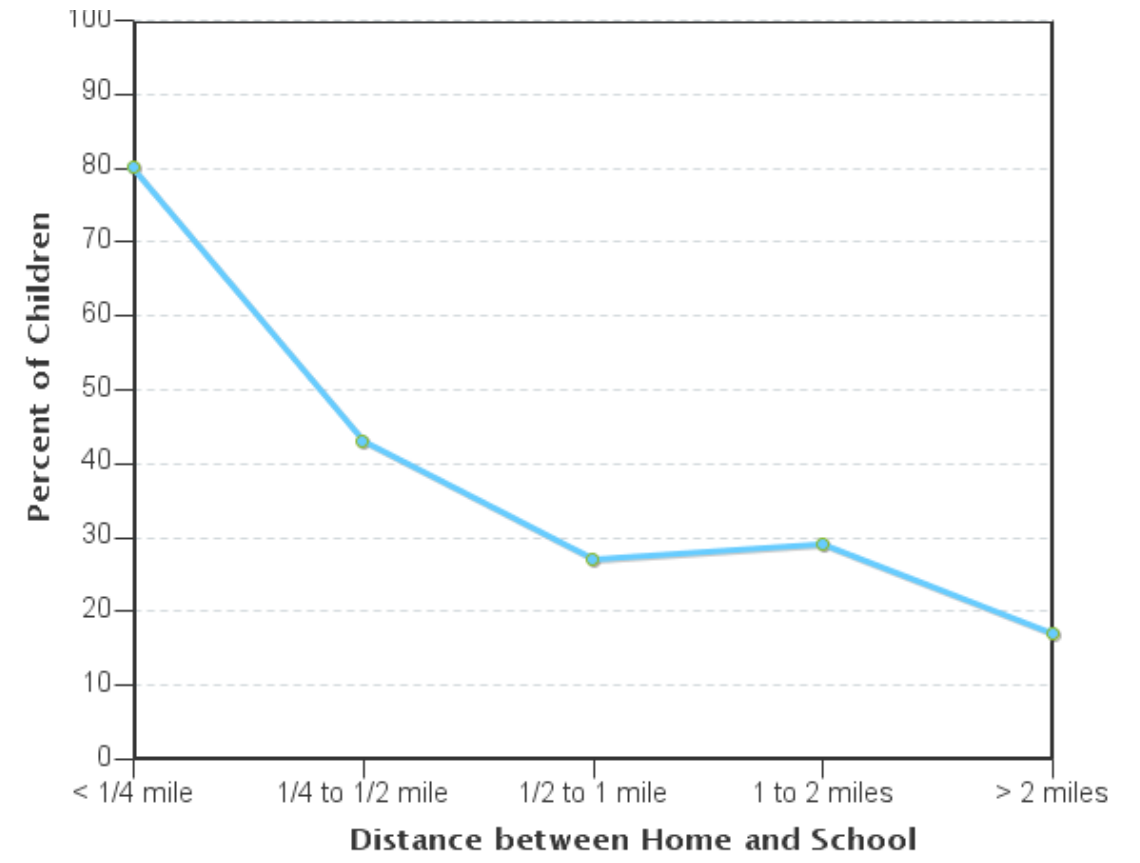
School Departure

Distance	Number within Distance	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Less than 1/4 mile	10	10%	0%	30%	60%	0%	0%	0%
1/4 mile up to 1/2 mile	7	0%	0%	43%	57%	0%	0%	0%
1/2 mile up to 1 mile	11	0%	0%	55%	45%	0%	0%	0%
1 mile up to 2 miles	21	0%	0%	76%	19%	5%	0%	0%
More than 2 miles	12	0%	0%	50%	50%	0%	0%	0%

Don't know or No response: 3

Percentages may not total 100% due to rounding.

Percent of children who have asked for permission to walk or bike to/from school by distance they live from school

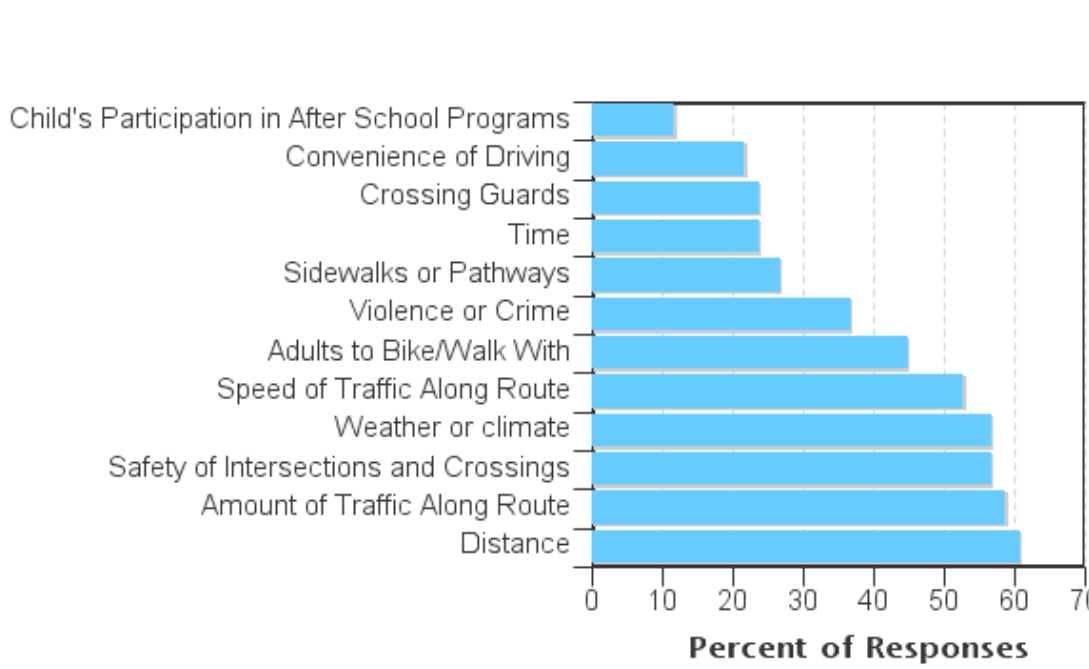


Percent of children who have asked for permission to walk or bike to/from school by distance they live from school

Asked Permission?	Number of Children	Less than 1/4 mile	1/4 mile up to 1/2 mile	1/2 mile up to 1 mile	1 mile up to 2 miles	More than 2 miles
Yes	22	80%	43%	27%	29%	17%
No	39	20%	57%	73%	71%	83%

Don't know or No response: 3
 Percentages may not total 100% due to rounding.

Issues reported to affect the decision to not allow a child to walk or bike to/from school by parents of children who do not walk or bike to/from school



Issues reported to affect the decision to allow a child to walk or bike to/from school by parents of children who already walk or bike to/from school

Issue	Child does not walk/bike to school	Child walks/bikes to school
Distance	61%	0
Amount of Traffic Along Route	59%	0
Safety of Intersections and Crossings	57%	0
Weather or climate	57%	0
Speed of Traffic Along Route	53%	0
Adults to Bike/Walk With	45%	0
Violence or Crime	37%	0
Sidewalks or Pathways	27%	0
Time	24%	0
Crossing Guards	24%	0
Convenience of Driving	22%	0

Child's Participation in After School Programs	12%	0
Number of Respondents per Category	49	0

No response: 15

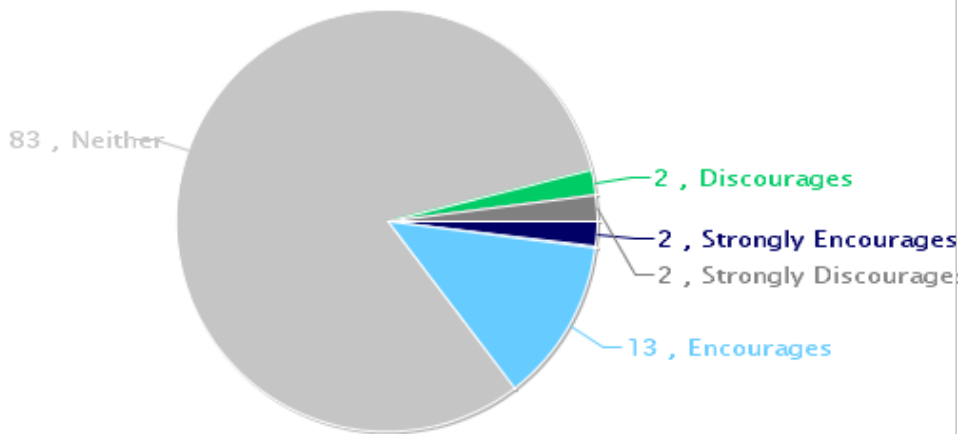
Note:

--Factors are listed from most to least influential for the 'Child does not walk/bike to school' group.

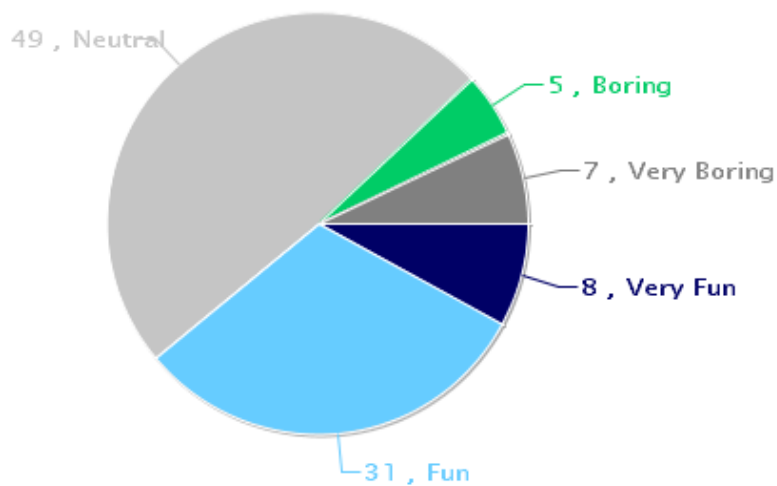
--Each column may sum to > 100% because respondent could select more than issue

--The calculation used to determine the percentage for each issue is based on the 'Number of Respondents per Category' within the respective columns (Child does not walk/bike to school and Child walks/bikes to school.) If comparing percentages between the two columns, please pay particular attention to each column's number of respondents because the two numbers can differ dramatically.

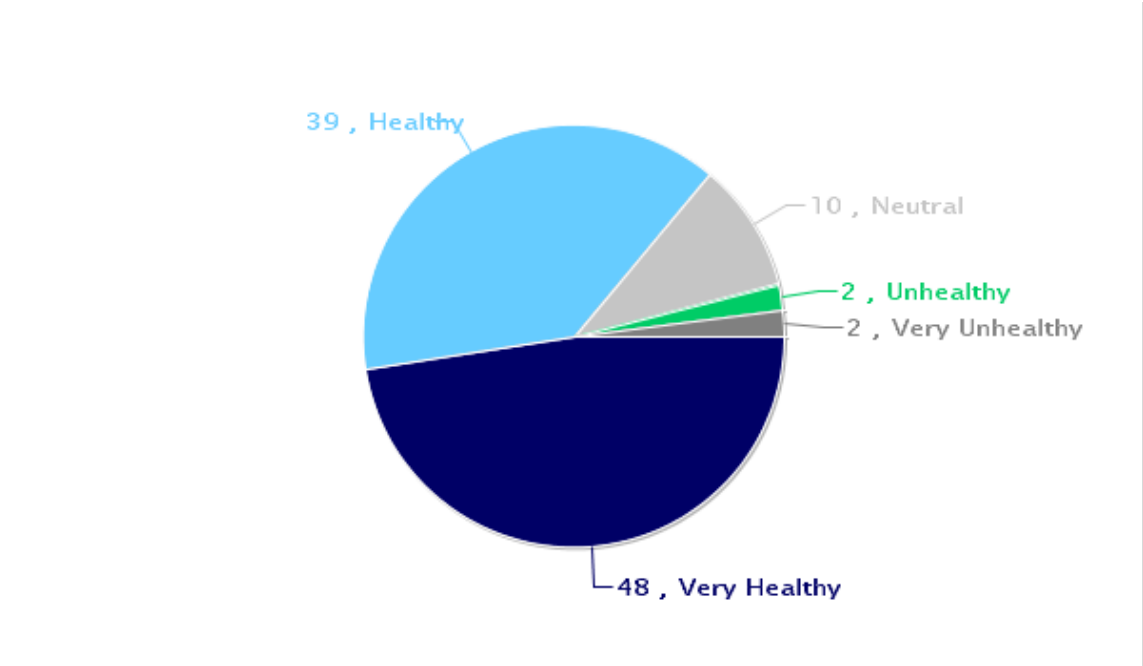
Parents' opinions about how much their child's school encourages or discourages walking and biking to/from school



Parents' opinions about how much fun walking and biking to/from school is for their child



Parents' opinions about how healthy walking and biking to/from school is for their child



Comments Section

SurveyID	Comment
1593389	I would never let my elementary age children walk or bike to school. We live too far away to go without a chaperone and the roads are too busy for it to be safe. Plus the climate we live in is too unpredictable.
1593485	I do encourage walking but with an adult. We typically drive because I am typically working and have lots of things to haul. I think walking as long as the path off of eventide is plowed is fairly simple. One way that would increase the likelihood is if kids were permitted to access the building from the back prior to school. I have been told that they have to walk around to the front which seems a bit silly given it adds quite a bit of distance and the path goes right to the back of the school.
1595910	My child has a young preschool age brother at same school which I am not comfortable with bikeinf or walking
1593391	We live close enough to walk to NTES but the intersection of PILOT KNOB and 170th street causes concern along with general traffic of cars going in and out of NTES for drop off and pick up of students
1593392	We live close enough to walk to NTES but the intersection of PILOT KNOB and 170th street causes concern along with general traffic of cars going in and out of NTES for drop off and pick up of students
1595894	I have walked to school with a group of my children and neighborhood kids. It was fun for everyone. Younger ones did get a bit tired as it is a 30 + minute walk. I would love for my child to be able to ride his bike to and from school on warm spring days. Winter is just not practical.
1595842	Flagstaff and 170th are too busy with morning commuters for them to walk alone. Also, thank goodness we have not had any child abduction cases but I do not want my child to be the next.
1595932	There is no neighborhood path from our house to the school except along 170th were vehicles travel 45+Mph most of the time and pull out of neighborhood streets incredibly fast. I've even been passed by another vehicle before while driving 40mph on 170th for no reason other than speed and don't feel that this is a safe road for my 8, 7, and 5 year old to safely walk/bike on without an adult present. So we drive our children to and from school, unable to afford the cost of bus service since your bus rates are per child not per family. Almost \$900 a year for bus service is more than we can afford.
1593408	Unfortunately in the times we live in, so many people are not aware of their surroundings and watching out for children while they are driving. For the distance we live from the school, I believe riding the bus is the safest way for my children to get to school.
1593410	Safety in numbers. If there were a group of neighborhood children all of whom attended the same school, along with safe/supervised route/s, would be much more willing to allow biking.
1595904	On most days my daughter rides the bus from her daycare, which is a lot further away (2 miles). If she were coming from home we would let her walk/ride her bike, as soon as she's a little older.
1595905	My child is open enrolled so the distance prevents us from walking/biking to school.
1597838	It is to cold for too long in Minnesota for the kids to be walking or biking to school. I think everyone should always have the option to ride the bus to school. It is more often dark when my middle school child goes to catch the bus. Standing at the bus stop when my kids go to and from school and the bus lights on for traffic to stop quite often does not encourage cars to stop. I may have to stare the drivers in the face and ask them to stop. My child almost got hit by a car that came around the bus with kids getting off and the bus lights on.

1595948	We live across pilot knob and do not want our children walking across that busy road
1593381	Weather is the main factor preventing my son from biking to/from school.
1593386	Safety is a main concern impacting our decisions to not allow our children to walk
1593962	Kids going from Autumn Meadows neighborhood to Meadowview is a problem for walking/biking. There are no paths or safe roads to walk/bike along. From 179th to 195th there is a gap of residential areas, it is all field with no paths.
1593970	My child has ADHD and my primary concern would be whether he can stay on task for the entire ride to/from school, plus when he gets to school that he locks his bike appropriately. I'm comfortable with the route, given the trails to the school.
1595846	If I lived closer to the school, within a few blocks I'd allow my child to ride a bike with good weather. However, currently outside of commute boundaries so bus is available which is best for childcare.
1595862	My kids can walk/bike to school because they are open enrolled. Their home school is MVES, however, they go to NTES. There is no way they would be allowed to walk or bike to school at MVES given our cross streets of Flagstaff and 179th. They would also not be able to walk or bike to any school friend's homes if at MVES. Our neighborhood is connected to other NTES neighborhoods, so, our kids are able to walk and bike to school friend's homes. This is very important to our family.
1595868	Speed limit by school (170th street) is far too high. Being so residential it should not be 45 mph. Wouldn't trust kids to walk on this road by themselves because of this. Sidewalks are needed on Fieldcrest Avenue as cars are much too fast here as well and the road is narrow. Do not like that I have to pay to utilize a school bus when I live .9 miles away.
1595840	This may not really apply to us as we live too far from Northtrail for my child to walk or bike. She may however go to a daycare next school year that is very close to NT and a group of them may ride their bikes/walk when weather permits.
1595841	<p>In this day and age, I am extremely hesitant to allow my children to walk or ride to/from school by themselves really regardless of distance. I might consider it if the school was within half a mile but that's not the case for us where we live. I would also say, as a former ISD 196 family, this has been the biggest thing we've been disappointed with in ISD 192. I feel my child could just walk off school grounds or get into a random car at the end of school without the school even having any idea. If your child does not ride the bus then there seems to be no care or verification that they are headed where they should be.</p> <p>Weather is my other main concern, with the high level of precipitation and the widely variable temperatures, I don't think kids should be walking too far in extreme weather only to arrive at school wet and uncomfortable. To put the responsibility on the parents to transport in these situations is unrealistic and students will be walking in adverse conditions. Health and fitness should certainly be a priority for all students, not just those who live within a certain proximity of their school. And bussing parameters should be decided upon based upon student safety first and foremost. Cutting costs at the expense of student safety and well being should not be an option.</p>
1595853	There are no sidewalks and the road is very busy where there is a bike path. Unfortunately I don't feel the world we live in is as safe as it was when we were kids. My son still refuses to ride bike to school on days I'm home because he gets scared. It would take way too long to walk to school.
1595946	I think it is absolutely insane that any school district would expect children to walk to school. It is MN where it is very cold in the winter. Also, it is very unsafe due to possible abductions while children are walking to school. Not only are elementary aged children not mature enough to walk to school, the risks associated with this exception are far too great. It is a great idea until a child dies or is horribly injured. All at the expense of the school district attempting to save money. Increase my taxes. Keep my children safe

1596414	My children want to walk to and from - and I would love them too but feel it is unsafe!!!! 170th is SO busy, there are no markings for crossings on these roads! The trails behind our houses that go to the school is completely UNSAFE. I feel the morning and afternoon should be filled with kids walking and biking home but it's not because we all feel it is unsafe. There should've police on duty on Theo road before and after!!!!
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Appendix F. Student Hand Tally

The following pages show summaries of a hand tally of student transportation behavior in May of 2018. During the first week of May, students were asked how they traveled to and from school on Tuesday, Wednesday, and Thursday. This report is a direct export from the National Safe Routes to School Data Collection System, which processed the tallies and generated this report.

School Name: North Trail Elementary School

Set ID: 25725

School Group: Dakota County Schools

Month and Year Collected: May 2018

School Enrollment: 587

Date Report Generated: 05/16/2018

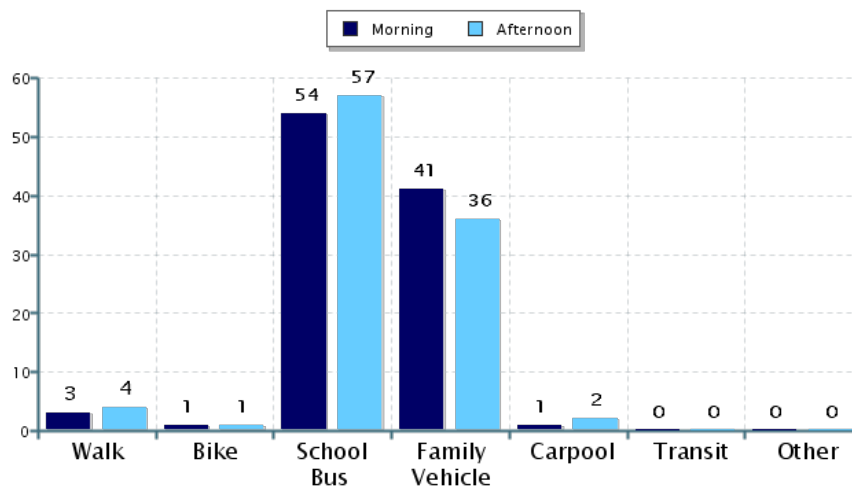
% of Students reached by SRTS activities:

Tags:

**Number of Classrooms
Included in Report:** 24

This report contains information from your school's classrooms about students' trip to and from school. The data used in this report were collected using the in-class Student Travel Tally questionnaire from the National Center for Safe Routes to School.

Morning and Afternoon Travel Mode Comparison



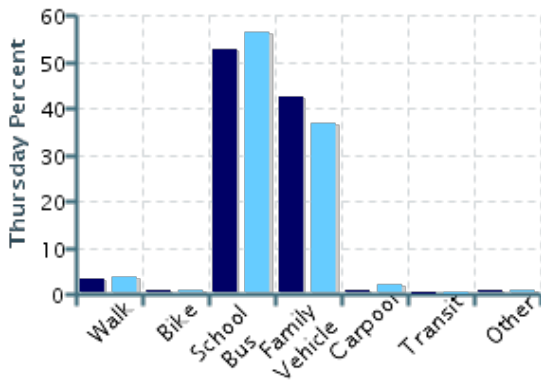
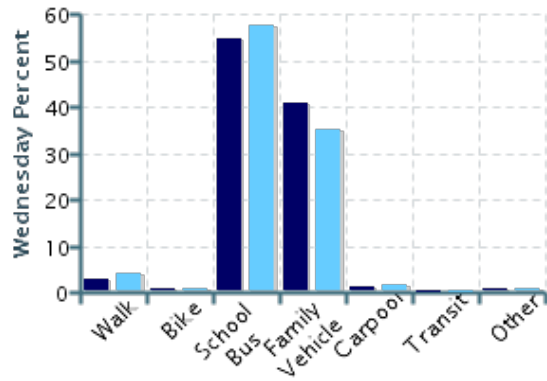
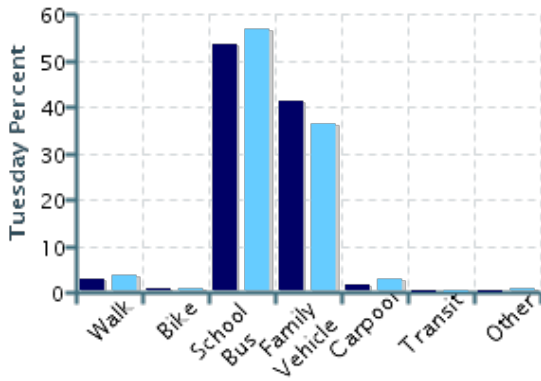
Morning and Afternoon Travel Mode Comparison

	Number of Trips	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Morning	1636	3%	0.8%	54%	41%	1%	0%	0.1%
Afternoon	1540	4%	0.8%	57%	36%	2%	0%	0.3%

Percentages may not total 100% due to rounding.

Morning and Afternoon Travel Mode Comparison by Day

■ Morning ■ Afternoon



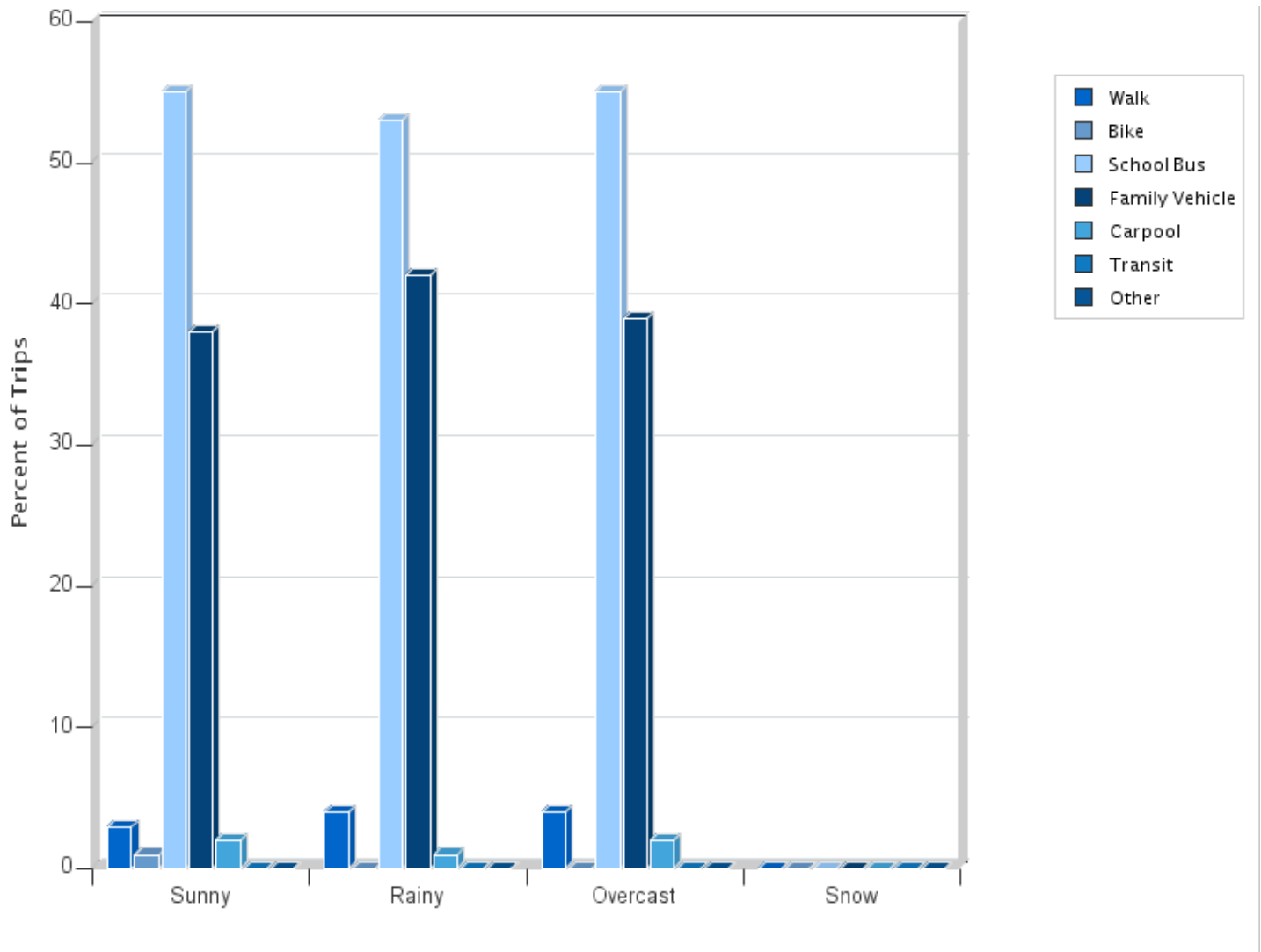
Morning and Afternoon Travel Mode Comparison by Day

	Number of Trips	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Tuesday AM	549	3%	0.7%	54%	41%	2%	0%	0%
Tuesday PM	544	4%	0.6%	57%	36%	3%	0%	0.2%
Wednesday AM	556	3%	0.9%	54%	41%	1%	0%	0.2%
Wednesday PM	499	4%	1%	58%	35%	2%	0%	0.4%
Thursday AM	531	3%	0.8%	53%	43%	0.8%	0%	0.2%
Thursday PM	497	4%	1%	56%	37%	2%	0%	0.2%

Percentages may not total 100% due to rounding.



Travel Mode by Weather Conditions



Travel Mode by Weather Condition

Weather Condition	Number of Trips	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Sunny	2324	3%	1.0%	55%	38%	2%	0%	0.3%
Rainy	218	4%	0%	53%	42%	0.9%	0%	0%
Overcast	634	4%	0.5%	55%	39%	2%	0%	0%
Snow	0	0%	0%	0%	0%	0%	0%	0%

Percentages may not total 100% due to rounding.

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Appendix G. Infrastructure Toolbox

This infrastructure toolbox provides an overview of different infrastructure projects. Each infrastructure project includes a pictorial representation, a brief description, a typical and estimated cost, and a list of resources for more specific engineering guidelines. References are shown at the end of this section.

ADVANCED STOP LINES

Description

An advanced stop bar is a solid white line painted ahead of crosswalks on multi-lane approaches to alert drivers where to stop to let pedestrians cross. It is recommended that advanced stop bars be placed twenty to fifty feet before a crosswalk. This encourages drivers to stop back far enough for a pedestrian to see if a second motor vehicle is approaching, reducing the risk of a hidden-threat collision. Advanced stop bars can also be used with smaller turning radii to create a larger effective turning radius to accommodate infrequent (but large) vehicles.



Estimated Costs^{A,E}

- \$8.50 per linear foot; \$85 for a ten foot travel lane

Resources

- Reducing Conflicts Between Motor Vehicles and Pedestrians: The Separate and Combined Effects of Pavement Markings and a Sign Prompt
- FHWA Signalized Intersections: Informational Guide – Pages: 192- 193
- MN MUTCD: Part 3. Markings – Page: 3B-32
- NACTO Urban Street Design Guide – Pages: 109-116, 144

CROSSING GUARD

Description

Facilitated crossings are marked crossing locations along student routes where adult crossing guards or trained student patrols are stationed to assist students with safely crossing the street. Facilitated crossings may be located on or off campus. Determining whether a location is more appropriate for an adult crossing guard or student patrol may be based on location including distance from school, visibility, and traffic characteristics. Adult crossing guards and student patrols receive special training, and are equipped with high-visibility traffic vests and flags when on duty.



Estimated Costs^D

- \$14.00 per hour average wage for a crossing guard

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 25-26
- MnDOT Minnesota Safe Routes to School: School Crossing Guard Brief Guide
- MN MUTCD: Part 7. Traffic Controls for School Areas – Pages: 7D-1-2

CURB EXTENSION/BULB OUT

Description

Curb extensions extend the sidewalk and curb into the motor-vehicle parking lanes at intersections or mid-block crossings. Also called bulb-outs, these facilities improve safety and convenience for people crossing the street by shortening the crossing distance and increasing visibility of people walking or biking to those driving.



Estimated Costs^E

- \$13,000 for a single corner

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 11-12
- FHWA Effects of Traffic Calming Measures on Pedestrian and Motorist Behavior – Pages: 6-11
- FHWA Signalized Intersections: Informational Guide – Pages: 190-192
- NACTO Urban Street Design Guide – Pages: 45-59

CURB RADIUS REDUCTION

Description

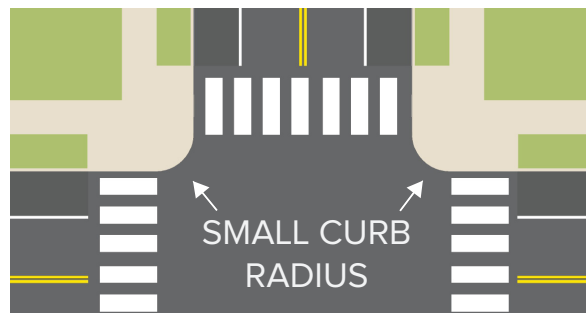
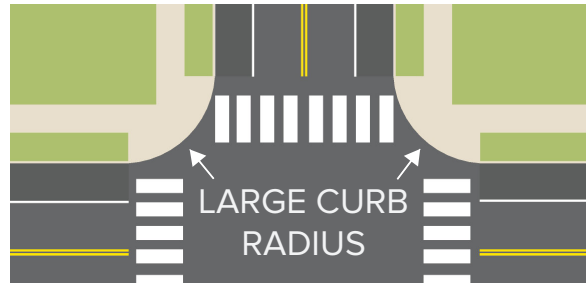
Curb radii designs are determined based on the design vehicle of the roadway. In general, vehicles are able to take turns more quickly around corners with larger curb radii. Minimizing curb radii forces drivers to take turns at slower speeds, making it easier and safer for people walking or biking to cross the street. An actual curb radius of five to ten feet should be used wherever possible, while appropriate effective turning radii range from 15 to 30 feet, depending on the roadway and land use context.

Estimated Costs^{F, G}

- \$2,000-\$40,000, depending on need for utility relocation and drainage

Resources

- FHWA Signalized Intersections: Informational Guide – Pages: 187-189
- NACTO Urban Street Design Guide – Pages: 117-120, 144-146



CURB RAMPS

Description

Curb ramps provide access for people between roadways and sidewalks for people using wheelchairs, strollers, walkers, crutches, bicycles, or who have mobility restrictions that make it difficult to step up or down from curbs. Curb ramps must be installed at intersections and mid-block crossings where pedestrian crossings are located, as mandated by federal law. Separate curb ramps should be provided for each direction of travel across the street.

Estimated Costs

- Varies depending on retrofit or new construction, material used

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 1-2
- FHWA Signalized Intersections: Informational Guide – Pages: 47-50
- United States Access Board Proposed Accessibility Guidelines for Pedestrian Facilities in Public Right-of-Way – Pages: 66-67, 78-83



HAWK SIGNALS

Description

The High-Intensity Activated Crosswalk Beacon (HAWK), also referred to as a Pedestrian Hybrid Beacon System by MnDOT, remains dark until activated by pressing the crossing button. Once activated, the signal responds immediately with a flashing yellow pattern which transitions to a solid red light, providing unequivocal 'stop' guidance to motorists. HAWK signals have been shown to elicit high rates of motorist compliance.

Estimated Costs^H

- \$80,000. Includes one HAWK signal in each direction

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 13-15
- FHWA Safety Effectiveness of the HAWK Pedestrian Crossing Treatment
- FHWA Evaluation of Pedestrian and Bicycle Engineering Countermeasures: Rectangular Rapid-Flashing Beacons, HAWKs, Sharrows, Crosswalk Markings, and the Development of an Evaluation Methods Report – Pages: 19-28



HIGH-VISIBILITY CROSSWALK

Description

High-visibility crosswalks help to create a continuous route network for people walking and biking by alerting motorists to their potential presence at crossings and intersections. Crosswalks should be used at fully controlled intersections where sidewalks or shared-use paths exist.

Estimated Costs^E

- \$25,000 each, depending on materials: paint vs. thermoplastic

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 3-8
- MnDOT Guidance for Installation of Pedestrian Crosswalks on Minnesota State Highways – Page: 3
- MN MUTCD: Part 3. Markings – Pages: 3B-34-38
- MN MUTCD: Part 7. Traffic Controls for School Areas – Pages: 7A-1-3, 7B-5-8, 7C-1
- NACTO Urban Street Design Guide – Pages: 109-116



LEADING PEDESTRIAN INTERVAL

Description

A Leading Pedestrian Interval (LPI) provides pedestrians with a three to seven second head start when entering an intersection with a corresponding green signal in the same direction of travel. LPIs enhance the visibility of pedestrians in the crosswalk and reinforce their right-of-way over turning vehicles. LPIs are most useful in areas where pedestrian travel and turning vehicle volumes are both high.

Estimated Costs^A

- \$0-\$3,500, depending on the need for new hardware vs. revising existing signal timing

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 20-22
- NACTO Urban Street Design Guide – Page: 128



MEDIAN REFUGE ISLAND

Description

Median refuge islands (also known as median crossing islands) make crossings safer and easier by dividing them into two stages so that pedestrians and bicyclists only have to cross one direction of traffic at a time. Median refuges can be especially beneficial for slower walkers including children or the elderly. Crossing medians may also provide traffic calming benefits by visually narrowing the roadway.

Estimated Costs^E

- \$13,500, \$10 per square foot

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 9-10, 43-44
- FHWA Effects of Traffic Calming Measures on Pedestrian and Motorist Behavior – Pages: 17-20
- FHWA Proven Safety Countermeasures: Medians and Pedestrian Crossing Islands in Urban and Suburban Areas
- MN MUTCD: Part 3. Markings – Page: 31-2
- NACTO Urban Street Design Guide – Page: 116



RAISED CROSSWALKS

Description

Raised crosswalks are wide and gradual speed humps placed at pedestrian and bicyclist crossings. They are typically as high as the curb on either side of the street, eliminating grade changes for people crossing the street. Raised crosswalks help to calm approaching traffic and improve visibility of people crossing.

Estimated Costs^E

- \$8,170 each

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 3-4
- FHWA Effects of Traffic Calming Measures on Pedestrian and Motorist Behavior – Pages: 12-15
- MN MUTCD: Part 3. Markings – Pages: 3B-46-49
- NACTO Urban Street Design Guide – Page: 54



RECTANGULAR RAPID FLASHING BEACON (RRFB)

Description

An RRFB uses an irregular stutter flash pattern with bright amber lights (similar to those on emergency vehicles) to alert drivers to yield to people waiting to cross. The RRFB offers a higher level of driver compliance than other flashing yellow beacons, but lower than the HAWK signal.

Estimated Costs^B

- \$36,000 for two assemblies on poles

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 16-17
- FHWA Effects of Yellow Rectangular Rapid-Flashing Beacon on Yielding at Multi-lane Uncontrolled Crosswalks
- FHWA Evaluation of Pedestrian and Bicycle Engineering Countermeasures: Rectangular Rapid-Flashing Beacons, HAWKs, Sharrows, Crosswalk Markings, and the Development of an Evaluation Methods Report – Pages: 13-18



ROAD DIET

Description

A classic road diet converts an existing four-lane roadway to a three-lane cross-section consisting of two through lanes and a center two-way left turn lane. Road diets improve safety by including a protected left-turn lane, calming traffic, reducing conflict points, and reducing crossing distance for pedestrians. In addition, road diets provide an opportunity to allocate excess roadway for alternative uses such as bike facilities, parking, transit lanes, and pedestrian or landscaping improvements.

Estimated Costs^E

- \$120,680 per mile, assuming 8 blocks in a mile. Estimate includes 16 symbols, 16 signs, six curb extensions, one mini traffic circle

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 29-31
- FHWA Road Diet Desk Reference
- FHWA Road Diet Informational Guide
- NACTO Urban Street Design Guide – Page: 14



SCHOOL SPEED ZONE

Description

School speed zones reduce speed limits near schools and alert motorists that they are driving near a school. School speed zones are defined as the section of road adjacent to school grounds or where an established school crossing with advance school signs is present. Each road authority may establish school speed zone limits on roads under their jurisdiction. In general, school speed limits shall not be more than 30 mph below the established speed limit and may not be lower than 15 mph. Speed violations within school speed zones are subject to a double fine.

Estimated Costs^{A, C}

- \$600 for sign and post in each direction

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 48-51
- MnDOT School Zone Speed Limits
- MN MUTCD: Part 7. Traffic Controls for School Areas – Section: 7E



SHARED USE PATH

Description

Shared-use paths provide off-road connections for people walking and biking. Paths are often located along waterways, abandoned or active railroad corridors, limited access highways, or parks and open spaces. Shared-use paths may also be located along high-speed, high-volume roads as an alternative to sidewalks and on-street bikeways; however, intersections with roadways should be minimal. Shared-use paths are generally very comfortable for users of all ages and abilities.



Estimated Costs^B

- \$55 per linear foot, 10 ft trail with aggregate base and associated costs

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Page: 2
- MnDOT Bikeway Facility Design Manual – Pages: 123-168
- AASHTO Guide for the Development of Bicycle Facilities – Chapter 5

SIDEWALKS

Description

A well-connected sidewalk network is the foundation of pedestrian mobility and accessibility. Sidewalks provide people walking with space to travel within the public right-of-way that is separated from roadway vehicles. Sidewalks are associated with significant reductions in motor vehicle / pedestrian collisions.

Estimated Costs^{A, B}

- \$84 per linear foot of 6 ft sidewalk with aggregate base

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 1-2
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- NACTO Urban Street Design Guide – Pages: 37-44
- United States Access Board Proposed Guidelines for Pedestrian Facilities in Public Right-of-Way





TRAFFIC CIRCLES (MINI ROUNDABOUTS)

Description

Traffic circles are raised circular islands constructed in the center of residential intersections. They may take the place of a signal or four-way stop sign, and calm vehicle traffic speeds by forcing motorists to navigate around them without requiring a complete stop. Signage should be installed with traffic circles directing motorists to proceed around the right side of the circle before passing through or making a left turn.



Estimated Costs^E

- \$35,000-\$50,000 each

Resources

- MnDOT Minnesota's Best Practice for Pedestrian and Bicycle Safety – Pages: 43-44
- FHWA Technical Summary: Mini-Roundabouts
- FHWA Technical Summary: Roundabouts – Page: 7 (mention of school area siting)
- MN MUTCD: Part 3. Markings – Pages: 3C1-15
- NACTO Urban Street Design Guide – Page: 99

SOURCES

A: <http://www.dot.state.mn.us/bidlet/avgPrice/AVGPR162015.pdf>

B: <http://www.hennepin.us/~media/hennepinus/residents/transportation/bottineau-documents-mpls-gv/estimated-infrastructure-costs-and-funding.pdf?la=en>

C: <http://www.trafficsign.us/signcost.html>

D: <https://www.bls.gov/oes/current/oes339091.htm>

E: http://www.pedbikeinfo.org/cms/downloads/Countermeasure%20Costs_Report_Nov2013.pdf

F: http://guide.saferoutesinfo.org/engineering/reduced_corner_radii.cfm

G: http://www.pedbikeinfo.org/cms/downloads/Countermeasure_Costs_Summary_Oct2013.pdf

H: <http://www2.ku.edu/~kutc/pdffiles/LTAPFS11-Mid-Block.pdf>

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Appendix H. Bike Parking for Schools



Bicycle parking at schools does more than just provide space for storage during the school day. Depending on design, bicycle parking can actually encourage students and staff to choose to ride their bikes to school. Here are some things to think about when planning bicycle parking at school.

HOW MUCH PARKING SHOULD BE PROVIDED?

The amount of bike parking needed will depend on the capacity of your school, the ages of students, and the number of staff. But remember: be aspirational! Provide parking for the number of students and staff you'd like to see biking! The following are some guidelines:

- Aim for 25 percent of the maximum student capacity of the school.
- Provide additional parking to encourage staff and faculty to bike to school

WHERE SHOULD PARKING BE LOCATED?

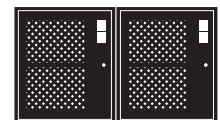
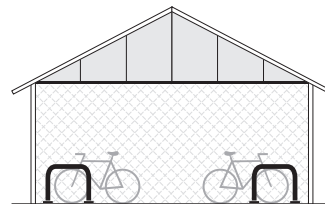
Well-located bike parking will be:

- visible to students, staff, and visitors
- near the primary school entrance/exit
- easily accessed without dismounting
- clear of obstructions which might limit the circulation of users and their bikes
- easily accessed without making a rider cross bus and car circulation
- installed on a hard, stable surface that is unaffected by weather
- often found near kindergarten and daycare entrance, which allows parents to conveniently pick up their children on their bikes

For example, if each classroom has a max capacity of 20 students and there are 10 classrooms, space for 50 bicycles should be provided. Don't forget to add some for faculty and staff!

CAN MY SCHOOL PROVIDE ADDITIONAL AMENITIES?

Bike parking shelters and lockers provide extra comfort and security for those choosing to ride to school. They're also a great project for a shop class. Both can be very simple in construction and go a long way towards making biking attractive and prioritized!



WHICH RACKS ARE BEST?



INVERTED U



POST & RING



WHEELWELL SECURE

These racks provide two points of contact with the bicycle, accommodate varying styles of bike, allow for at least one wheel to be U-locked, and are intuitive to use!

WHICH RACKS ARE NOT RECOMMENDED?



WAVE



COMB



SPIRAL

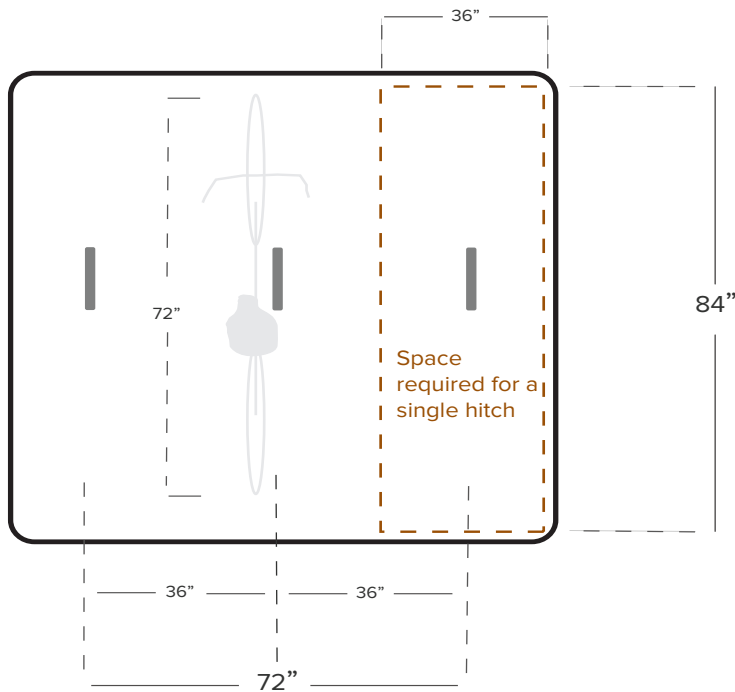
These racks do not provide support at two places on the bike, can damage the wheel, do not provide adequate security, and are not intuitive to use!



WHEELWELL

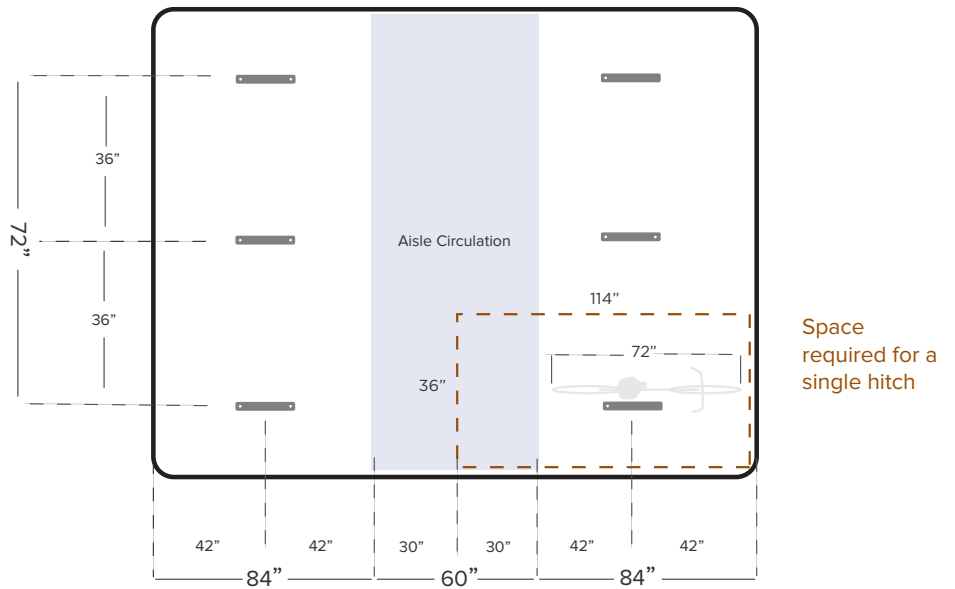
Graphics courtesy of Association of Pedestrian and Bicycle Professionals Essentials of Bike Parking report (2015).

SPACE REQUIREMENTS



The space requirements shown here assume a person parking their bike would have open access forward and from behind.

The space requirements shown here assume the area is confined on either side (left and right). Access is located at the top and bottom of the image, requiring a center aisle for circulation.



RESOURCES FOR EQUIPMENT

[Dero](#)
[Sportworks](#)
[Urban Racks](#)

MORE INFORMATION

[APBP Essentials of Bike Parking](#)



Appendix I. Maintenance Planning

ANNUAL 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.

SEASONAL PLANNING AND MAINTENANCE

Walking and cycling generally diminish during the cold winter months as poorly maintained infrastructure and unpleasant weather conditions create barriers for pedestrians and bicyclists. However, maintaining infrastructure and planning inviting winterscapes for students can facilitate the convenience of biking and walking as well as provide new opportunities to encourage students to be outside more.

Snow removal and maintenance of school routes should be prioritized. 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.

While it is important to prioritize maintenance, additional planning should be employed to create new opportunities to encourage students to be outside more through design. According to the City of Edmonton's Winter Design Guidelines, the five main design principles for designing cities that are inviting and functional for outdoor public life year-round include blocking wind, capturing sunshine, using color, lighting, and providing infrastructure that supports desired winter activities.

Lighting is important year-round, but becomes increasingly important in the winter for creating more inviting winterscapes for pedestrians and bicyclists. Lighting can contribute to inducing a sense of warmth and safety as well as be used for wayfinding and as passive public art displays.

Lastly, providing infrastructure that supports desired winter activities can also encourage more active transportation. Some particularly encouraging strategies beyond providing ice skating rinks that have been employed in Edmonton, Canada include harnessing plowed snow piles and stored snow to create new play opportunities for students. These snow piles can be strategically placed in parks along walking routes and mounded into winter slides. Other practices have included regularly compacting snow to make it malleable enough for students to construct their own snow house structures with maintenance crews compacting the snow every few days to prevent it from forming into denser ice.

Resources

Winter Design Guidelines: Transforming Edmonton into a Great Winter City
https://www.edmonton.ca/city_government/documents/PDF/WinterCityDesignGuidelines_draft.pdf

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Appendix J. Equity in SRTS Planning

When planning and implementing your SRTS programming, it is important to design events and activities that are inclusive of students of all backgrounds and abilities. This appendix identifies potential obstacles to participation and suggests creative outreach, low-cost solutions, and flexible program implementation to address language barriers, students with disabilities, personal safety concerns, and barriers related to school distance.

LANGUAGE AND/OR CULTURAL BARRIERS

To encourage families that do not speak English, are learning English, or have recently immigrated to participate in Safe Routes to School programs, it is important to communicate how the program can benefit families and address parental concerns. Hiring a bilingual staff person is the best way to communicate and form relationships with a community.

Provide Materials in Multiple Languages

Some concepts can lose their meaning and be confusing when translated literally. Also, words may have different meanings depending on the regional dialect.

- Ask families with native speakers to help communicate the message to others.
- Use images to supplement words so that handouts are easy to read and understand.

Use a Variety of Media

In schools where families speak different languages, it can be a good idea to present information in multiple ways.

- Use a variety of mechanisms to communicate the benefits of walking and bicycling to parents.
- Have students perform to their parents, such as through a school play.
- Encourage youth-produced PSAs to educate parents on why biking and walking are fun and healthy events.
- Provide emails, print materials, etc., in multiple languages.
- Use a phone tree, PTA, or events to reach parents.
- Engage an assistant who speaks multiple languages to reach out to parents at events.
- Employ staff from similar ethnic backgrounds to parents at the school.
- Parents increasingly use texting more than emails. Find out how parents communicate with each other and use their methods.

Meet People Where They Are

Some families may not feel comfortable coming to your events or participating in formal PTA and organizations.

- Attend established meetings to reach groups who may not participate in school PTAs or other formal meetings.
- State required English Learner Advisory Committees (ELACs) are good partners.
- Conduct outreach or table at school events (such as: Movie nights, family dance nights, Back to School nights, etc.).

Residents are often aware of traffic and personal safety issues in their neighborhoods, but don't know how to address them.

- Provide a safe place for parents to voice concerns to start the conversation about making improvements. Listen to their concerns, help parents prioritize, and connect them with the responsible agency to address the concerns.
- Encourage staff or parent volunteers to host house meetings, in which a small group gathers at the home of someone they know to voice concerns and brainstorm solutions.
- Seek common goals for community improvement that can be addressed through collaborative efforts with all parent groups.

- Consider inviting law enforcement or public works staff to build a better relationship between officers and residents so they feel comfortable voicing future concerns. Note that some groups may have complex relationships of police mistrust, such as among undocumented communities. Again, asking for police representatives who are from the community works best.
- When looking for volunteers, start by looking to friends and neighbors to build your base group.
- Be creative; consider going to community events like Farmer's Markets and neighborhood gathering spots to recruit. Try different ways of engaging with participants; the City as Play Design Workshops have creative ideas for asking attendees to build their visions.
- Look for small victories: adding a crossing guard, signage and paint gives parents confidence that their issues can be addressed.

Host Parent Workshops

All parents desire for their children to be successful. Workshops are a good opportunity to articulate how services and programs can reduce barriers to students' success and help them be successful.

- Create simple ways for parents to get involved and help put on events and activities with their children, who can often help navigate the situation.
- Hold a "Parent University," or workshops where parents can voice their concerns.
- Listen to and act on parents' suggestions to build trust in the community and address concerns.
- Include an icebreaker activity to introduce yourself and to make the participants more comfortable sharing their thoughts and opinions.

Establish Flexible Programs

Create a trusting and welcoming environment by not requiring participants to provide information about themselves, which could be a deterrent to undocumented immigrants.

- Establish a training program for volunteers that does not require background checks or fingerprints since some parents who would like to volunteer may not be able to pass background checks.

Often working parents have limited time to volunteer with their children's schools. The hours and benefits associated with many jobs can make it challenging for parents to be available for school activities and take paid time off.

- Host meetings and events at varying times to accommodate differing work schedules.
- Make specific requests and delegate so no single person has to do the majority of the work.

Communicate Health Benefits

Families who are not as well-connected to the school community may not be as aware of the benefits of SRTS programming.

- Publicize to parents that walking and biking to school is exercise and to children that it is fun, like an additional recess.
- Encourage caregivers to attend health fairs that highlight biking and walking to create an association between those commute options and their benefits. Encouragement competitions such as the Golden Sneaker Award and Pollution Punch Card can show how many calories students have burned.

STUDENTS WITH DISABILITIES

Some students may not be able to walk or bike to school because of physical or mental disabilities, but they can still be included in SRTS programs.

- Invite children with physical disabilities to participate in school infrastructure audits to learn how to improve school access for all.
- Understand that students with mental disabilities may have differing capacities for retaining personal and traffic safety information, but programs like neighborhood cleanups and after-school programs can be fun ways to socialize and participate with other students.



- Involve special education instructors and parents of disabled students in the planning and implementation of these programs to better determine the needs of children with disabilities.
- Create SRTS materials that recognize students with disabilities. Include pictures of students with disabilities in program messaging to highlight that SRTS programs are suitable for all students.

Additional Resources

- National Center for SRTS's Involving Students with Disabilities
- SRTS National Partnership's: Serving Students with Disabilities

PERSONAL SAFETY CONCERNS

In some communities, personal safety concerns associated with crime activity is a significant barrier to walking and bicycling. These can include issues of violence, dogs, drug use, and other deterrents that can take precedence over SRTS activities in communities. These neighborhoods may lack sidewalks or other facilities that offer safe access to school, and major roads may be barriers.

Neighborhood Watch Programs

Establishing neighborhood crime watches, parent patrols, and safety zones can involve the community in addressing personal safety concerns as supervision reduces the risk of bullying, crime, and other unsafe behavior.

- Set up parent patrols to roam areas of concern. Safe Passages or Corner Captain programs station parent or community volunteers on designated key street corners to increase adult presence to watch over children as they walk and bicycle to school.
- Issue special hats, vests, or jackets to give the volunteers legitimacy and identify them as patrol leaders.
- Provide walkie-talkies to allow parents to radio for help if they are confronting a situation they have not been able to resolve.
- Work to identify “safe places” like a home along the route where children can go to in the event of an emergency, or create a formal program with mapped safe places all children can go to if a situation feels dangerous.

SchoolPool with a Group

SchoolPool, or commuting to school with other families and trusted adults, can address personal safety concerns about traveling alone.

- Form Walking School Buses, Bike Trains, or carpools. For information about how to set up a SchoolPool at your school, read the Spare the Air Youth SchoolPool guidebook at <http://www.sparetheairyouth.org/schoolpool-guidebook>. More information about organizing a Walking School Bus or Bike Train is available online at <http://www.sparetheairyouth.org/walking-school-buses-bike-trains>.

Sponsor Neighborhood Beautification Projects

Clean neighborhoods free of trash and graffiti can create a sense of safety and help reduce crime rates.

- Host neighborhood beautification projects around schools, such as clean-up days, graffiti removal, and tree planting to help make families feel more comfortable and increase safety for walking or biking to school.
- Host a community dialogue about positive and negative uses of public space.

Education Programs

Teach students and their families about appropriate safety issues. Parents may not want students to walk or bike if they are not confident in their child's abilities.

Safety Information for Students

- Use time at school, such as during recess, PE, or no-cost after school programs, to teach children how to bike and walk safely.

- Utilize either existing curricula or bring in volunteer instructors from local advocacy groups and non-profit organizations.
- Teach children what to do in the event of an emergency and where to report suspicious activity or bullying.
- Provide helmets and bikes during the trainings will allow all students to participate regardless of whether or not they have access to these items.
- Organize an Open Streets event as a strategy to create safe zones to teach new skills in the street.

Safety Information for Parents

- Provide information about how to get to around safely.
- Develop and distribute suggested routes to school maps that highlight streets with amenities like sidewalks, lighting, low speeds, and less traffic.
- Identify informal shortcuts and cutthroughs that students may take to reduce travel time. Consider whether these routes may put students at risk (for example, by cutting through a fence, across a field, or near railroad tracks) and work with your city planners to improve the route.
- Provide flyers for parents about how to find other families groups to commute with or what to do in the event of an emergency to educate themselves and their children.
- Offer pedestrian safety training walks. Make these fun and interactive and address parents' safety concerns as well as provide tips for them to teach their children to be safe while walking.

Resources

- SRTS National Partnership's Implementing Safe Routes to School in Low-Income Schools and Communities <http://www.saferoutespartnership.org/sites/default/files/pdf/LowIncomeGuide.pdf>

BARRIERS RELATED TO SCHOOL DISTANCE

Some students simply live too far from school to reasonably walk or bike. However, there are programs that may be implemented to include these students in healthy physical activities, such as walking or biking.

Remote Drop-off

- Suggest remote drop-offs for parents to drop their children off a couple blocks from the school so they can walk the rest of the way. Volunteers wait at the drop-off and walk with students at a designated time to ensure they arrive to school safely and on time.
- Remote drop-off sites can be underutilized parking lots at churches or grocery stores that give permission for their property to be used this way.
- Identify potential park and walk areas on route maps.

Walk to School Bus Stops

- Incorporate physical activity into students' morning schedule by encouraging them to walk to bus stops.
- Utilize walking school bus programming to organize nearby students to walk in groups to a more centrally located bus stop, which may translate into fewer bus stops because more students will be boarding at each stop.

Frequent Walker Programs

- Implement programs that identify walking opportunities on campus, which can be defined in terms of routes or by amount of time spent walking. This will allow students who arrive to school by bus or parent vehicle to benefit from the physical benefits provided by walking or biking to school.

Additional Resources

- Safe Routes to School National Partnership Rural Communities: Making Safe Routes Work
- Safe Routes to School National Partnership Rural Communities: Best Practices and Promising Approaches for Safe Routes
- Safe Routes to School National Partnership Rural Communities: A Two Pronged Approach for Improving Walking and Bicycling



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