



SAFE ROUTES TO SCHOOL PLAN, JUNE 2018

MAXFIELD ELEMENTARY

Saint Paul, MN

A

APPENDICES

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Appendix A. For More Information

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

NATIONAL RESOURCES

Safe Routes to School Data Collection System

<http://www.saferoutesinfo.org/data-central>

Pedestrian and Bicycle Information Center

<http://www.pedbikeinfo.com/>

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://www.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

10 Tips for SRTS Programs and Liability

<http://www.saferoutesinfo.org/sites/default/files/liabilitytipsheet.pdf>

Tactical Urbanism and Safe Routes to School

<http://www.saferoutespartnership.org/resources/factsheet/tactical-urbanism-and-safe-routes-school>

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.mnsaferoutestoschool.org>

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

LOCAL RESOURCES

Fay Simer

Pedestrian Safety Advocate, City of Saint Paul
fay.simer@stpaul.gov

Carol Grady

Saint Paul Public Schools
carol.grady@spps.org

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 six 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 5 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% of its original oil supply remaining.
- Americans drive more than 2 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 1% of short automobile trips to walking or biking decreases emissions by 2 to 4%.
- 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% to 25% 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%, carbon monoxide by 80% and hydrocarbons by 90% per passenger mile.
- Eight bicycles can be parked in the space required for just one car.



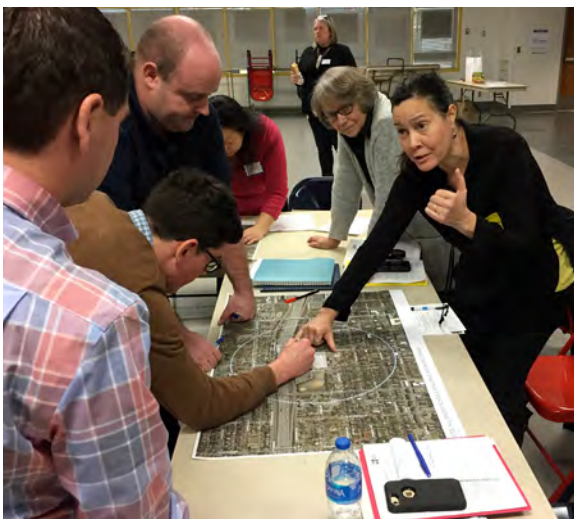
Appendix C. Summary of Planning Process

The following is a brief summary of the planning process completed for the formation of this plan. The timeline below accompanies the narrative.



Planning for the SRTS plan began in the summer of 2017, after SPPS successfully applied and was awarded a planning assistance grant from MnDOT. In early fall, consultant staff met with school administration to go over first steps and provide background of SRTS to principals and assistant principals.

In October of 2017, data collection of student travel patterns and parent perceptions of walking and biking was completed by the local team and school staff. Administrators at Maxfield sent home a survey to parents in several different languages that asked them 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 addition to the surveys sent home to parents, students were asked by school staff about their travel patterns to and from school. This student tally collected data on travel to and from school during three weekdays. It was administered in October 2017 by Maxfield staff. 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 F and G.



RAPID PLANNING SESSION AND COMMUNITY WORKSHOP

In December 2017, a broad group of stakeholders met for an intensive half-day meeting called a Rapid Planning Session. This charrette-style event brought together school, district, city and county staff, plus students, health professionals, and community members to discuss the challenges and opportunities for walking and biking to Maxfield. The Rapid Planning Session segued into an evening community workshop to open the planning process up to a wider range of community participants.

The Rapid Planning Session was comprised of four main sections. The workshop began with an introduction to SRTS, the planning process, and an overview of existing conditions and upcoming projects. The following section focused on infrastructure for walking and biking including identifying student routes, barriers, and opportunities for improvement. A discussion about programs followed and focused on the non-infrastructure components of SRTS including education, encouragement, enforcement, and evaluation. It included a brainstorm of existing programs and resources and identification of potential SRTS programs to strengthen or develop. The Rapid Planning Session concluded with an observation of dismissal at Maxfield Elementary and the Rondo Complex. An additional walking audit provided an opportunity for participants to evaluate existing conditions for walking and biking on campus and in the surrounding areas. Finally, the group reconvened to share their observations from dismissal and the walk audit and build consensus around issues and opportunities for each school. These were recorded on large format maps and later referenced for development of recommendations.

In the evening, a community workshop provided an opportunity for students, caregivers, and other members of the neighborhood and school community to learn about SRTS and provide their insight on walking and biking in the area. The community workshop included an introduction to the SRTS project and planning team and a series of interactive breakout activities to gather information about routes, barriers, and opportunities for programming and infrastructure improvements. More information about the community workshop is available in Appendix H.





Appendix D. Existing Conditions

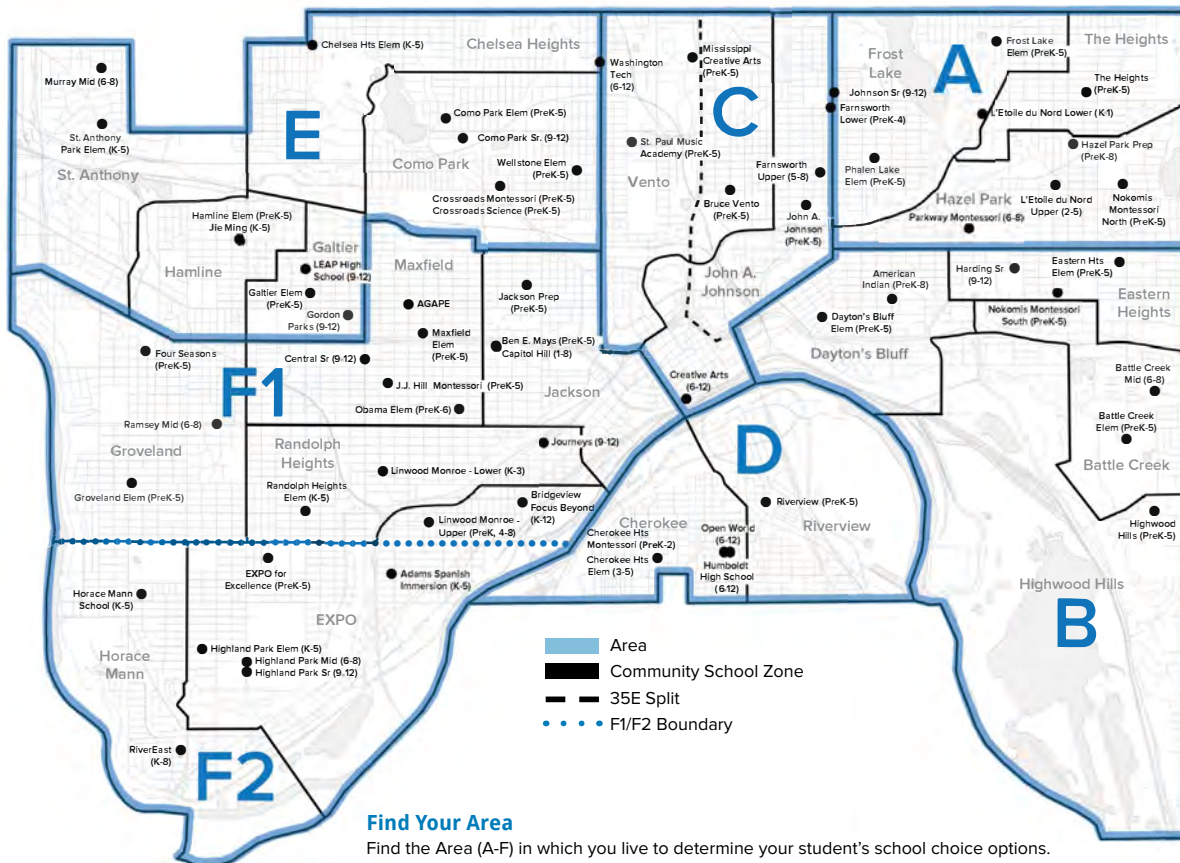
The following is a brief summary of the existing conditions in the area of Maxfield.

SURROUNDING LAND USE

Maxfield Elementary School is located in the Summit-University neighborhood of Saint Paul. It is located directly north of Interstate 94 and three blocks south of University Avenue W. Maxfield's campus is surrounded on the north, west, and east by residential neighborhood streets. Commercial and mixed-uses are prevalent along University Avenue. Interstate 94 separates Maxfield from the residential development south of campus. North Victoria Street on the west edge of campus provides access over I-94. Pedestrian and bicycle bridges over I-94 are located two blocks west and two blocks east at Chatsworth Street and Grotto Street, respectively.

SCHOOL ENROLLMENT BOUNDARY

Maxfield is located in the upper-middle community school zone of area F1. Map produced by Saint Paul Public Schools.



CURRENT TRAVEL PATTERNS

In fall of 2017, Maxfield staff conducted a student hand tally to gather information about how students traveled to and from school during three consecutive days of the week. Between 120 and 187 students participated in each tally.

On average over the three day period, most students reported that they arrive by bus (59 percent). Twenty-six percent said they arrive by family vehicle, nine percent walk, four percent carpool with other students' families, one percent take transit, and one percent arrive by another mode. No students reported biking to or from school. In the afternoon, more students take the bus (68 percent) and fewer students travel by family vehicle (18 percent).

The full results of the student hand tally can be found in Appendix G.

PARENT SURVEY SUMMARY

Maxfield families were invited to complete the SRTS Parent Survey in fall of 2017. The survey is intended to gather information about transportation habits and barriers to walking or biking to school. A total of 22 surveys were returned and analyzed.

Of those who responded, 15 reported that their child primarily takes the school bus to and from school, four said their child is typically driven in a family vehicle, and three said their child primarily walks to school. There was some variation between arrival and dismissal, with more respondents reporting that their child walks in the morning than in the afternoon. All of the respondents who indicated that their child primarily walks either to or from school live within a quarter-mile of Maxfield.

Parents and caregivers most frequently identified distance as the main factor that affects their decision to not allow their child to walk or bike to school. Violence or crime, traffic volumes, traffic speeds, safety of intersections or crossings, and weather were also identified as factors that affect their decision. Caregivers who currently allow their students to walk identified sidewalks or pathways as the main factor that affect their decision.

Thirteen of the respondents reported that Maxfield neither encourages nor discourages walking or biking. Five stated that Maxfield encourages walking or biking. Three indicated that Maxfield discourages or strongly discourages students from walking or biking. Nine respondents have the opinion that walking or biking to school is neither fun nor boring for their students. Six reported that it they felt walking or biking was fun for their child, and six reported that it was boring or very boring. Seventeen respondents reported that they felt walking or biking to school is healthy or very healthy for their child.

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



PEDESTRIAN AND BICYCLE-INVOLVED CRASHES

The map below shows crashes involving people walking or biking within one half mile of Maxfield between 2006 and 2015. The school campus is marked by the purple school icon. Crashes shown as a larger, dark red circle (K) resulted in a fatality. Crashes shown as a pink circle (A) resulted in an incapacitating injury. Crashes shown as a gray circle (those categorized as N, C, or B by MnDOT) are those that resulted in non-incapacitating injury, no injury, or property damage only. This map does not show near misses or crashes that go unreported.

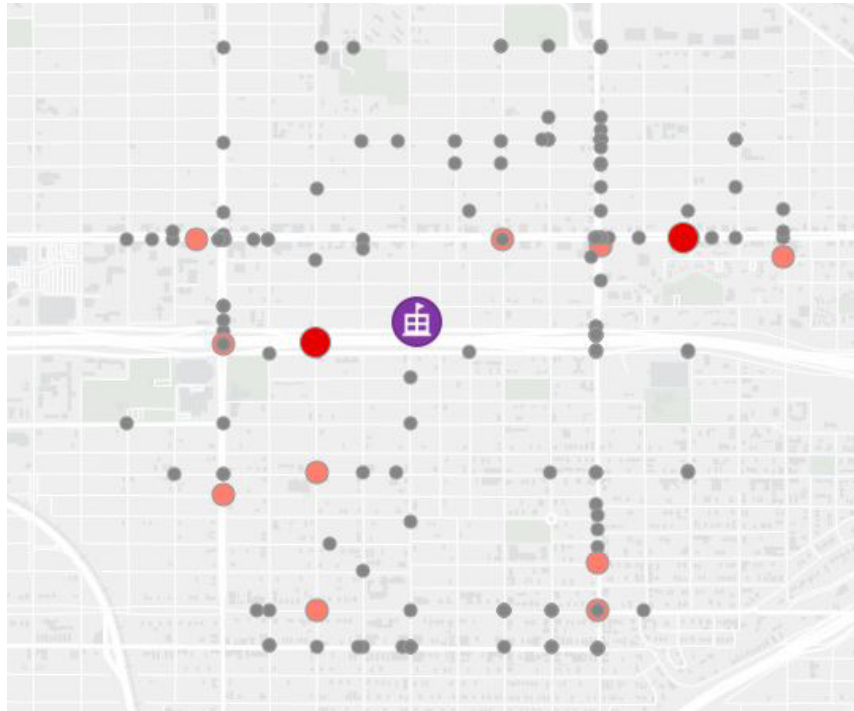
A high number of crashes involving people walking and biking were reported on University Avenue, Lexington Parkway, and Dale Street. All three corridors provide important connections across the city, providing access over interstates and rail corridors and connecting to transit, employment, commercial, and recreational destinations. All three corridors carry high volumes of vehicular traffic and none have dedicated bicycle facilities.

Crashes were also reported on neighborhood streets, primarily north of University Avenue and south of I-94. In addition to University Avenue, Lexington Parkway, and Dale Street, severe and fatal crashes were also reported along Chatsworth Street which connects to a dedicated pedestrian and bicycle bridge over I-94.

Legend

Bicycle and Pedestrian Involved Crashes
within one mile of Maxfield Elementary

- C
- B
- A
- N
- K



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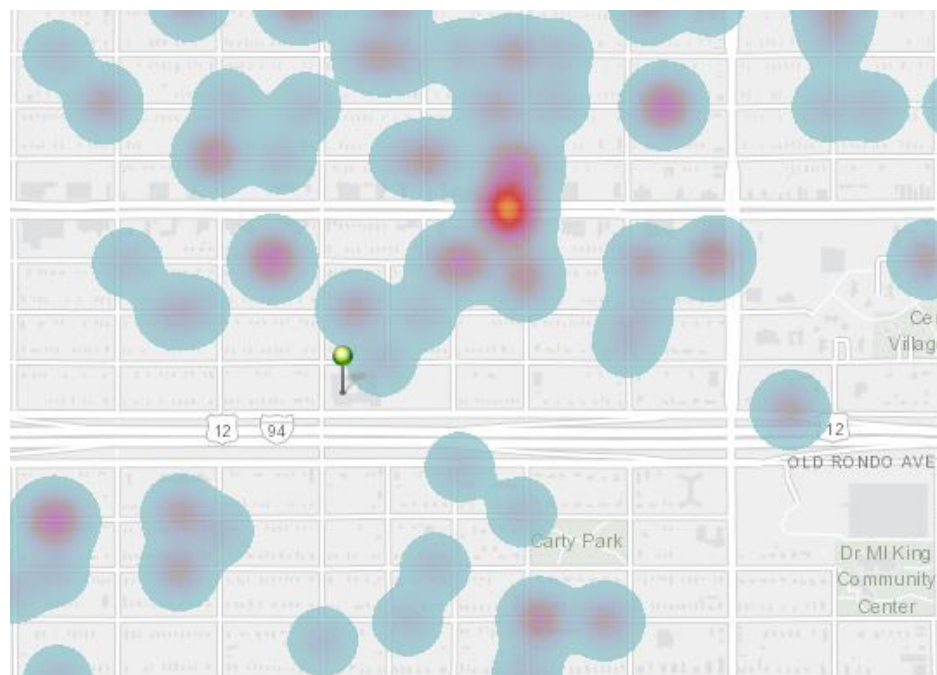
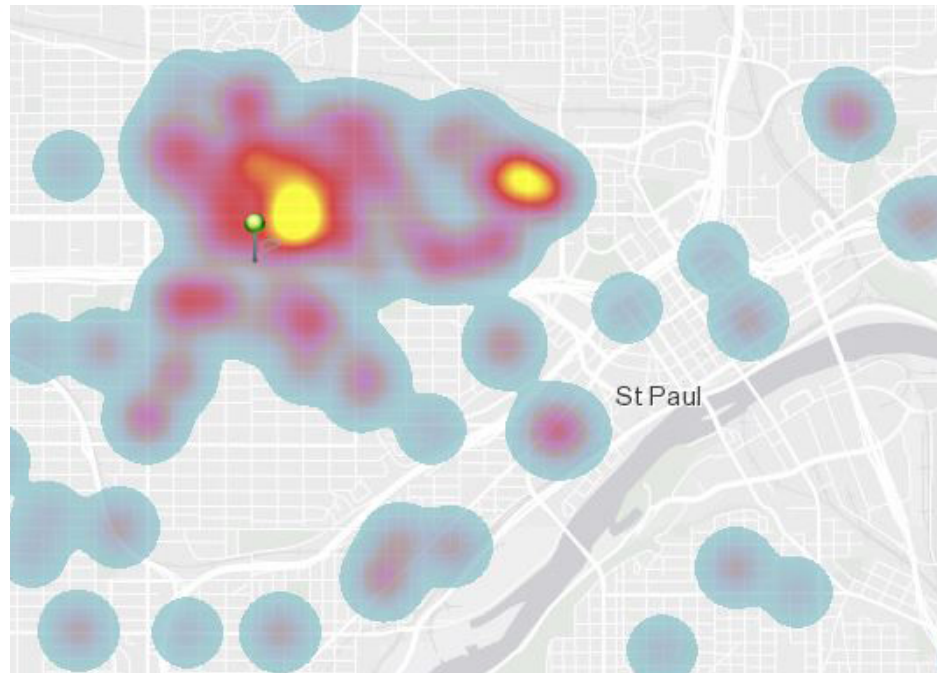


Appendix E. Student Residences

The maps below show the locations of students attending Maxfield. The top map shows the neighborhoods surrounding school. The lower map shows the area immediately surrounding school. The warmer colors represent a higher concentration of students than the cooler colors. The green push pin icon shows the location of the school. Not all students are shown in the extents.

Legend

Maxfield Student Locations



Appendix F. Parent Survey

The following shows a summary of a survey sent home to parents of children attending Maxfield in the fall of 2017. 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.

Parent Survey Report: One School in One Data Collection Period

School Name: Maxfield Magnet Elementary School

Set ID: 17033

School Group: Saint Paul Safe Routes to School Steering Committee

Month and Year Collected: October 2017

School Enrollment: 0

Date Report Generated: 11/27/2017

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

Tags:

Number of Questionnaires Distributed: 0

Number of Questionnaires

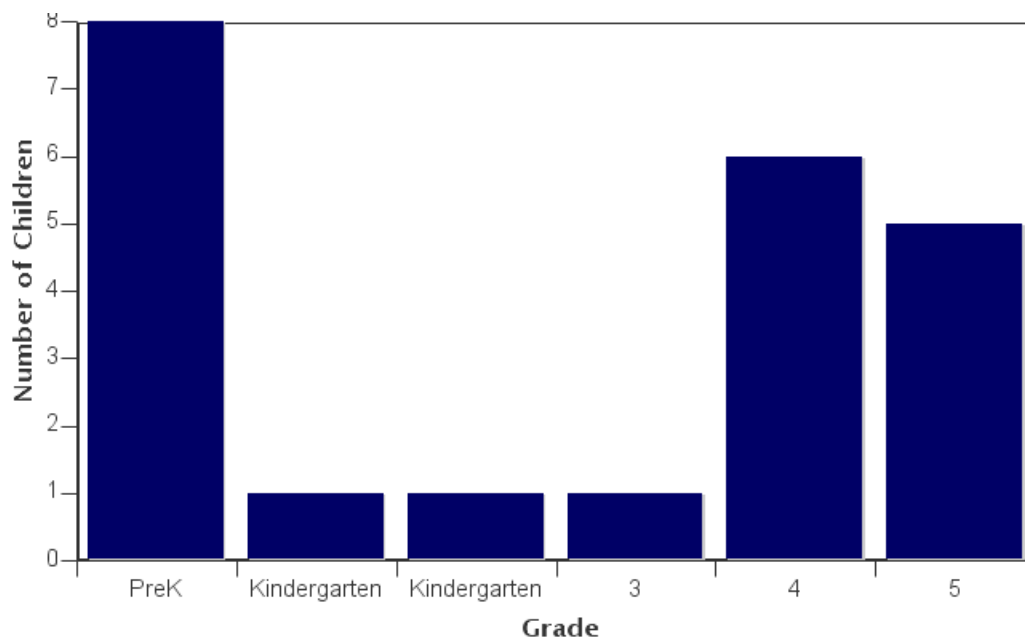
Analyzed for Report: 22

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.

**Because less than 30 questionnaires are included in this report, each graph and table display counts rather than percentage information.



Grade levels of children represented in survey



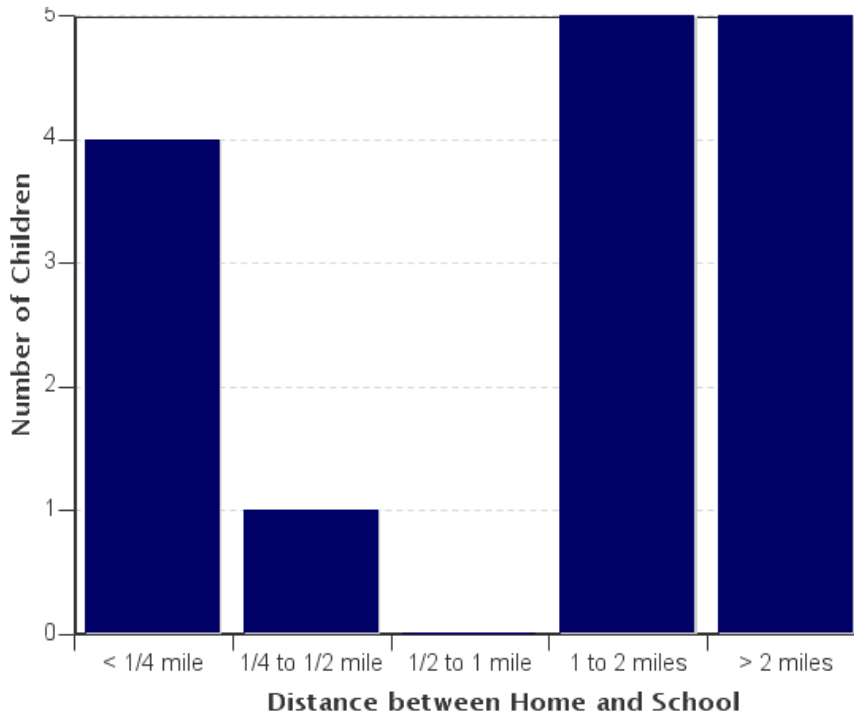
Grade levels of children represented in survey

| Grade in School | Responses per grade |
|-----------------|---------------------|
| | Number |
| PreK | 8 |
| Kindergarten | 1 |
| 1 | 1 |
| 3 | 1 |
| 4 | 6 |
| 5 | 5 |

No response: 0

Numbers rather than percents are displayed because the number of respondents for this question was less than 30.

Parent estimate of distance from child's home to school



Parent estimate of distance from child's home to school

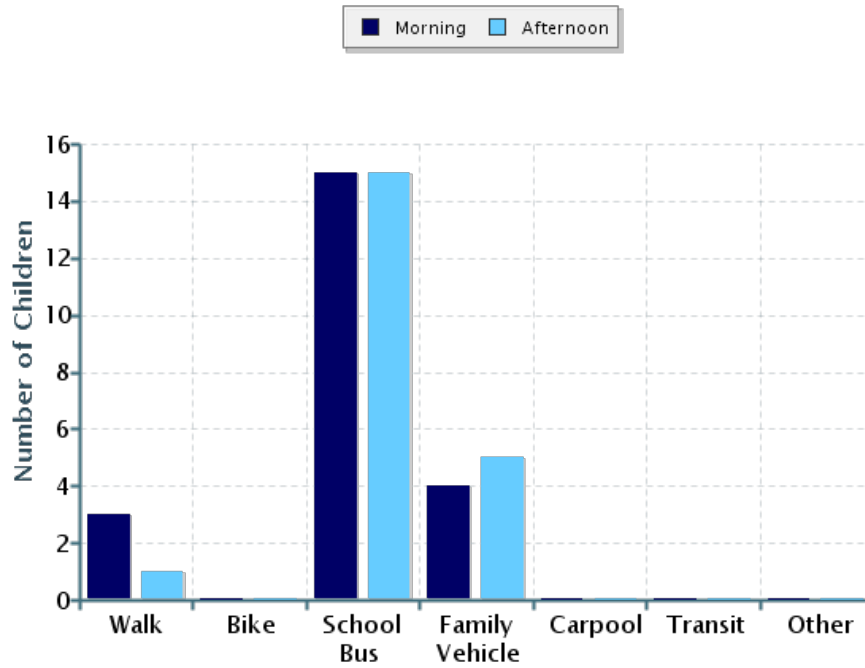
| Distance between home and school | Number of children |
|----------------------------------|--------------------|
| Less than 1/4 mile | 4 |
| 1/4 mile up to 1/2 mile | 1 |
| 1/2 mile up to 1 mile | 0 |
| 1 mile up to 2 miles | 5 |
| More than 2 miles | 5 |

Don't know or No response: 7

Numbers rather than percents are displayed because the number of respondents for this question was less than 30.



Typical mode of arrival at and departure from school



Typical mode of arrival at and departure from school

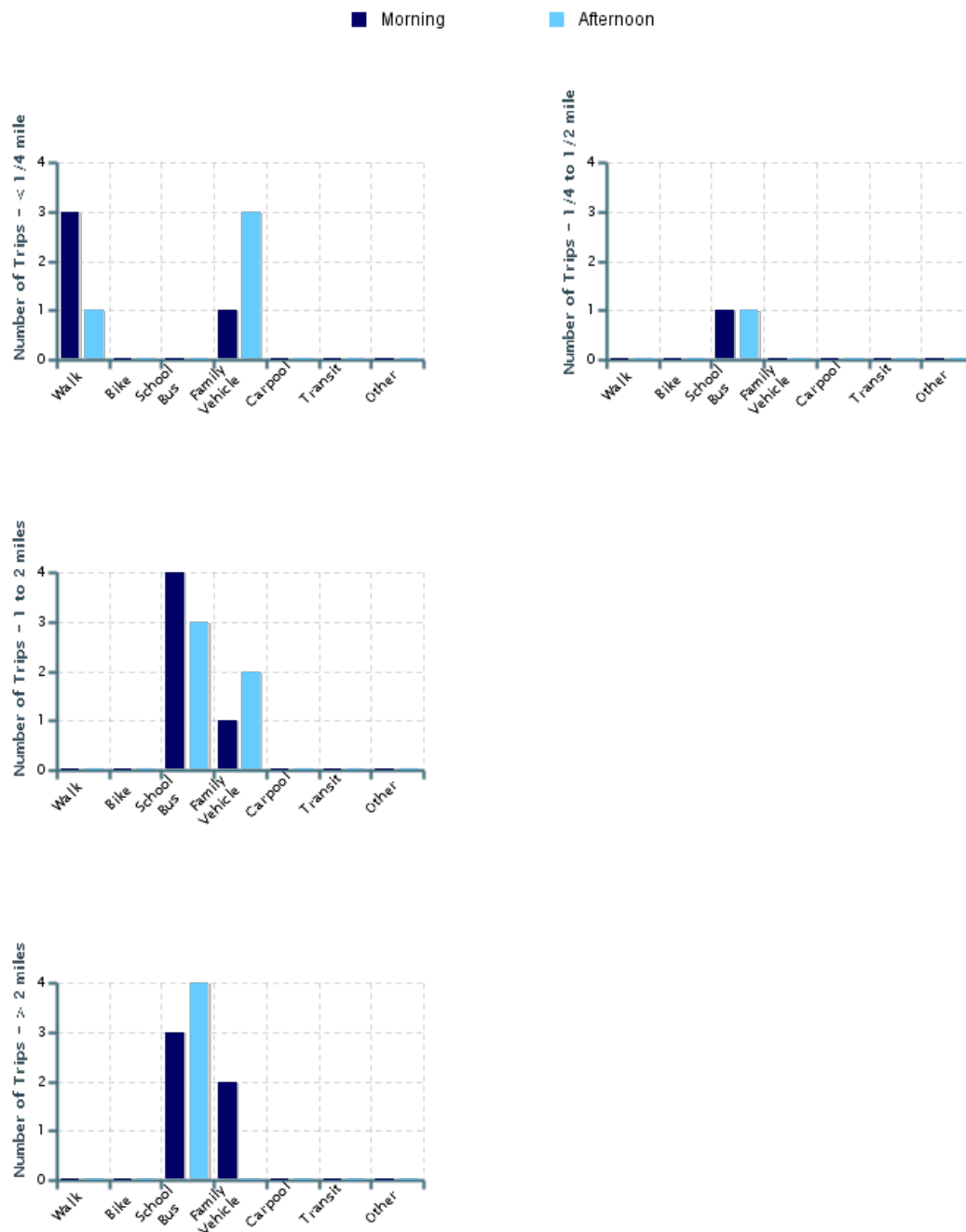
| Time of Trip | Number of Trips | Walk | Bike | School Bus | Family Vehicle | Carpool | Transit | Other |
|--------------|-----------------|------|------|------------|----------------|---------|---------|-------|
| Morning | 22 | 3 | 0 | 15 | 4 | 0 | 0 | 0 |
| Afternoon | 21 | 1 | 0 | 15 | 5 | 0 | 0 | 0 |

No Response Morning: 0

No Response Afternoon: 1

Numbers rather than percents are displayed because the number of respondents for this question was less than 30.

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



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 | 4 | 3 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1/4 mile up to 1/2 mile | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1/2 mile up to 1 mile | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 mile up to 2 miles | 5 | 0 | 0 | 4 | 1 | 0 | 0 | 0 |
| More than 2 miles | 5 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

Don't know or No response: 7

Numbers rather than percents are displayed because the number of respondents for this question was less than 30.

School Departure

| Distance | Number within Distance | Walk | Bike | School Bus | Family Vehicle | Carpool | Transit | Other |
|-------------------------|------------------------|------|------|------------|----------------|---------|---------|-------|
| Less than 1/4 mile | 4 | 1 | 0 | 0 | 3 | 0 | 0 | 0 |
| 1/4 mile up to 1/2 mile | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1/2 mile up to 1 mile | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 mile up to 2 miles | 5 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| More than 2 miles | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |

Don't know or No response: 8

Numbers rather than percents are displayed because the number of respondents for this question was less than 30.

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

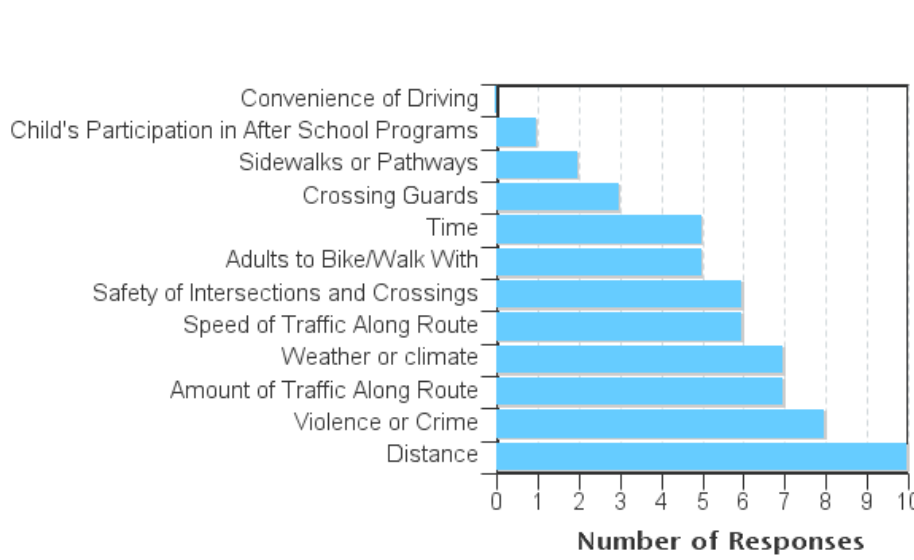
| Asked Permission? | Number of Children | Less than 1/4 mile | 1/4 mile up to 1/2 mile | 1/2 mile up to 1 mile | 1 mile up to 2 miles | More than 2 miles |
|-------------------|--------------------|--------------------|-------------------------|-----------------------|----------------------|-------------------|
| Yes | 2 | 1 | 0 | 0 | 1 | 0 |
| No | 12 | 3 | 1 | 0 | 4 | 4 |

Don't know or No response: 8

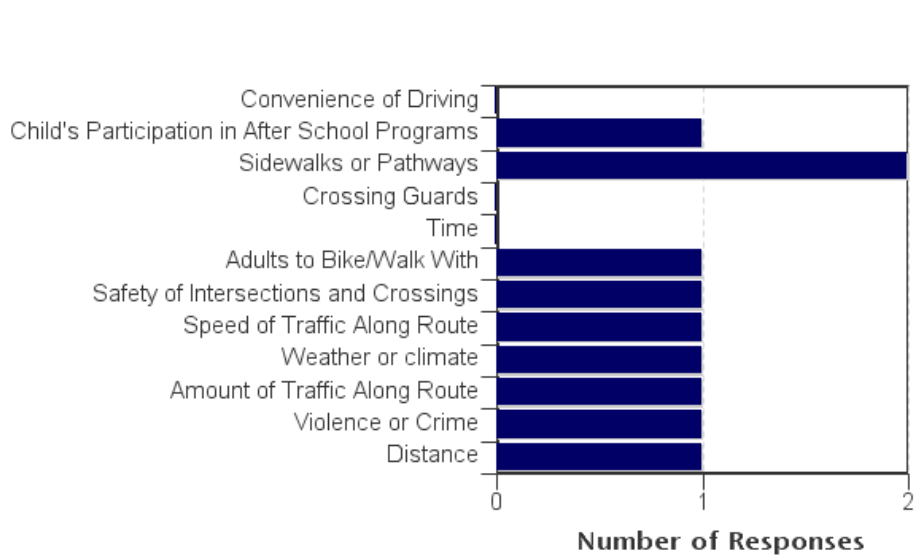
Numbers rather than percents are displayed because the number of respondents for this question was less than 30.



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



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 | 10 | 1 |
| Violence or Crime | 8 | 1 |
| Amount of Traffic Along Route | 7 | 1 |
| Weather or climate | 7 | 1 |
| Speed of Traffic Along Route | 6 | 1 |
| Safety of Intersections and Crossings | 6 | 1 |
| Adults to Bike/Walk With | 5 | 1 |
| Time | 5 | 0 |
| Crossing Guards | 3 | 0 |
| Sidewalks or Pathways | 2 | 2 |
| Child's Participation in After School Programs | 1 | 1 |
| Convenience of Driving | 0 | 0 |
| Number of Respondents per Category | 11 | 2 |

No response: 9

Note:

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



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

| Level of support | Number of children |
|----------------------|--------------------|
| Strongly Encourages | 0 |
| Encourages | 5 |
| Neither | 13 |
| Discourages | 2 |
| Strongly Discourages | 1 |

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

| Level of fun | Number of children |
|--------------|--------------------|
| Very Fun | 0 |
| Fun | 6 |
| Neutral | 9 |
| Boring | 2 |
| Very Boring | 4 |

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

| How healthy | Number of children |
|----------------|--------------------|
| Very Healthy | 7 |
| Healthy | 10 |
| Neutral | 1 |
| Unhealthy | 2 |
| Very Unhealthy | 1 |

Comments Section

| SurveyID | Comment |
|----------|---|
| 1574376 | My child should be at least 14-15yrs to walk or bike to/from school. |
| 1574378 | If you are going to transport me ami school girl please please let me know with Keyli thank you |
| 1574372 | Would not feel comfortable to let child walk/bike to/from school at any grade in elementary school. |
| 1574371 | Speed of cars on Victoria St by school is too fast when students present especially. Cars do not come to a complete top at 3-way stop signs on Victoria / St Anthony right outside of school. My car was t-boned when picking my daughter up at full speed. Easily could have been a child. Needs a stoplight or to have monitoring by safety officials/police. |
| 1574381 | She has to cross the train line I don't like that |
| 1574383 | The distance for pre-k is too far for child to walk (2 miles), but I would support a remote bus drop for pre-school physical activity. Also, the intersetcions near Maxfield could be improved. |
| 1574363 | #10 should reference a child's age as well. That's the secondary reason for not allowing my child to walk (first being the distance) |
| 1574369 | We live far from school, but if we lived closer, I would MAYBE let my children walk, sometimes, but not often. |
| 1574366 | It is more safer for my kids to ride on the bus |



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Appendix G. Student Hand Tally

The following pages show a summary of hand tallies of student transportation behavior at Maxfield. In the fall of 2017, students were asked how they traveled to and from school on three midweek school days. The report shown is a direct export from the National Safe Routes to School Data Collection System, which generated the report.

Student Travel Tally Report: One School in One Data Collection Period

School Name: Maxfield Magnet Elementary School

Set ID: 24839

School Group: Saint Paul Safe Routes to School Steering Committee

Month and Year Collected: October 2017

School Enrollment: 0

Date Report Generated: 11/27/2017

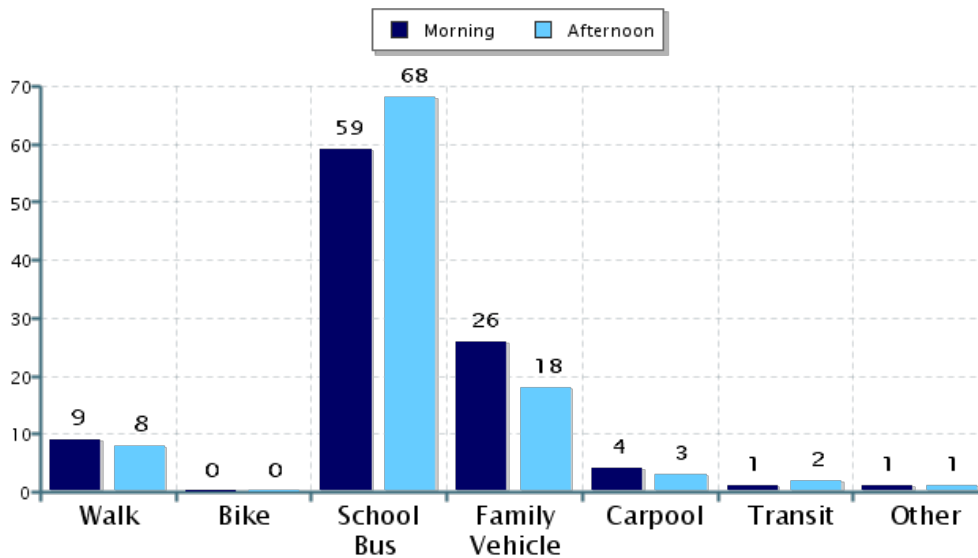
% of Students reached by SRTS activities:

Tags:

**Number of Classrooms
Included in Report:** 10

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

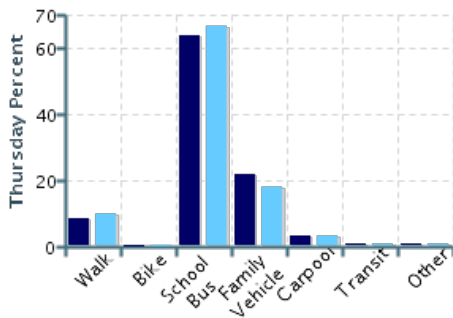
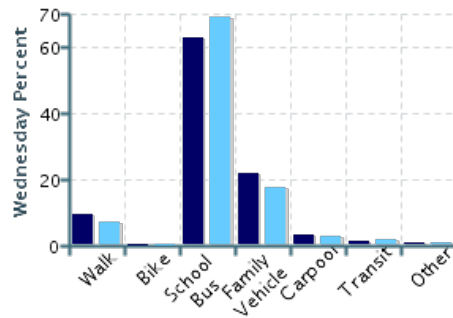
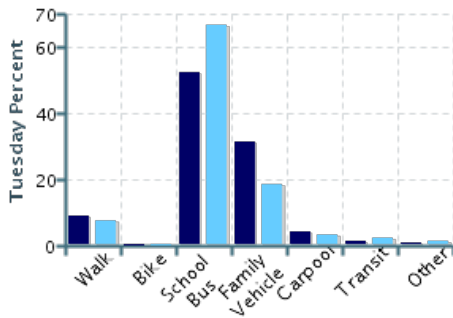
| | Number of Trips | Walk | Bike | School Bus | Family Vehicle | Carpool | Transit | Other |
|-----------|-----------------|------|------|------------|----------------|---------|---------|-------|
| Morning | 484 | 9% | 0% | 59% | 26% | 4% | 1% | 1% |
| Afternoon | 473 | 8% | 0% | 68% | 18% | 3% | 2% | 1% |

Percentages may not total 100% due to rounding.



Morning and Afternoon Travel Mode Comparison by Day

■ Morning ■ Afternoon

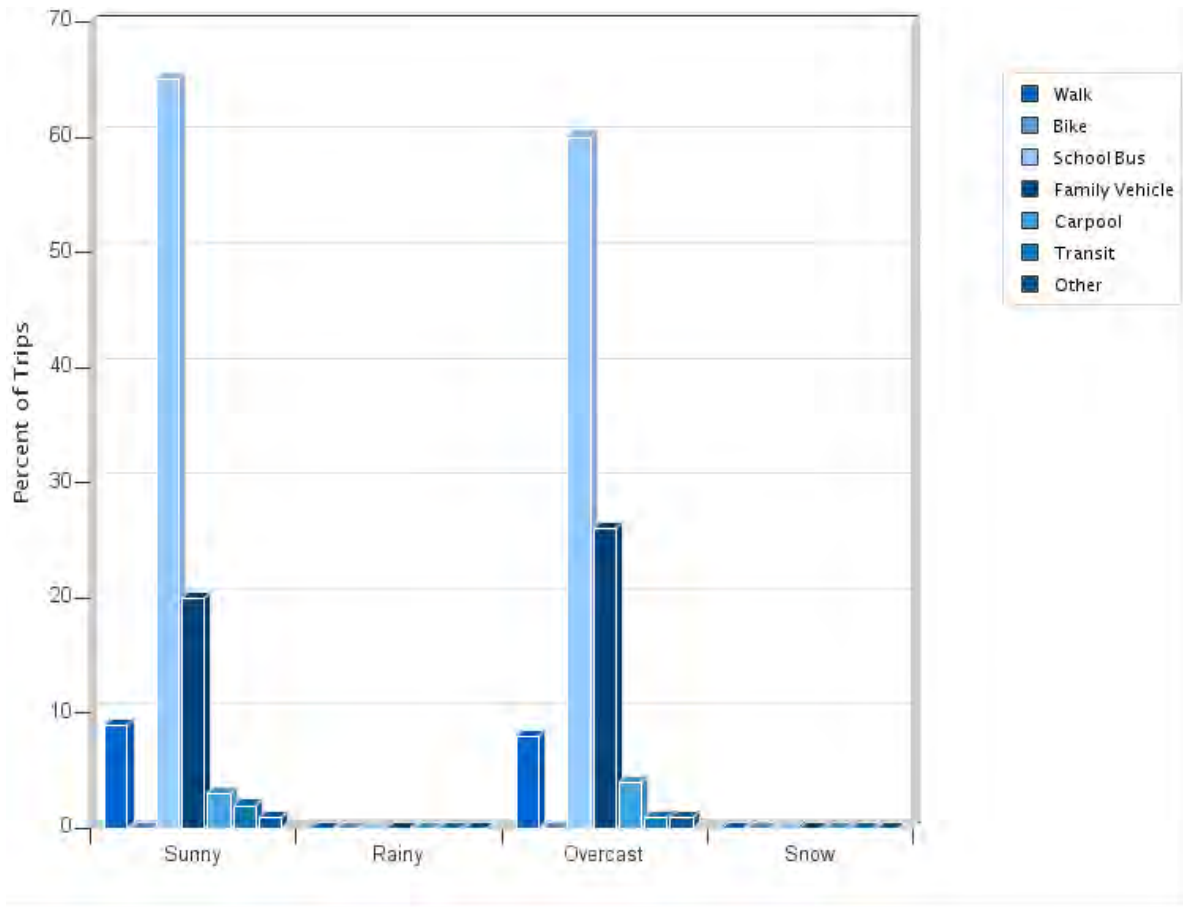


Morning and Afternoon Travel Mode Comparison by Day

| | Number of Trips | Walk | Bike | School Bus | Family Vehicle | Carpool | Transit | Other |
|--------------|-----------------|------|------|------------|----------------|---------|---------|-------|
| Tuesday AM | 187 | 9% | 0% | 52% | 32% | 4% | 2% | 1% |
| Tuesday PM | 184 | 8% | 0% | 67% | 18% | 3% | 2% | 2% |
| Wednesday AM | 183 | 9% | 0% | 63% | 22% | 3% | 2% | 1% |
| Wednesday PM | 169 | 7% | 0% | 69% | 18% | 3% | 2% | 1% |
| Thursday AM | 114 | 9% | 0% | 64% | 22% | 4% | 0.9% | 0.9% |
| Thursday PM | 120 | 10% | 0% | 67% | 18% | 3% | 0.8% | 0.8% |

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 | 636 | 9% | 0% | 65% | 20% | 3% | 2% | 1% |
| Rainy | 0 | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Overcast | 321 | 8% | 0% | 60% | 26% | 4% | 1% | 0.6% |
| Snow | 0 | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

Percentages may not total 100% due to rounding.



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Appendix H. Engagement Summary

COMMUNITY ENGAGEMENT HIGHLIGHTS

SRTS Planning Assistance – Community Engagement

Capitol Hill and Benjamin E. Mays Open House and Maxfield Elementary School's Culture Night

Opportunities

The Saint Paul Public School community shared that walking and biking can be healthy activities and can help students become more independent.

Barriers

The biggest barriers to walking and biking to Saint Paul Public Schools include safety concerns and distance from school. Parents and students requested slower car traffic and safer crossing on roads near their schools.

Infrastructure Findings

The Saint Paul Public School community suggested more stop signs at problematic intersections along Concordia and Victoria Avenues to help students cross more safely.

Program Findings

Expanding on existing crossing guard programs and adding walk/bike education, walking school bus/bike trains, walk/bike field trips, and walk/bike buddies could help support walking and biking to Saint Paul Public Schools.

INTRODUCTION

The 2017 Safe Routes to School (SRTS) program included three Saint Paul Public Schools: Capitol Hill, a 1-8 school; Benjamin E. Mays, a PreK-5 school; and Maxfield Elementary School, a K-5 school. Capitol Hill and Benjamin E. Mays are located on a shared campus at 560 Concordia Avenue in Saint Paul. Maxfield Elementary School is located at 380 Victoria Street North in Saint Paul.

As a part of the 2017 SRTS program, the Minnesota Department of Transportation (MnDOT) provided Saint Paul Public Schools with technical assistance which included engagement with the Capitol Hill, Benjamin E. Mays, and Maxfield Elementary communities (e.g., parents, students, staff, etc.). The purpose of this engagement was to:

- Provide information
- Identify walking and biking routes and barriers
- Understand community desires
- Build excitement and support for walking and biking

SRTS staff hosted an open house Capitol Hill and Benjamin E. Mays on November 30, 2017 and conducted a “pop-up” style table at Maxfield Elementary’s Culture Night on December 14, 2017. Both the open house and pop-up table included activities and information for attendees. Activities included a routes and barriers mapping activity, a visioning board, a “build your route” design game, and a “how I walk and bike” self-portrait drawing activity. Information included SRTS overview materials. In total, staff interacted with around 40 students, parents, and faculty through the open house and pop-up table.

EXISTING CONDITIONS

Opportunities

The Capitol Hill, Benjamin E. Mays, and Maxfield Elementary communities generally like to walk and bike since it helps to get students outside and allows them to be more independent. The frequency of walking and biking to



Students think creatively about their neighborhoods with “build your route” activity.

Capitol Hill and Benjamin E. Mays has improved over recent years with the addition of a sidewalk along Concordia Avenue and a crossing guard to help students cross Concordia Avenue from the pedestrian bridge. Parents and students say these improvements have made it easier to walk to school and they hope improvement will continue to occur. Parents at Maxfield Elementary tend to agree that there are opportunities for improvement that could help more students walk or bike to school.

The following are quotes from Capitol Hill and Benjamin E. Mays Open House and Maxfield Elementary School’s Culture Night:

- “Means of transportation for kids”
- “Saves time”
- “Get to be outside more”
- “Get to stop and see things while walking”
- “Live too far to walk or bike”
- “Safety keeps them from walking and biking to school”
- “Ice on the western bridge”

Barriers

The biggest barriers to walking and biking to Saint Paul public Schools are safety concerns, distance from school, and temperature. Many Saint Paul Public School parents said that they would feel unsafe letting their children walk

to school alone because it is too dangerous. One Capitol Hill parent said they are nervous about kids crossing Concordia Avenue and biking in the street. A parent from Maxfield said that students have had bad things happen to them on the way to and from school. Several people said that cold during the winter is barrier to walking and biking more.

Problematic Roads

- Concordia Avenue
- Victoria Avenue

Parents and students from all three schools said they have difficulty crossing Concordia Avenue, especially people from Capitol Hill and Benjamin E. Mays. People feel that the traffic is too fast on Concordia Avenue and there are no safe crossings. People from Maxfield feel similarly about crossing Victoria Avenue and wish there were more breaks in traffic and safe crossing points along Victoria Avenue.

Problematic Intersections

- Concordia Avenue—Pedestrian Bridge
- Victoria Avenue—Central Avenue

Parents and students from Capitol Hill and Benjamin E. Mays say that crossing Concordia Avenue from the pedestrian bridge feels unsafe since cars speed and tend not to stop at the crosswalk. Even with the new crosswalk and crossing guards, they still think it is dangerous to traverse.

Several parents and staff from Maxfield Elementary are concerned about students crossing Victoria Avenue and Central Avenue. They wish the crossing distance wasn't as long and that car traffic would slow down.

FINDINGS

Infrastructure

Parents and students requested more protection from cars when walking and biking to and from Saint Paul Public Schools. The Capitol Hill, Benjamin E. Mays, and Maxfield Elementary communities had suggestion for problematic roads like Concordia Avenue and Victoria Avenue. One parent from Capitol Hill requested stop signs on Concordia Avenue at the pedestrian bridge to help students safely cross Concordia Avenue. A couple of parents and staff from Maxfield Elementary suggested turning the intersection of Victoria Avenue and Central Avenue into a four-way stop by adding stop signs on Victoria Avenue.

Programs

Crossing Guards – One program that came up at all three Saint Paul Public Schools was the use of crossing guards to help students cross problematic roads. Parents at Capitol Hill felt the crossing guard on Concordia Avenue at the pedestrian bridge was helpful and should continue to be used. Several people from Maxfield suggested the use of crossing guards on Victoria Avenue at both Central Avenue and Saint Anthony Avenue intersections to help students walk and bike to and from school.

Education – Parents indicated that bicycle and walking education would be helpful for students to learn about how to safely walk and bike to school. Several parents stated that their students are too young to walk and bike alone and that it is too dangerous for them to bicycle with traffic. Education programs such as elective classes or a bike rodeo were well received by some parents and could help ease parent concerns about safety while walking and biking to school.

Walking School Bus/Bike Trains – Another idea brought forward during SRTS engagement was to organize regular walking school buses or bike trains. One parent said that having a group of students and adults walk or bike to school together could alleviate concerns about students walking and biking to school alone.

Walk/Bike Field Trip – Saint Paul Public Schools could add walk/bike field trips to give students more opportunities to walk and bike at school and to help groups of students practice walking and biking skills. Adult supervisors leading the walks or bikes could help students cross roads safely and also provide an activity break in the school



day. Students and adult supervisors could walk to popular destinations in their areas such as parks or recreation centers.

[Walk/Bike Buddies](#) – A parent from Maxfield Elementary said that their student buddies up with an older student to get to daycare after school. The parent said their student’s older buddy made them more comfortable with allowing their student to walk from school without an adult. The Saint Paul Public Schools could implement a program that matches older and younger students who live in the same neighborhoods or who have common destinations to help younger students become more comfortable walking and biking to school. Student buddies would also have the opportunity to get to know those who live near them and to practice safe walking and biking habits together.

OTHER FINDINGS

The Capitol Hill and Benjamin E. Mays Open House had a low turnout and should have had better advertised through the school. One parent thought the event would have been better attended if it was attached to an existing event. It is also surprising to note that Interstate 94 did not come up as a problematic road during engagement.

Appendix I. 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 line 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 lines 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 lines 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.



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

Estimated Costs^D

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



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 bump-outs or 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.

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



Estimated Costs^E

- \$13,000 for a single corner

CURB RADIUS REDUCTION

Description

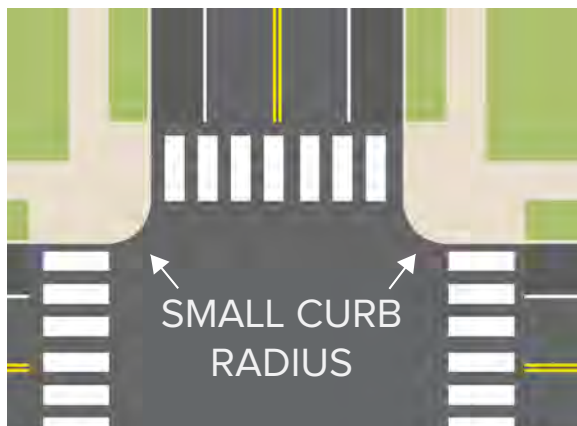
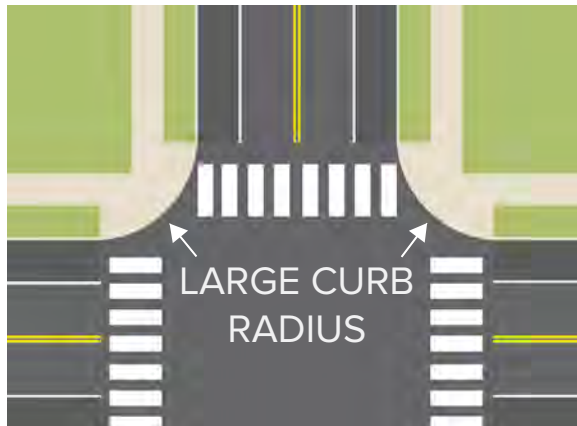
Curb radii designs are determined based on the design vehicle of the roadway. In general, vehicles are able to take turns more quickly around corners with larger curb radii. Minimizing curb radii forces drivers to take turns at slower speeds, making it easier and safer for people walking or biking to 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.

Resources

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

Estimated Costs^{F, G}

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



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.



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

Estimated Costs

- Varies depending on retrofit or new construction, material used.

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.



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

Estimated Costs^H

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



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.



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

Estimated Costs^E

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

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.



Resources

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

Estimated Costs^A

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

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.



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: 3I-2
- NACTO Urban Street Design Guide – Page: 116

Estimated Costs^E

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

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.



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

Estimated Costs^E

- \$8,170 each



ACTIVATED FLASHING BEACON

Description

One type of activated flashing beacon is a rectangular rapid flashing beacon (RRFB). It 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.



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

Estimated Costs^B

- \$36,000 for two assemblies on poles

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.



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

Estimated Costs^E

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

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.



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

Estimated Costs^{A, C}

- \$600 for sign and post in each direction

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.



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

Estimated Costs^B

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



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.



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

Estimated Costs^{A, B}

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

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.



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

Estimated Costs^E

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

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>

Appendix J. 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

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!

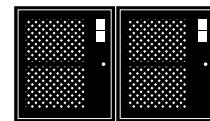
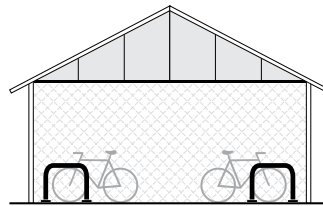
WHERE SHOULD PARKING BE LOCATED?

Well-located bike parking will be:

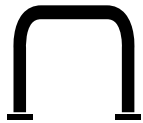
- visible to students, staff, and visitors
- near the primary school entrance/exit
- easily accessed without dismounting
- clear of obstructions which might limit the circulation of users and their bikes
- easily accessed without making a rider cross bus and car circulation
- installed on a hard, stable 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

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

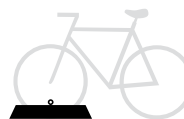


COMB



SPIRAL

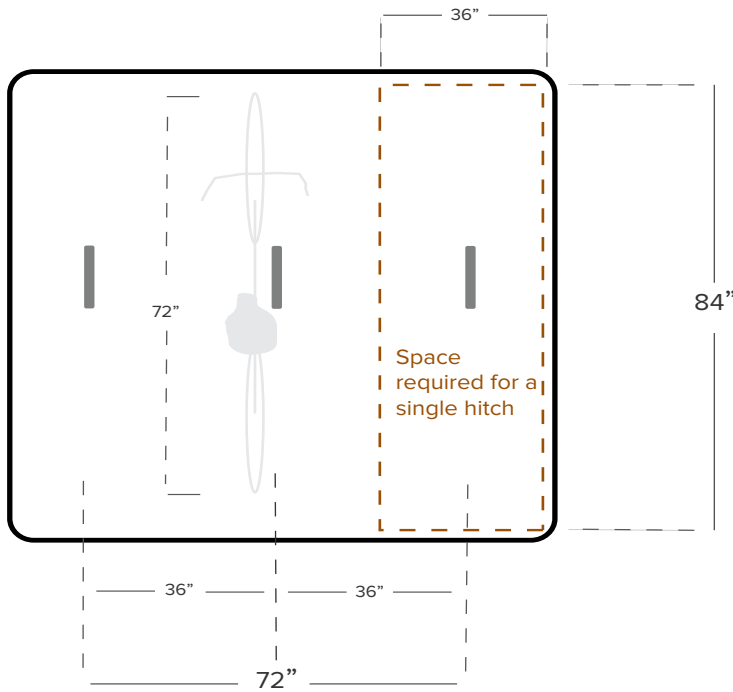
These racks do not provide support at two places on the bike, can damage the wheel, do not provide adequate security, and are not intuitive to use!



WHEELWELL

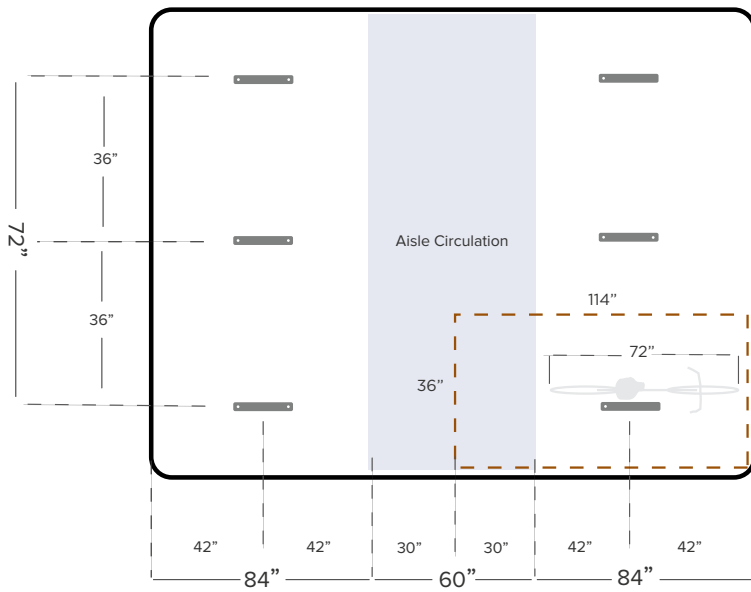
Graphics courtesy of Association of Pedestrian and Bicycle Professionals Essentials of Bike Parking report (2015).

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.



Space required for a single hitch

RESOURCES FOR EQUIPMENT

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

MORE INFORMATION

- [APBP Essentials of Bike Parking](#)
- [Bike Shelter Development Guide -Portland Public Schools](#)

Appendix K. 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



Appendix L. 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.
- 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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