

Safe Routes to School

*Improving Health,
Safety and
Transportation*



Lenexa, KS

The need for Safe Routes to School



1. Fewer kids today walk and bike to school
2. Unintended consequences have resulted
3. SRTS programs are part of the solution

1. Fewer kids are biking and walking. More parents are driving.

- 2001: 16% walked
- 1969: 42% walked

(CDC, 2005)



What caused the shift?

- Shift from small schools in community centers to larger schools on the edge of town increases distance



It's not just distance

Students who live within 1 mile and walk or bike:

2001: 63%

1969: 87%

(CDC, 2005)



Most common barriers to walking and bicycling to school

- Long distances 62%
- Traffic danger 30%
- Adverse weather 19%
- Fear of crime danger 12%

Note: Sum of percentages is more than 100% because respondents could identify more than one barrier.

(CDC, 2005)

2. What are the unintended consequences of less walking and bicycling?

- For the environment
- For individual health

Air quality

Measurably
better around
schools with
more walkers
and bicyclists

(EPA, 2003)



Chicago, IL

Physical inactivity



- Most kids aren't getting the physical activity they need
- Recommended 60 minutes on most, preferably all, days of the week

(US Depts. of Health and Human Services and Agriculture, 2005)

3. Safe Routes to School programs are part of the solution...

- ...to improve walking and bicycling conditions
- ...to increase physical activity
- ...to decrease air pollution



Dallas, TX

More benefits of SRTS programs

- Reduce congestion around schools
- Can lead to cost savings for schools (reduce need for “hazard” busing)
- Others: increase child’s sense of freedom, help establish lifetime habits, teach pedestrian and bicyclist skills

Elements of SRTS programs

- Education
- Encouragement
- Enforcement
- Engineering
- Evaluation



Federal Safe Routes to School program

- \$612 million to States 2005-2009
- Funds infrastructure and non-infrastructure activities
- Requires State SRTS Coordinators



More information:
www.saferoutesinfo.org

www.saferoutesinfo.org


National Center for Safe Routes to School



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What is Safe Routes to School?

Watch a short video to learn more about encouraging kids to safely walk and bike to school.

[click here](#)

Community leaders, parents and schools across the U.S. are using Safe Routes to School programs to encourage and enable more children to safely walk and bike to school. The National Center for Safe Routes to School aims to assist these communities in developing successful Safe Routes programs and strategies. The Center offers a centralized resource of information on how to start and sustain a Safe Routes to School program, case studies of successful programs as well as many other resources for training and technical assistance.

Featured Resource

[10 Tips for Getting Walk to School Event Media Coverage](#)

This tip sheet outlines a few helpful tips for obtaining media coverage for a Walk to School event.

SRTS in the News

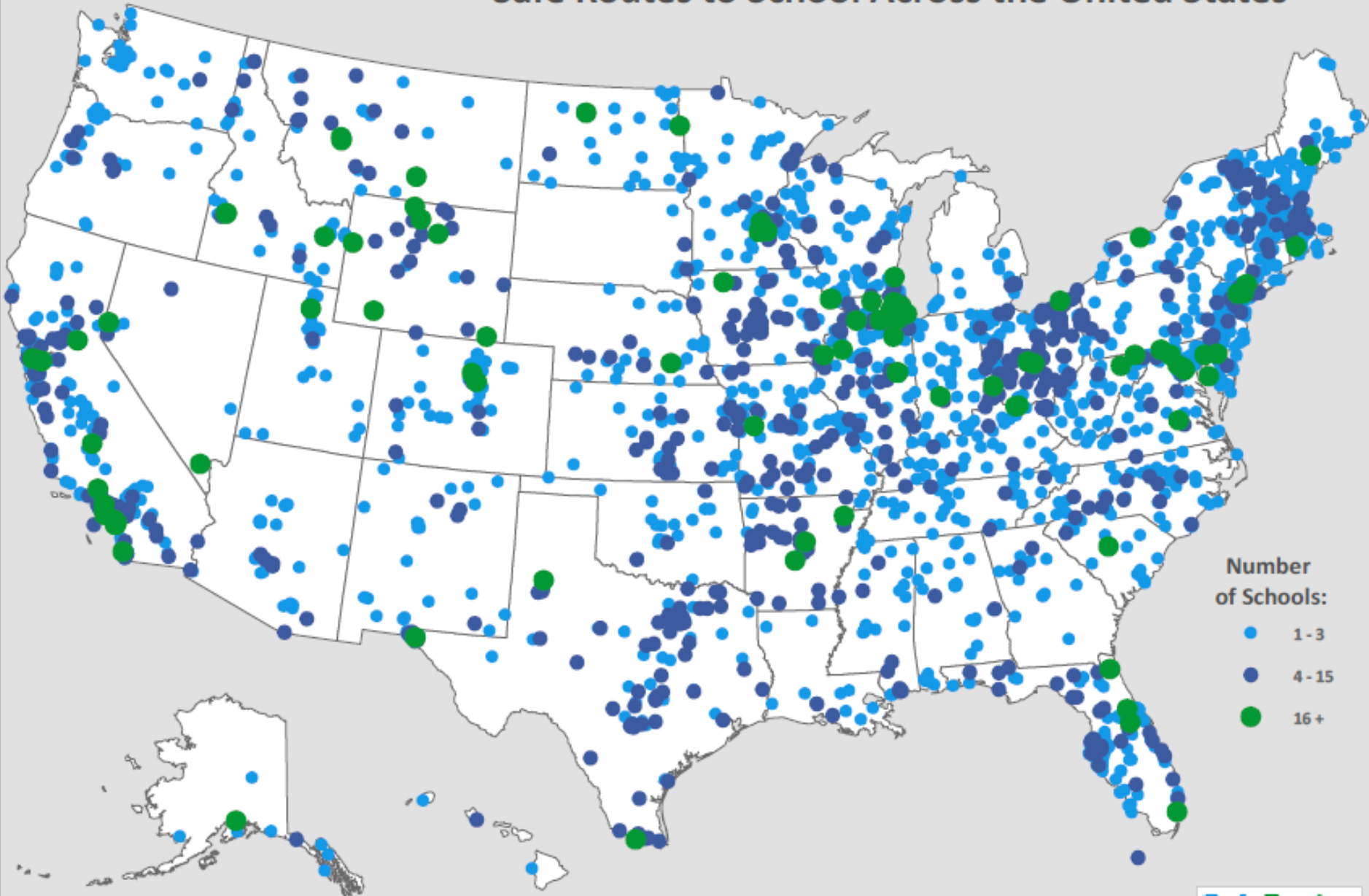
Kid bicyclists strap on helmets Daytona Beach News-Journal 08/31/2006	Expert tests walking routes Rome News-Tribune 08/31/2006	Signs near schools warn speeders to 'slow down' The Honolulu Advertiser 08/30/2006
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visit the Federal SRTS Program site

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the National Center for Safe Routes to School within the University of North Carolina Highway Safety Research Center in partnership with the American Association of State Highway and Transportation Officials, America Walks, the Governor's Highway Safety Association, the Institute of Transportation Engineers, and Toole Design Group.


Safe Routes to School Across the United States




Locations above represent more than 7,622 schools for which SRTS funds have been announced, according to information reported to the National Center for Safe Routes to School as of June 30, 2010. To see details on SRTS projects, please go to www.saferoutesinfo.org/project_list.

State Program

- Minnesota's Safe Routes to School Coordinator: Merry Daher





Minnesota Department of
Transportation

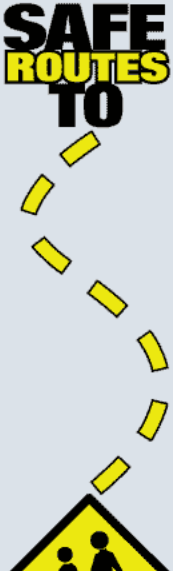


Mn/DOT A to Z | General Contacts | Simple Search | Advanced Search

Safe Routes to School Program
Help build safe routes for kids to walk and bike to school

**SAFE
ROUTES
TO SCHOOL**

SRTS Home | Resources by Group | Marketing Toolkit | Success Stories | Applicants | Project Administration | Contact Us



What's New

Next Solicitation: At this time Mn/DOT has awarded all funds available under SAFETEA-LU. Minnesota's next Safe Routes to School project solicitation is contingent upon the next Federal Transportation bill. As soon as we have more information we will post it here. If you would like direct notification please sign up for our [email list](#), if you have not done so already.


Promoting happier, healthier kids, families and communities.

At Safe Routes Minnesota, we help build safe routes for kids to walk and bike to school... and get the exercise they need.

- Funding projects to make communities more walker/biker-friendly
- Educating teachers, students, parents, and communities on safe walking and biking
- Encouraging kids to walk or bike to and from school because it's fun!

Learn more by exploring our resources for [parents](#), [educators](#), [community groups](#), and [kids](#).

LEARN ABOUT SAFE ROUTES TO SCHOOL...



Contact Us

- [Sign up for email](#)
- [Give us your comments](#)

National SRTS Links

- [Safe Routes Clearinghouse](#)
- [Safe Routes Partnership](#)
- [FHWA Safe Routes](#)
- [Walk to School Week](#)
- [Kids Walk, CDC](#)


Minnesota Links

- [Bicycling in Minnesota](#)
- [Walking in Minnesota](#)

Downloads

- [Marketing toolkit](#)

Developed by the National Center for Safe Routes to School | www.saferoutesinfo.org



Safe Routes to School goals

- Where it's safe, get children walking and biking
- Where it's not safe, make changes



Winston-Salem, NC

How can GIS help?

- Maps identifying safe routes
- Maps identifying unsafe areas/features for improvement

What makes a route safe?

Walkability Checklist

Room to Walk?

- Sidewalks or paths started and stopped
- Sidewalks were broken or cracked
- Sidewalks were blocked with poles, signs, shrubbery, dumpsters, etc.
- No sidewalks, paths, or shoulders
- Too much traffic

Walkability Checklist

Was it easy to follow safety rules? Could you...

- Cross at crosswalks or where you could see and be seen by drivers?
- Stop and look left, right and then left again before crossing streets?
- Walk on sidewalks or shoulders facing traffic where there were no sidewalks?
- Cross with the light?

Walkability Checklist

Easy to cross streets?

- Road was too wide
- Traffic signals made us wait too long or did not give us enough time to cross
- Needed striped crosswalks or traffic signals
- Parked cars blocked our view of traffic
- Trees or plants blocked our view
- Needed curb ramps or ramps needed repair

Walkability Checklist

Did drivers behave well?

- Drivers backed out of driveways without looking
- Drivers did not yield to people crossing the street
- Drivers turned into people crossing the street
- Drivers drove too fast
- Drivers sped up to make it through traffic lights or drove through traffic lights

Walkability Checklist

Was your walk pleasant?

- Needed more grass, flowers, or trees
- Scary dogs
- Scary people
- Not well lighted
- Dirty, lots of litter or trash
- Dirty air due to automobile exhaust

Bikeability Checklist

Did you have a place to bicycle safely?

- a) On the road, sharing the road with motor vehicles?
 - No space for bicyclists to ride
 - Bicycle lane or paved shoulder disappeared
 - Heavy and/or fast-moving traffic
 - Too many trucks or buses
 - No space for bicyclists on bridges or in tunnels
 - Poorly lighted roadways

Bikeability Checklist

Did you have a place to bicycle safely?

b) On an off-road path or trail, where motor vehicles were not allowed?

- Path ended abruptly
- Path didn't go where I wanted to go
- Path intersected with roads that were difficult to cross
- Path was crowded
- Path was unsafe because of sharp turns or dangerous downhills
- Path was uncomfortable because of too many hills
- Path was poorly lighted

Bikeability Checklist

How was the surface that you rode on?

- Potholes
- Cracked or broken pavement
- Debris (e.g. broken glass, sand, gravel, etc.)
- Dangerous drain grates, utility covers, or metal plates
- Uneven surface or gaps
- Slippery surfaces when wet (e.g. bridge decks, construction plates, road markings)
- Bumpy or angled railroad tracks
- Rumble strips

Bikeability Checklist

How were the intersections you rode through?

- Had to wait too long to cross intersection
- Couldn't see crossing traffic
- Signal didn't give me enough time to cross the road
- Signal didn't change for a bicycle
- Unsure where or how to ride through intersection

Bikeability Checklist

Did drivers behave well?

- Drove too fast
- Passed me too close
- Did not signal
- Harassed me
- Cut me off
- Ran red lights or stop sign

Bikeability Checklist

Was it easy for you to use your bike?

- No maps, signs, or road markings to help me find my way
- No safe or secure place to leave my bicycle at my destination
- No way to take my bicycle with me on the bus or train
- Scary dogs
- Hard to find a direct route I liked
- Route was too hilly

Advanced GIS Project

Use GIS analysis to find safe routes to schools

- Winona Senior High School
- Cotter High School

School	Walkers	Non-Walkers
WSHS	27%	73%
Cotter	15%	85%

Advanced GIS Project

Data Collection

- Site visits
- Use of Google Earth to find stop signs and traffic lights

Advanced GIS Project

Analysis of Crossing Control (roads):

$$\text{Safety} = \frac{\text{Total number of edges meeting at the center of an intersection}}{\text{Total number of control points (stop signs, stop lights) for the intersection}}$$

Advanced GIS Project

Analysis of Crossing Control (roads)

1 = Stoplight

2 = All Way Stop

3 = $\frac{3}{4}$ Controlled

4 = $\frac{1}{2}$ Controlled

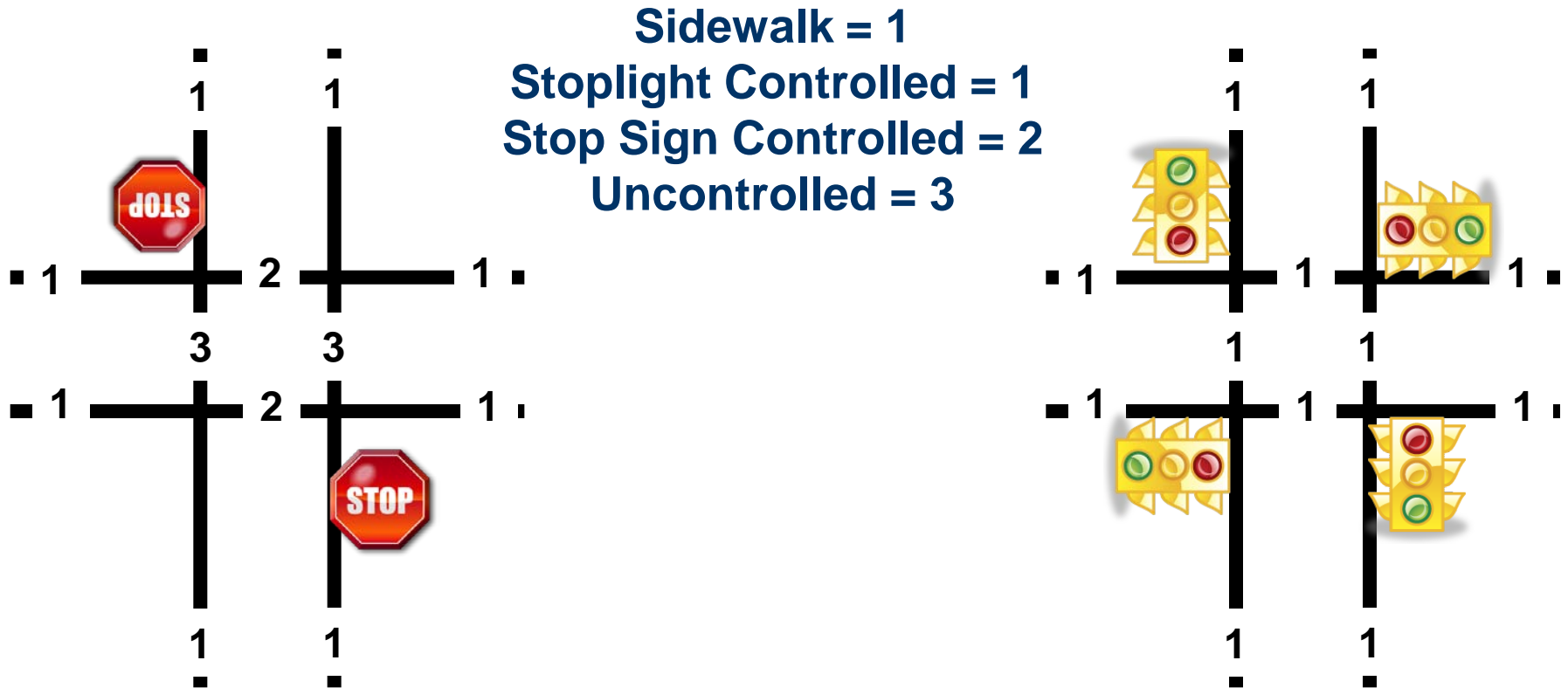
5 = $\frac{1}{3}$ Controlled

6 = Uncontrolled

7 = Railroad / Dead end road

Advanced GIS Project

Analysis of Crossing Control (sidewalks):



Advanced GIS Project

Analysis of Crossing Control (sidewalks):

- **Output designed to be interactive**
- **Click start point to find route**
- **View 1 mile buffer**

Source: Lindsey Danielson, Tyler Danielson, Ben Weber, and Mike Snozek 2010

Advanced GIS Project

Hazardous and Positive Features Approach

Hazardous

- High Traffic Roads
- Unarmed Railroads
- Disconnected Sidewalks
- Areas Near Industrial Zones

Positive

- Designated Trails (bike lanes)
- Walking Trails Around Parks
- School Zone Designations with Signage

Routes selected to avoid hazards and remain close to positive features

Source: Bill Durkin, Bonnie Maffitt, Kelsey Beery, Nick Meyers, Suba Krishnan, 2010

Advanced GIS Project

Use of Routes and Stations

Routes were created from population centers to school locations

Stations were created along routes

Students could check-in with a volunteer

Students could walk or bike together

Routes selected to avoid hazards and remain close to positive features

Source: Ashley Ignatius, 2010

What are others doing?

Data collection by individuals using Blackberry with mobile GIS software

(<http://www.directionsmag.com/pressreleases/safe-routes-2-school-mapped-with-blackberry-gis-software/111372>)

What are others doing?

Walkability audit with online mapping application displaying results

(<http://bikenwalk.com/woodbridgewalk/>)

What are others doing?

Pedestrian and Bicycle GIS Safety Analysis Tool Development

(<http://www.hsisinfo.org/hsis.cfm?num=9&page=1>)