



Iowans Walking Assessment Logistics Kit

A Safe Routes to School Program

Dallas Center Elementary School Dallas Center, Iowa

Spring 2012



IOWA STATE UNIVERSITY
Extension and Outreach

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Iowa Department of Public Health
Promoting and Protecting the Health of Iowans

Mariannette Miller-Meeks, B.S.N., M.Ed., M.D.
Director

Terry E. Branstad
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Kim Reynolds
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August, 2011

Dear Colleagues:

The health of Iowa children is a major concern not only as it relates to the health and well-being of youth, but for the quality of life for all Iowans. According to the latest report, 37% of Iowa elementary school children are either overweight or obese. The prevalence rate of overweight and obesity among children is on the rise in Iowa and nationwide, resulting in many lifestyle-related chronic diseases. Lifestyle choices, including physical activity, account for approximately 85% of the risk of having a chronic disease; indeed, all Iowans have the personal capacity to control health and make a positive impact in this staggering statistic.

Because Iowa children spend a majority of time at school and being transported to and from school, addressing physical activity in this environment is a viable avenue to address lifestyle factors. The Iowa Department of Public Health, in collaboration with Iowa State University Extension, conducted an assessment of the routes Iowa elementary school children taken to and from school. This assessment was conducted to aid communities across Iowa in addressing opportunities to increase school walkability routes, as well as focus on active transport barriers to and from school. The information in this report explains the results of that assessment, as well as presents resources to increase active transport to and from school.

One of the most critical conclusions to draw from the information presented in this report is the importance of active transport to schools to prevent chronic diseases among Iowa children. There are a host of opportunities to prevent chronic disease including:

- Achieving and sustaining an ideal body weight, and
- Increasing physical activity

It is our expectation that the information contained in this report will lead to healthier children, indeed all citizens, across the entire state of Iowa, resulting in a better quality of life for Iowans.

Sincerely,

A handwritten signature in black ink that reads "Mariannette Miller-Meeks". The signature is written in a cursive, flowing style.

Mariannette Miller-Meeks, B.S.N., M. Ed., M.D.
Director, Iowa Department of Public Health

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cknowledgements

INTRODUCTION

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Introduction

In the past three decades, the number of obese and overweight individuals in Iowa and across the nation has skyrocketed. With obesity comes the greater risk of health complications and life expectancy reduction. As a result, the current generation of youth face a new and growing threat to their overall quality of life. In Iowa alone, 37.1% of 3rd grade students are identified as either overweight or obese.

Given the prevalence of obese and overweight individuals, it is important to promote healthy behaviors for all Iowans. The development of Safe Routes to School (SRTS) is a key component of advocating for healthy behaviors. A vision of healthy Iowa communities must regard and value safe routes to and from school.

The Iowans Walking Assessment Logistics Kit (I-WALK) program aims to provide community coalitions with relevant local information to assist them in continuously updating, implementing, and evaluating their SRTS plan. The I-WALK program is an Iowa SRTS project funded through the Iowa Department of Transportation, administered by Iowa Department of Public Health (IDPH) and Iowa State University Extension and Outreach (ISUEO) and implemented by communities across Iowa.

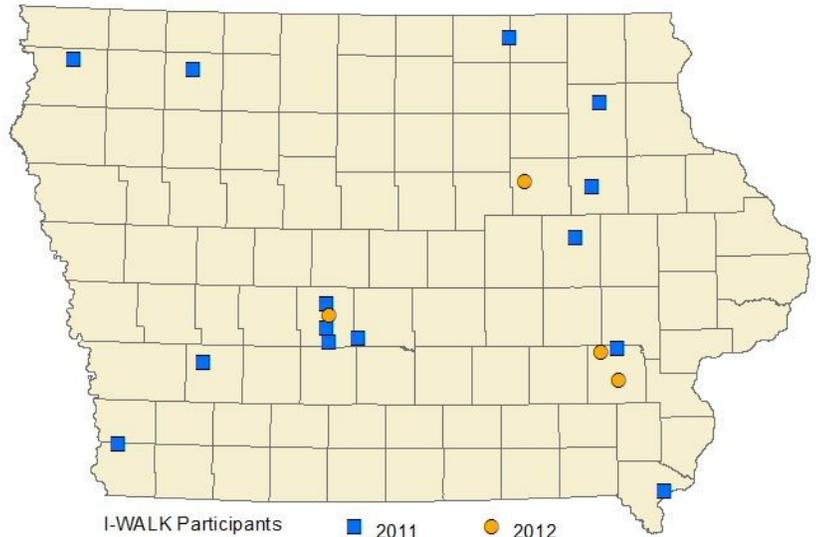
I-WALK utilizes web mapping technologies and global positioning system (GPS) units to accurately map routes that children use to walk or bicycle to school and identify safety barriers and solutions. Creating environments that encourage children to walk or bicycle safely to school will improve health outcomes for children by providing additional opportunities to reach the recommended daily 60 minutes of physical activity, as well as normalize walking as a healthy lifestyle habit.



* Iowa Department of Public Health 2010 BMI Assessment



I-WALK was piloted in 2010 and 2011 in twelve Iowa communities. The communities include Atlantic, De Soto, Fort Madison, Hull, Independence, Kalona, Riceville, Spencer, Tabor, Vinton, West Des Moines and West Union; the range in population is from 875 to 56,609 people. IDPH selected the pilot communities by choosing two from each of the six public health regions in the state. In 2012, IDPH received additional funding from the Centers for Disease Control and Prevention (CDC) to implement I-WALK in four communities: Cedar Falls, Dallas Center, Washington and Wellman.



The project team includes:

- Christopher J. Seeger, ISU Extension and Outreach Landscape Architect and Associate Professor of Landscape Architecture;
- Mary Savage, ISU Community Campus Partnership for Health;
- Tami Larson, IDPH Project Manager;
- Sarah Taylor Watts, IDPH Physical Activity Coordinator; and
- Catherine Lillehoj, Ph.D., IDPH Chief Epidemiologist and Program Evaluator.

Local Public Health (LPH) led local efforts in each community. The I-WALK project consisted of four components: 1) Parent/Child Survey, 2) Teacher Tally, 3) GPS Walkability Workshops and 4) Community Coalitions.

1. Parent/Child Survey

The purpose of the survey was to better understand how each child gets to and from school and the concerns parents have about their children walking or biking to and from school. While most of the survey focused on SRTS issues for those who walk or bike to school, parents and children that live in the country and ride the bus were also asked to complete the survey. The survey was divided into the following sections:

- Multiple-choice survey questions
 - Parent or Guardian completed
- Distance mapping between home and school
 - Parent or Guardian completed
- Route mapping
 - Parent or Guardian and child completed together
- Barrier/opportunity mapping
 - Parent or Guardian and child completed together





2. Teacher Tally

The Teacher Tally was developed to help communities determine how students get to and from school each day. This information provided the baseline data needed to determine any change in walking or bicycling to and from school; it also helped evaluate the short and long term effectiveness of the I-WALK program.

Over the course of several consecutive days, teachers listed the different ways students could get to school and then, with a show of hands, the students indicated how they got to and from school that day. The teacher recorded the information, along with the weather for that day, on the tally sheet. Individual students were not identified on the tally sheet, and only aggregate data were recorded.

3. GPS Walkability Workshops

Trained citizens conducted an inventory of their community using iPhones equipped with the Environmental Systems Research Institute ArcGIS application (ESRI ArcGIS app) that was customized for use in SRTS projects by ISUEO. The I-WALK team trained the volunteers in each of the pilot communities to use the iPhone app. The volunteers then took to the streets to collect data.

Workshop participants mapped information from three categories: intersections, midblock sidewalks, and additional features that impede pedestrians and cyclists.

At intersections, volunteers indicated whether or not there were painted crosswalks and curb cuts and what type of control system, if any, was in place (e.g.,

stop signs, stoplight, flashing light).

Volunteers evaluated sidewalks at midblock, indicating whether or not there were sidewalks, and if so, whether or not they were in good condition and wide enough for two people to walk side by side.

Additional features included barriers such as vegetation growth across the sidewalk, places where water frequently pools on the sidewalk, sidewalks that just end and barking dogs that scare children.

4. Community Coalitions

LPH headed up an effort to create a SRTS coalition in the community to help address issues identified by the assessment. The communities used resources from the SRTS website to guide their invitations to local stakeholders that could be involved. They were then tasked with inviting all of these people to be involved in the effort. After the coalitions were created, the communities started assembling funding for future projects.

The following report includes the data compiled while evaluating the elementary school.

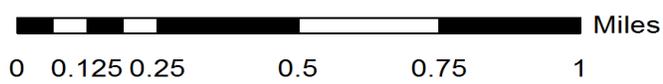
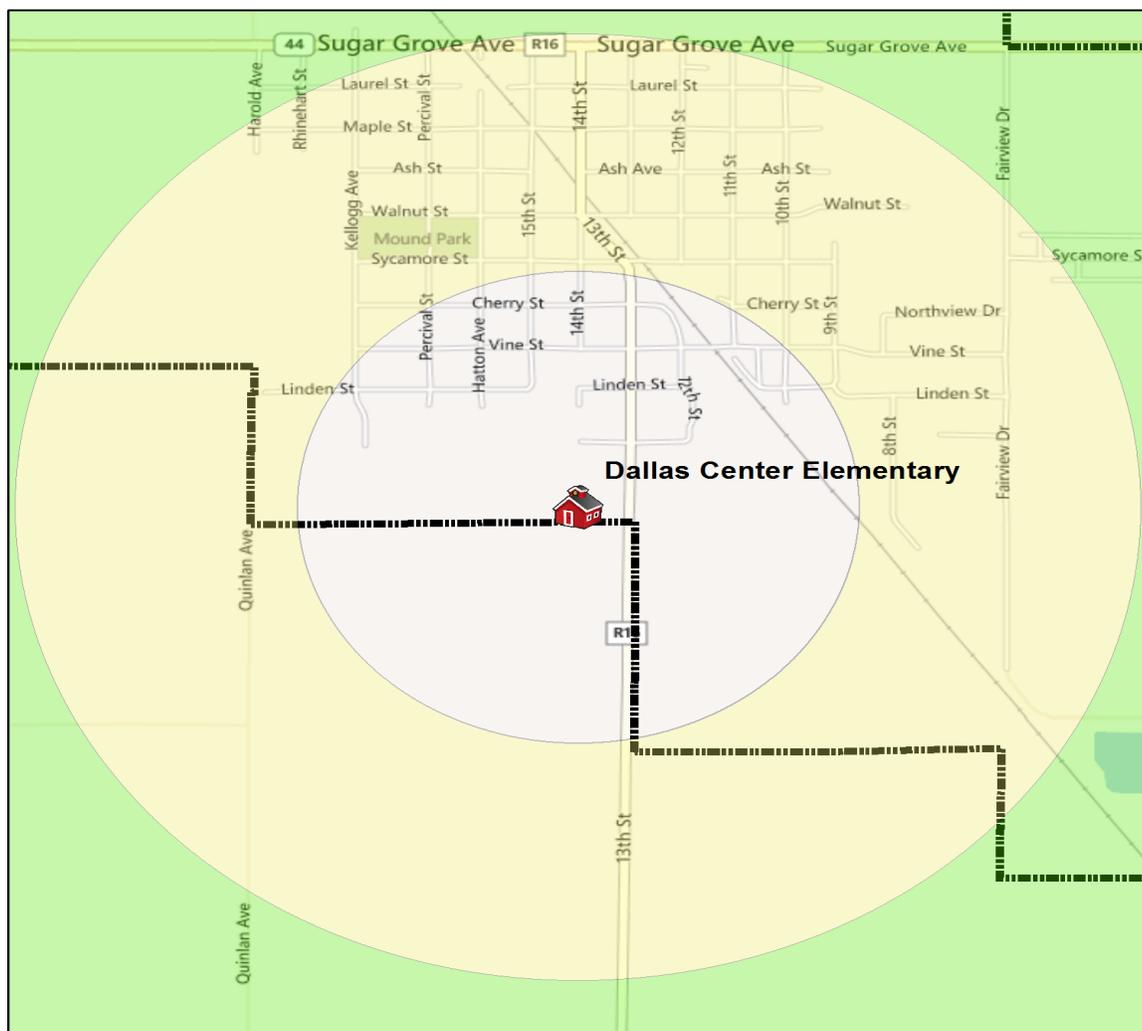


Citizens collect data during a GPS Walkability Workshop.

B

uffer Around School

Euclidean buffers (as the crow flies) are often used to determine the distance students live from a school. While this map illustrates the areas one-half, one and two miles around the school, SRTS planning teams should be cautioned that the true distance for a child to walk along a network (street or trail) to the school could be a longer distance. Note: Information for this map was derived from creating a GIS radial buffer around the school in 1/2, 1 and 2 mile increments.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

- City Limit
- 1/2 Mile
- 1 Mile
- 2 Mile
- School

INTRODUCTION

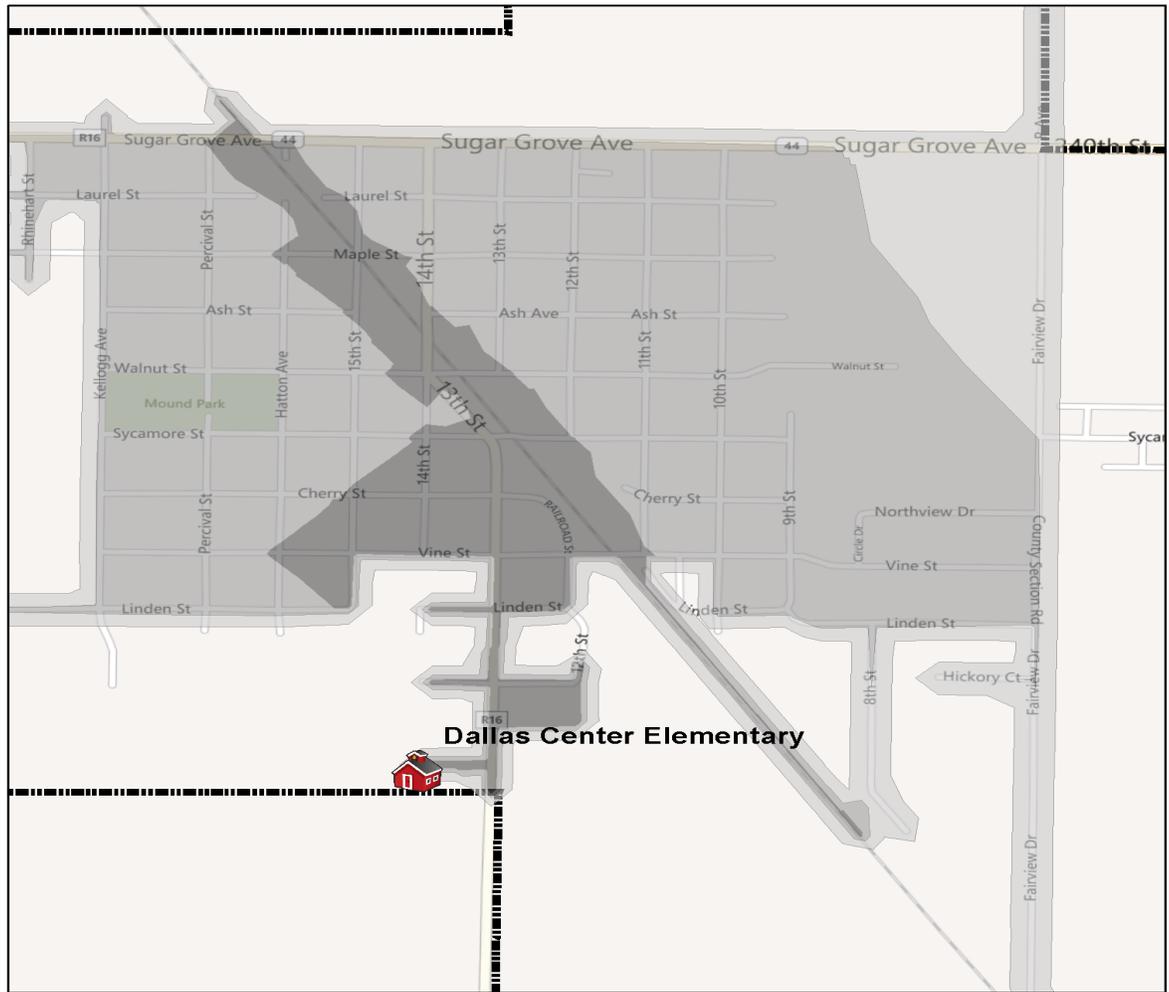


N

etwork Buffer Around School

Much like the Euclidean buffer, the network buffer map shows one-half, one and two mile buffers around the school. However, the buffers on this map are based on the distance required to navigate a network (road). Thus, this map is more appropriate when determining the distance a student would travel to get to school if all streets provided adequate sidewalks and crossings. Note: Map created at Iowa State University using Network Analysis GIS software. The analysis maps the 'service' area around the school using the entire street network.

INTRODUCTION



0 0.125 0.25 Miles



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

City Limit

School

1/2 Mile

1 Mile

2 Mile

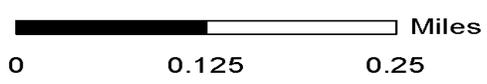
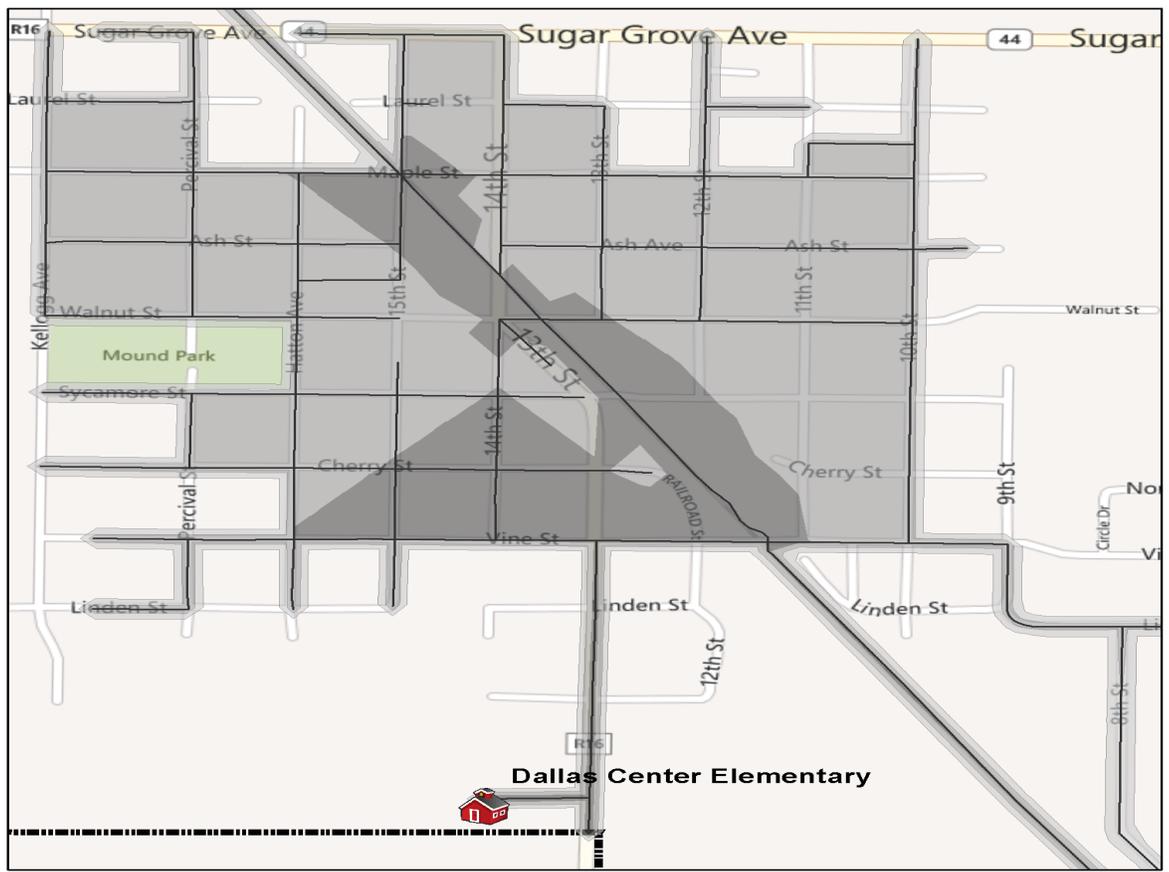


S

idewalk Presence Network Buffer

Expanding upon the network buffer in the previous map, streets with walkable sidewalks on either side were identified and included in the network analysis. The result is a map that illustrates the distance a student could travel from the school if limited to only those streets that included at least one adjacent sidewalk. The city core, which is generally an older residential area, typically has sidewalks along both sides of the street and presents a robust network of walking paths. Newer developments typically have an irregular or absent network with little or no connectedness, making safe walking a challenge for the student. Note: Map created at Iowa State University using Network Analysis GIS software. The analysis maps the 'service' area around the school using only the street network that has a sidewalk on one or two sides of the street. The sidewalk between the schools is not included in this analysis.

INTRODUCTION



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

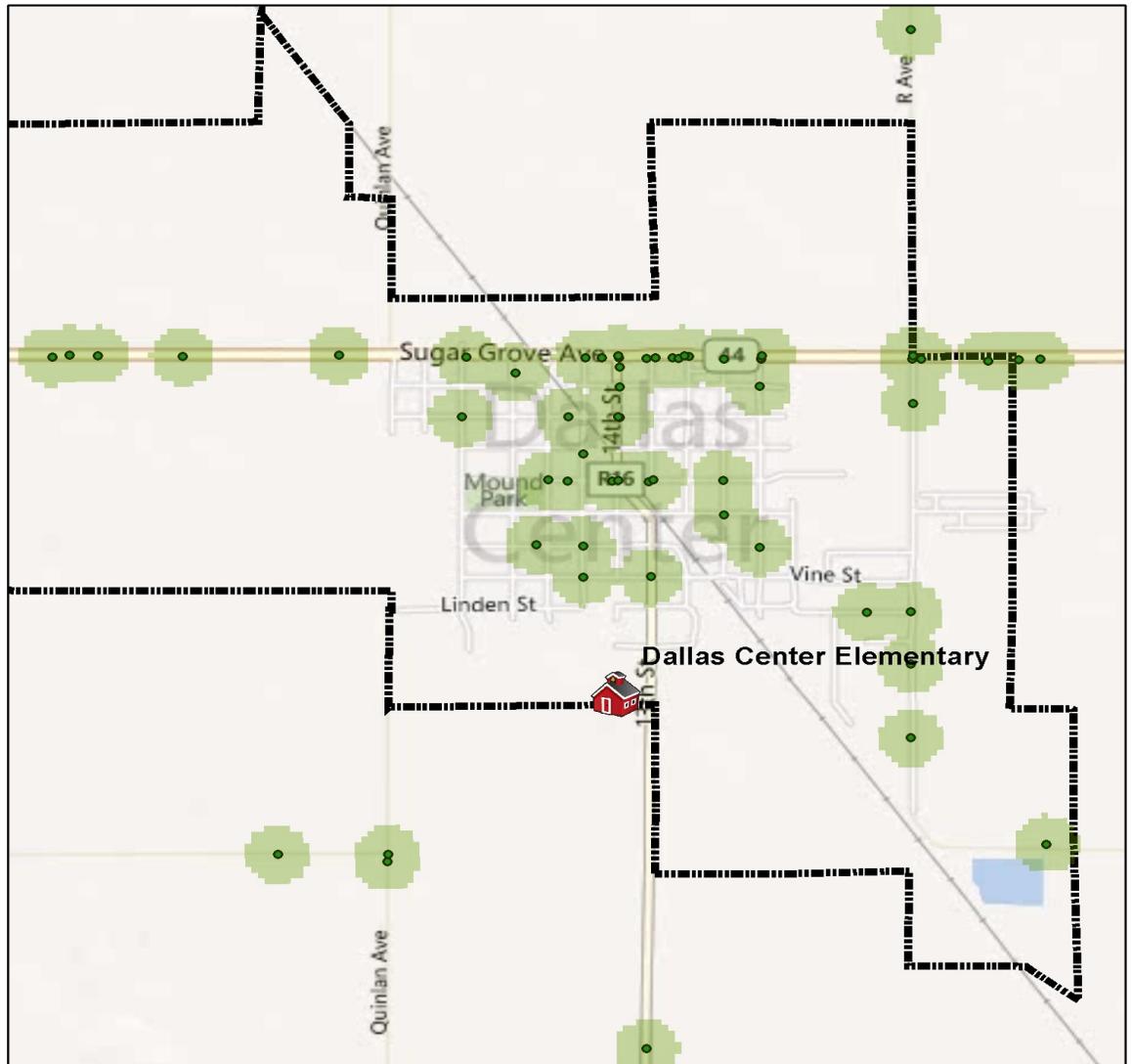
- Legend**
- City Limit
 - School
 - Sidewalks
 - 1/2 Mile
 - 1 Mile
 - 2 Mile



A

utomobile vs. Pedestrian or Bicycle Crash Data

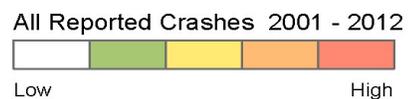
The map below uses Iowa Department of Transportation data from 2009 through early 2012 to identify locations where accidents between vehicles and either bicyclist, pedestrians or skaters occurred. Note: There were no reported pedestrian, bicyclist, or skater accidents in Dallas Center.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

-  School
-  City Limit
-  Pedestrian Accident
-  Pedalcyclist Accident
-  Skater Accident



INTRODUCTION



C

oalition Building

Inviting and involving key partners to be a part of the community coalition is essential to having a successful SRTS program. Each community was charged with identifying key organizations and individuals ready to be involved in the discussions surrounding a safe and healthy environment for students to walk or bicycle to and from school. A community coalition should be a well-rounded group that represents a wide range of interests and expertise that are related to SRTS. Local public health representatives accessed online resources, developed specifically for I-WALK, to engage and lead the coalition members.

INTRODUCTION

	Dallas Center
Local Public Health	1
School Representative	3
Parent	1
Student	
Community Citizens	1
Parks and Recreation Department	
Local Law Enforcement/Traffic Safety Officer/Safety Education Officer/Safety Enforcement Officer/School Resource Officer/ City Mayor/City Engineer	2
City Planner	1
ISU Extension and Outreach	1
Department of Natural Resources (DNR) Representative	
Grandparent	
Others	
TOTAL	10



T

eacher Tally Results

The Teacher Tally was administered during Spring 2012. During one week, teachers marked how students got to and from school on Tuesday, Wednesday and Thursday on the tally as depicted below. Results for all schools can be found on the I-WALK website at www.i-walk.org.

School: _____
 Teacher: _____
 Grade: ____ Total No. students in class ____
 No. students living in city _____ country _____

The purpose of this tally is to record how students get to and from school each day. On the first day, ask the class by raise of hand if they live within the city or in the country. Record this information above.

- Ask the class to think about how they came to school. Did they walk to school, ride the bus or maybe walk to a local bus stop. Read through all the potential answers so the students know the choices.
- Ask students, by a raise of hands, how many kids walk/bike/scoot to a local school bus stop. Count the hands raised and record that number in the School Bus Plus box. Note:
 - Students that raise their hand for this may also raise their hand again for Walk, Bike or Scoot, but they should NOT raise their hand again for the School Bus Only option.
 - A student that walks to the community bus stop in another town and then rides the bus should be counted as a School Bus Plus and Walker, not a School Bus Only rider.
- Ask the class by raise of hand to answer "How did you arrive at school or your community school bus stop today?" Record results in the appropriate box along with the general weather that day (Sun, Rain, Overcast, Windy, SNow or COlder than normal).
- Repeat for walking home and the remaining two days of the week.
- At the end of the three days, you will need to visit www.i-walk.org, click on the Teacher Tally menu, then the link under Data Collection Forms. There you will enter the data collected from the 3-day tally.

I-WALK: Teacher Tally



Start Date	Tuesday		Wednesday		Thursday	
	To	From	To	From	To	From
School Bus Plus						
Walk						
Bike						
Skate/Scoot						
School Bus Only						
Family Vehicle						
Carpool						
Public Trans.						
Other						
Weather <i>(circle)</i>	S, R, O, W, SN, CO					

I-WALK is a joint project of the Iowa Department of Public Health and Iowa State University Extension and Outreach and is funded through an Iowa Department of Transportation SRTS non-infrastructure grant. The online and print tally form was developed by the ISU Campus Community Partnership for Health (CCPH).

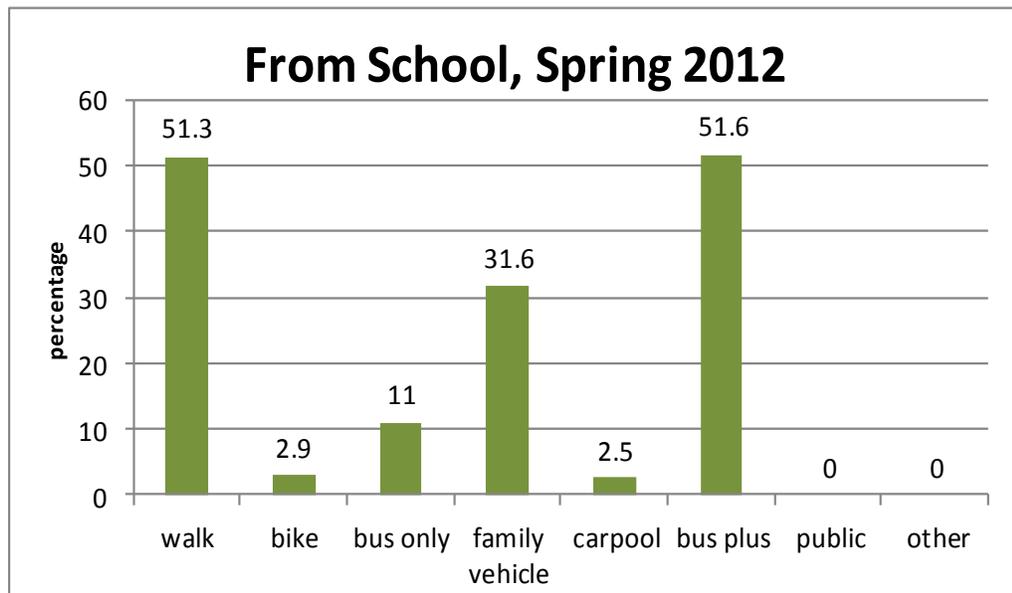
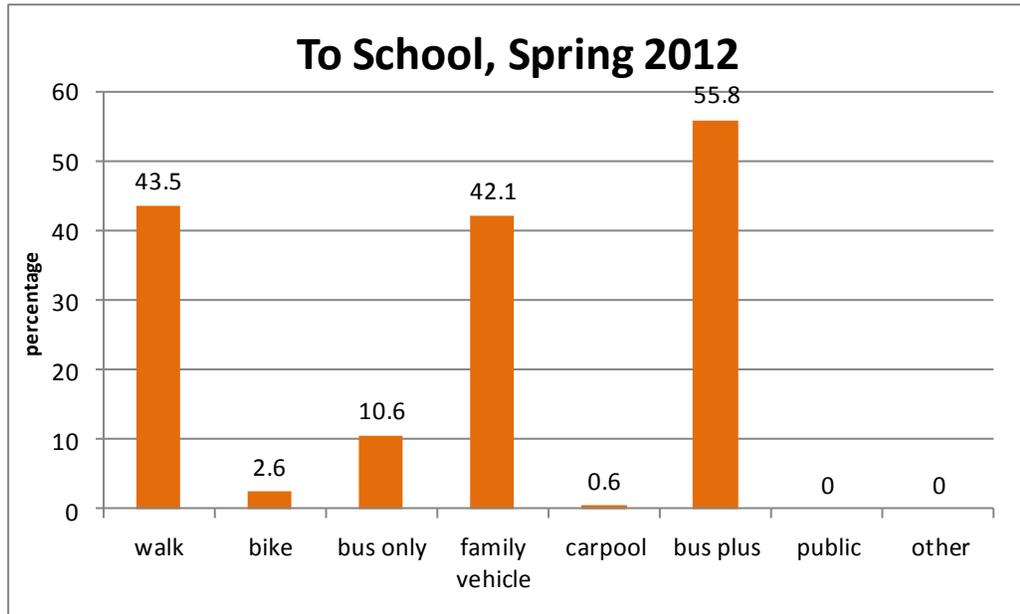


RESULTS



-WALK Teacher Tally Comparison

Below is a comparison of transportation methods students use to get to and from school as determined by the Teacher Tally. The percentages below may exceed 100% because students who chose the “Bus Plus” option may also chose another form of transport.



P

arent/Child Survey

Present Conditions

Dallas Center Elementary has 240 students between the grades of 3 through 5. Of the 240 students in grades 3 through 5, 53 surveys were completed.

Parent/Child Surveys

The purpose of the survey was to better understand how each child gets to and from school and what concerns, if any, parents have about their child[ren] walking or biking to and from school. While parts of the survey focused on SRTS issues for those who walk or bike to school, survey participation was also requested from parents and children who live in the country and ride the bus.

There were four parts to this survey:

- Multiple choice survey questions
 - Parent or Guardian completed
- Distance mapping between home and school
 - Parent or Guardian completed
- Route mapping
 - Parent or Guardian and child completed together
- Barrier/opportunity mapping

I-WALK School Transportation Survey: Parent Survey

The following multiple choice questions should be completed by the parent/guardian.

Age of child?
 years

Gender of child? *
 Male
 Female

How many children do you have in Kindergarten through 8th grade? *

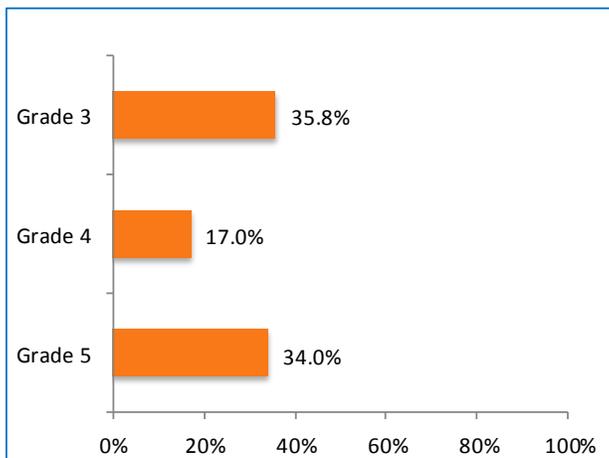
How long does it normally take your child to get to/from school? *
 (If your child goes to a different location than home after school, use the time to that location)

	To School	From School
Less than 5 minutes	<input type="radio"/>	<input type="radio"/>
5 - 10 minutes	<input type="radio"/>	<input type="radio"/>
11 - 20 minutes	<input type="radio"/>	<input type="radio"/>
More than 20 minutes	<input type="radio"/>	<input type="radio"/>
Do not know Not sure	<input type="radio"/>	<input type="radio"/>

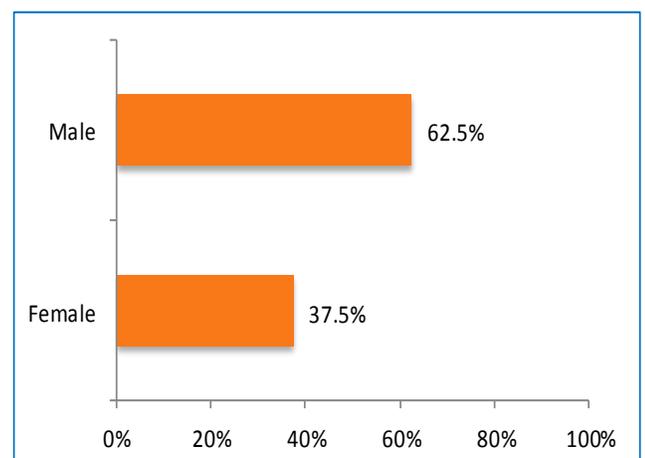
The following graphs represent data collected from the Parent/Child Survey completed by parents and children from Dallas Center Elementary School in Dallas Center, Iowa. All survey responses were collected by the I-WALK program.

RESULTS

Current Grade of Child, Spring 2012

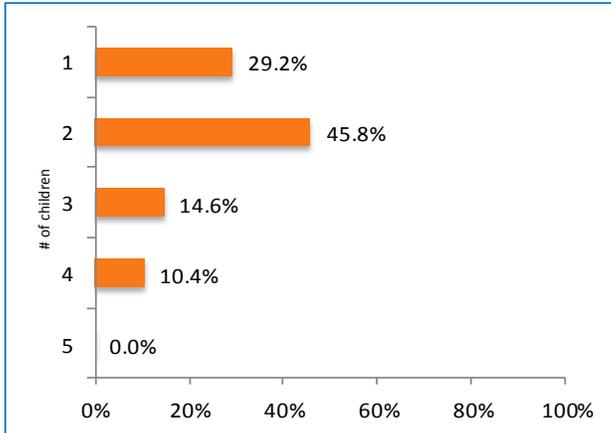


Child Gender, Spring 2012

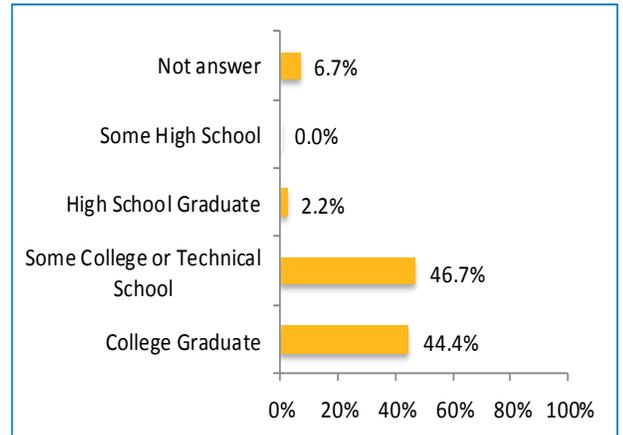




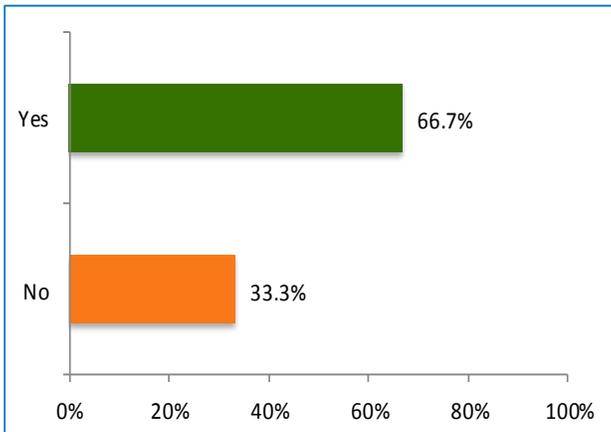
Number of Children in Kindergarten – 5th Grade, Spring 2012



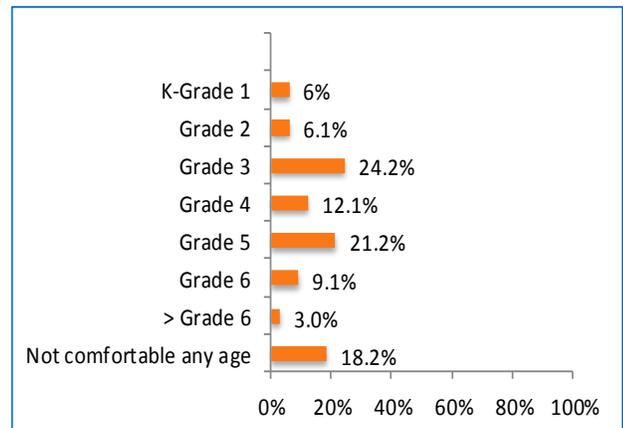
Parent Level of Education, Spring 2012



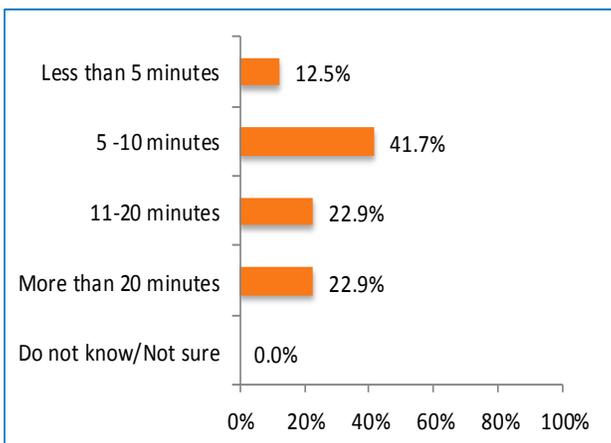
Child Asked Permission Walk/Bike To/From School Past Year, Spring 2012



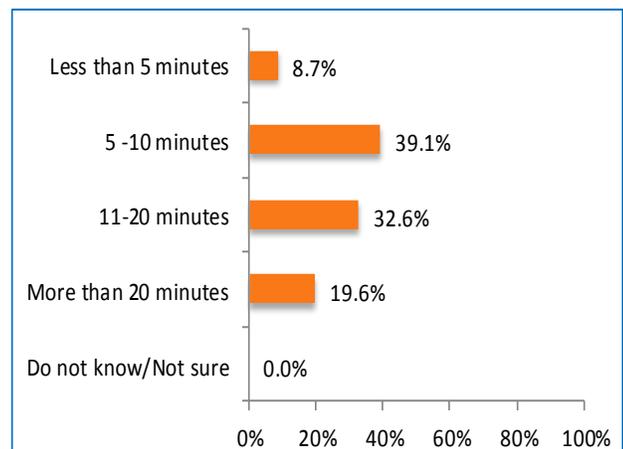
At What Grade-Level Would You Allow Child To Walk/Bike To/From School Without Adult, Spring 2012



Child Travel Time To School, Spring 2012

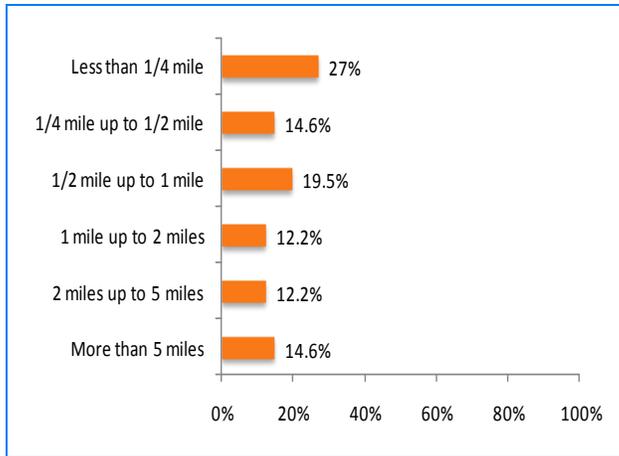


Child Travel Time From School, Spring 2012

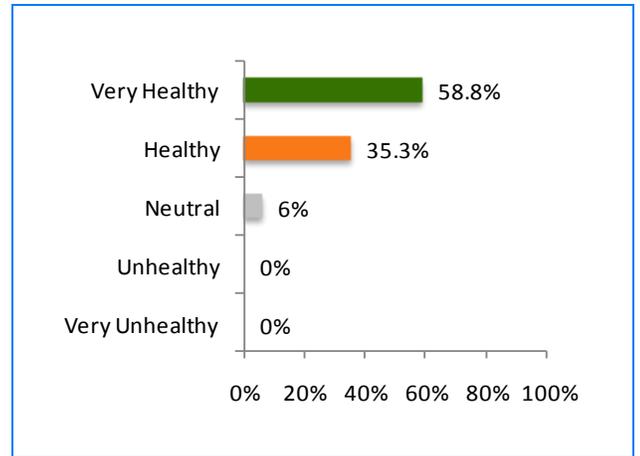




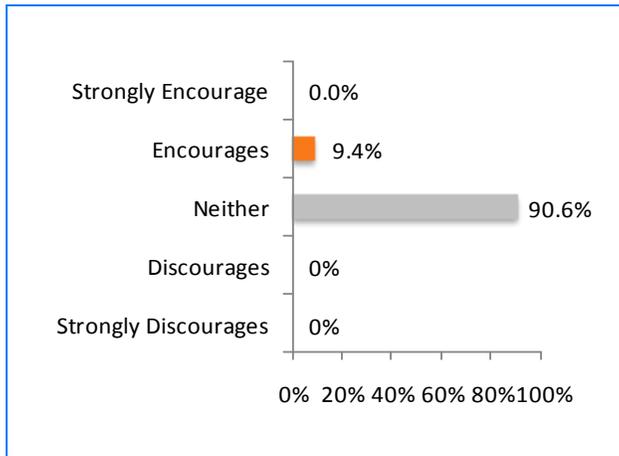
How Far Child Lives From School, Spring 2012



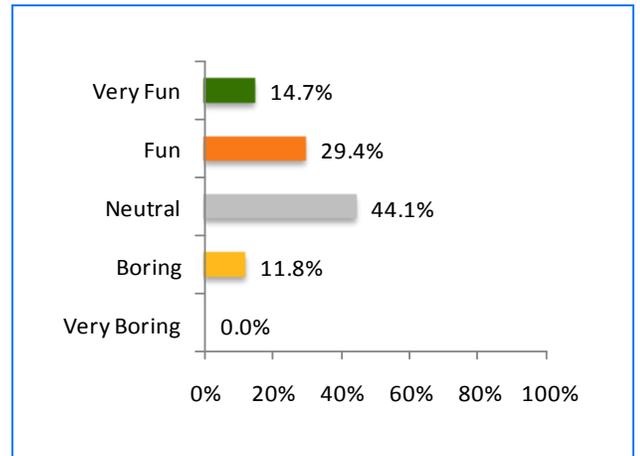
Health Benefits Walk/Bike To/From School, Spring 2012



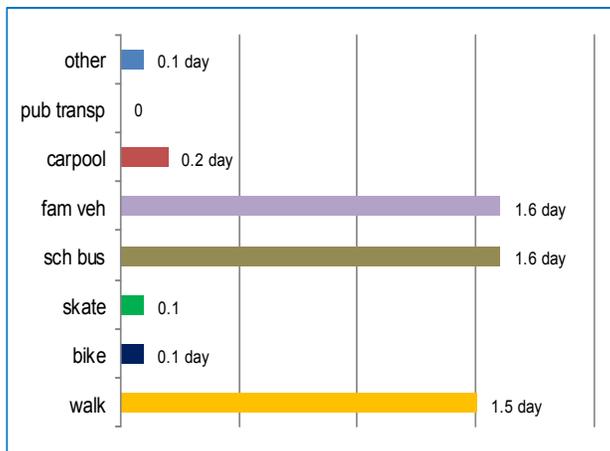
School Level Encouragement Child Walk/Bike To/From School, Spring 2012



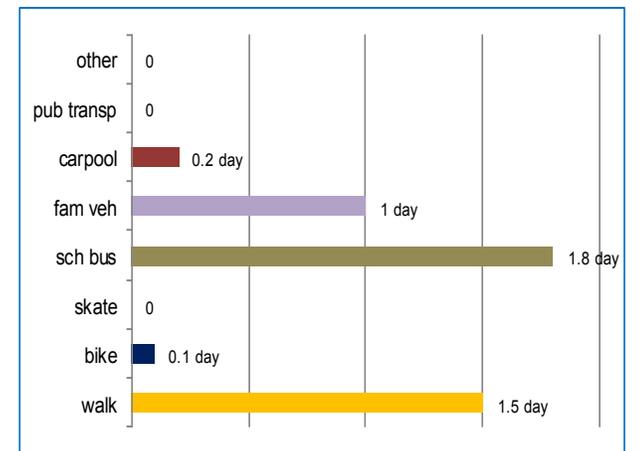
Child Level of Fun Walk/Bike To/From School, Spring 2012



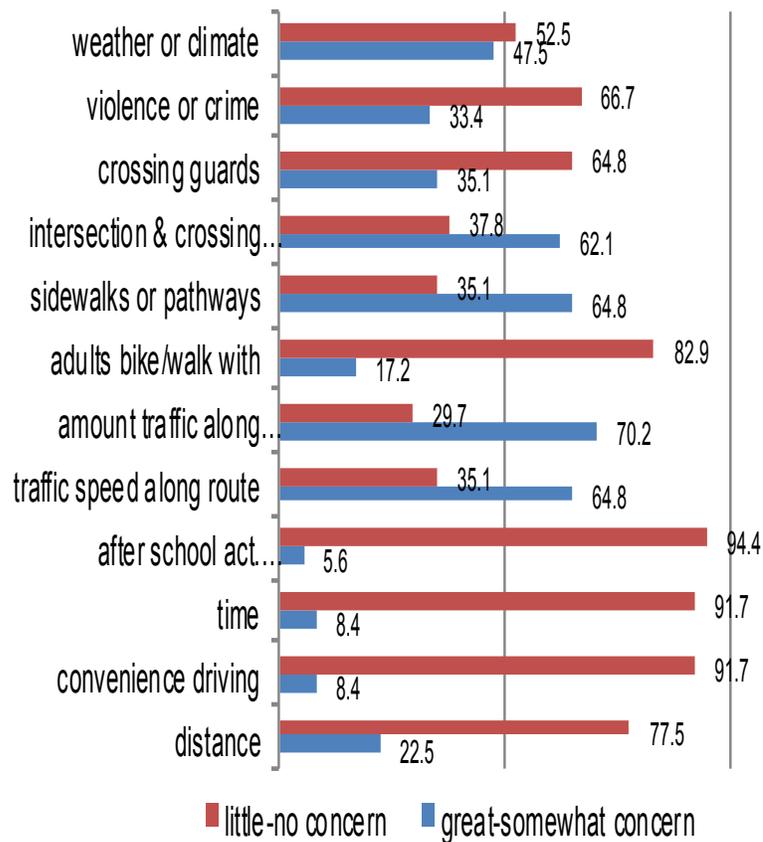
Child Transport to School, Spring 2012



Child Transport From School, Spring 2012



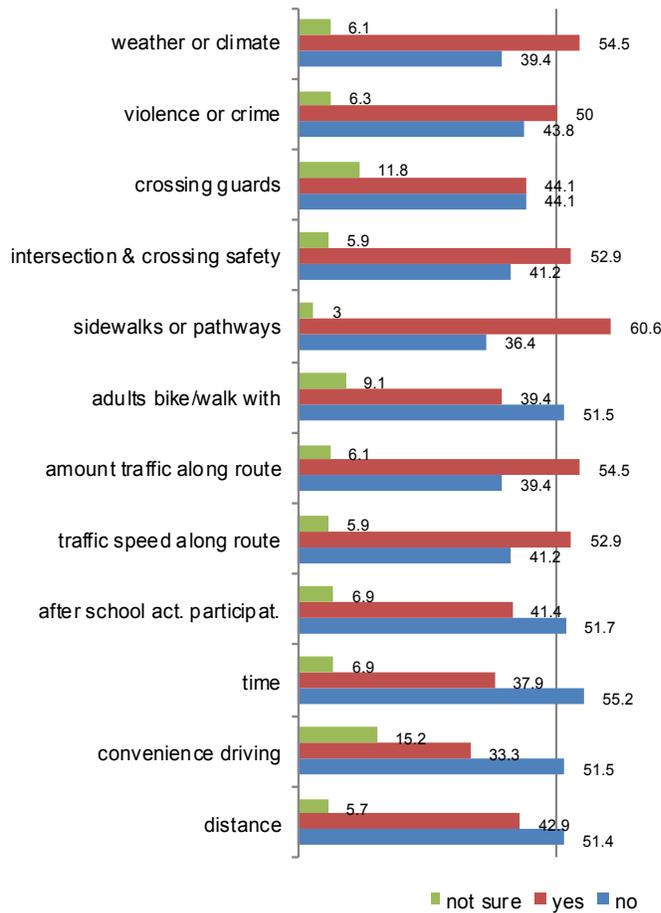
Issues Affecting Parent Decision to Allow Child Walk/Bike To/From School, Spring 2012



RESULTS



If Issue Was Resolved, Parent Would Allow Child Walk/Bike To/From School, Spring 2012



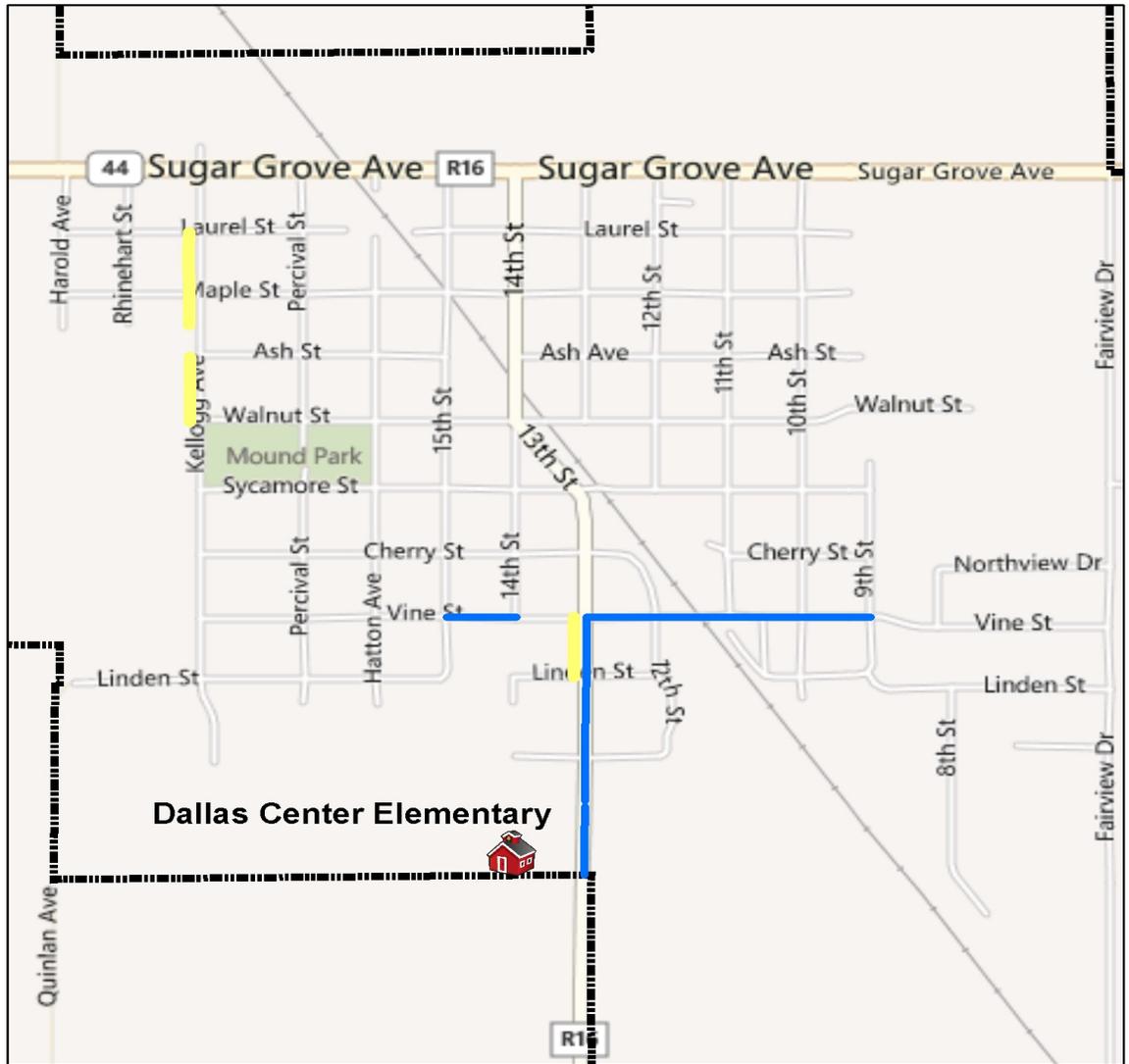
RESULTS



P

arent/Child Identified Routes *to/from* School

As part of the Parent/Child Survey, students identified routes they would use to walk or bike to/from school. The map below shows the routes that were identified by multiple students. These routes should be considered as primary routes when developing the SRTS plan.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

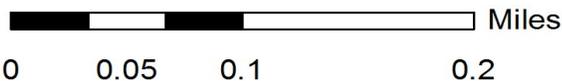
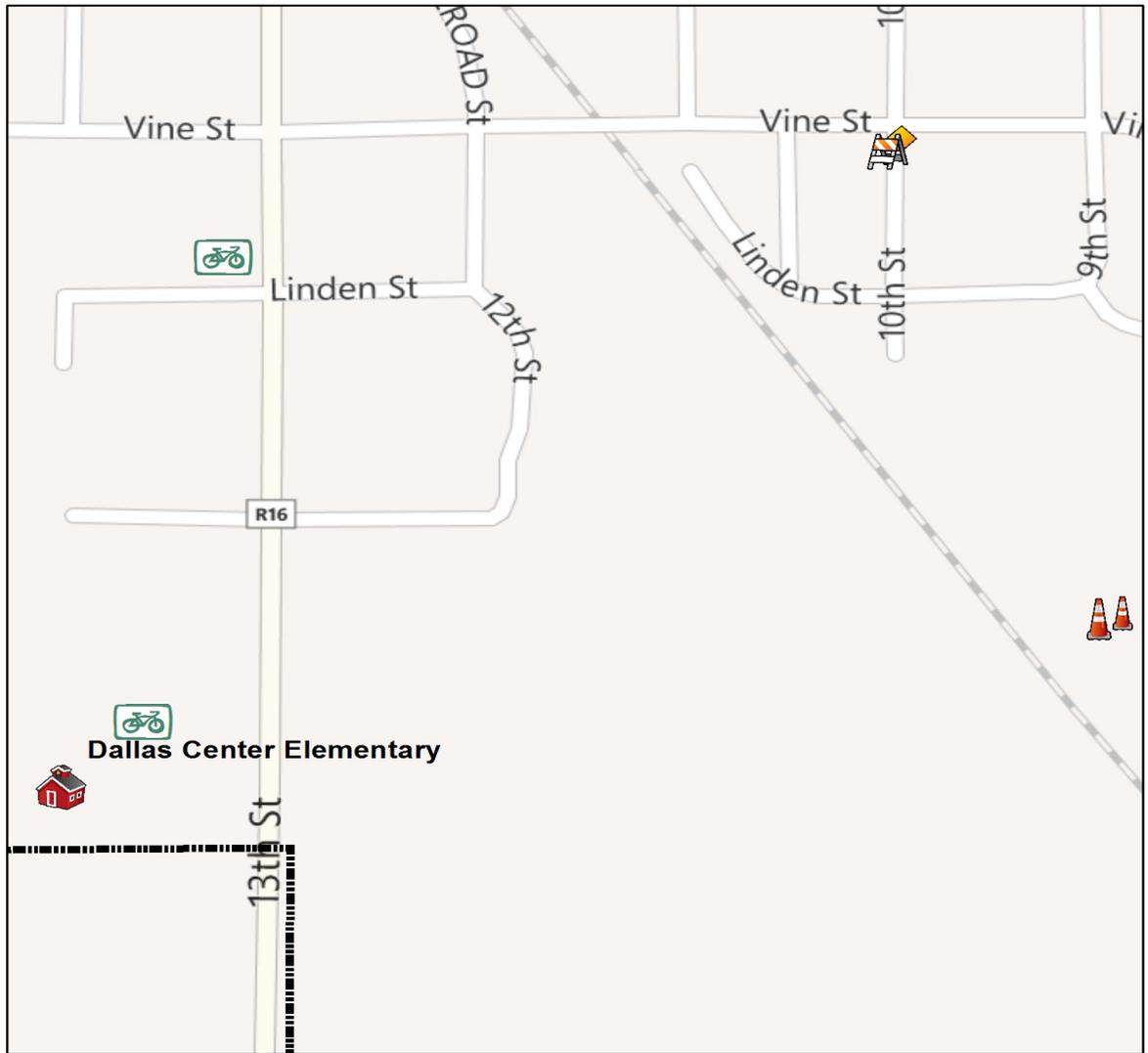
- School
- Most Used Routes to School
- Most Used Routes from School
- City Limit



P

arent/Child Identified Improvement Recommendations

As part of the Parent/Child Survey, parents and students identified recommendations to the routes they used to walk or bike to/from school. The map below shows the recommendations that were identified by multiple students. These recommendations should be considered when developing the SRTS plan.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

-  City Limit
-  Add bike rack
-  Add short connection
-  School
-  Add crossing signal
-  Curb cuts needed



P

arent/Child Identified Challenges

As part of the Parent/Child Survey, parents and students identified the challenges to the routes used to walk or bike to/from school. The map below shows the challenges to the routes that were identified by multiple students. These challenges should be considered when developing the SRTS plan.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

- City Limit
- Blocked
- Landscape maintenance
- Other
- School
- Damaged
- No sidewalk
- Scary animals

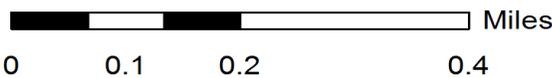
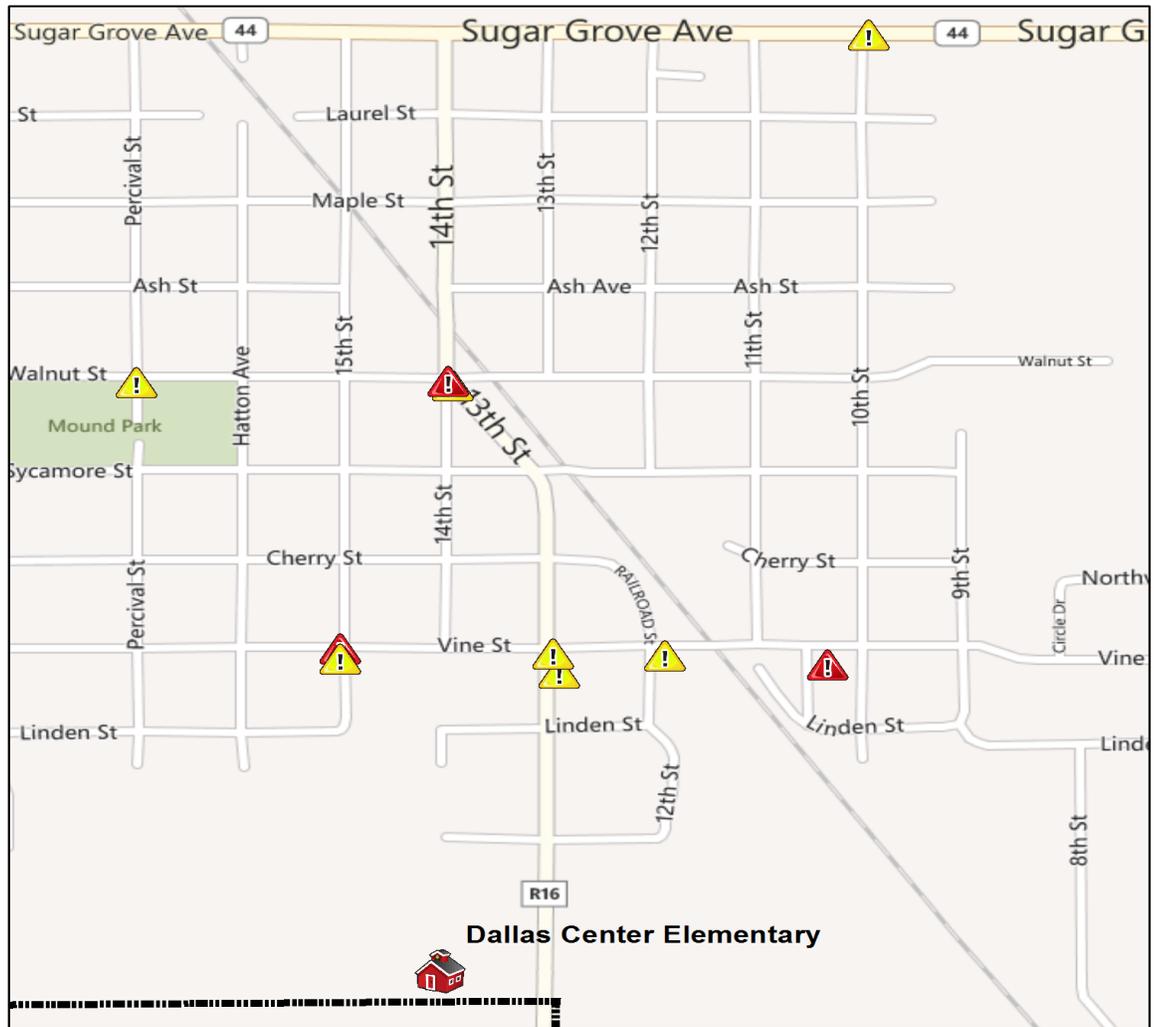
RESULTS



P

arent/Child Perceived Dangerous Intersections

The map below shows the intersections that parents perceived as dangerous. Notice that intersections identified are relatively close to the school location or along a major highway. The selection of a particular intersection was up to the judgment of the parent with no specified criteria established and was identified by parents who completed the Parent/Child Survey. A more detailed view of these data is available on the www.i-walk.org website under the "School Reports/Maps" menu link.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

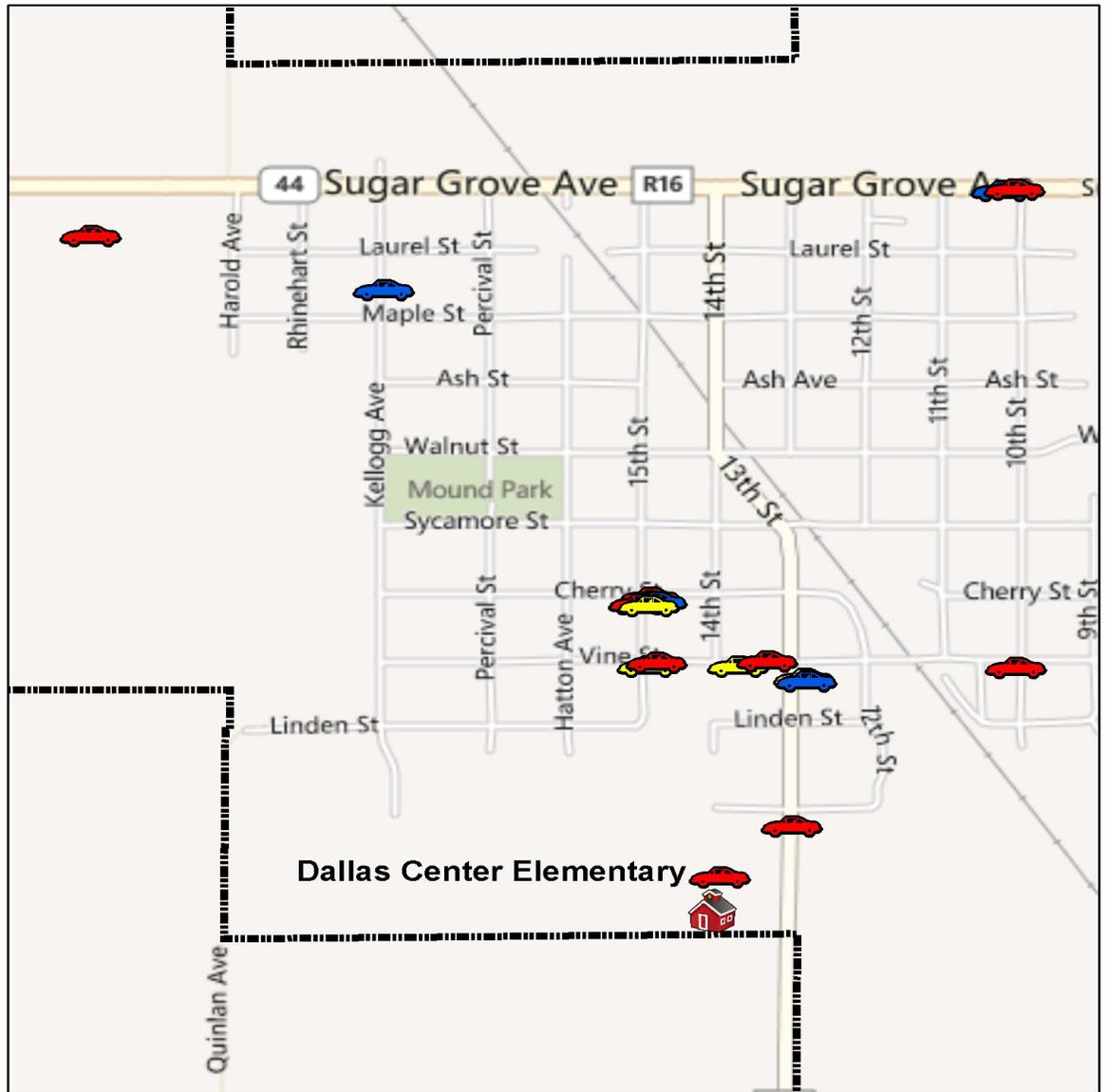
- City Limit
- Dangerous intersection
- Difficult crossing
- School



P

arent/Child Perceived Traffic Issues

The map below shows perceived traffic issues that parents identified in the survey. The location of a particular traffic issue was up to the judgment of the parent with no specified criteria established. A more detailed view of these data is available on the www.i-walk.org website under the "School Reports/Maps" menu link.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

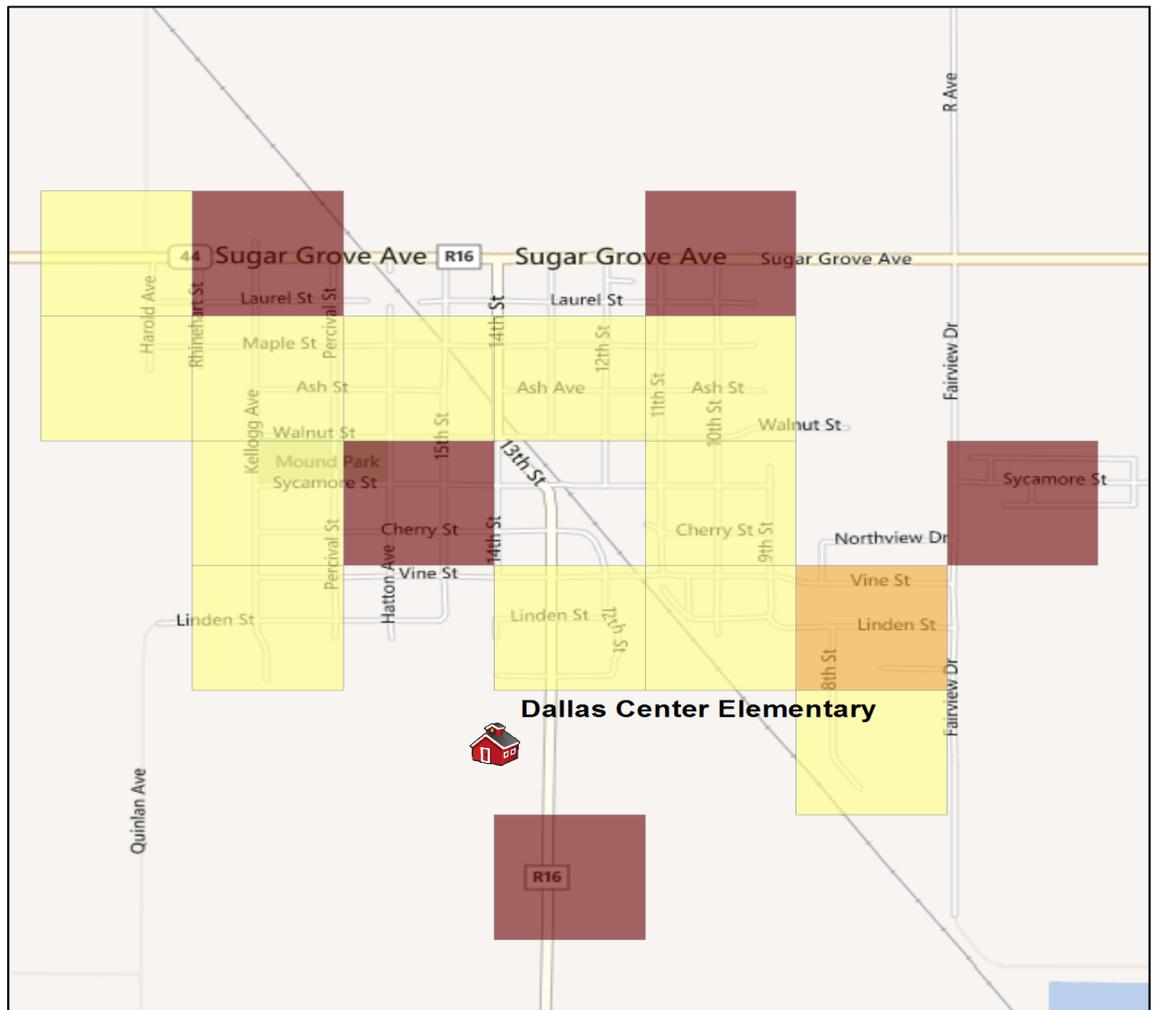
- City Limit
- School
- Heavy traffic
- Driver behavior
- Parking
- Railroad crossing
- Speeding traffic



P

arent/Child Concerns Regarding Distance

The Parent/Child Survey asked parents what level of concern they had regarding the distance to the school. To keep individual responses to this question anonymous, the results were spatially aggregated into a grid and the percent of responses indicating “concerns me greatly” or “concerns me somewhat” was calculated. The SRTS planning team should take a closer look at the colored grid areas below, paying particular attention to the orange and red areas.

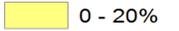
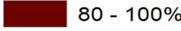
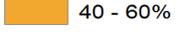


Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

-  School
-  School Limit

Distance Concern (Somewhat or Greatly)

- | | |
|--|---|
|  0 - 20% |  60 - 80% |
|  20 - 40% |  80 - 100% |
|  40 - 60% | |

RESULTS



IDPH, in collaboration with ISUEO, conducted a GPS Assessment Training prior to the community volunteer mapping activity. This process was also intended to develop the capacity of the local I-WALK coalition to enable the community mapping activity. GPS Walkability Workshops trained citizens to conduct inventory of their community using iPhones equipped with a copy of the ESRI ArcGIS app for the purpose of mapping SRTS infrastructure; the information was then sent to a GIS at ISU and saved.

During the one-day workshop, the I-WALK team trained these volunteers in each of the communities to use the ESRI ArcGIS app. The volunteers then took to the streets to collect data. Volunteers were asked to evaluate intersections, mid-block areas and any additional items that may impact the walkability around the school.



I-WALK team members use the iPhones to collect data during the one-day workshop.

The following figures show the questions the volunteers were asked at each location, the additional features that could be mapped and the iPhone interface. Additional data is also available online at www.i-walk.org.

I-WALK Assessment

Are there sidewalks midblock?	<ul style="list-style-type: none"> ◆ Complete on both sides of street ◆ Complete on one side of street & no sidewalk on the other ◆ Complete on one side of the street & incomplete on other ◆ Incomplete on one side & no sidewalk on other ◆ Incomplete on both sides of street ◆ No sidewalks on either side
What is the condition of the sidewalk?	<ul style="list-style-type: none"> • Good - free of major cracks and uneven areas, can easily walk or bicycle • Fair - has some major cracks and uneven areas, but still able to ride a bicycle • Poor - is uneven or has major cracks or missing concrete throughout
Is the sidewalk wide enough for two adults to walk side by side?	<ul style="list-style-type: none"> • Yes • No • Unsure
Is the sidewalk set back from fast-moving traffic?	<ul style="list-style-type: none"> • Yes • No • Unsure
Is the route pleasant to walk? (no litter, visually interesting)	<ul style="list-style-type: none"> • Yes • No • Unsure
Is street lighting provided?	<ul style="list-style-type: none"> • Yes • No • Unsure
Comment:	

Additional Features

* Answer options that are bolded are the system default answers

Intersection-Elementary student feel safe?

Do you think an elementary student would feel safe crossing this street?	<ul style="list-style-type: none"> + Yes + Maybe + No + --
Do you think an adult would feel safe crossing this street?	<ul style="list-style-type: none"> • Yes • No
How many streets intersect? For Example:	1, 2, 3, 4, 5, 6 (Type in number)
 3 streets 4 streets 5 streets	
How is traffic controlled at the intersection?	<ul style="list-style-type: none"> • Yield • One Way stop • Two Way stop • Three Way Stop • Four Way Stop • Roundabout • Traffic Light • Flashing alert • No traffic control
Is there a traffic light pedestrian crossing signal? (Walk/Don't Walk)	<ul style="list-style-type: none"> • Yes • No
Do the sidewalks have curb cuts/ramps?	<ul style="list-style-type: none"> • Yes • Yes, but curb cut/ramp needs improvement • No
How many streets have painted crosswalks?	1, 2, 3, 4, 5, 6 (Type in number)
Is the road too wide to cross safely?	<ul style="list-style-type: none"> • Yes • No • Unsure
Is there enough time to cross the street?	<ul style="list-style-type: none"> • Yes • No
Are there items that make it difficult for you to see traffic or for traffic to see you?	<ul style="list-style-type: none"> • Yes • No
Comment:	



Getting Started

Power Button



ESRI Mapping Application
Press to start

Return to home screen.



Select My Groups.
A window displaying available maps will be displayed.

Select the I-Walk Community Map

Mapping Application

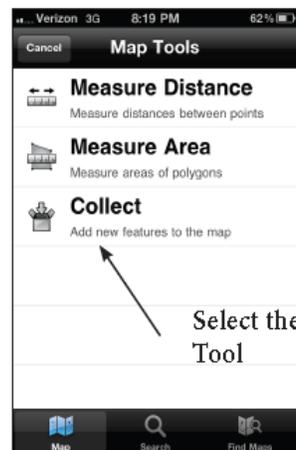


Select the wrench to display the Map Tools window below.

To pan, drag finger across map.
To Zoom, pinch/drag two fingers across screen.

Select target icon to zoom map to your GPS location and turn on GPS.

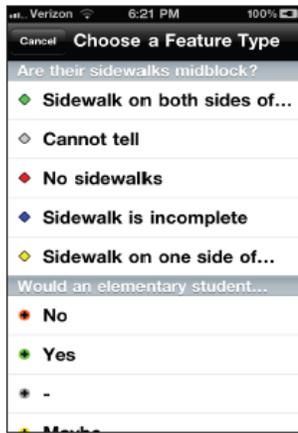
Select Find maps to return to previous map selection screen.



Select the Collect Tool

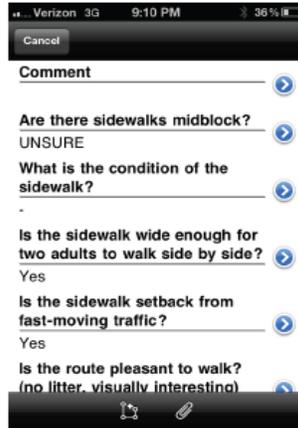


Collect a Data Point



Select feature to map

- Midblock
- Intersection
- Feature

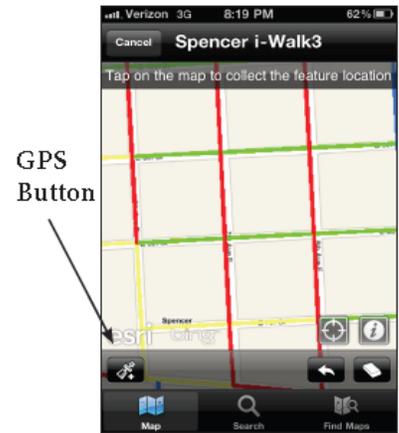


Press this button to Collect Location.

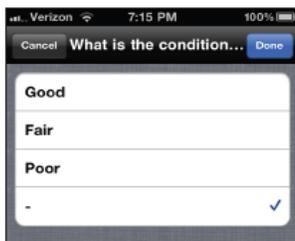


Tap on map to locate the feature or press the GPS button to have the feature located where you are.

Move point if necessary by clicking on it (holding on the point for 3 seconds will magnify the map). Press accept when done.



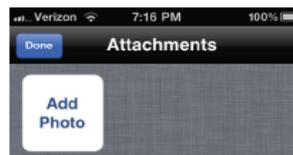
Continue to answer each question on the screen. Make sure and scroll down through the questions. After answering the questions, press Done to return to previous page or press the paperclip to add a photo.



Add a photo attachment or press finish.



Click Add Photo box.



Then press Take Photo



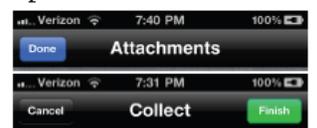
Confirm camera is selected and camera is held with icon to bottom or right.



Retake or Use photo.



Press Done once photos(s) are complete and press Finish to upload data.



Walkability Workshop Evaluation

A detailed evaluation of the GPS Assessment Training was conducted at workshop conclusion to guide future developments of the activity. The training evaluation was used to measure participants' reactions to and learning, understanding and application of the mapping activity. A questionnaire was administered to the volunteers after they had completed the mapping activity. Respondents were community residents. Results from the evaluation are presented below.

GPS Assessment Training Evaluation Results

When you left the training, how prepared did you feel to conduct a GPS walkability assessment	1.1
Were the materials presented in a way that made sense and flowed smoothly	1.1
Was the training organized and arranged in a manner that made sense and "user friendly"	1.0
How helpful is it to practice GPS assessment before actually doing it	1.1
Were you given ample opportunity to ask questions during the training	1.0
Did the answers to your questions make sense	1.0
Overall rating of workshop	4.9
Rating of trainer	4.9
Rating of organization of workshop	4.9
Rating of usefulness of workshop	4.8
Rating of understanding of GPS Assessment Procedures	4.6
Rating of understanding of effectiveness of GPS Assessment	4.6

- The first question asked community volunteers how prepared they were to conduct a walkability assessment following the training (1 "Very well prepared" – 5 "Not at all prepared"). For the most part, community volunteers were very well prepared to conduct the walkability assessment.
- Respondents reported the training materials were presented in a way that made sense and flowed smoothly (1 "Very well" – 5 "Not at all").
- The training was organized and arranged in a manner that made sense (1 "Very well organized" – 5 "Not at all organized").
- It was very helpful to practice a GPS assessment before actually doing it (1 "Very helpful" – 5 "Not at all helpful").
- Community volunteers were given ample opportunity to ask questions during the training (1 "Very much opportunity" – 5 "Not at all provided opportunity").
- For the most part, answers to questions posed during the training made sense to the volunteers (1 "Yes," 2 "Somewhat," 3 "No").

Overall, the training workshop and the trainer were rated as excellent (1 "Very poor" – 5 "Excellent"), and the workshop was very organized (1 "Very disorganized" – 5 "Very organized"). In addition, the workshop was very useful (1 "Not useful at all" – 5 "Very useful"). The GPS assessment procedures were very well understood (1 "Not understood at all" – 5 "Very well understood"), as well as the understanding of the effectiveness of the GPS assessment.

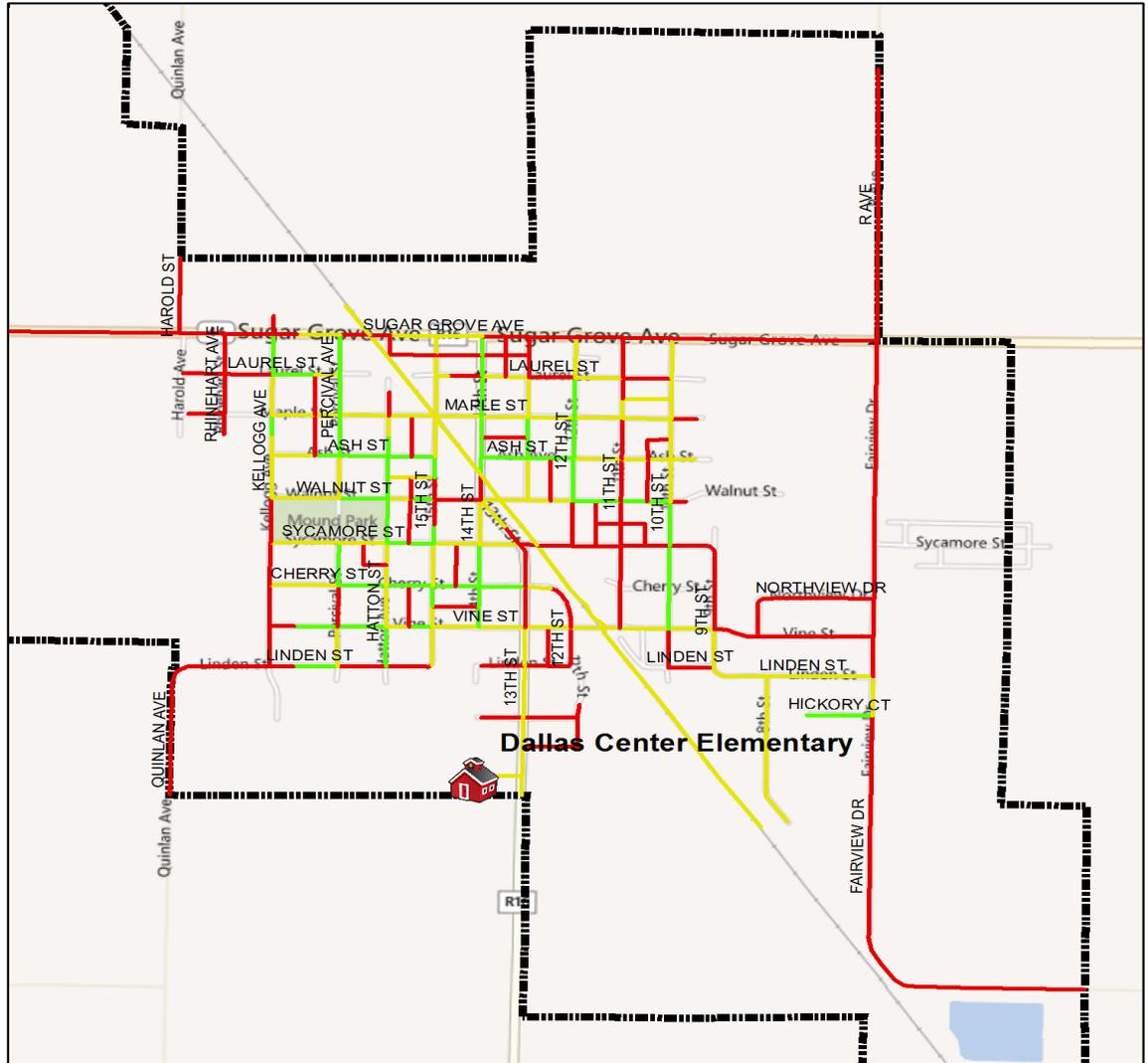


S

idewalk Availability

Using aerial photography and the data collected by the volunteers using the iPhone devices, the map below identifies the streets that have incomplete sidewalks, sidewalks on one or both sides of the street and no sidewalks at all.

GIS MAPPING RESULTS



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

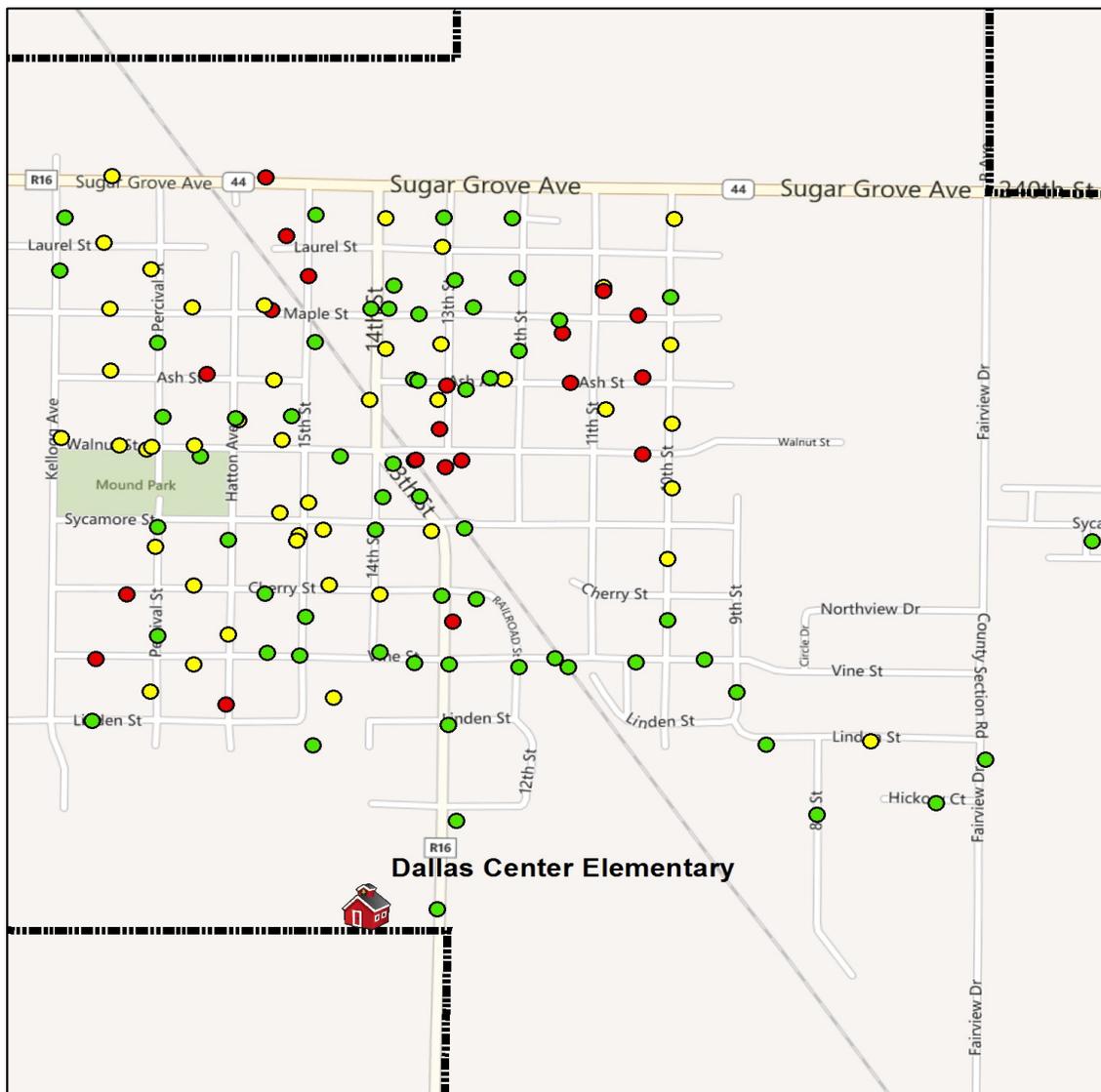
Legend

- City Limit
- Both sides
- None
- One Side
- School
- SchoolLimit



Sidewalks: General Conditions

Using the data collected by the volunteers using the iPhone devices, the map below identifies the general condition of the sidewalks on the identified streets.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

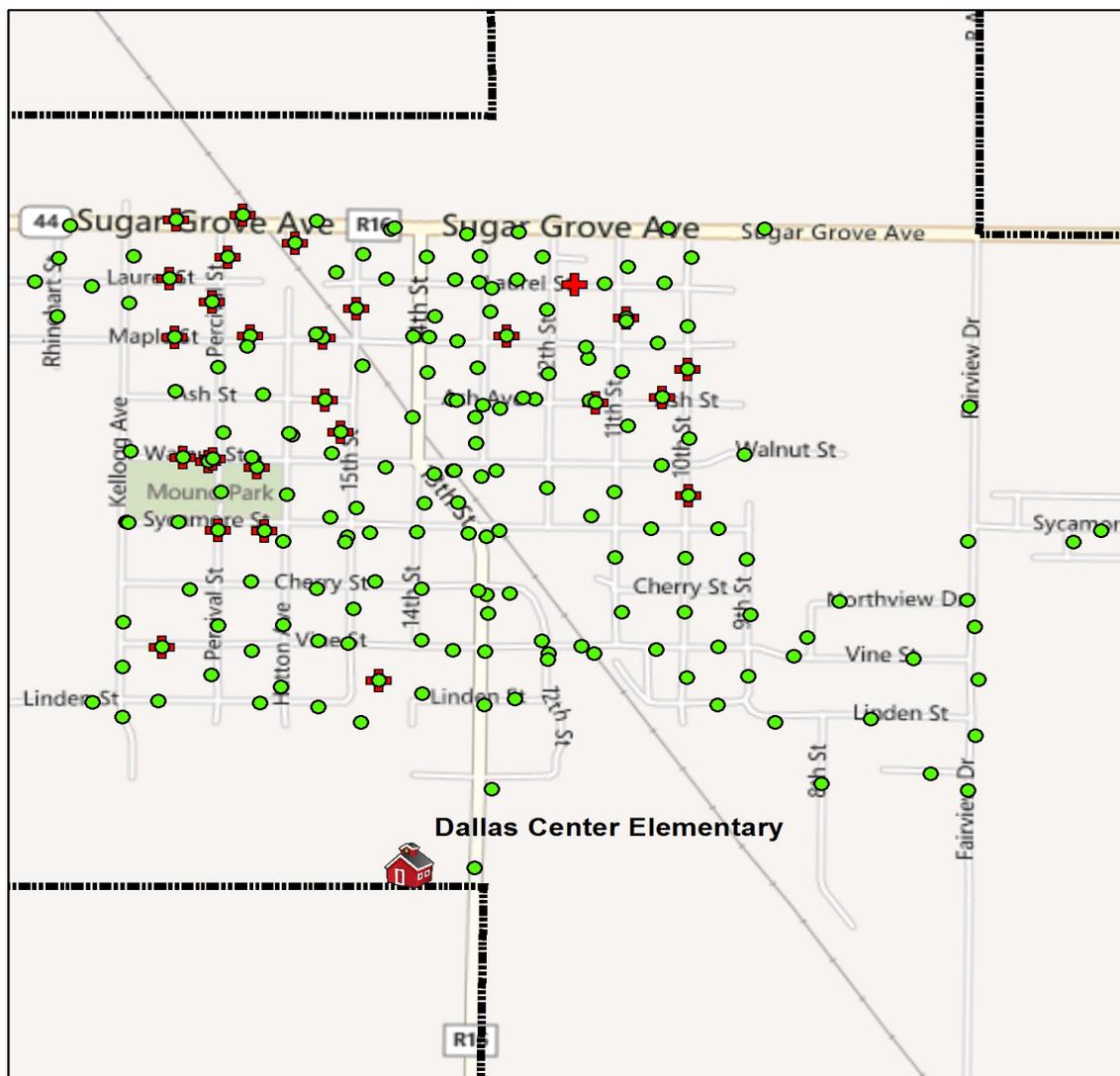
Legend

-  School
-  Poor - is uneven or has major cracks or missing concrete throughout
-  Fair - has some major cracks and uneven areas, but still able to ride a bicycle
-  City Limit
-  Good - free of major cracks and uneven area, can easily walk or bicycle



Sidewalks: Setbacks and Width

Using the data collected by the volunteers using the iPhone devices, the map below identifies sidewalk setback from moving traffic and sidewalks not wide enough for two adults to walk side by side.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

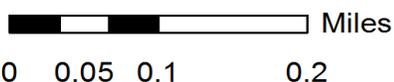
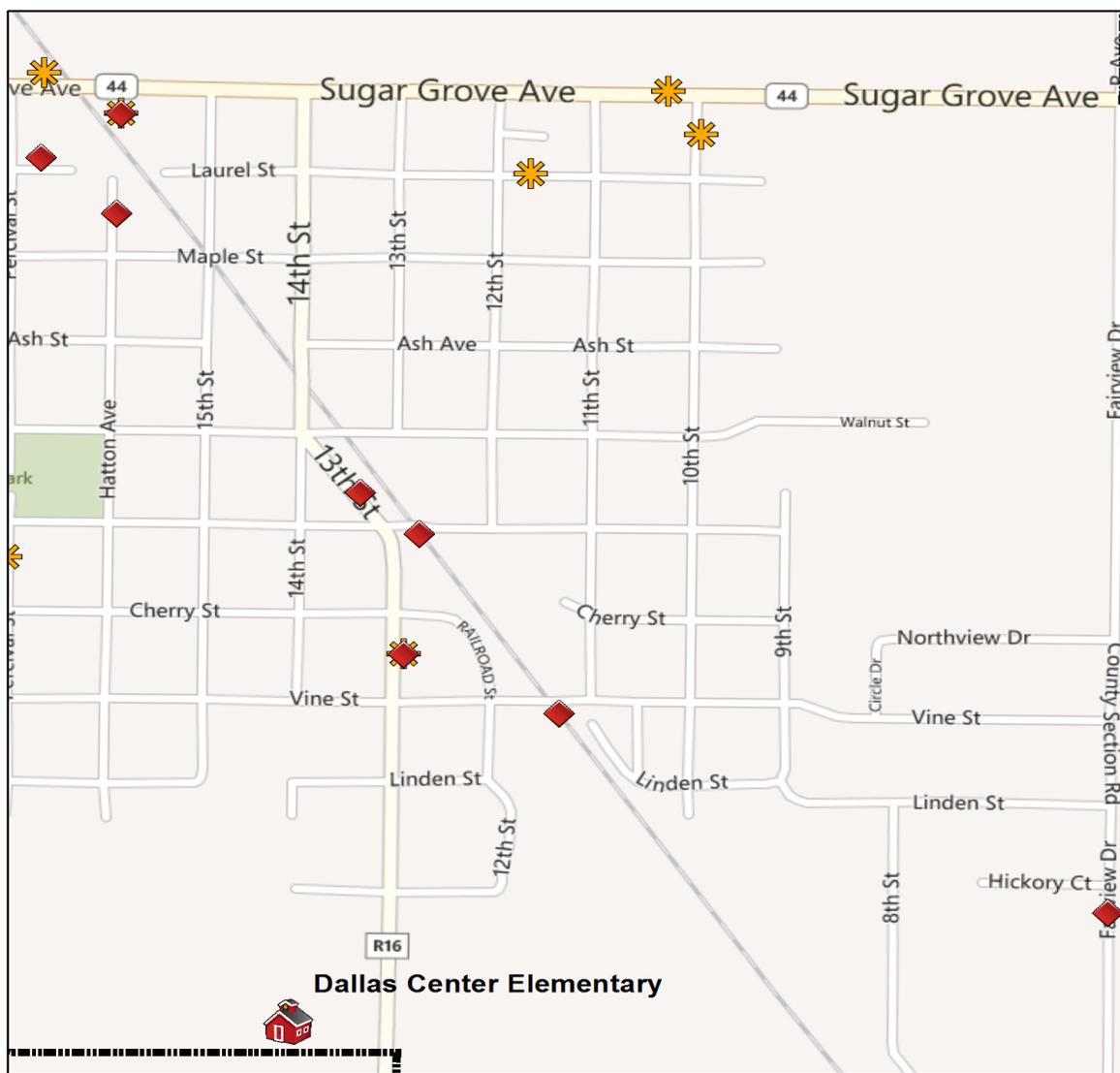
Legend

-  City Limit
-  Sidewalks set back from fast moving traffic
-  School
-  Sidewalk not wide enough for two adults to walk side by side



Sidewalks: Street Lighting and Unpleasant Routes

Using the data collected by the volunteers using the iPhone devices, the map below identifies absence of street lighting and an unpleasant, littered route.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

- City Limit
- No street lighting
- School
- Route not pleasant to walk or has litter

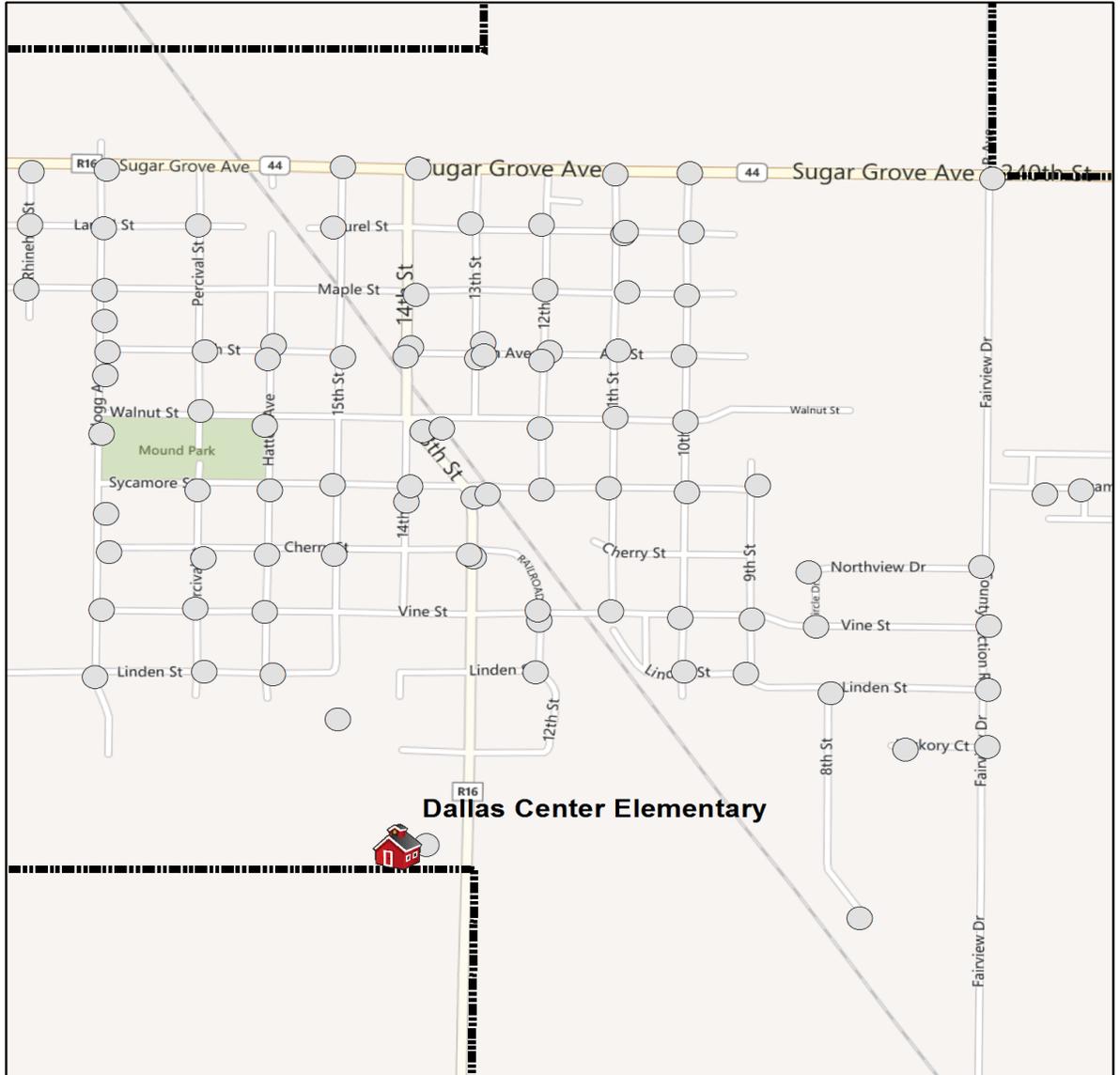


C

crosswalks

Using the iPhone devices, volunteers identified areas that did not have painted crosswalks.

GIS MAPPING RESULTS



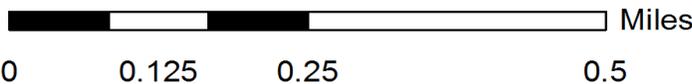
Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

- City Limit
- No Painted Crosswalks
- School

ould Not Feel Safe Crossing the Street

Using the iPhone devices, volunteers identified areas that they thought a student would not feel safe crossing. In addition, specific intersections were also identified as being equally unsafe for an adult to cross.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

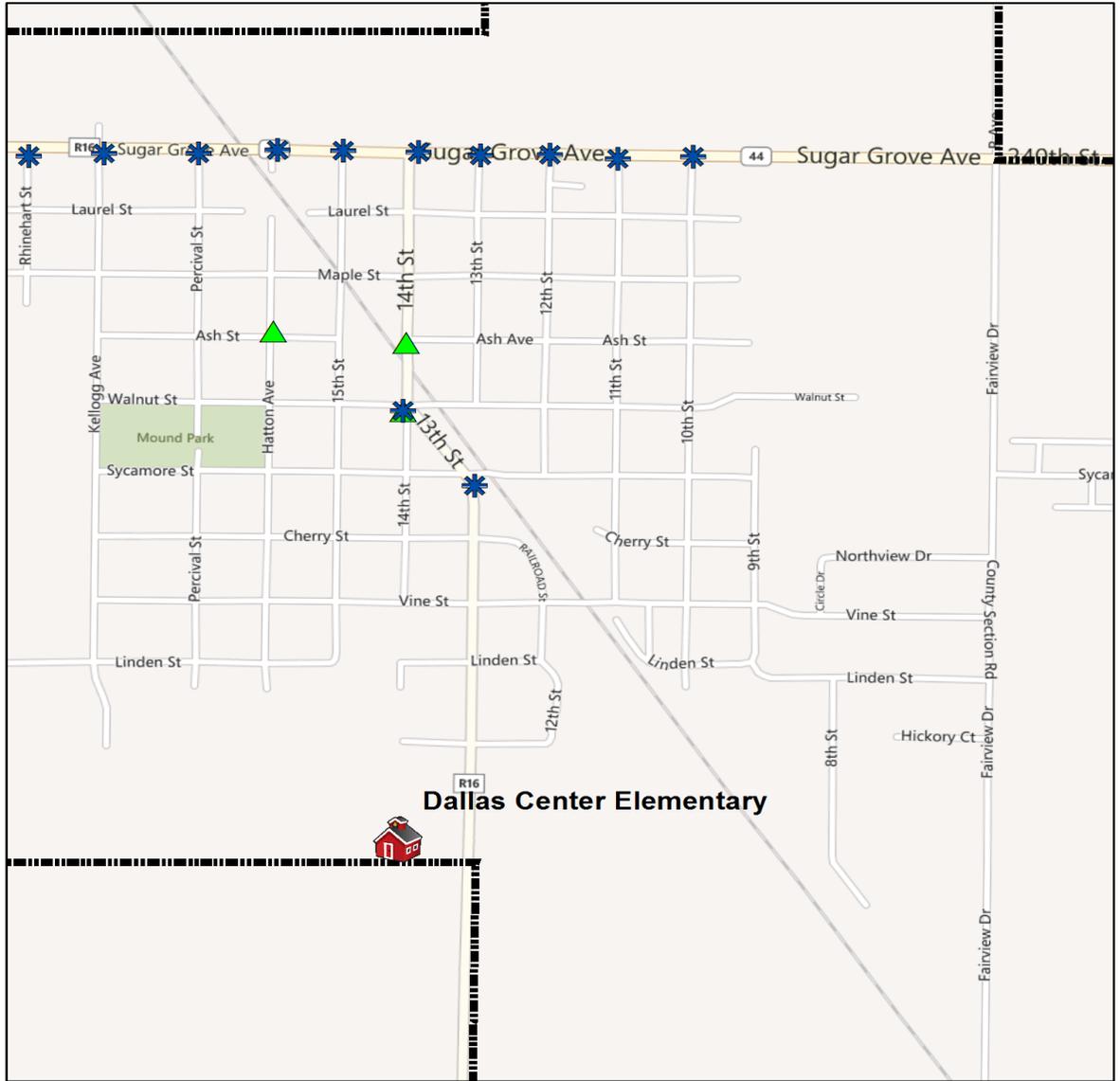
Legend

- City Limit
- School
- Adult Wouldn't Feel Safe
- Student Wouldn't Feel Safe



Insufficient Time to Cross

Using the iPhone devices, volunteers identified intersections where the data collector did not consider there to be sufficient time to cross the street safely.



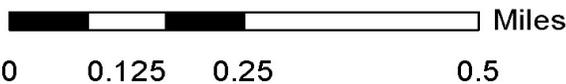
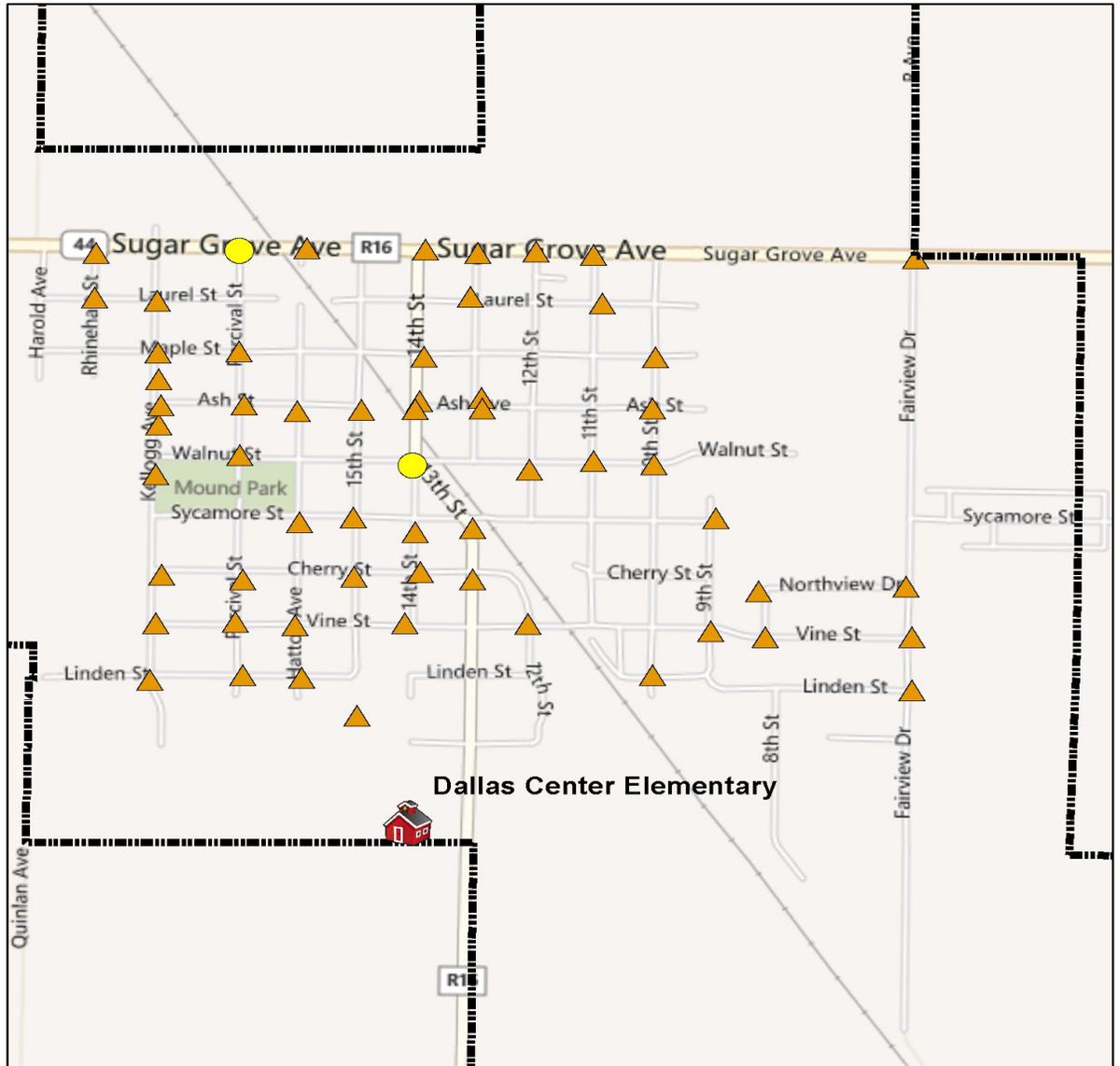
Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

- Legend**
- City Limit
 - Not enough time to cross the street
 - School
 - Items blocking view



Intersections: Curb Cuts and Street Width

Using the data collected by the volunteers with the iPhone devices, the map below identified the streets that have incomplete curb cuts and issues with street width.



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

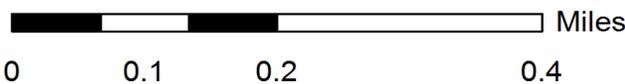
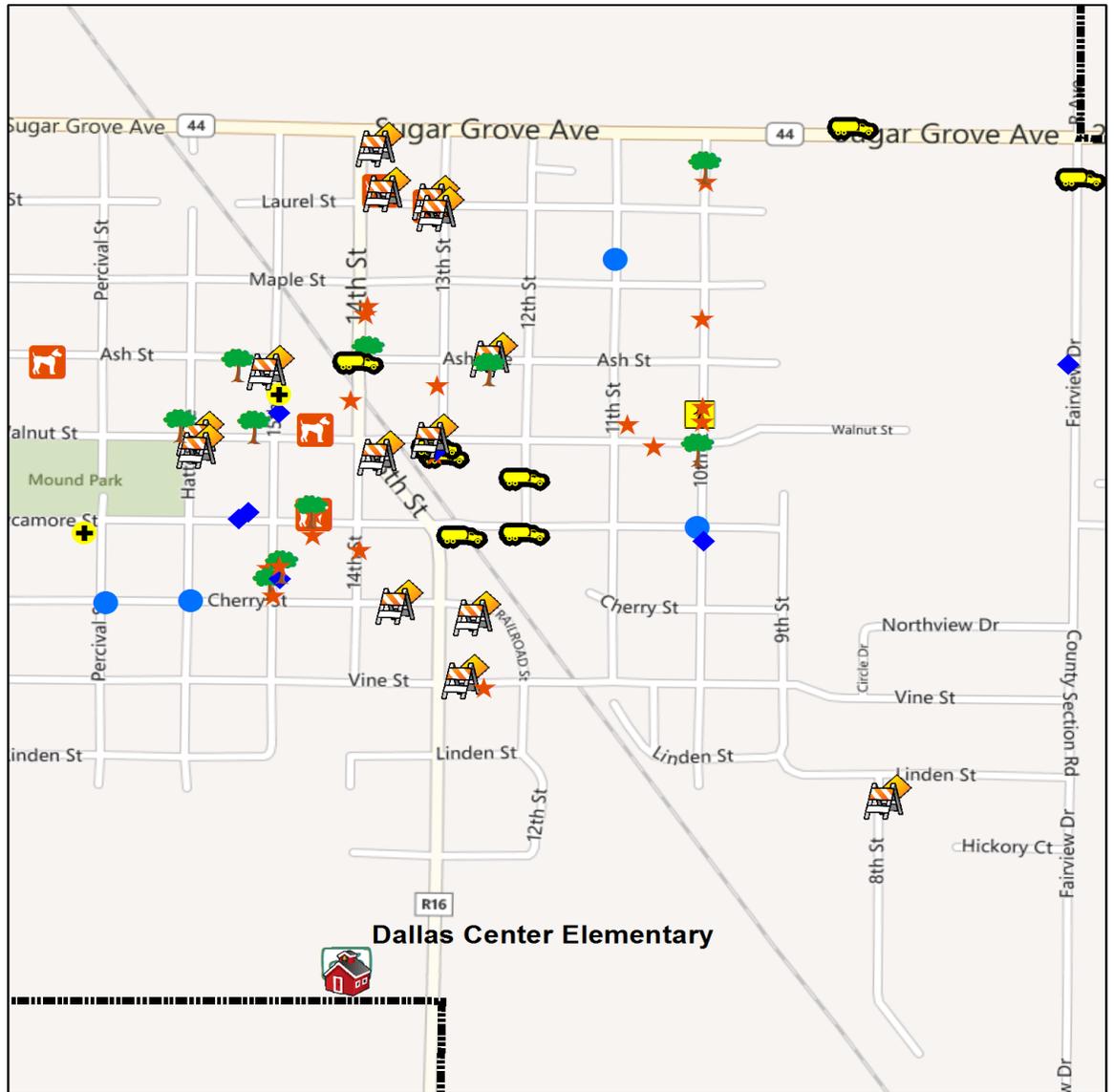
Legend

-  School
-  Sidewalks do not have curb cuts/ramps
-  Road is too wide to cross safely
-  City Limit



Infrastructure Challenges and Assets

Using the data collected by the volunteers with the iPhone devices, the map below identified the infrastructure challenges (e.g., car block sidewalk) and assets (e.g., presence of bike rack).



Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend

- | | | | |
|------------|------------------|-------------------------------|--------------------------|
| School | Sidewalk ends | Vegetation Blocking Route | Often has standing water |
| City Limit | Cracked Sidewalk | Sidewalk with Stairs | Large Truck Traffic |
| Bike Rack | Crossing Guard | Crosswalk not at intersection | Other |
| Bus Stop | Scary Dogs | Cars blocking sidewalk | |



The goal of SRTS programs is to give a community the opportunity to make walking and bicycling to and from school safer and more accessible for children of all abilities and to increase the number of children who choose to walk and bicycle. On a broader level, SRTS programs can enhance children's health and well-being, ease traffic congestion near the school, improve air quality and improve community members' overall quality of life. Communities are encouraged to tailor a combination of engineering, education, encouragement, evaluation, and enforcement strategies to address the specific needs of their schools.

Engineering

"Engineering" is a broad concept used to describe the design, implementation, operation and maintenance of traffic control devices or physical measurements, including both low- and high-cost capital measures. Engineering approaches can improve children's safety to enable more bicycling and walking. Engineering should also improve the accessibility of walking and bicycling routes for children with disabilities.

Enforcement

Enforcement, especially for SRTS programs, is a network of community members working together to promote safe walking, bicycling and driving. This can be accomplished through safety awareness, education and, where necessary, the use of ticketing for dangerous behaviors. Enforcement includes students, parents, adult school crossing guards, school personnel and neighborhood watch programs working in conjunction with law enforcement to enforce rules for safe walking, bicycling and driving.

Encouragement

Encouragement strategies are about having fun. They generate excitement and interest in walking and bicycling to increase the number of children who walk and bicycle to and from school safely. In particular, encouragement and education strategies are closely intertwined, working together to promote walking and bicycling by rewarding participation and educating children and adults about walking and bicycling. Special events, mileage clubs, contests and ongoing activities all provide ways for parents and children to discover, or rediscover, that walking and bicycling are

doable and a lot of fun.

Education

While education dovetails with engineering and enforcement, it is most closely linked to encouragement strategies. For example, children may learn pedestrian and bicyclist safety skills and then get the chance to join a mileage club, rewarding them for walking or bicycling to and from school. Encouragement activities also offer "teachable moments" to reinforce pedestrian and bicyclist safety education messages.

Evaluation

Evaluation is used to determine if the aims of the strategies are being met and to assure that resources are directed toward efforts showing the greatest likelihood of success. Also, evaluation can identify needed adjustments to the program while it is underway. This information describes how to conduct a SRTS program evaluation that is tailored to that specific program's objectives and strategies.



The first steps of SRTS is to do an assessment like I-WALK. Once the infrastructure data is collected, the next step is to observe *how* kids get to and from school. Communities are encouraged to spend time observing how and where students cross the street. Using the data provided in the infrastructure assessment and Parent/Child Survey as a guide, evaluators can determine where observations should start.

The primary focus area should be one-half mile around the elementary school. Past this point, it becomes increasingly unlikely that a child would walk; if the first one-half mile is not walkable, it does not matter what the second one-half mile is like. After the observation step has been completed, the community should use the collected data and observations to prioritize where to begin improvements.



The following recommendations are “general” recommendations to all communities. The word “general” does not imply that they are of lesser importance than any of the specific recommendations for each one of the school districts and their respective community. These are common recommendations of importance to create safer pedestrian and bicycle environments, while at the same time encouraging walking and bicycling to and from school.

General Recommendations for the Community

- Focus first on projects that are of low-cost and easy to implement.
- Implement a Complete Streets design for the community.
- Update the city’s comprehensive plan every two years.
 - With each comprehensive plan update, specifically address access to physical activity infrastructure by all segments of the population in the streets/sidewalk and parks/recreation sections.
 - In the comprehensive plan, set specific goals and evaluation criteria for access to and availability of the physical activity infrastructure including (but not limited to):
 - Sidewalks
 - Bike paths
 - Walking and hiking trails
 - Recreation facilities
 - Skating rinks and other winter outdoor activity facilities
 - Any other initiatives to encourage and facilitate physical activity and enjoyment of the outdoors
- Develop and initiate city or school-sponsored programs to retrofit sidewalks in developed areas where sidewalks are absent and/or had not been required.

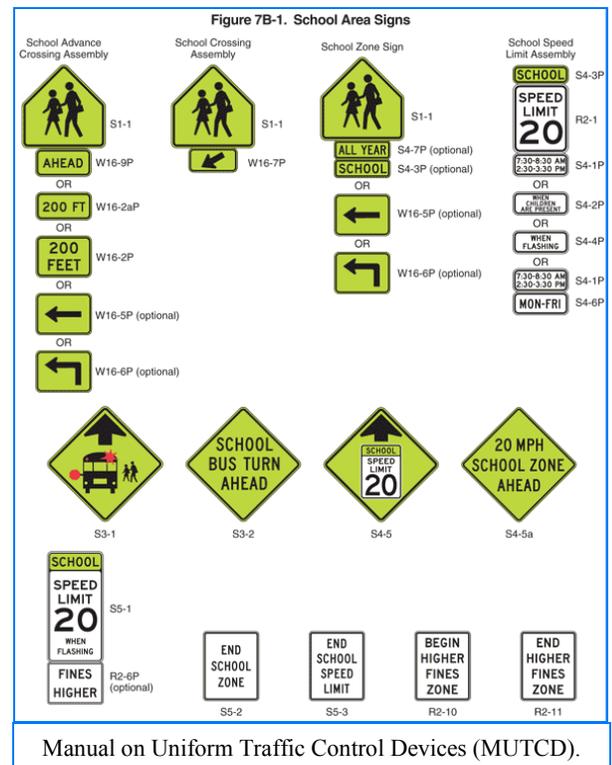


RECOMMENDATIONS

- Implement annual inspection and repair of all physical activity infrastructure.
- Keep walkways and bikeways separate from the street (buffer with grass, trees or even a bike lane).
- Provide a sidewalk on both sides of the street to prevent jumping from one side to the other.
- Ensure sidewalks are the appropriate width for the site conditions (sidewalks adjacent to street should be wider).
- Provide ramps and curb cuts at all intersections for all sidewalks.
- Mark ALL crosswalks in the community:
 - Use “zebra stripe pattern” as opposed to simple striped lines across the road.
 - Provide “shark teeth” paint markings to show where cars should stop for crosswalks, particularly on multi-lane roads.
 - While crosswalk flashers may seem to be an area to focus on, be aware that studies show they only make a three mile reduction in speed when these devices are installed. Putting up signs to remind drivers that it is the law to give pedestrians the right of way and fines exist for disobeying the law can also be effective.
- Review the Manual on Uniform Traffic Control Devices (MUTCD) to ensure signage is current. See figure 7B-1 below or visit www.mutcd.fhwa.dot.gov/hm/2009/part7/part7_toc.htm.
- Post traffic control signs on each I-WALK route with the fine listed for violating the law. Ticket violators in the first few days of posting to ensure signage is taken seriously.
- Publish walking maps for each neighborhood that includes:
 - Community amenities and services such as schools, libraries, playgrounds, city offices, etc.
 - Unique vegetation and bird species
 - Distances
 - Walking times to destinations
 - Safest routes, crossings, etc.

General Recommendations for School:

- Move bike racks away from the bus/parent pickup points to avoid congestion.
- Provide bike racks that allow the frame of the bike to be attached to the bike rack, not just the wheels.
- In instances where people turn at the same time the crosswalk light is green, consider using a “leading pedestrian interval” instead of a concurrent signal.
- Use methods to slow traffic around the school:
 - Speed bump
 - “Street diet” (go from four lanes to two)
 - Extend curb into road (also creates a shorter distance for the student to cross)
- Limit vehicular traffic in the school vicinity, especially during the times immediately before and after school.
- Do not spend an excessive amount of time and money making the drop off/pickup more convenient. It needs to be safe, but if made easy, however, it is more likely that kids will be dropped off and picked up by a vehicle as opposed to walking/bicycling.
- Require high school drivers to take a driver awareness short course on pedestrian and bicycle safety in order to be able to have a parking permit at school. Provide a reward such as a special parking sticker.

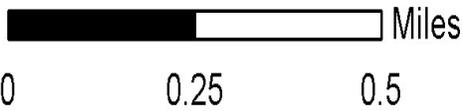
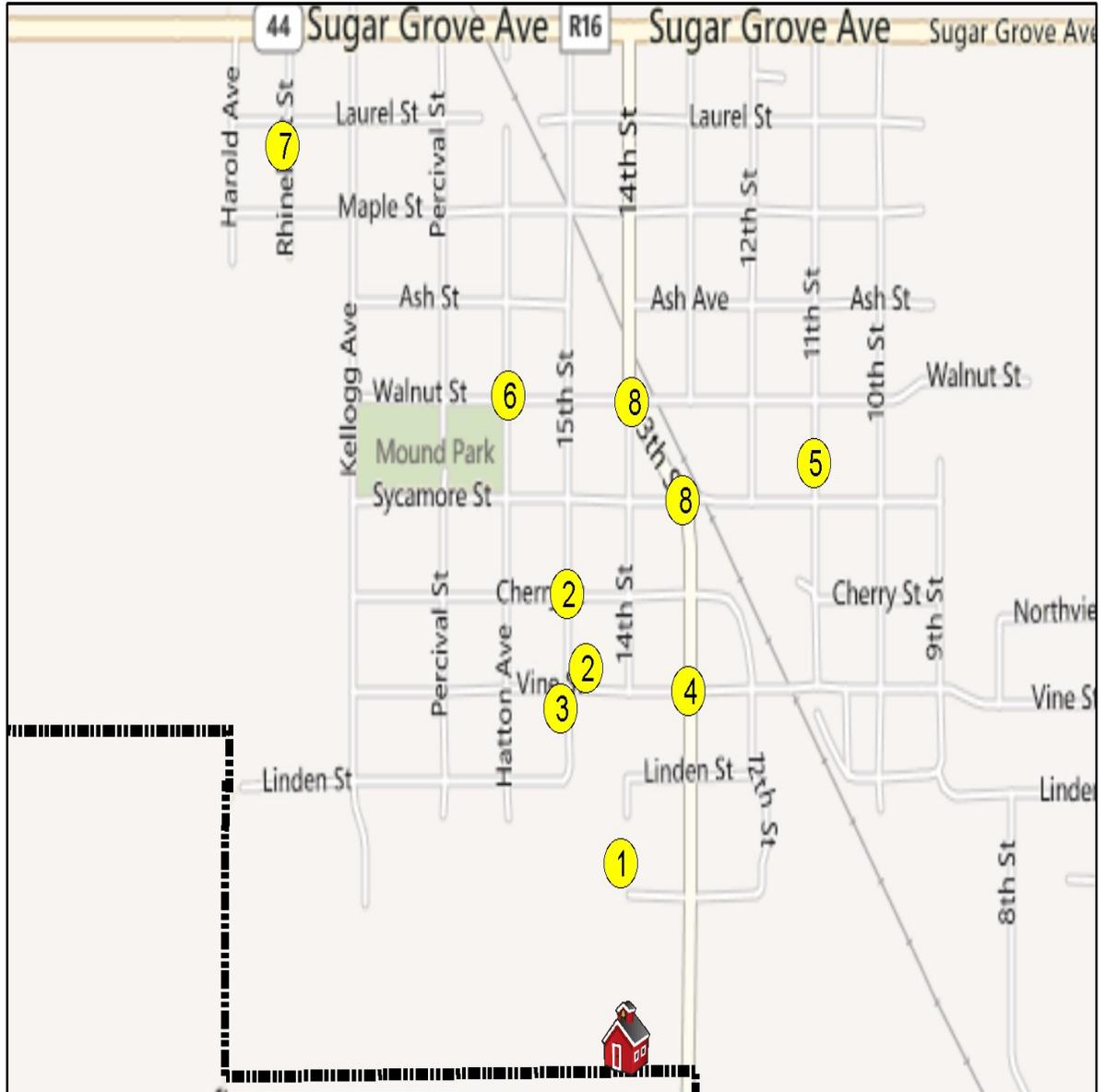


Specific Recommendations for Dallas Center

The teacher tally (grades 3 – 5) conducted in Dallas Center in April indicated that over half of the students walk from the school or the community bus stop to home. This number is encouraging as it indicates that this behavior is already part of the transportation routine. However, there is still room for improvement. The parent/child survey identified that the top four concerns regarding walking and biking to school were the amount and speed of traffic along the student's routes, missing sidewalks or pathways and intersection & crossing safety. Over 70% of the respondents said that if improvements were made to these issues that they would let their child walk to school. Additionally, having adults to walk or bike with was identified as an issue that would increase the number of students walking to school. Following are several challenges identified in the survey and field assessment could be improved or implemented.

1. Implement a Walking School Bus Program that includes two or three routes. Take advantage of the sidewalk between the middle school and elementary and link routes to utilize the converted railroad trail. Vine St. was identified as a popular route students currently use as well as Kellogg Ave.
2. Increase enforcement of vehicular speed and driver behavior around the intersections of Cherry St. and 15th St. and at the intersection of Vine St. and 15th St.
3. The parent/child survey identified that it is difficult to cross the street at Vine St. and 15th St. Consider posting a school crossing guard here.
4. The intersection of Vine St. and 13th St. appears to be a primary intersection for students walking from homes located east of 13th street. A crossing guard, school crossing lights, rollout 4-way stop sign and painted crosswalks would all be beneficial steps to take at this intersection.
5. Add sidewalks in this neighborhood.
6. Add sidewalks in this neighborhood.
7. Add sidewalks in this neighborhood.
8. The intersection of Walnut and 13/14th St. can be difficult for younger students to navigate as 5 roads meet together. Ideally, this location should be avoided when developing primary walking routes, however because of the direct connection to the bike trail this and the Sycamore St. intersection will need a more detailed evaluation to identify strategies for improving the safety. At the very least, visible crosswalks should be painted.





Map By:
Iowa State University Extension & Outreach
Extension Community Economic Development
Contact: Prof. Chris Seeger
May 2012

Legend



School



City Limit



A

Additional Resources

The I-WALK website offers many useful resources to those looking for more information:

- [Webinars](#)
Infrastructure
Iowa Safe Routes to School Workshops
Iowa Department of Natural Resources
Iowa Department of Transportation
...and many more
- [Walking with a Purpose](#)
This resource will help your school conduct a walkability assessment of its neighborhood. The checklist will help assess what makes the walking environment inviting and safe, as well as identify barriers that exist. After the assessment, school staff can help students become advocates for a more walkable community.
- [Teacher Tally](#)
This is the tally that is administered by each 3rd-5th grade classroom teacher over three consecutive days. Ideally, this would be done in October to coincide with National Walk to School Day.
- [Teacher Tally Collection Recorder](#)
To ensure we gather as much data as possible, it may be helpful to keep a record of the teachers that the tallies were sent to in order to track who returned completed tallies. This template will help determine the percentage of students who participated.
- [Healthy Community Design Checklist](#)
The Healthy Community Design Initiative's (HCDI) Healthy Community Design Checklist is a plain-language checklist for community members with little or no knowledge of the public health and built environment connection. It includes healthy community design elements that should be considered while participating in a land-use planning process.
- [Alliance for Biking and Walking: Bicycling and Walking in the United States: 2012 Benchmarking Report](#)
In the new report, the Alliance for Biking & Walking ranks all 50 states and the 51 largest U.S. cities on bicycling and walking levels, safety, funding and other factors. The report is funded by CDC's Healthy Community Design Initiative.
- [Federal Highway Administration: Livability Fact Sheets](#)
The fact sheets provide information and examples on how considering livability during the transportation decision-making process can benefit communities. The fact sheet topics include health, housing costs, freight, land use, safety, management and operations, rural communities and the environment.
- [Complimentary Copies Of The 2012 Minnesota Bike Guide Are Available Now](#)
To encourage more to become, or stay active this year's guide has expanded its pages offering information to more than 200 bike related events, many bike-friendly maps of places we all like to ride and helpful tips. Printed courtesy of our many wonderful sponsors, guides come in bundles of 25 and are available.
- [School Walk and Bike Routes: A Guide for Planning and Improving Walk and Bike to School Options for Students](#)
The State of Washington developed this guide with the support of the Committee on School Walk Routes comprised of representatives from local, county, and state agencies committed to student pedestrian safety. It is their sincere hope that this guidebook will prove a useful tool for communities throughout the state.

To access these resources and others, visit www.i-walk.org and click on "Resources".





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