

West Middle School Walking and Biking Audit



September 28, 2016

West Middle School Audit for Walking and Biking

September 28th, 2016

Team Members:

Robert Barker, Safety and Security Officer, School District 51

Jessica Carlson, Safe Routes to School, Mesa County

Stacy Feather, Parent Volunteer

Jennifer Fox-Colwell, Safe Routes to School, Mesa County

Callie Fronczak, Safe Routes to School, Mesa County

Cody Martin, Transportation Engineering Assistant, City of Grand Junction

Terri Wenzlaff, Safe Routes to School, Mesa County

Discussion:

The West Middle School walking and biking audit occurred on Wednesday, September 28th, for the morning arrival to school.

This was a fairly typical morning, according to the school officials who were present. Both Principal Vernon Walker and the Assistant Principal Tracy Gallegos participated in the audit.

The audit team observed:

- The pick-up and drop-off zone north of the school
- The bus zone
- Walkers and bikers all around the school
- The bike racks
- N. 1st St. and Orchard Ave.
- The entrance/exit from the south parking lot on N. 1st St.
- The 2 entrance/exits from the south parking lot on W. Mesa Ave.
- The intersection of N. 1st St. and Patterson



Figure 1: Bike rack in unlit area that students are encouraged to use, because it is considered more secure

The parent volunteer, who was not able to attend the morning audit, observed the afternoon student foot and bike traffic at the intersection of N. 1st St. and Patterson, located 0.6 mile to the north of the school, where students must cross to go home to the Northridge neighborhood.

West Middle School has about 377 students, 37% of whom qualify for Free or Reduced Lunch. On this day, the team observed the arrival of five scooters and one skateboard (both of which get stored inside for security), five bikes, and only one bike helmet. Eleven bikes were parked at the rack closest to the school entrances. The rack near the basketball courts, which is partially lit, was empty. The 87 bike rack spots meet the standard quantity of one spot per five students. There were 71 empty spots on this day.

However, the racks do not meet standards in terms of security. First, they are not visible from the main school building, and bike thefts have led the administration to encourage kids to lock their bikes at the rack closest to the school. Second, the rack is only partially lit. The presence or lack of lighting is significant because arrival at school may occur in the dark for several months of the year.

While the school does not have a formal Traffic Safety Team, administrators and members of the school community have identified hindrances to the growth of healthy transportation. Primarily, the principal and assistant principal have been concerned about crossing N. 1st St. and Orchard Avenue. A parent hit a student with a car this fall - breaking his leg; this was not the first collision involving a student, and the cause was not a surprise to the principals. West's commute-time safety challenge is seasonal and yet perennial; for several months in the fall, and again in the spring, the rising sun blinds drivers as they leave the drop-off cul de sac north of the school and head east. After the recent collision, the City of Grand Junction adjusted the timing on the east-west pedestrian signals so walkers and bikers now have a lead time of five seconds before cars have a green light.



Figure 2: Drivers drop-off students in lot south of school, in the bus zone. Note that the cars on the right side are facing west, against traffic, as shown by the Stop sign behind them

During the audit, a police officer stopped a car in the school zone. The school zone speed limit is 25 mph on N. 1st St., and 20 mph on Orchard Avenue. The school zone extends one block north of the school, one block south of the school, and a little over a block east of the school on Orchard Ave.

Pick-up and drop-off is on the north side of the school, on W. Orchard Ave. The bus zone is south of the school, at the north end of the parking lot. The bus zone serves as an alternate drop-off and pick-up zone. Bikes are parked near the bus zone, in the parking lot on the south side of the school. In both areas, there are signs promoting a “No Idle Zone” to limit the air pollution from cars dropping off and picking up.

This area south of the school sees a lot of traffic. Pedestrians arrive on foot and others walk from vehicles parked in the parking lot. Buses arrive from 1st St., pull into the zone and exit onto W. Mesa Ave. within ten minutes. Vehicles dropping off students pull in behind the buses or park. Pedestrians cross the line of buses and vehicles while they walk in the parking lot in the dark for morning arrival.

The safety of walkers and bikers could be improved by changes to the parking lot south of West Middle School. Traffic flow in the parking lot south of the school is not clear. This is due to worn signs, faded parking lot paint, parked cars facing the wrong way on a two-way entrance/exit, and to drivers ignoring the signs. During this audit, one driver went in what others were using as the exit, and caused confusion and congestion. This confusion endangers students who are on foot or bike as they make their way through the parking lot. Additionally, buses were seen to leave space between them, allowing pedestrians to pass through the line of buses without being seen by adjacent traffic.

Given the well-known incident this past fall, in which a student was injured crossing at 1st and Orchard by a driver blinded by the morning sun, West's current challenge is to diminish the risk to pedestrians and cyclists and appropriately reassure parents that their children are safe walking and biking to West. The primary locations of concern that were identified in this audit include the intersection at 1st and Orchard, the parking lot south of the school, and the pick-up/drop-off zone north of the school, as it is the source of cars heading into the blinding sun. A comprehensive review of the school's arrival and departure process might yield a plan that increased the safety and convenience for all. One possibility might be to make the W. Orchard Ave. into the bus zone and to make the south parking lot the official pick-up and drop-off zone, and to unify the flow of traffic through the south parking lot. Another plan that is used successfully by some schools is to divide pick-up and drop-off locations by grade, as is done at Bookcliff Middle School.



Figure 3: Looking north on 1st St.

Observations/Comments:

The following observations and comments regarding the afternoon pick-up and departure were made by members of the audit team and members of the school community.

Walking and biking:

General

- Teacher and administrator presence helpful in Drop-off/Pick-up Zone and at this intersection.

- No bike lanes in the area right around the school, so kids ride bikes on sidewalks.
- The only designated bike lane starts north of the school by one block on N. 1st St. There are also traffic calming measures in this section, in the form of speed bumps, there are signed crosswalks (at Lilac and Wellington) and a median strip.
- Sidewalks surrounding the school are not continuous.
- Some of the sidewalks in the immediate vicinity of the school need tactile warning strips and curb ramps to be ADA compliant.

Bike racks

- More than the standard 1 bike space per 5 students exists; there were 11 bikes present in rack at the north end of the parking lot this morning and 71 empty spots total.
- Not lit, though rack near basketball courts on the south side of the school benefits from some light from the courts.
- Neither bike rack is sufficiently visible from school buildings; and bikes have been stolen, so staff encourage students to park their bikes at the rack closest to the school building.

Crosswalks

- Consider north-south marked crosswalk installation at 1st and Mesa on west side of intersection.
- Suggest crosswalk and children crossing warning signs at entrance to parking lot on west side of N. 1st St., north of W. Mesa Ave.

W. Mesa Ave.

- Students walked in the street to get around a trash container that was on the sidewalk down the street. (This was the weekly trash



Figure 4: Signs at the NE entrance to the informal pick-up/drop-off just behind the bus zone, in the south parking lot. Note the “No Idle Zone.”

pick-up day.)

- Because there is gravel berm next to the sidewalks, there is gravel on the sidewalks.
- Sidewalk turns into gravel beyond school property.

Bus Loading Zone/Informal Pick-up & Drop-off Zone/Parking Lot on south side of school:

- General:
 - There are few pedestrian and vehicular signs to help with traffic separation.
 - Some cars went in the wrong way, which caused traffic to stop in the wrong places. This was also an issue when bikers were trying to enter the parking lot.
- Walking and biking:
 - Kids cross bus zone/alternate pick-up drop-off zone when riding their bikes to or from the school, or after being dropped off in the parking lot.
 - Parking lot is not lit, though basketball courts have lights.
- Buses:
 - Bus drivers leave too much space between buses, so people walk in-between the buses and into the parking lot, where cars are passing to park or drive away after dropping off their students behind the bus line.
 - Buses do not leave in a line; they pull out individually.
- Cars:
 - Entrance/exit to parking lot on N. 1st. St (on northeast corner of this lot) is currently two-way (shown by Stop sign) but cars all are parked facing west on the south side of this ingress, which makes it look like a one-way.
 - “Do Not Enter” signs, and arrows would help unify the traffic flow direction and cut down on confusion.

Pick-up/Drop-off - north of school on W. Orchard Avenue:

- There is one street light, and there are lights on the school building.
- Cars drive too fast.
- Seven to 9 cars park on the north side of W. Orchard, narrowing the road for parents dropping their kids off on the south side.
- Cars swing out of line after dropping off.
- Traffic gets a little backed up in cul de sac when the kids are getting out.
- Pick-up parents in afternoon arrive early and park, so traffic backs up.
- W. Orchard Ave. is congested during pick-up and drop off.

Intersection and Traffic Control:

- School Zone
 - Posted school zone speed limits of 20 mph on Orchard Ave and 25 mph on N. 1st St.
 - Flashing beacons well-placed for visibility.
- N. 1st St. and Orchard Ave.
 - Short crossing signal period at 1st and Orchard. Students run across while cars are trying to turn onto N. 1st St. from Orchard Ave.
 - Sun coming up in the morning blinds drivers coming away from parent drop-off heading east. There have been incidents with kids in the crosswalk.
 - All kids used crosswalks.
 - There are marked crosswalks.
- N. 1st St. and Patterson, 0.6 mile north of school
 - This intersection lies between the school and the Northridge neighborhood, the home of many West students. This neighborhood potentially has many walkers and cyclists.
 - Traffic on Patterson is heavy and fast.
 - Turning vehicles present a danger to pedestrians.
 - More students cross Patterson on the west side of the intersection, and cross N. 1st St. on the north side.
 - Sixteen kids used this intersection on the afternoon of September 28, 2016: 12 on foot, 2 on bike, 2 on scooter. No helmets were seen.
- N. 5th St. and Orchard Ave. 4-way stop
 - Peak traffic from Grand Junction High School commuters coincides with West Middle School's, and cars from both schools use this 4-way stop.
 - Cars do not all stop despite the stop signs.
 - Many of the drivers are high school students.
- East of N. 1st St.
 - There are no marked crosswalks between the N. 1st St. and Orchard Avenue intersection and the 4-way stop at N. 5th St. and Orchard Ave.
- W. Mesa Ave. (south of the school property)
 - Drivers were good about stopping at the stop sign on W. Mesa Ave. at N. 1st St. to wait for kids to cross.
 - Spillover of traffic waiting to drop off kids in the unofficial drop-off zone south of the school: Traffic backs up some on the Spruce Ct. cul-de-sac on the south side of W. Mesa Ave, impacting neighborhood for a short time each morning.

Suggested Solutions:

Location of Interest	Obstacle/Problem	Proposed Solutions	Responsible Parties
General	Information sharing of available resources (Safe Routes to school maps and WebApp); promotional ideas about getting kids to walk and bike to school.	Link on school website with pertinent information including SRTS maps.	School administration, SRTS personnel, parent involvement groups, school safety teams
General	Sun blinds many cars when drop-off zone is on W. Orchard Ave. South parking lot is confusing and thus less safe for drivers, pedestrians, and cyclists.	Consider undertaking a comprehensive review of arrival and departure process with an eye to making West MS more walkable and bikeable.	School administration
General	Students who walk and wheel to school do not use helmets.	Promote the acquisition and use of helmets.	School Administration, PE teacher, Health Assistant
Bike racks	Poor lighting makes it hard to park and lock bikes in the many months of the year when students' arrival is in the dark.	Improve lighting at bike racks or relocate.	School administration; District 51
Bike racks	Bikes have been stolen from south bike rack, and security of bikes is a concern.	Consider moving the bike racks to the area between the two school buildings, where East Middle School has theirs.	School administration
Pick-up/drop-off loop north of school	Travel way is narrowed because 7-9 cars park on the north side of W. Orchard Ave. while parents drop their kids off on south side. Parents swing out of line and the road isn't wide enough for 4 cars abreast.	Encourage walking and biking to school. Consider changing north side of W. Orchard Ave. to No Parking zone during pick-up & drop-off hours. Consider changing pick-up/drop-off area.	School administration; PE teacher
Pick-up/drop-off loop north of school	Cars drive very fast.	Educate parents and students.	School administration
Bus zone	Parked buses have space between them so people walk in between the buses, compromising their visibility and their view of traffic.	Remind bus drivers of protocol.	School administration, District 51

Parking lot south of school	Confusion from unclear flow of traffic causes dangerous situation for pedestrians and cyclists in parking lot, and congestion on city streets. Such congestion causes air pollution.	Consider changing to one-way flow: Use a two-lane ingress on N. 1st St. at northeast end of parking lot; make both lanes of parking lot egress onto W. Mesa Ave. Repaint and repair/replace arrows and signs. Use Do Not Enter signs to unify the flow of traffic.	School administration; District 51
Parking lot south of school	Kids cross bus zone/alternate pick-up drop-off zone when walking or riding their bikes to or from the school, or when coming from a car that is parked in the parking lot.	Determine a safe route from the parking lot or from sidewalks to the south side of the school. Teach kids to use the school parking lot's sidewalks and not to cross the line of vehicles.	School administration
N. 1st St. and Orchard Ave.	Blinding sun endangers walkers and bikers, and short crossing signal period at east-west 1st and Orchard crossing. Students run across while cars are trying to turn onto N. 1st St.	Increase the lead time and total crossing time for the east-west pedestrian crossing at 1st and Orchard. (3.5 feet per second is used as walking speed standard for timing for pedestrian light.)	City of Grand Junction - RESOLVED
N. 5th St. and Orchard Ave. 4-way stop	Peak commute times for Grand Junction HS and West MS coincide, and hurried drivers rush through the 4-way stop, at times not even stopping.	Conduct a traffic study to determine if marking crosswalks and installing pedestrian crossing signs would improve safety. Enforce traffic laws.	City of Grand Junction; Grand Junction Police
W. Mesa Ave.	Sidewalk turns into gravel west of school, and so sidewalks don't connect.	Complete sidewalks around school.	City of Grand Junction
N. 1st St. and Patterson (north of school by 0.6 miles)	Turning vehicles present a danger to pedestrians.	Conduct a traffic study to determine if initiating a lead time for the pedestrian signal would improve safety.	City of Grand Junction
N. 1st St. & W. Mesa Ave. AND entrance of parking lot on N. 1st St.	Students walk on N. 1st to and from school on west side of N. 1st St.	Consider installation of crosswalks and appropriate signage.	City of Grand Junction
General	Curb cuts, tactile ramps	Update as needed to meet ADA	School District 51; City of Grand Junction

Best Practices:

- “Children Breathing - No Idle Zone” = Engines off sign (e.g. West MS photos)
- Pick-up/Drop-off areas by grade (e.g. Bookcliff MS, Pear Park ES). This may create a safer situation for walkers and bikers.
- Crossing guard gathers kids by school for crossing busy street (e.g. Mesa View ES)
- Crossing guards have standard stop signs, and Class A, Level 2 vests.
- Crossing guards are well trained -- on site training available (e.g. Chipeta report for more on this). Crossing guards need to be paid to take the training.
- Take the time to teach parents how to go through pick-up/drop-off process correctly. (e.g. Bookcliff MS)
- Teach kids to wear helmets.
- Having staff and faculty outside the building at the beginning and the end of day. (e.g. West MS, Rocky Mountain ES)
- Clear and predictable flow of traffic through parking lots. (e.g. Bookcliff MS)
- The Health Assistant and PE teachers are active in promoting healthy transportation to and from school. (e.g. Mesa View ES)
- Hosting a bike rodeo and teaching the bike safety and skills unit in PE.
- Crossing guards shouldn't be teachers or other staff who can't get to their stations in time. (e.g. Tope ES, where the PTO pays crossing guards, and “specials” teachers also have duty)

Walk Route Maps

West Middle School Walk Route Map Summary

	1-Mile Radius ~ 459 street crossings		2-Mile Radius ~768 street crossings		3-Mile Radius ~932 street crossings	
	Length	Percent	Length	Percent	Length	Percent
Least Favored - 4	11.1	16%	27.2	21%	42.0	26%
Not Favored - 3	15.4	22%	26.7	21%	38.3	24%
Favored - 2	31.5	45%	52.9	42%	59.7	37%
Most Favored - 1	12.2	17%	19.7	16%	21.2	13%
	70.2	100%	126.5	100%	161.2	100%

Key to Walk Route Map Ratings:



GREEN

Most favored route. May have a detached sidewalk and/or a bike lane. May be a path that has no vehicle traffic. (A detached sidewalk is separated from the roadway, often by a strip of grass, dirt or rocks.)



BLUE

Has attached sidewalks that are wide enough for 2 people to walk side by side. (An attached sidewalk is right next to the roadway).



YELLOW

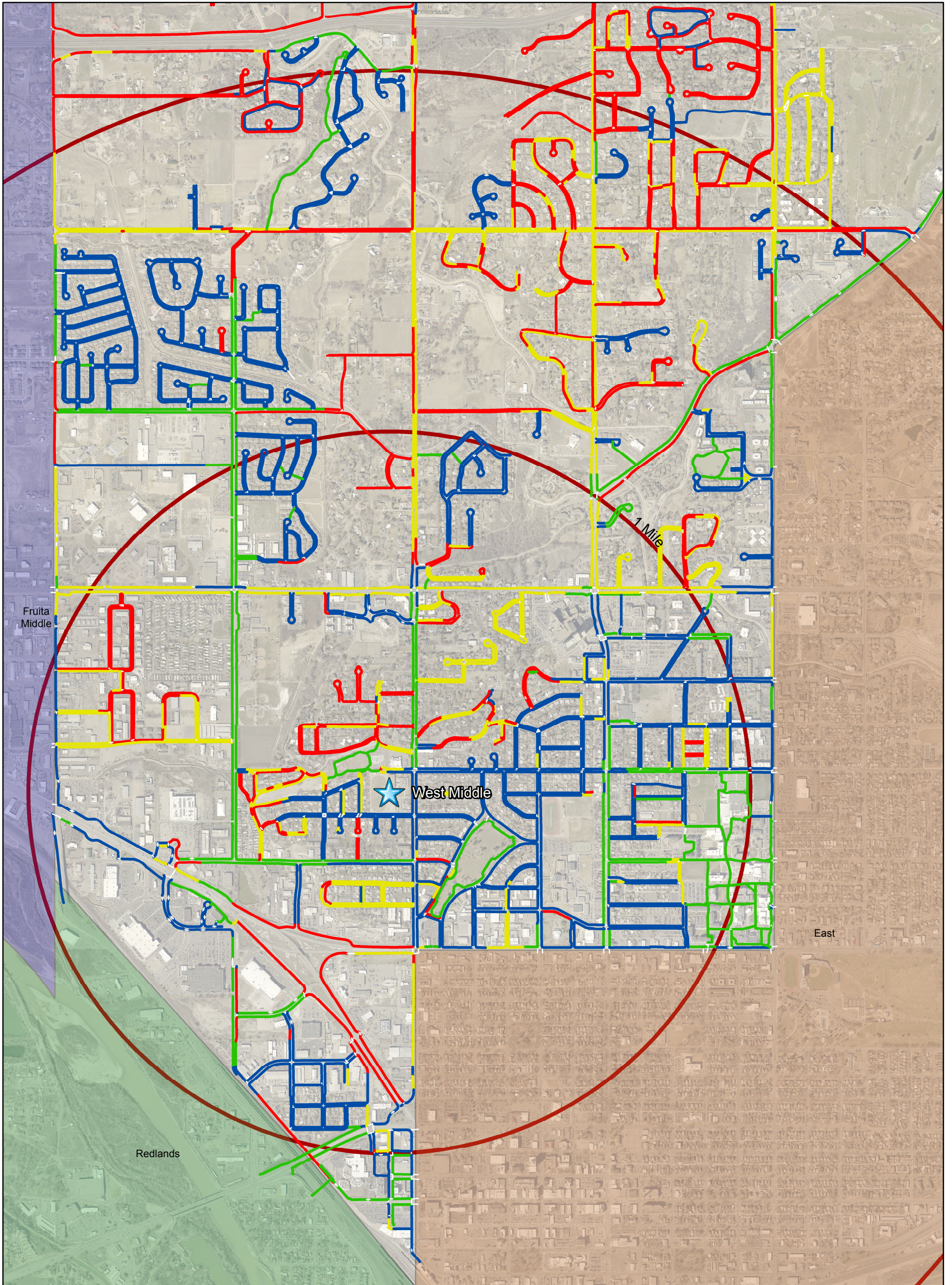
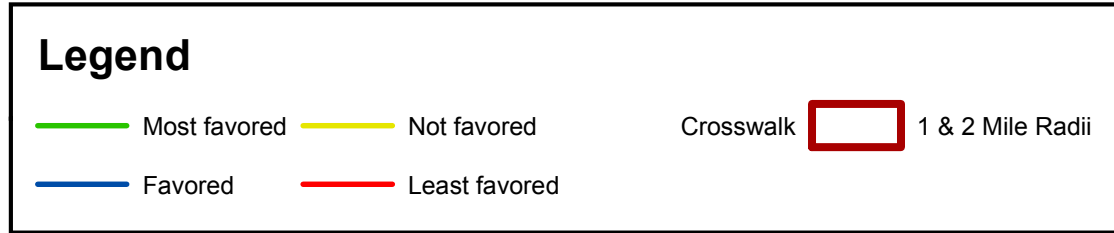
Has a place to walk or ride that may be a sidewalk, but could be a path or simply sufficient unpaved space on the side of the road.



RED

Least favored route. Pedestrians and bicyclists must use the vehicle lanes to walk or ride. (No sidewalk and little or no space beyond the white edge line on the side of the road.)

SRTS 2016 - West Middle Path Ratings within 1 & 2 Mile Radii



Classroom Tallies

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

School Name: West Middle School

Set ID: 22435

School Group: Mesa County Valley School District 51

Month and Year Collected: October 2016

School Enrollment: 0

Date Report Generated: 01/03/2017

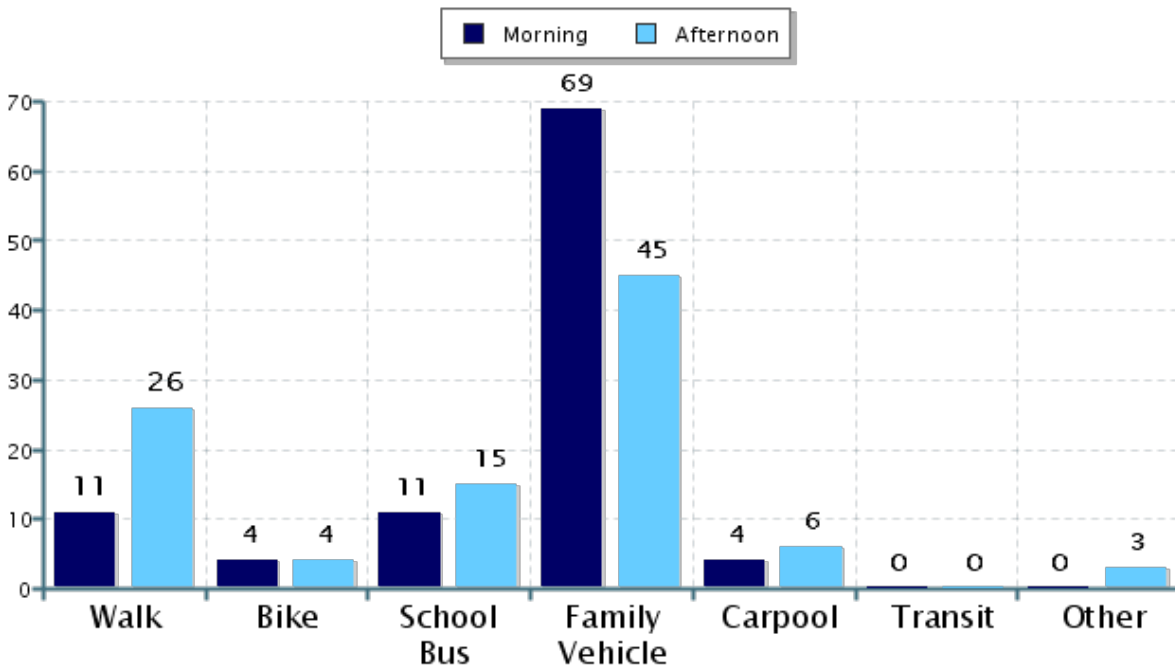
% of Students reached by SRTS activities:

Tags:

**Number of Classrooms
Included in Report:** 4

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



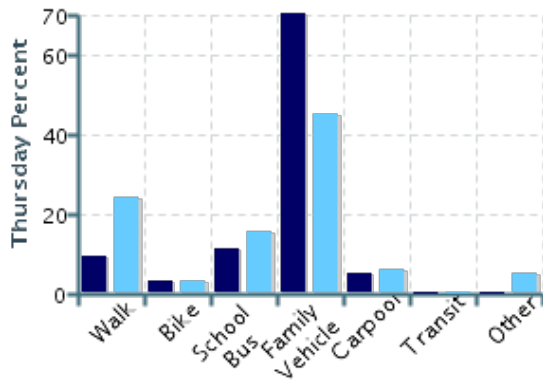
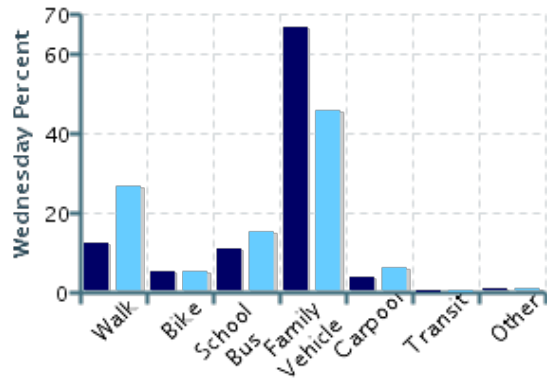
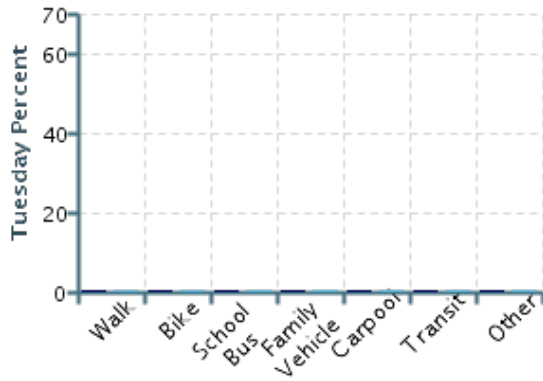
Morning and Afternoon Travel Mode Comparison

	Number of Trips	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Morning	226	11%	4%	11%	69%	4%	0%	0.4%
Afternoon	227	26%	4%	15%	45%	6%	0%	3%

Percentages may not total 100% due to rounding.

Morning and Afternoon Travel Mode Comparison by Day

■ Morning ■ Afternoon

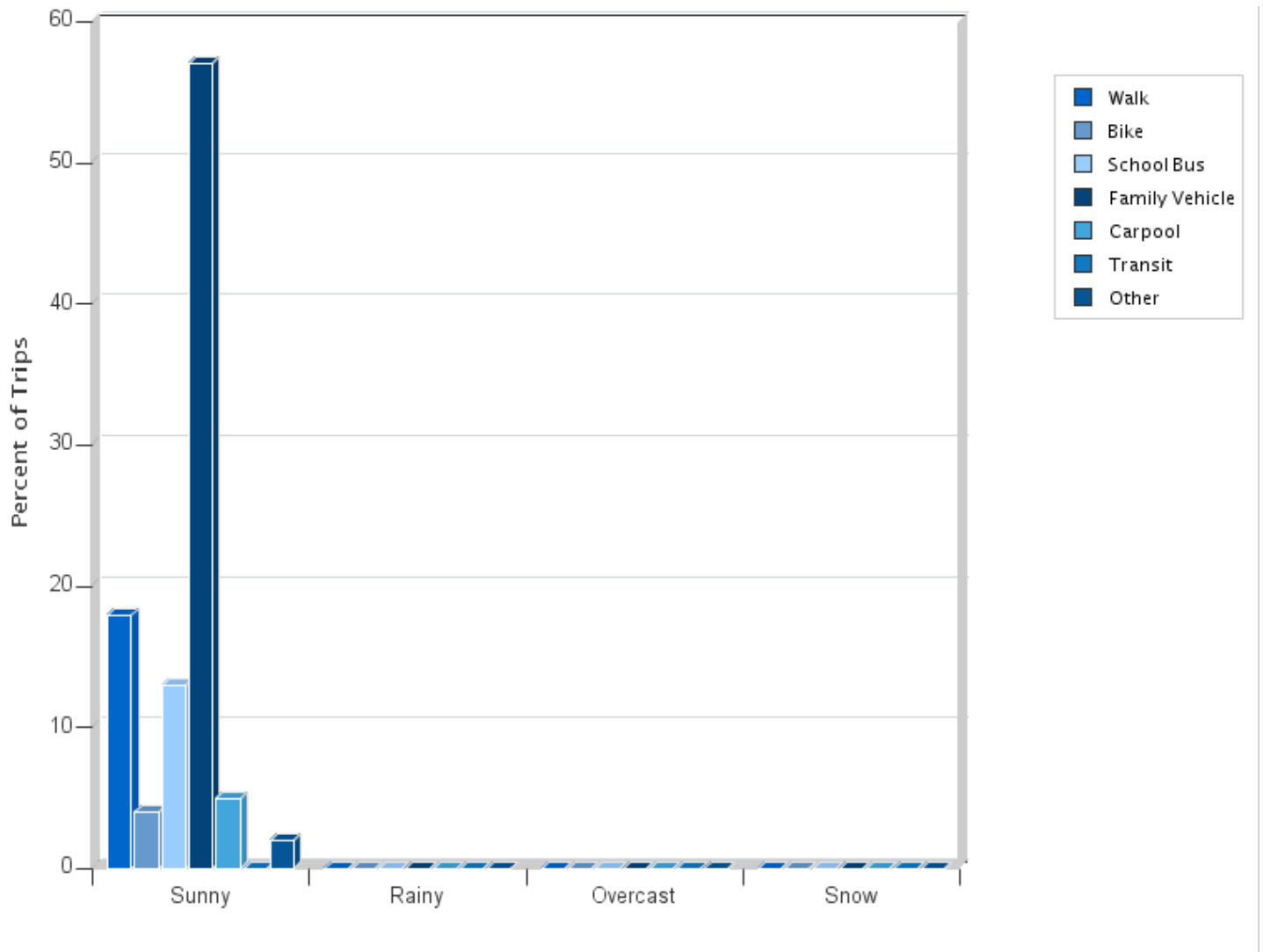


Morning and Afternoon Travel Mode Comparison by Day

	Number of Trips	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Tuesday AM		0%	0%	0%	0%	0%	0%	0%
Tuesday PM		0%	0%	0%	0%	0%	0%	0%
Wednesday AM	111	13%	5%	11%	67%	4%	0%	0.9%
Wednesday PM	112	27%	5%	15%	46%	6%	0%	0.9%
Thursday AM	115	10%	3%	11%	70%	5%	0%	0%
Thursday PM	115	24%	3%	16%	45%	6%	0%	5%

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	453	18%	4%	13%	57%	5%	0%	2%
Rainy	0	0%	0%	0%	0%	0%	0%	0%
Overcast	0	0%	0%	0%	0%	0%	0%	0%
Snow	0	0%	0%	0%	0%	0%	0%	0%

Percentages may not total 100% due to rounding.

Parent Surveys

Parent Survey Report: One School in One Data Collection Period

School Name: West Middle School

Set ID: 15791

School Group: Mesa County Valley School District 51

Month and Year Collected: October 2016

School Enrollment: 0

Date Report Generated: 12/30/2016

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

Tags:

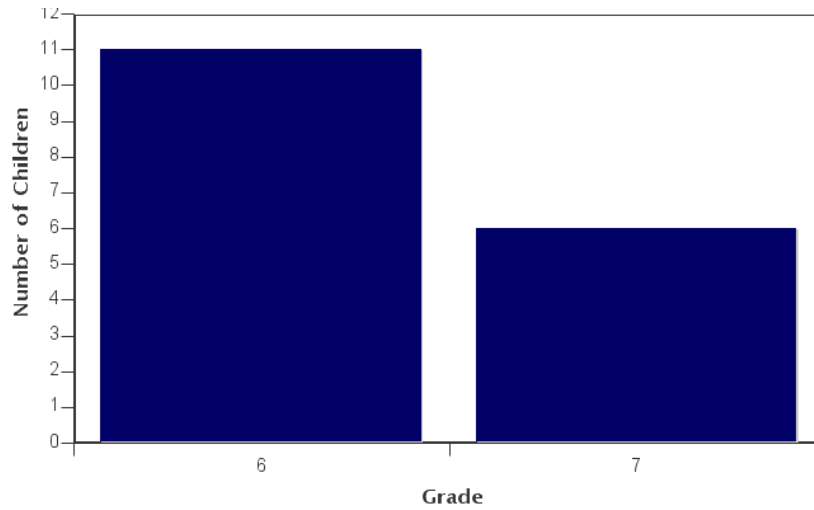
Number of Questionnaires Distributed: 0

**Number of Questionnaires
Analyzed for Report:** 17

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



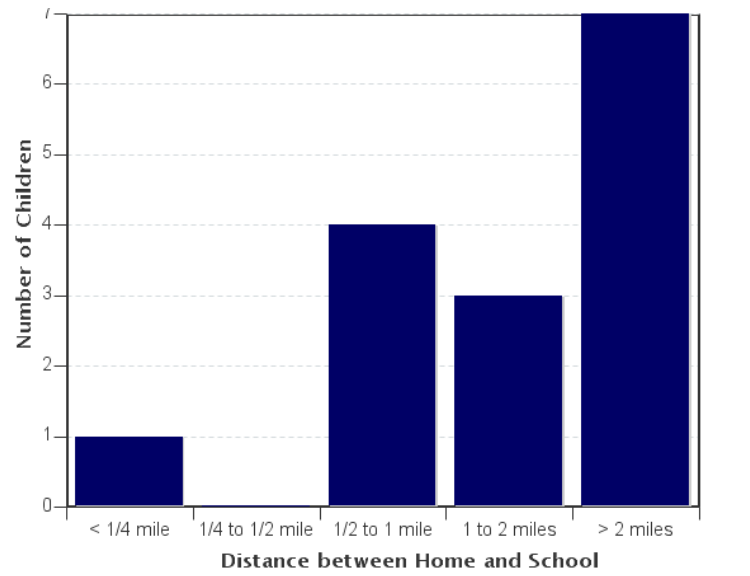
Grade levels of children represented in survey

Grade in School	Responses per grade
	Number
6	11
7	6

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



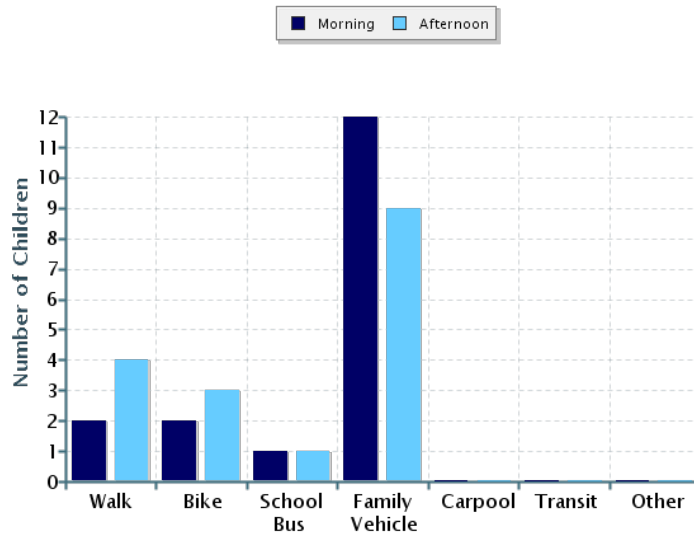
Parent estimate of distance from child's home to school

Distance between home and school	Number of children
Less than 1/4 mile	1
1/4 mile up to 1/2 mile	0
1/2 mile up to 1 mile	4
1 mile up to 2 miles	3
More than 2 miles	7

Don't know or No response: 2

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	17	2	2	1	12	0	0	0
Afternoon	17	4	3	1	9	0	0	0

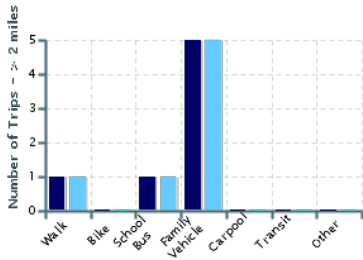
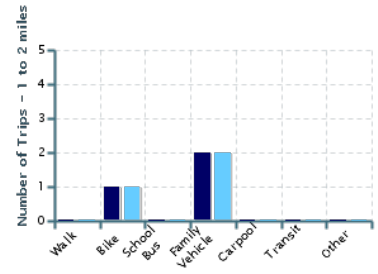
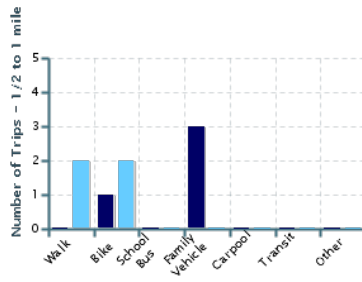
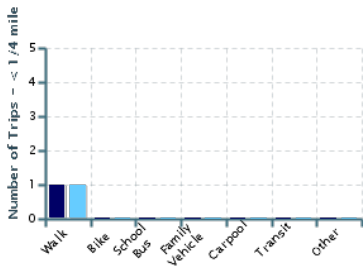
No Response Morning: 0

No Response Afternoon: 0

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

■ Morning ■ Afternoon



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

School Arrival

Distance	Number within Distance	Walk	Bike	School Bus	Family Vehicle	Carpool	Transit	Other
Less than 1/4 mile	1	1	0	0	0	0	0	0
1/4 mile up to 1/2 mile	0	0	0	0	0	0	0	0
1/2 mile up to 1 mile	4	0	1	0	3	0	0	0
1 mile up to 2 miles	3	0	1	0	2	0	0	0
More than 2 miles	7	1	0	1	5	0	0	0

Don't know or No response: 2

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	1	1	0	0	0	0	0	0
1/4 mile up to 1/2 mile	0	0	0	0	0	0	0	0
1/2 mile up to 1 mile	4	2	2	0	0	0	0	0
1 mile up to 2 miles	3	0	1	0	2	0	0	0
More than 2 miles	7	1	0	1	5	0	0	0

Don't know or No response: 2

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

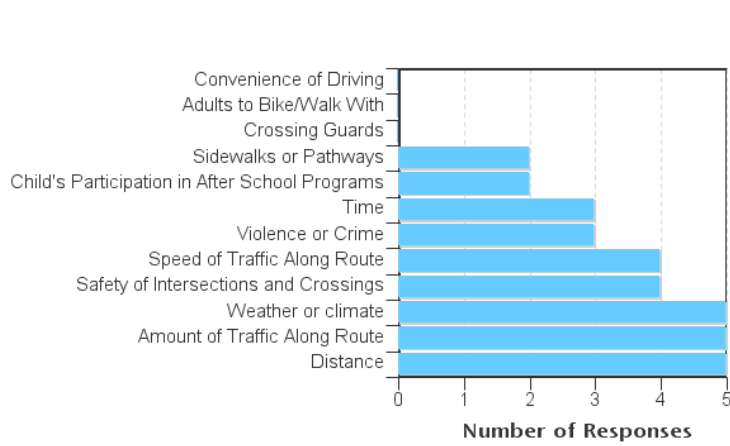
Number of children who have asked for permission to walk or bike to/from school by distance they live from school

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	8	1	0	4	2	1
No	7	0	0	0	1	6

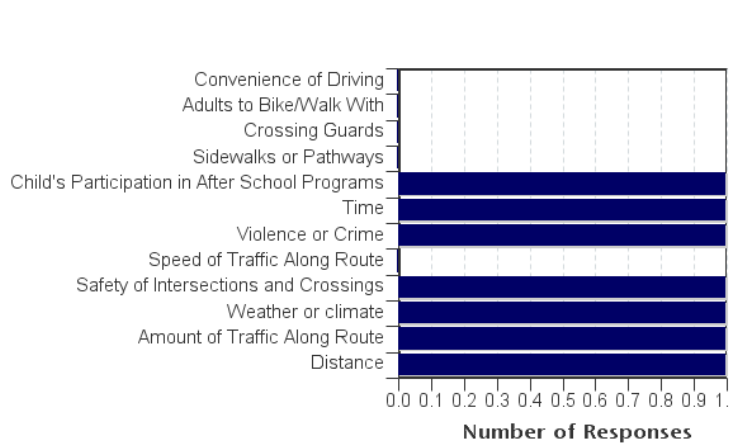
Don't know or No response: 2

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	5	1
Amount of Traffic Along Route	5	1
Weather or climate	5	1
Safety of Intersections and Crossings	4	1
Speed of Traffic Along Route	4	0
Violence or Crime	3	1
Time	3	1
Child's Participation in After School Programs	2	1
Sidewalks or Pathways	2	0
Crossing Guards	0	0
Adults to Bike/Walk With	0	0
Convenience of Driving	0	0
Number of Respondents per Category	7	1

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	1
Encourages	0
Neither	15
Discourages	0
Strongly Discourages	0

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

Level of fun	Number of children
Very Fun	1
Fun	5
Neutral	7
Boring	1
Very Boring	1

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

How healthy	Number of children
Very Healthy	6
Healthy	9
Neutral	2
Unhealthy	0
Very Unhealthy	0

Comments Section

SurveyID	Comment
1493347	We "school of choice" it is too far to bike
1493342	I would not feel comfortable at any grade: Not safe! No sidewalks or street lights! We live 2.9 miles out. But you have to be 3 miles out. Country rode is not safe. No sidewalks or street lights. Dark in the mornings during winter time.