

Regional Safe Routes to School Plan Phase II

Volume II – City of Barstow



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Prepared by KOA Corporation – In Collaboration with the San Bernardino County
Transportation Authority (SBCTA)
September 2017

City of Barstow

Phase II of the San Bernardino County Transportation Authority (SBCTA) Regional Safe Routes to School (SRTS) Plan is centrally focused on enabling alternative modality usage to and from school sites as well as enhancing the safety of local routes to school. For each of the selected schools, Phase II included student travel data collection, tabulation of specific network improvement recommendations, and formulation of cost estimates for the proposed improvements. Local agency involvement and integration within the SBCTA Regional SRTS Plan Phase II has established the nexus for forthcoming action to secure funding and implementation of identified recommendations.

Within the City of Barstow (a member agency of the SBCTA), project efforts saw the completion of three walk audits at the schools listed below. The selection of the target schools was a task that combined insights from the previously completed Regional SRTS Plan Phase I, as well as from City of Barstow engineering staff, SBCTA staff, the office of the Barstow Unified School District (BUSD) Superintendent, and the consulting team members whose facilitation unified the respective bodies for this task. The three completed walk audits were:

Montara Elementary School – May 17th, 2016

Crestline Elementary School – May 10th, 2016

Barstow High School – May 17th, 2016

Following the selection of the target schools, the outreach effort began with school-specific coordination. Each selected school received individualized attention to identify dates, times, and details pertaining to the scheduling of walk audits. This process was carried out between the school staff (principal, assistant principal, and support staff) and the consultant staff directly. The same personnel were involved in issuing notices about the walk audits to key outlets to generate the most participation during the events. Methods used to publicize the walk audits included: backpack express (hard copy flyers), email blasts, automated phone calls, social media outlet notification, and district website promotion.

The walk audits held at each school followed a proven methodology while retaining flexibility to ensure that data best incorporated input from the community members that were in attendance. The approach integrated school site field observations with feedback from parents who were momentarily available to participate (walking to school, waiting in cars, waiting in front of school, etc.). For a detailed walk audit methodology and procedures, please refer to the Regional SRTS Plan Phase II Volume I.

Montara Elementary School

Montara Elementary School is a Barstow Unified School District (BUSD) school located in a low-density residential area of Barstow, California. The school is situated along Montara Road between Forane Street and Aurora Way. The walk audit performed at Montara Elementary School was held in the afternoon, prior to the afternoon release bell ringing, from 1:30PM to 2:30PM on May 17th, 2016. Participants were recruited in the time leading up to the afternoon release bell as they waited for their students, totaling 44 participants. Observations extended into the surrounding neighborhood, along Montara Road, Aurora Way, and Sunset Court.

“Even though we live two blocks away, I walk with my daughter to school and will not allow her to walk by herself.”

“The amount of loose dogs and crime is concerning. Also my child’s decision-making ability regarding crossing streets and behavior around strangers prevents me from allowing her to walk to school.”

****All remarks received from walk audit participants at Montara Elementary ****



Montara Elementary School Survey and Tally Data



Number of Students Assessed in Tally	164
Number of Tallies	713
» Morning (To School)	364
» Afternoon (From School)	349

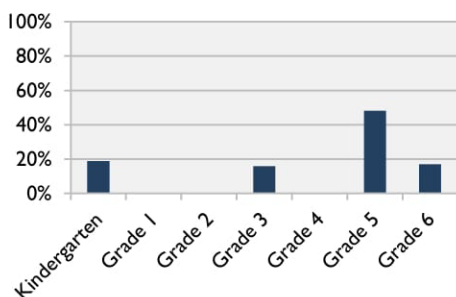
Number of Surveys Received	32
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Data source: KOA Corporation, processed by the National Center for Safe Routes to School. Data and figures accurate as of Spring 2016.

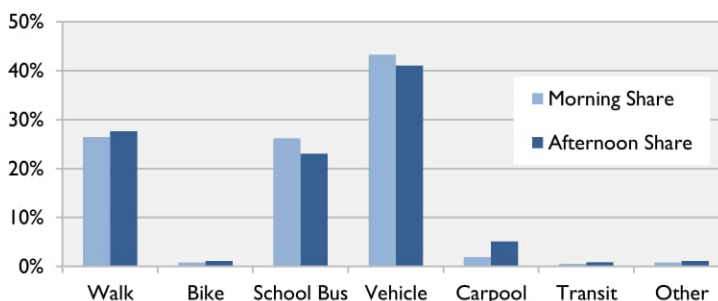
Tallies were conducted by teachers in six classes on a consecutive Tuesday, Wednesday, and Thursday, assessing students' trips both to and from school that day. The number of tallies is ideally six times the number of students. **Surveys** were printed on two-page forms and distributed to parents to take home.

Students who walk or bike to school	25.0%
Students who don't walk/bike but have asked parents for permission	+ 21.9%
Students who walk/bike or have asked parents for permission	46.9%
Student enrollment	x 659
Potential walking/biking student base	309

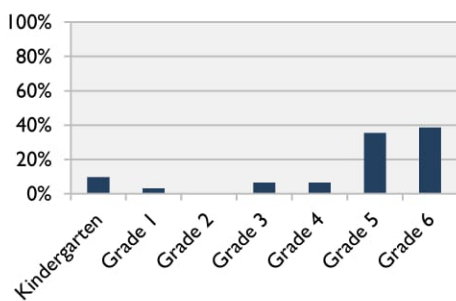
Grade Distribution of Tallies



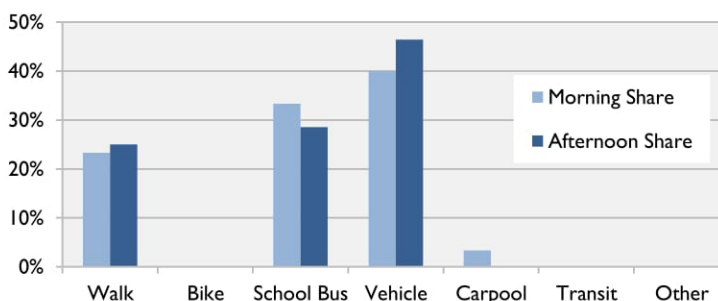
Travel Mode Distribution of Tallies



Grade Distribution of Surveys

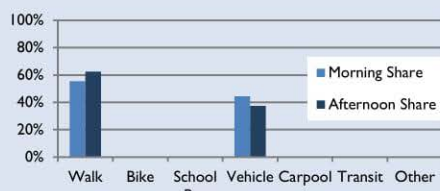


Travel Mode Distribution of Surveys



Students Living Less than ¼ Mile from School

30%
of survey responses

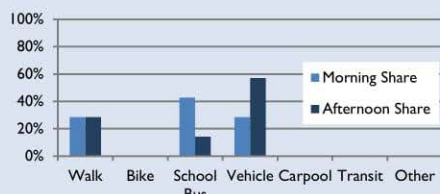


Top 5 Issues Affecting Likelihood to Walk/Bike:

Crossing Guards – 33%
Sidewalks or Pathways – 22%
Violence or Crime – 22%
Weather or Climate – 22%
Speed of Traffic Along Route – 11%

Students Living Between ¼ and ½ Mile from School

23%
of survey responses

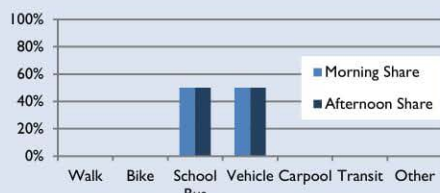


Top 5 Issues Affecting Likelihood to Walk/Bike:

Speed of Traffic Along Route – 43%
Safety of Intersections or Crossings – 43%
Violence or Crime – 43%
Distance – 29%
Amount of Traffic Along Route – 29%

Students Living Between ½ and 1 Mile from School

13%
of survey responses

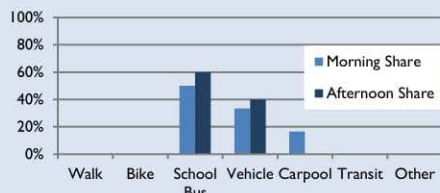


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 50%
Time – 50%
Amount of Traffic Along Route – 50%
Safety of Intersections or Crossings – 50%
Weather or Climate – 50%

Students Living Between 1 and 2 Miles from School

20%
of survey responses

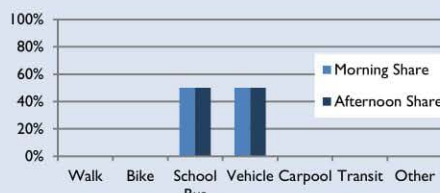


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 67%
Speed of Traffic Along Route – 67%
Sidewalks or Pathways – 67%
Weather or Climate – 67%
Amount of Traffic Along Route – 50%

Students Living Farther than 2 Miles from School

13%
of survey responses

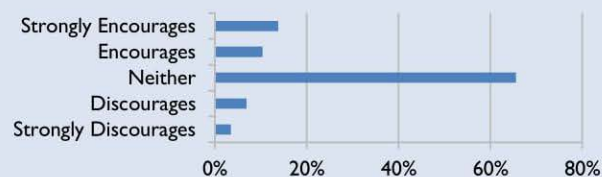


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 50%
Convenience of Driving – 50%
Time – 50%
Speed of Traffic Along Route – 50%
Sidewalks or Pathways – 50%

Parents' Perspectives

Whether School Encourages Walking/Biking



77%
consider walking/biking healthy or very healthy.

56%
would not feel comfortable having their child walk/bike at any age with current conditions.

MONTARA ELEMENTARY SCHOOL - Fact Sheet

OVERVIEW

General Information:



Jurisdiction - City of Barstow
School Enrollment - 659
Free or Reduced Lunch - 84.40%

Environmental Indicators:



Cal Enviro Score % Range - 81-85%
Cal Enviro Score (CES2.0*) - 43.38

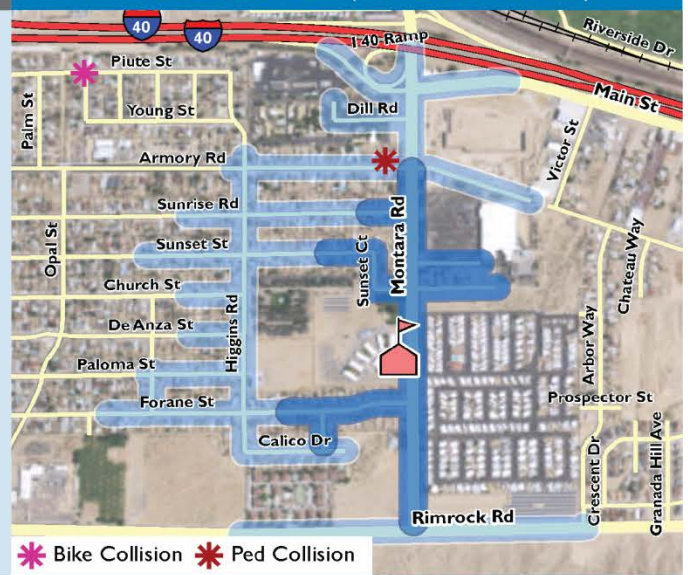
*CES2.0: Screening method that identifies communities that are disproportionately burdened by multiple sources of pollution.

Walk Audit Highlights

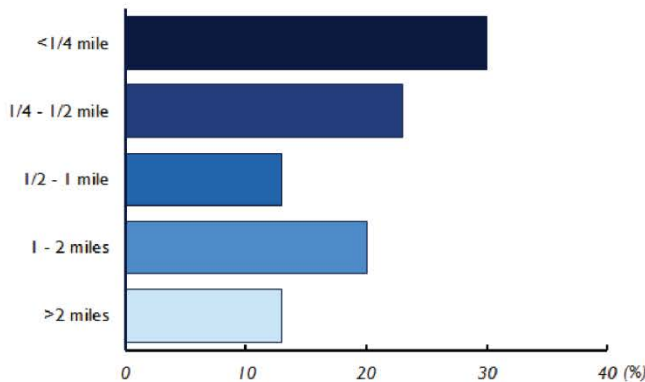


of Walk Audit Participants - 44
of Surveys Received - 32

WALKSHED (1/4 and 1/2 mile)

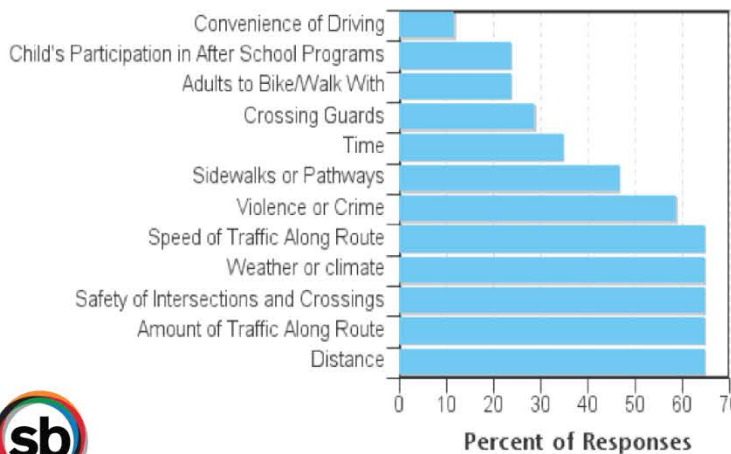


COMMUTE DISTANCE (%)



Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

REASONS FOR NOT WALKING/BIKING



Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

COLLISION ANALYSIS

Pedestrian Related Collisions



0 within 1/4 mile
1 within 1/2 mile
0 fatal within (1/2 mile)

Bicyclist Related Collisions



0 within 1/4 mile
0 within 1/2 mile
0 fatal within (1/2 mile)

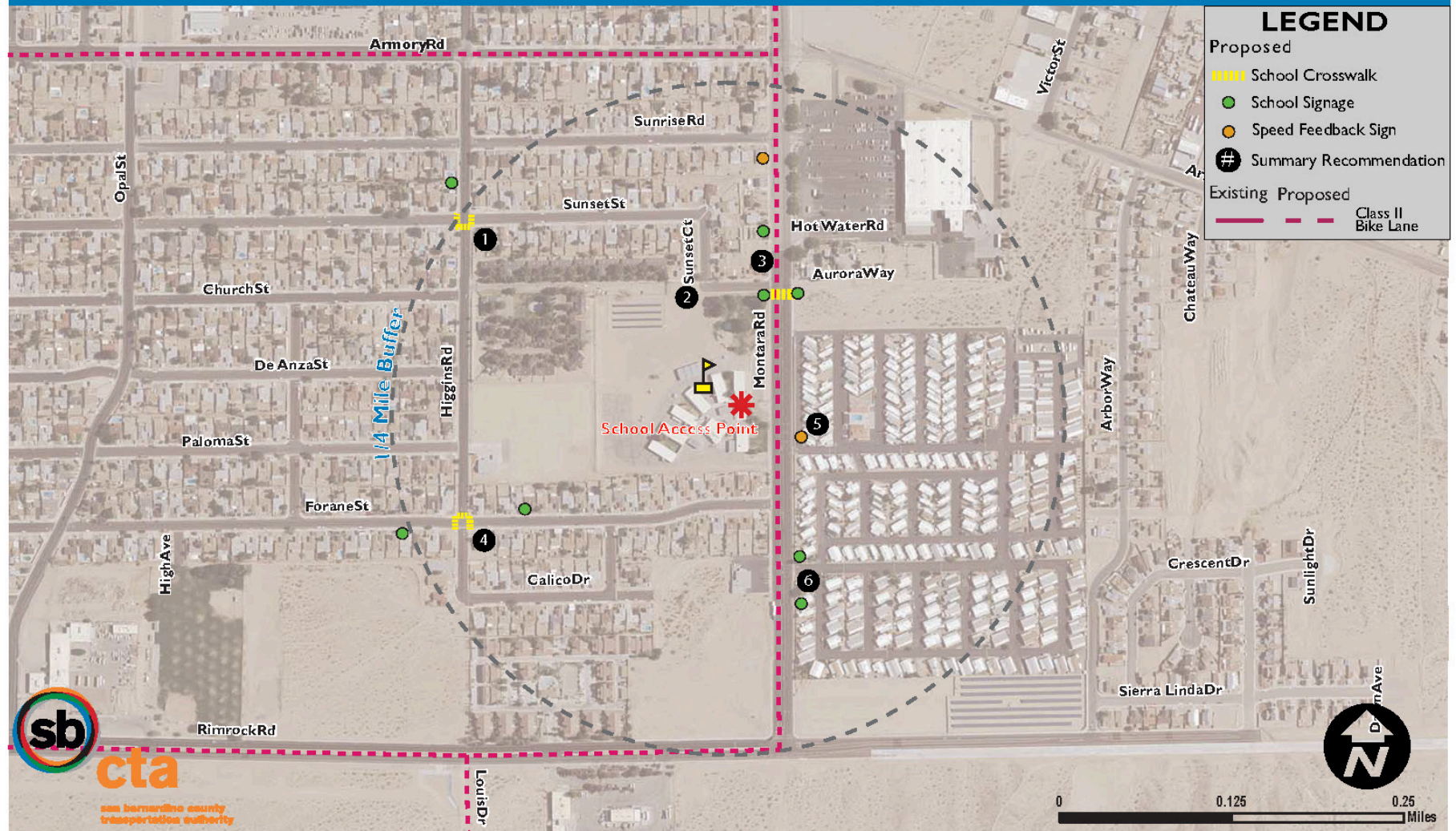
Source: <https://tims.berkeley.edu/> - (Years: 2010 - 2016)

TRAVEL MODE BEHAVIOR

		morning	afternoon
	walk	23%	25%
	bike	0%	0%
	bus	33%	29%
	vehicle	40%	46%
	carpool	3%	0%
	transit	0%	0%
	other	0%	0%

Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

SBCTA SRTS PHASE II: MONTARA ELEMENTARY SCHOOL, BARSTOW



PROPOSED ENGINEERING RECOMMENDATIONS

- 1 Sunset Street at Higgins Road:** Restripe existing school crosswalks with high visibility paint (ladder style). Replace existing sign with SW24-3(CA) Assembly D sign for southbound traffic. Paint red curb to improve the visibility of pedestrians.
- 2 Sunset Court at Aurora Way:** Install sidewalk on southwest corner of Sunset Court and Aurora Way and clear sidewalk on south side of Aurora Way to provide an accessible route.
- 3 Montara Road at Aurora Way:** Install speed feedback sign for southbound traffic. Replace existing SR4-1(CA) Assembly C sign with same sign of larger size. Install in road flasher system at high visibility crosswalk.
- 4 Forane Street at Higgins Road:** Install SW24-3(CA) Assembly D signs for eastbound and westbound traffic. Repaint red curb at the southwest corner; and paint red curb at the northeast corner to improve visibility of pedestrians. Restripe existing school crosswalks with high visibility paint (ladder style).
- 5 Montara Road:** Repaint red curb along roadway, indicating where "no parking" zone starts and ends. Install speed feedback sign for northbound traffic. Station crossing guard at crosswalk at Forane Street.
- 6 Montara Road at Elm Lane:** Install SW24-3(CA) Assembly D sign for northbound traffic. Replace existing SR4-1(CA) Assembly C sign with same sign of larger size.

Background/Discussion of the Engineering Recommendations

Montara Elementary School	Recommendation #	Location	Improvement	Background/Discussion
	1	Sunset Street at Higgins Road	High visibility ladder style crosswalk, school signage and red curb	Improvements located along primary walking route to school (noted during field observation), where two pedestrian collisions took place. Location identified by walk audit participants and explicitly through school-wide surveys as a focus intersection, where students/parents have difficulty crossing and feel unsafe. Engineering recommendations used to increase pedestrian visibility while crossing the uncontrolled intersection.
	2	Sunset Court at Aurora Way	Sidewalk	See below, "General - Sidewalk."
	3	Montara Road at Aurora Way	School signage and in road flasher system	Improvements are located along the primary walking route to school (noted during field observation), responding to comments received during the school-wide surveying and the walk audit. Engineering recommendations used to increase pedestrian visibility while crossing the uncontrolled crosswalk.
	4	Forane Street at Higgins Road	School signage, red curb and high visibility ladder style crosswalk	Improvements are located along the primary walking route to school (noted during field observation), responding to comments received during the school-wide surveying and the walk audit. Engineering recommendations used to increase pedestrian visibility while crossing. See below, "General - Red curb."
	5	Montara Road	Red curb, no parking indications, speed feedback sign and crossing guard	Speed feedback signage installation addresses speeding in the area, per walk audit observations and comments received during the survey process. Crossing guard helps with pedestrian safety near the school. See below, "General - Red curb."
	6	Montara Road at Elm Lane	School signage	Adherence to MUTCD Part 7 guidelines, which are in place to increase driver awareness of pedestrians along Montara Road at Elm Lane, a primary walking route to school (noted during field observation).
	General	School area	Red curb	Red curbs are recommended for driveways/intersections for primary walking routes to school (noted during field observation) to increase visibility of pedestrians and vehicles.
		School area	Sidewalk	Sidewalks recommended along primary walking routes to school within ¼ mile radius of the school to close gap in existing sidewalk network. Recommendation attends to comments received on the walk audit and during school-wide surveying.

Cost Estimates: Montara Elementary School

The following cost estimation table details the Montara Elementary School network engineering recommendations by corridor.

CORRIDOR	IMPROVEMENT	UNIT	COST	QTY	TOTAL
Montara Rd.	In-Road Flashers Crosswalk	Each	\$66,413	1	\$66,413
	Speed Awareness Sign	Each	\$14,490	2	\$28,980
	New Sign on Post	Each	\$181	3	\$543
	Segment Total				\$95,936
Higgins Rd.	New Sign on Post	Each	\$181	1	\$181
	High Visibility Ladder Crosswalk	Each	\$1,788	5	\$8,940
	Segment Total				\$9,121
Forane St.	New Sign on Post	Each	\$181	2	\$362
	High Visibility Ladder Crosswalk	Each	\$1,788	1	\$1,788
	Segment Total				\$2,150
ALL SEGMENTS					\$107,207

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Crestline Elementary School

Crestline Elementary School is a Barstow Unified School District (BUSD) school located in a low-density residential area of Barstow, California. The school is situated along a major arterial roadway (Rimrock Road) as it intersects with Monterey Avenue. Held on May 10th, 2016, the Crestline Elementary walk audit took place from 1:00PM to 2:30PM, prior to the afternoon release bell ringing. Participants were recruited in the time leading up to the afternoon release bell as they waited for their students, totaling ten participants. Observations extended into the surrounding neighborhood, along the following streets: Rimrock Road, Monterey Avenue, Big Horn Drive, and Zion Drive.

“Walking is very healthy but due to the amount and speed of traffic along Rimrock Rd, between Barstow Rd & Muriel Rd, it is not safe for my children to walk alone.”

“Crestline provides a crossing guard on Armory which makes me feel safe. However, there have been many instances where cars disregard the crossing guard. This experience is scary and prevents me from allowing my child to cross by herself.”

“I would like my kid to be able to walk home but I don’t feel safe, especially with other older kids harassing each one another.”

****All remarks received from walk audit participants at Crestline Elementary****



Crestline Elementary School Survey and Tally Data



Number of Students Assessed in Tally	27
Number of Tallies	146
» Morning (To School)	73
» Afternoon (From School)	73

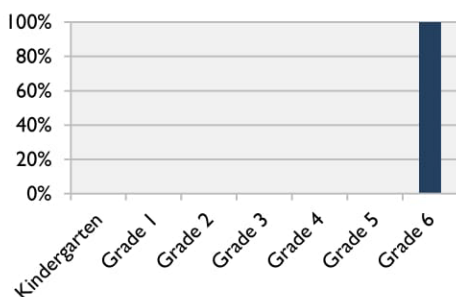
Number of Surveys Received	32
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Data source: KOA Corporation, processed by the National Center for Safe Routes to School. Data and figures accurate as of Spring 2016.

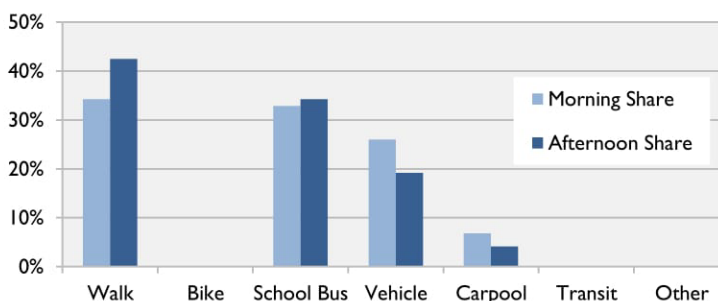
Tallies were conducted by a teacher in one class on a consecutive Tuesday, Wednesday, and Thursday, assessing students' trips both to and from school that day. The number of tallies is ideally six times the number of students. **Surveys** were printed on two-page forms and distributed to parents to take home.

Students who walk or bike to school	31.0%
Students who don't walk/bike but have asked parents for permission	+ 17.2%
Students who walk/bike or have asked parents for permission	48.3%
Student enrollment	x 605
Potential walking/biking student base	255

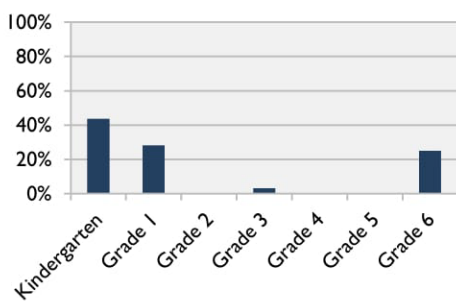
Grade Distribution of Tallies



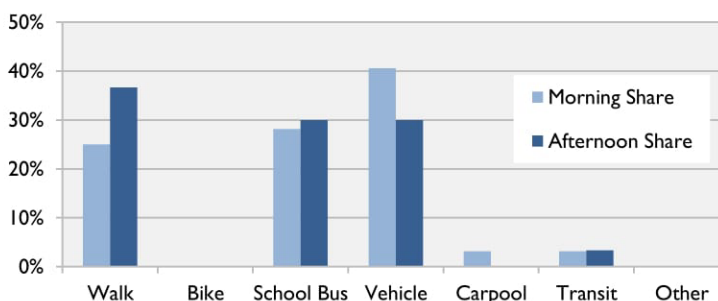
Travel Mode Distribution of Tallies



Grade Distribution of Surveys

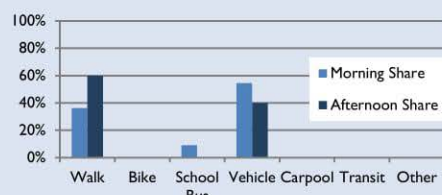


Travel Mode Distribution of Surveys



Students Living Less than ¼ Mile from School

35%
of survey responses

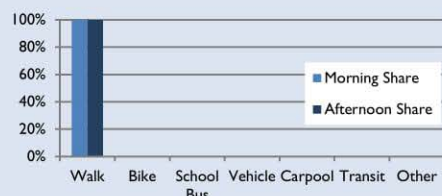


Top 5 Issues Affecting Likelihood to Walk/Bike:

Violence or Crime – 55%
 Safety of Intersections or Crossings – 45%
 Speed of Traffic Along Route – 36%
 Convenience of Driving – 18%
 Amount of Traffic Along Route – 18%

Students Living Between ¼ and ½ Mile from School

6%
of survey responses

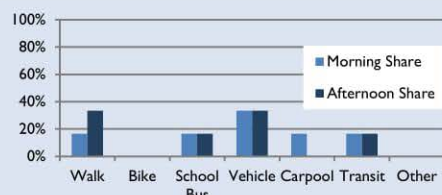


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 100%
 Amount of Traffic Along Route – 50%
 Adults to Bike/Walk With – 50%
 Crossing Guards – 50%
 (No other issues ranked.)

Students Living Between ½ and 1 Mile from School

19%
of survey responses

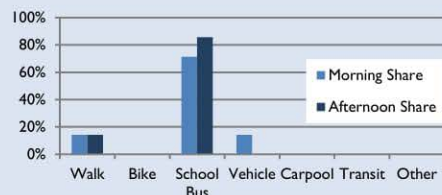


Top 5 Issues Affecting Likelihood to Walk/Bike:

Violence or Crime – 33%
 Weather or Climate – 33%
 Convenience of Driving – 17%
 Speed of Traffic Along Route – 17%
 Amount of Traffic Along Route – 17%

Students Living Between 1 and 2 Miles from School

23%
of survey responses

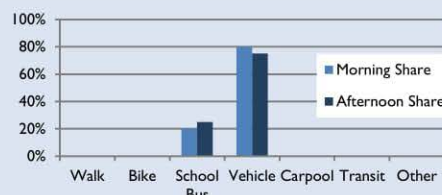


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 71%
 Speed of Traffic Along Route – 71%
 Amount of Traffic Along Route – 71%
 Weather or Climate – 71%
 Safety of Intersections or Crossings – 57%

Students Living Farther than 2 Miles from School

16%
of survey responses

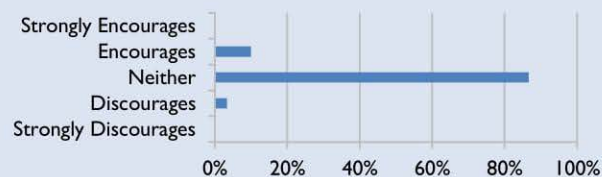


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 20%
 Speed of Traffic Along Route – 20%
 Amount of Traffic Along Route – 20%
 Safety of Intersections or Crossings – 20%
 Violence or Crime – 20%

Parents' Perspectives

Whether School Encourages Walking/Biking



71%
consider walking/biking healthy or very healthy.

56%
would not feel comfortable having their child walk/bike at any age with current conditions.

CRESTLINE ELEMENTARY SCHOOL - Fact Sheet

OVERVIEW

General Information:



Jurisdiction - City of Barstow
School Enrollment - 605
Free or Reduced Lunch - 89.40%

Environmental Indicators:



Cal Enviro Score % Range - 56-60%
Cal Enviro Score (CES2.0*) - 27.95

*CES2.0: Screening method that identifies communities that are disproportionately burdened by multiple sources of pollution.

Walk Audit Highlights

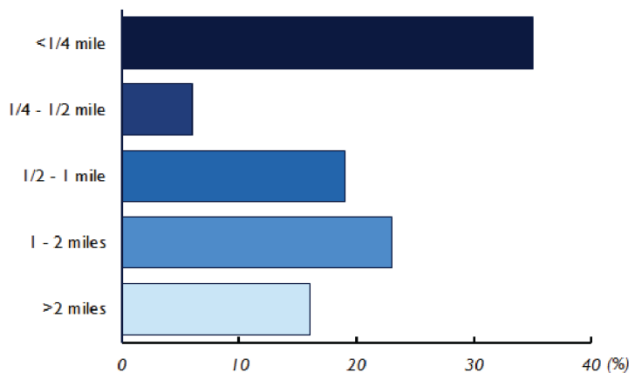


of Walk Audit Participants - 10
of Surveys Received - 32

WALKSHED (1/4 and 1/2 mile)

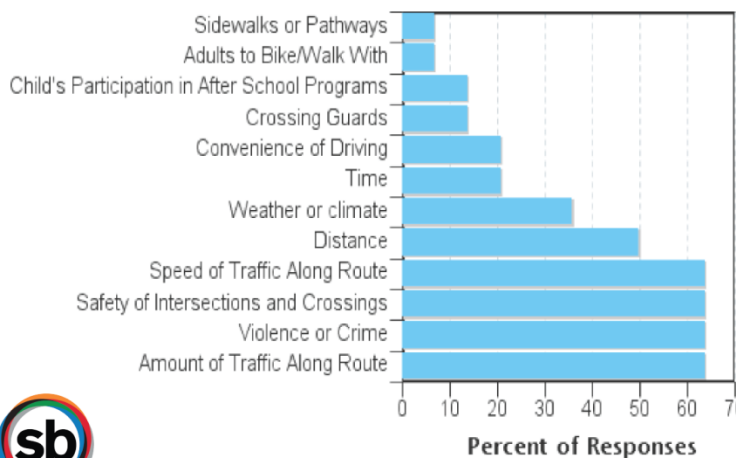


COMMUTE DISTANCE (%)



Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

REASONS FOR NOT WALKING/BIKING



san bernardino county
transportation authority

Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

COLLISION ANALYSIS

Pedestrian Related Collisions



0 within 1/4 mile
1 within 1/2 mile
0 fatal within (1/2 mile)

Bicyclist Related Collisions



0 within 1/4 mile
0 within 1/2 mile
0 fatal within (1/2 mile)

Source: <https://tims.berkeley.edu/> - (Years: 2010 - 2016)

TRAVEL MODE BEHAVIOR



	morning	afternoon
walk	25%	37%



bike	0%	0%
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bus	28%	30%
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vehicle	41%	30%
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carpool	3%	0%
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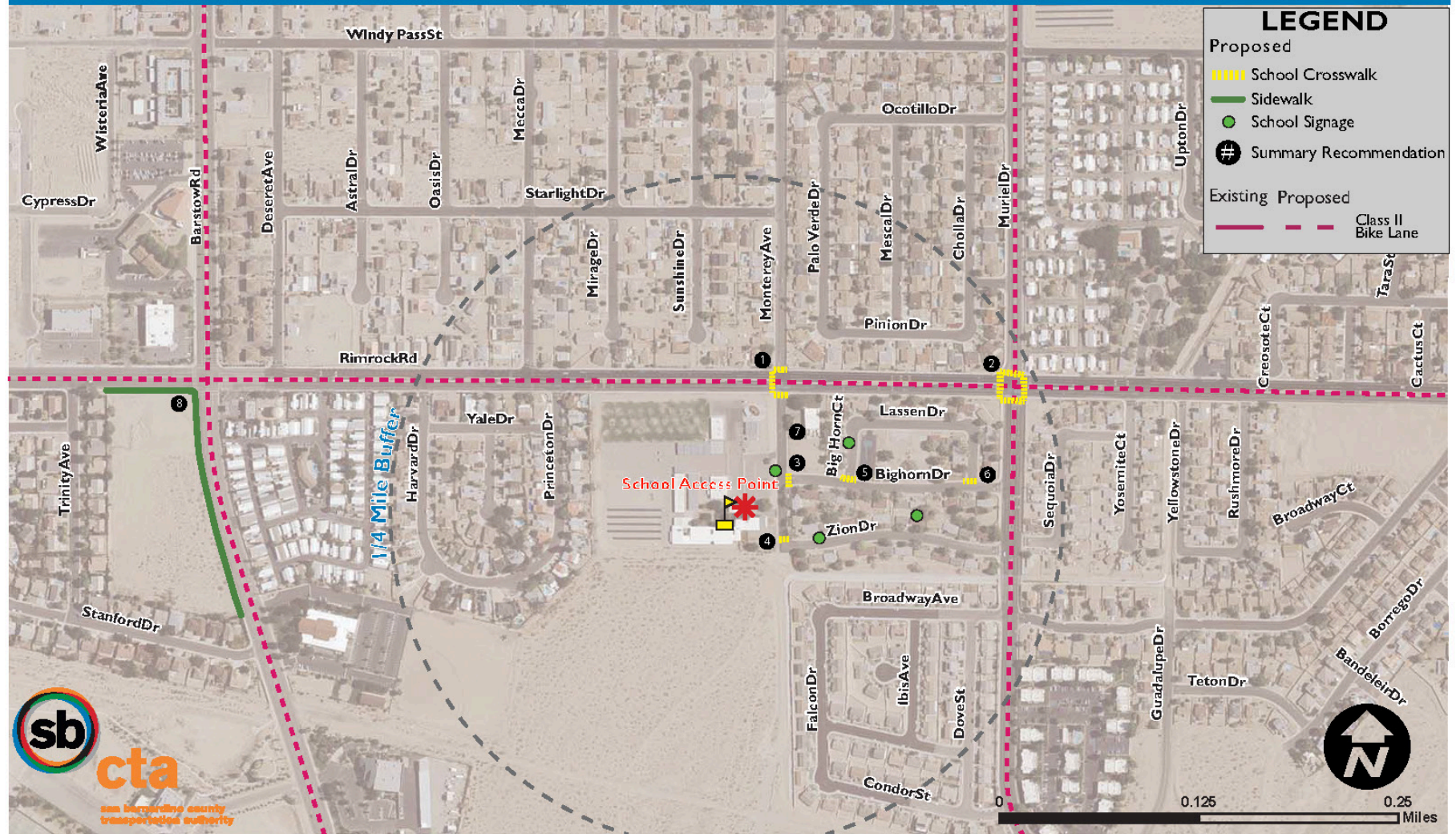
transit	3%	3%
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other	0%	0%
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Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

SBCTA SRTS PHASE II: CRESTLINE ELEMENTARY SCHOOL, BARSTOW



PROPOSED ENGINEERING RECOMMENDATIONS

- 1** Monterey Ave at Rimrock Road: Install bulbouts at the NW, NE, and SW corners of the intersection. Restripe existing crosswalks with high visibility paint or thermoplastic. Install pavement flashers at each crosswalk. Install traffic signals (pending passed signal warrant). If not passed, install all way stop control.
- 2** Rimrock Road at Muriel Drive: Install traffic signals (pending passed signal warrant). Restripe existing crosswalks with high visibility white paint or thermoplastic.
- 3** Monterey Ave at Bighorn Drive: Restripe existing school crosswalk with high visibility paint/thermoplastic.
- 4** Monterey Ave at Zion Drive: Restripe existing school crosswalk with high visibility paint/thermoplastic. Install SW24-3 (CA) Assembly D signs approaching school crossing.
- 5** Bighorn Drive at Bighorn Court: Paint school crosswalk with high visibility paint/thermoplastic.
- 6** Bighorn Drive at Lassen Court: Paint school crosswalk with high visibility paint/thermoplastic.
- 7** Monterey Avenue Corridor: Repaint red curb along the street, indicating where parking is not allowed.
- 8** Barstow Road at Rimrock Road: Install sidewalk along these streets, connecting existing sidewalks.

Background/Discussion of the Engineering Recommendations

Crestline Elementary School	Recommendation #	Location	Improvement	Background/Discussion
	1	Monterey Avenue at Rimrock Road	Bulbouts, High visibility crosswalks, Pavement flashers, Traffic signal or All way stop control	Bulbouts shorten the crossing distance for pedestrians along this primary walking route to school, and narrow the roadway, naturally slowing down traffic. High visibility crosswalks provide clearer paths for pedestrians and draw drivers' attention to the crossing. Pavement flashers may alert drivers of pedestrians in the crosswalk. Traffic signal or all way stop control installation (pending warrants in CA MUTCD Part 4) will provide necessary gaps for pedestrians in the area while controlling speed in the area, which addresses comments received during the survey process.
	2	Rimrock Road at Muriel Drive	Traffic signal (pending warrants), High visibility crosswalks	Traffic signal installation (pending warrants in CA MUTCD Part 4) will accommodate vehicular and pedestrian volumes at this intersection, providing necessary gaps in traffic for pedestrians to cross. High visibility crosswalks alert drivers of crossings in the area.
	3	Monterey Avenue at Bighorn Drive	High visibility crosswalks	Improvements alert drivers of crossings in the area and provide clearer paths for pedestrians along a primary walking route.
	4	Monterey Avenue at Zion Drive	High visibility crosswalks, Advanced warning school signage	High visibility crosswalks alert drivers of crossings in the area and provide clearer paths for pedestrians along a primary walking route. Signage improvements adhere to CA MUTCD Part 7 guidelines, which are in place to increase driver awareness of pedestrian crossings in the area.
	5	Bighorn Drive at Bighorn Court	High visibility crosswalks	Improvements alert drivers of crossings in the area and provide clearer paths for pedestrians along a primary walking route.
	6	Bighorn Drive at Lassen Court	High visibility crosswalks	Improvements alert drivers of crossings in the area and provide clearer paths for pedestrians along a primary walking route.
	7	Monterey Avenue Corridor	Red curb	See item below, "General - Red curb."
	8	Barstow Road at Rimrock Road	Sidewalk	See item below, "General - Sidewalk."
	General	School area	Red curb	Red curbs are recommended for driveways/intersections for primary walking routes to school (noted during field observation) to increase visibility of pedestrians and vehicles.
		School area	Sidewalk	Sidewalks recommended along primary walking routes to school within ¼ mile radius of the school to close gap in existing sidewalk network. Recommendation attends to comments received on the walk audit and during school-wide surveying.
		School area	ADA curb ramps	Improvements made to comply with ADA standards for increased accessibility for students/parents along their primary routes to school.

Cost Estimates: Crestline Elementary School

The following cost estimation table details the Crestline Elementary School network engineering recommendations by corridor.

CORRIDOR	IMPROVEMENT	UNIT	COST	QTY	TOTAL
E Rimrock Rd.	New Sign on Post	Each	\$181	4	\$725
	High Visibility Ladder Crosswalk	Each	\$1,788	6	\$10,728
	Curb Extension - Raised	Per Intersection	\$87,766	0.5	\$43,883
	Concrete Sidewalk (1 side of street)	Per Linear Foot	\$52	1245	\$64,644
Segment Total					\$119,979
Monterey Ave.	New Sign on Post	Each	\$181	1	\$181
	High Visibility Ladder Crosswalk	Each	\$1,788	2	\$3,576
Segment Total					\$3,757
Bighorn Dr.	High Visibility Ladder Crosswalk	Each	\$1,788	2	\$3,576
	Segment Total				\$3,576
Zion Dr.	New Sign on Post	Each	\$181	1	\$181
	High Visibility Ladder Crosswalk	Each	\$1,788	1	\$1,788
Segment Total					\$1,969
ALL SEGMENTS					\$129,281

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Barstow High School

Barstow High School is a Barstow Unified School District (BUSD) school located in a low-density residential area of Barstow, California. The school is located along 1st Avenue between Buena Vista Street and Mountain View Street. The Barstow High School walk audit was held on May 17th, 2016 from 6:00AM to 7:00AM. During this time there were 14 participants who provided insights into the surrounding neighborhood. Engineer field observations into these areas took place following the morning start bell along the following streets: 1st Street, Buena Vista Street, Mountain View Street, Campus Way, Flora Street, and May Avenue.

"I do not allow my child to walk because there are loose dogs along the long block where she would have to walk."

"It's not safe for a student to walk alone anywhere surrounding the school or beyond."

****All remarks received from walk audit participants at Barstow High****



Barstow High School Survey and Tally Data



Number of Students Assessed in Tally	252
Number of Tallies	1,232
» Morning (To School)	655
» Afternoon (From School)	577

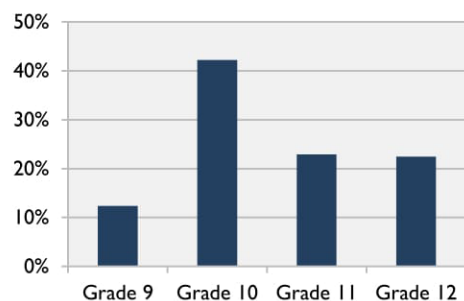
Number of Surveys Received	120
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Data source: KOA Corporation, processed by the National Center for Safe Routes to School. Data and figures accurate as of Spring 2016.

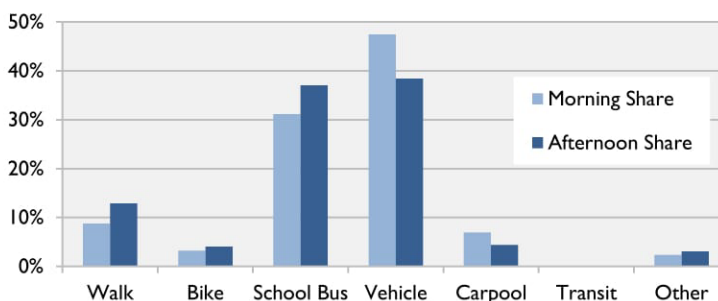
Tallies were conducted by teachers in 11 classes on a consecutive Tuesday, Wednesday, and Thursday, assessing students' trips both to and from school that day. The number of tallies is ideally six times the number of students. **Surveys** were printed on two-page forms and distributed to parents to take home.

Students who walk or bike to school	16.7%
Students who don't walk/bike but have asked parents for permission	+ 13.3%
Students who walk/bike or have asked parents for permission	30.0%
Student enrollment	x 1,409
Potential walking/biking student base	423

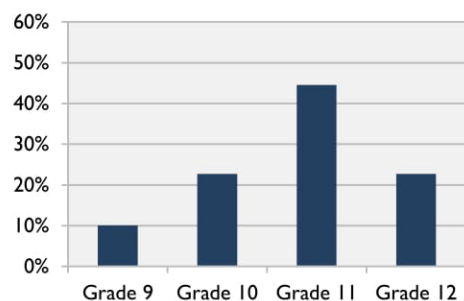
Grade Distribution of Tallies



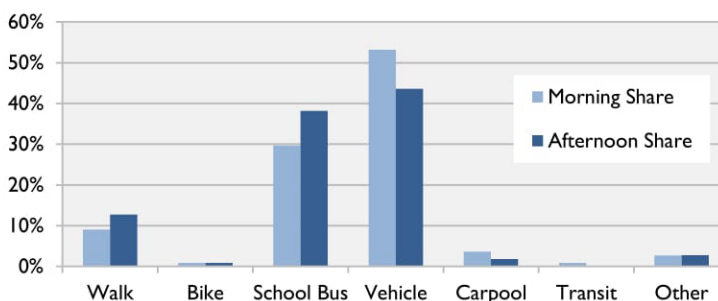
Travel Mode Distribution of Tallies



Grade Distribution of Surveys

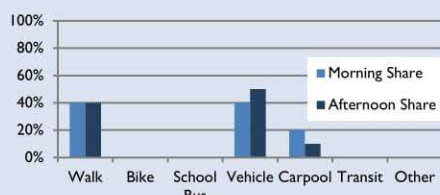


Travel Mode Distribution of Surveys



Students Living Less than ¼ Mile from School

10%
of survey responses

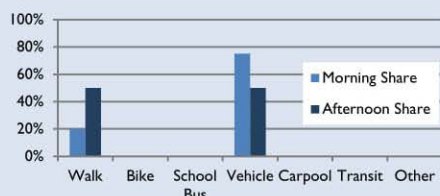


Top 5 Issues Affecting Likelihood to Walk/Bike:

Time – 50%
Distance – 40%
Convenience of Driving – 40%
Participation in After-School Programs – 40%
Safety of Intersections or Crossings – 30%

Students Living Between ¼ and ½ Mile from School

5%
of survey responses

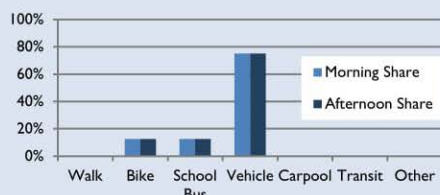


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 60%
Violence or Crime – 60%
Weather or Climate – 60%
Time – 40%
Amount of Traffic Along Route – 40%

Students Living Between ½ and 1 Mile from School

8%
of survey responses

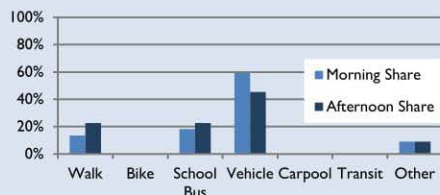


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 38%
Time – 25%
Participation in After-School Programs – 25%
Sidewalks or Pathways – 25%
Violence or Crime – 25%

Students Living Between 1 and 2 Miles from School

26%
of survey responses

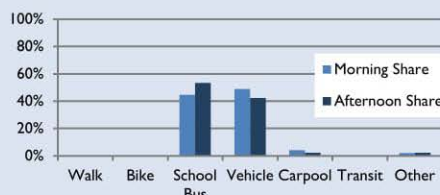


Top 5 Issues Affecting Likelihood to Walk/Bike:

Violence or Crime – 40%
Distance – 28%
Safety of Intersections or Crossings – 24%
Convenience of Driving – 20%
Weather or Climate – 20%

Students Living Farther than 2 Miles from School

50%
of survey responses

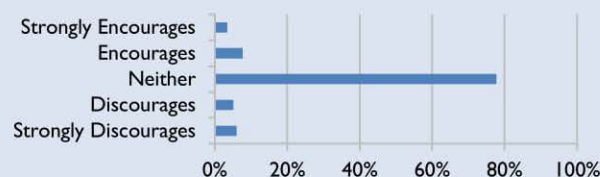


Top 5 Issues Affecting Likelihood to Walk/Bike:

Distance – 58%
Time – 38%
Participation in After-School Programs – 29%
Weather or Climate – 29%
Violence or Crime – 27%

Parents' Perspectives

Whether School Encourages Walking/Biking



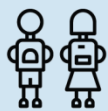
62%
consider walking/biking healthy or very healthy.

37%
would not feel comfortable having their child walk/bike at any age with current conditions.

BARSTOW HIGH SCHOOL - Fact Sheet

OVERVIEW

General Information:



Jurisdiction - Barstow

School Enrollment - 1409

Free or Reduced Lunch - 68.80%

Environmental Indicators:



Cal Enviro Score % Range - 91-95%

Cal Enviro Score (CES2.0*) - 54.51

*CES2.0: Screening method that identifies communities that are disproportionately burdened by multiple sources of pollution.

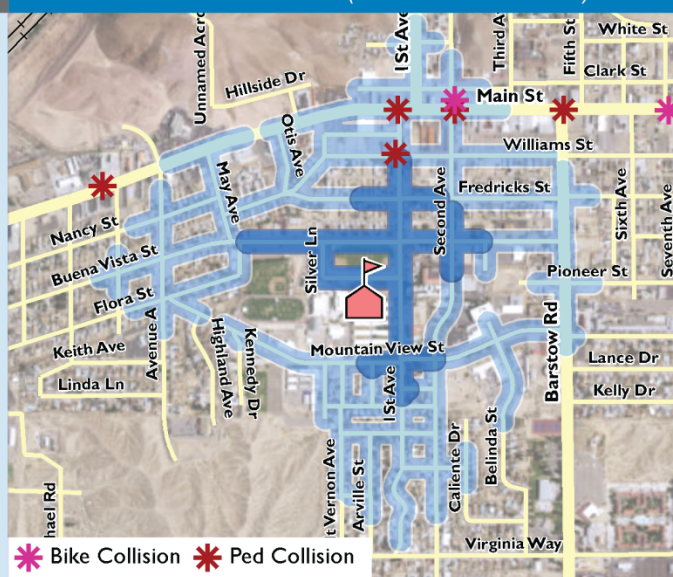
Walk Audit Highlights



of Walk Audit Participants - 14

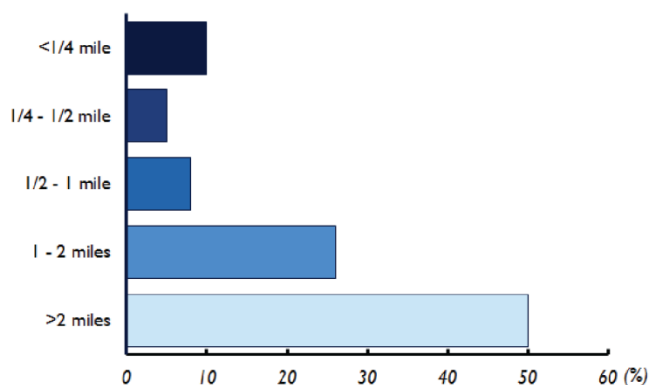
of Surveys Received - 120

WALKSHED (1/4 and 1/2 mile)



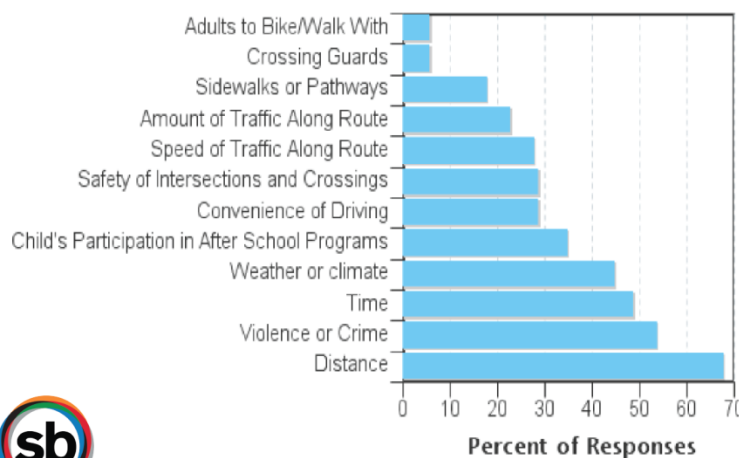
* Bike Collision * Ped Collision

COMMUTE DISTANCE (%)



Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

REASONS FOR NOT WALKING/BIKING



san bernardino county
transportation authority

Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

COLLISION ANALYSIS

Pedestrian Related Collisions



1 within 1/4 mile

7 within 1/2 mile

0 fatal within (1/2 mile)

Bicyclist Related Collisions



0 within 1/4 mile

2 within 1/2 mile

0 fatal within (1/2 mile)

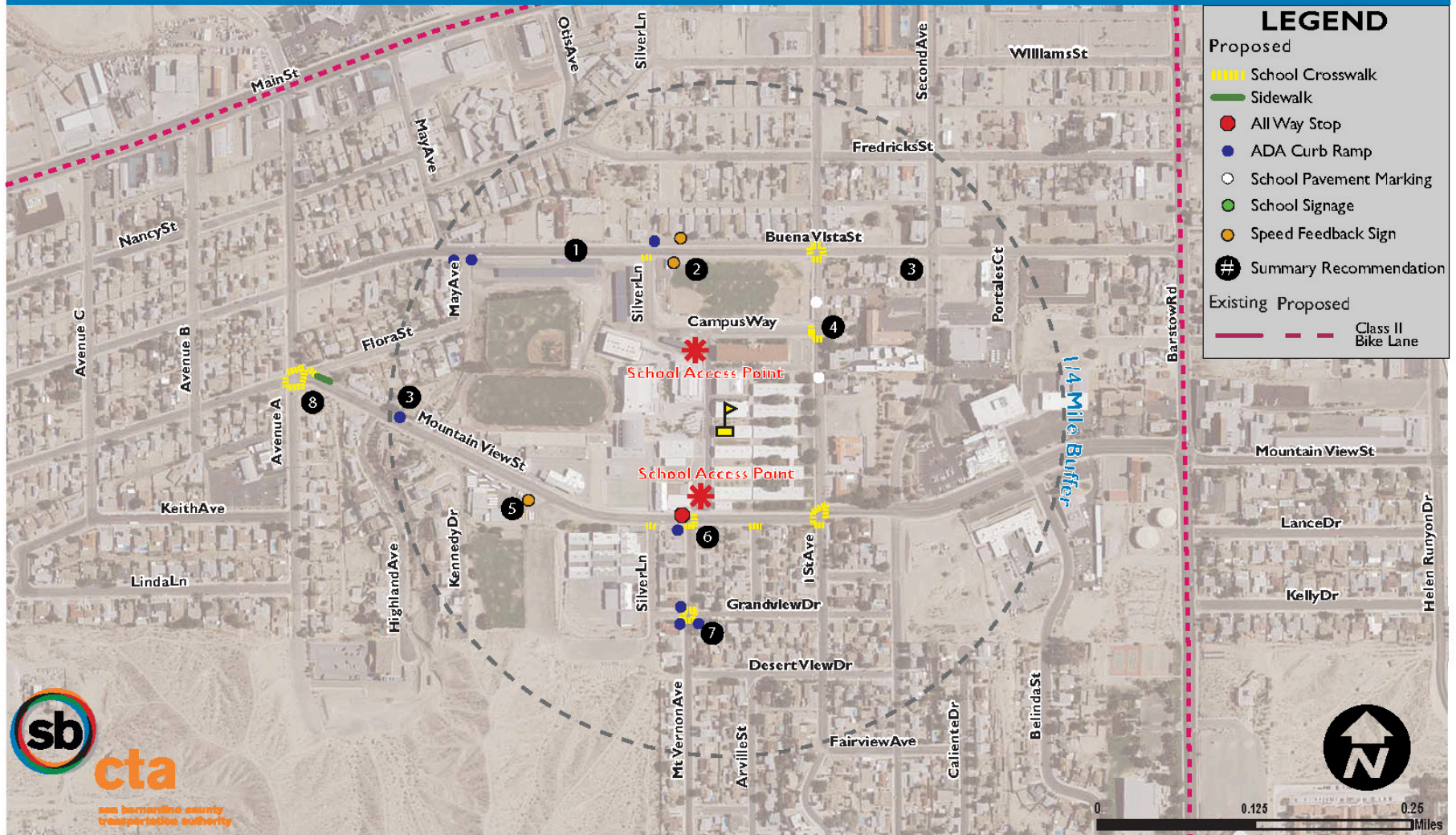
Source: <https://tims.berkeley.edu/> - (Years: 2010 - 2016)

TRAVEL MODE BEHAVIOR

		morning	afternoon
	walk	9%	13%
	bike	0.9%	0.9%
	bus	30%	38%
	vehicle	53%	44%
	carpool	4%	2%
	transit	0.9%	0%
	other	3%	3%

Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

SBCTA SRTS PHASE II: BARSTOW HIGH SCHOOL, BARSTOW



PROPOSED ENGINEERING RECOMMENDATIONS

- Buena Vista Street** Restripe corridor to include Class II Bike Lane. Install ADA compliant curb ramps at intersections with May Ave and with Silver Lane.
- Buena Vista Street** Install speed feedback sign for both westbound and eastbound traffic.
- Ensure sidewalk is ADA compliant, i.e. raised sidewalk or hydrant placement recommended to be altered.
- 1st Street** Install bulbouts at school crossing for south leg. Repaint school pavement markings leading towards school crossing that read, "SLOW SCHOOL XING."
- Mountain View Street** Install speed feedback sign for eastbound traffic.
- Mountain View Street and Mt. Vernon Avenue:** Install an all way STOP if warrant is met. Install an ADA compliant curb ramp on the SW corner.
- Mt. Vernon Avenue and Grandview Drive:** Install ADA compliant curb ramps at NW, SW, and SE curbs as well as depicted crosswalk restriping with high visibility ladder style crosswalk.
- Mountain View Street at Avenue A:** Realign Flora Street by providing bulbouts and install missing sidewalk to complete the gaps. Remove existing crosswalks on west leg and southeast leg. Replace existing school crosswalks at north and south legs with high visibility ladder crosswalks and install new crosswalk at east leg of Avenue A and Mountain View Street.

Background/Discussion of the Engineering Recommendations

Barstow High School	Recommendation #	Location	Improvement	Background/Discussion
	1	Buena Vista Street	ADA curb ramps, Class II Bike Lane	The improvements are along primary walking route to and from school (noted during field observation). The addition of bike lane promotes riding to and from school per comments received via the survey process. See item below, "General - ADA curb ramps."
	2	Buena Vista Street	Speed feedback signs	The improvements address comments received during walk audit observation regarding high speeds in front of the school.
	3	Mountain View Street/Buena Vista Street	Sidewalk	See item below, "General - Sidewalk."
	4	1st Street	Bulbouts, school pavement markings	The improvements at school crossing are along primary walking route and shorten crossing distance at heavily used crossings. Improvements to school pavement markings adhere to CA MUTCD Part 7 regarding traffic control for schools.
	5	Mountain View Street	Speed feedback sign	The improvements address comments received during walk audit observation regarding high speeds in front of the school.
	6	Mountain View Street at Mt. Vernon Avenue	All-Way Stop, ADA curb ramps	The engineering recommendation made at this intersection used to respond to comments during walk audit regarding speeds and safety along Mountain View Street. See below, "General - ADA curb ramps."
	7	Mt. Vernon Avenue at Grandview Drive	ADA curb ramps, high visibility crosswalk	See item below, "General - ADA curb ramps." These suggested improvements provide clearer walking routes from neighborhoods south of the school and can alert drivers of pedestrians in the area.
	8	Mountain View Street at Avenue A	Street realignment, bulbouts, sidewalk, high visibility crosswalks	These improvements create clearer paths for pedestrians and vehicular traffic alike, per comments made during walk audit. Bulbouts shorten the crossing distance for pedestrians walking along this route. High visibility crosswalks improve the conditions along primary walking route to school, and can alert drivers of pedestrians in the area. See item below, "General - Sidewalk."
	General	School area	Red curb	Red curbs are recommended for driveways/intersections for primary walking routes to school (noted during field observation) to increase visibility of pedestrians and vehicles.
		School area	Sidewalk	Sidewalks recommended along primary walking routes to school within ¼ mile radius of the school to close gap in existing sidewalk network. Recommendation attends to comments received on the walk audit and during school-wide surveying.
		School area	ADA curb ramps	Improvements made to comply with ADA standards for increased accessibility for students/parents along their primary routes to school.

Cost Estimates: Barstow High School

The following cost estimation table details the Barstow High School network engineering recommendations by corridor.

CORRIDOR	IMPROVEMENT	UNIT	COST	QTY	TOTAL
Buena Vista St.	Speed Awareness Sign	Each	\$14,490	2	\$28,980
	High Visibility Ladder Crosswalk	Each	\$1,788	3	\$5,364
	ADA Curb Ramps	Each	\$3,623	3	\$10,868
Segment Total					\$45,212
Mountain View St.	Existing Roadway Striping Removal (Sand Blast)	Per Linear Foot	\$6	42	\$254
	Speed Awareness Sign	Each	\$14,490	1	\$14,490
	High Visibility Ladder Crosswalk	Each	\$1,788	10	\$17,880
	ADA Curb Ramps	Each	\$3,623	1	\$3,623
	Curb Extension - Raised	Per Intersection	\$87,766	0.25	\$21,942
	Concrete Sidewalk (1 side of street)	Per Linear Foot	\$52	65	\$3,375
	Concrete Curb and Gutter (1 side of Street)	Per Linear Foot	\$36	55	\$1,992
Segment Total					\$63,555
Mt. Vernon Ave.	High Visibility Ladder Crosswalk	Each	\$1,788	5	\$8,940
	ADA Curb Ramps	Each	\$3,623	3	\$10,868
Segment Total					\$19,808
S. 1st Ave.	School Area Pavement Marking (Per Word)	Each	\$254	6	\$1,521
	High Visibility Ladder Crosswalk	Each	\$1,788	6	\$10,728
	Curb Extension - Raised	Per Intersection	\$87,766	0.75	\$65,825
Segment Total					\$78,074
ALL SEGMENTS					\$206,649