

Regional Safe Routes to School Plan Phase II

Volume II – City of Needles



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

City of Needles

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 Needles (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 Needles engineering staff and the City Manager, SBCTA staff, the office of the Needles Unified School District Superintendent, and the consulting team members whose facilitation unified the respective bodies for this task. The three completed walk audits were:

Needles High School – December 6th, 2016

Needles Middle School – December 6th, 2016

Vista Colorado Elementary School – December 6th, 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 principals 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 in attendance. The approach integrated school site field observations with participants as well as briefing and debriefing sessions. For detailed walk audit methodology and procedures, please refer to the Regional SRTS Plan Phase II Volume I.

Note: The three schools represented in Needles have overlapping improvement recommendations, thus the cost breakdowns for each school should be taken on an individual basis and not summed together.

Needles High School

Needles High School is a Needles Unified School District (NUSD) school located in a low-density residential area of Needles, California. The school is positioned along Washington Street at the corner of Park Avenue. The walk audit for Needles High School was held in the afternoon, prior to the afternoon release bell, from 2:00PM to 3:00PM on December 6th, 2016. An on-campus facility was utilized as the staging area for the four participants where briefing and de-briefing were conducted. Observations extended into the surrounding neighborhood along Highland Avenue, Park Avenue, Bailey Avenue, Erin Drive, Fairmont Avenue, and L Street.

Survey and tally data are not available for Needles High School.



NEEDLES HIGH SCHOOL - Fact Sheet

OVERVIEW

General Information:



Jurisdiction - City of Needles
 School Enrollment - 220
 Free or Reduced Lunch - 58.60%

Environmental Indicators:



Cal Enviro Score % Range - 61-65%
 Cal Enviro Score (CES2.0*) - 31.88

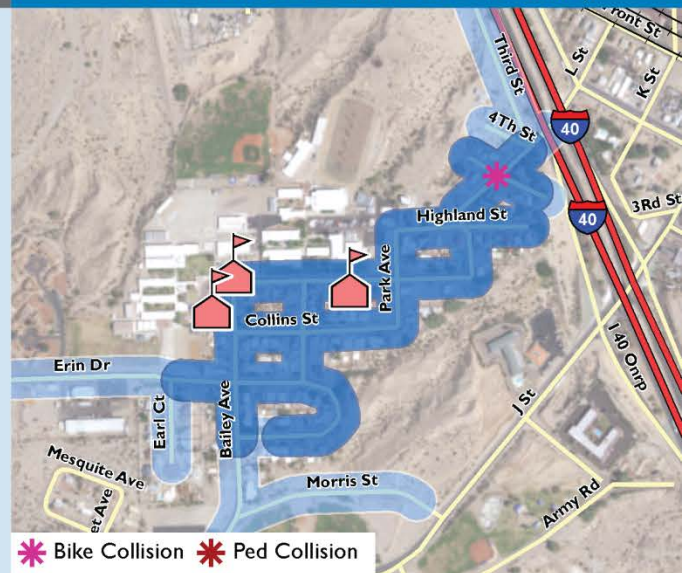
*CES2.0: Screening method that identifies communities that are disproportionately burdened by multiple sources of pollution.

Walk Audit Highlights



of Walk Audit Participants - 4
 # of Surveys Received - 1

WALKSHED (1/4 and 1/2 mile)



* Bike Collision * Ped Collision

COLLISION ANALYSIS

Pedestrian Related Collisions



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

Bicyclist Related Collisions

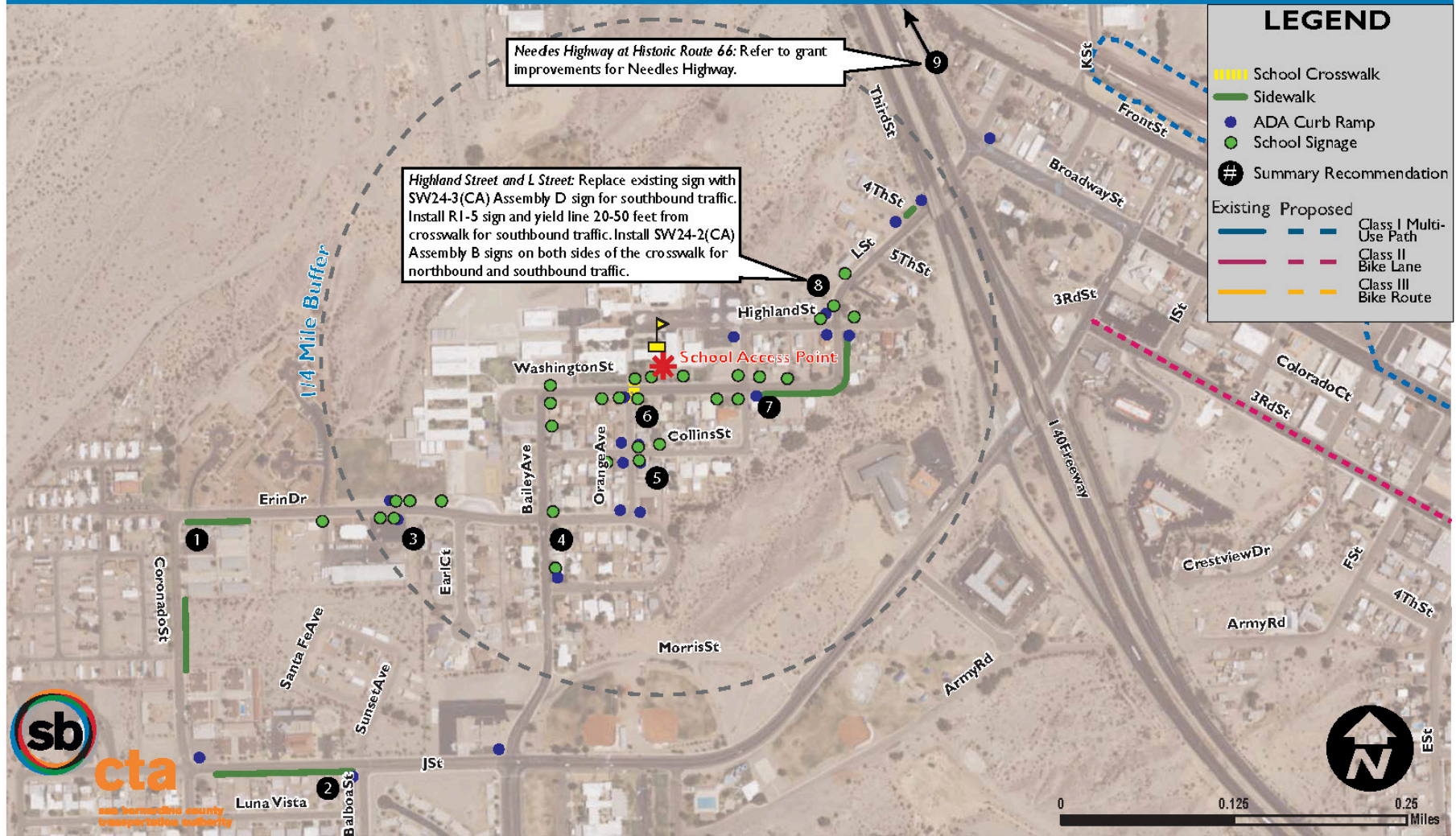


1 within 1/4 mile
 2 within 1/2 mile
 0 fatal within (1/2 mile)

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



SBCTA SRTS PHASE II: NEEDLES HIGH SCHOOL, NEEDLES



PROPOSED ENGINEERING RECOMMENDATIONS

- 1** Erin Drive and Coronado Street: Remove high visibility crosswalk across east leg.
- 2** Balboa Street at J Street: Remove high visibility crosswalk across east leg.
- 3** Erin Drive near Earl Court: Install/replace SW24-3(CA) Assembly D signs for eastbound and westbound traffic. Install R1-5 signs and yield lines 20-50 feet from crosswalk for eastbound and westbound traffic. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.
- 4** Bailey Avenue: Relocate power pole to install ADA curb ramp. Replace signs with new SW24-3(CA) Assembly D signs for northbound traffic. Replace existing sign with SW24-1(CA) Assembly A with W16-6P school sign.
- 5** Collins Street at Orange Avenue: For eastbound and westbound traffic, install R1-5 signs and yield lines 20-50 feet from crosswalk at east leg. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.
- 6** Washington Street at Orange Avenue: Remove existing sign with SW24-3(CA) Assembly D sign for eastbound traffic. Install SW24-3(CA) Assembly D sign for westbound traffic. Install R1-5 signs and yield lines 20-50 feet from crosswalk for eastbound and westbound traffic. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic. Restripe all pavement markings in front of the school, including high visibility crosswalks. Replace R1-1 signs at Bailey Avenue.
- 7** Washington Street at Park Avenue: Replace existing sign with SW24-3(CA) Assembly D sign for westbound traffic. Install R1-5 signs and yield lines 20-50 feet from crosswalk for eastbound and westbound traffic. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.

Background/Discussion of the Engineering Recommendations

| | | Background/Discussion of the Engineering Recommendations | | |
|----------------------------|--------------------|--|---|--|
| | | Recommendation # | Location | Improvement |
| Needles High School | 1 | Erin Drive and Coronado Street | Remove high visibility ladder style crosswalk | Improvements suggest removing a crosswalk in order to have pedestrians cross at a different and safer crossing. |
| | 2 | Balboa Street at J Street | Remove high visibility ladder style crosswalk | Improvements suggest removing a crosswalk in order to have pedestrians cross at a different and safer crossing. |
| | 3 | Erin Drive and Earl Court | School signage | Improvements are located along primary walking route to school, respond to comments received during the walk audit, and adhere to the MUTCD Part 7 guidelines. |
| | 4 | Bailey Avenue | ADA compliance and school signage | Improvements are located along primary walking route to school, respond to comments received during the walk audit, and adhere to the MUTCD Part 7 guidelines. See below, "General - ADA curb ramps." |
| | 5 | Collins Street at Orange Avenue | School signage and striping | Adherence to MUTCD Part 7 guidelines to increase driver awareness on Feron Boulevard. Improvements at school crossing are along primary walking route and shorten crossing distance. |
| | 6 | Washington Street at Orange Avenue | School signage and striping and high visibility ladders style crosswalk | Improvements are located along primary walking route to school, respond to comments received during the walk audit, and adhere to the MUTCD Part 7 guidelines. See below, "General - ADA curb ramps." |
| | 7 | Washington Street at Park Avenue | School signage | Improvements are located along primary walking route to school, respond to comments received during the walk audit, and adhere to the MUTCD Part 7 guidelines. |
| | 8 | Highland Street and L Street | School signage and striping | Adherence to MUTCD Part 7 guidelines to increase driver awareness on Feron Boulevard. Improvements at school crossing are along primary walking route and shorten crossing distance. |
| | General | 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: Needles High School

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

| CORRIDOR | IMPROVEMENT | UNIT | COST | QTY | TOTAL |
|--|---|-----------------|---------|-----|------------------|
| Bailey Ave. | New Sign on Post | Each | \$181 | 4 | \$724 |
| | Segment Total | | | | \$724 |
| Collins St. | New Sign on Post | Each | \$181 | 4 | \$725 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 4 | \$208 |
| | Segment Total | | | | \$932 |
| Coronado St. | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 270 | \$14,019 |
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| Erin Dr. | New Sign on Post | Each | \$181 | 6 | \$1,087 |
| | ADA Curb Ramps | Each | \$3,623 | 4 | \$14,490 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 250 | \$12,981 |
| | Segment Total | | | | \$28,557 |
| Highland Ave. | New Sign on Post | Each | \$181 | 2 | \$362 |
| | ADA Curb Ramps | Each | \$3,623 | 4 | \$14,490 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 100 | \$5,192 |
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| Broadway St. (Historic U.S. 66) | ADA Curb Ramps | Each | \$3,623 | 1 | \$3,623 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 560 | \$29,077 |
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| J St. | ADA Curb Ramps | Each | \$3,623 | 3 | \$10,868 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 550 | \$28,557 |
| | Segment Total | | | | \$39,425 |
| L St. | New Sign on Post | Each | \$181 | 2 | \$362 |
| | ADA Curb Ramps | Each | \$3,623 | 3 | \$10,868 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 50 | \$2,596 |
| | Segment Total | | | | \$13,826 |
| Washington St. | New Sign on Post | Each | \$181 | 12 | \$2,174 |
| | School Area Pavement Marking (Per Word) | Each | \$254 | 15 | \$3,804 |
| | High Visibility Ladder Crosswalk | Each | \$1,788 | 6 | \$10,728 |
| | ADA Curb Ramps | Each | \$3,623 | 2 | \$7,245 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 800 | \$41,538 |
| | Segment Total | | | | \$65,488 |
| ALL SEGMENTS | | | | | \$215,714 |

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Needles Middle School

Needles Middle School is a Needles Unified School District (NUSD) school located in a low-density residential area of Needles, California. The school is positioned along Washington Street at the corner of Bailey Avenue. Held on December 6th, 2016, the Needles Middle School walk audit took place from 2:00PM to 3:00PM, prior to the afternoon release bell. An on-campus facility was utilized as the staging area for the four participants where briefing and de-briefing were conducted. Observations extended into the surrounding neighborhood along Highland Avenue, Park Avenue, Bailey Avenue, Erin Drive, Fairmont Avenue, L Street, and J Street.

“During the summer months the hot weather is extreme, making walking impractical.”

“For a decent amount of my route there is no sidewalk for my children walk on.”

“We live right by the school, but with the amount of traffic and how fast they go it is too dangerous to walk to school.”

****All remarks received from walk audit participants at Needles Middle****



Needles Middle School Survey Data

SafeRoutes

National Center for Safe Routes to School



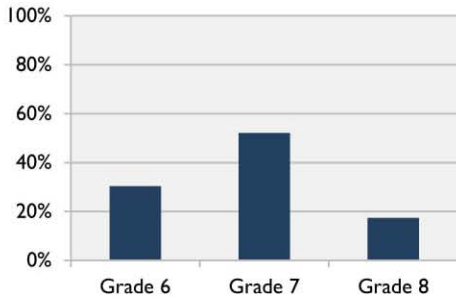
Number of Surveys Received 29

Data source: KOA Corporation. Data and figures accurate as of Fall 2016.

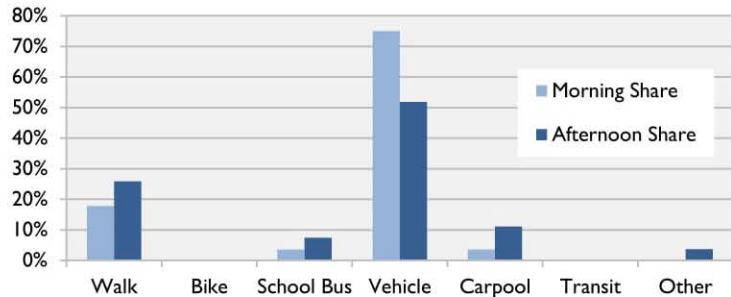
Surveys were printed on two-page forms and distributed to parents to take home. Tally data are not available for this school.

| | |
|---|----------------|
| Students who walk or bike to school | 17.2% |
| Students who don't walk/bike but have asked parents for permission | + 41.4% |
| Students who walk/bike or have asked parents for permission | 58.6% |
| Student enrollment | x 228 |
| Potential walking/biking student base | 134 |

Grade Distribution of Surveys

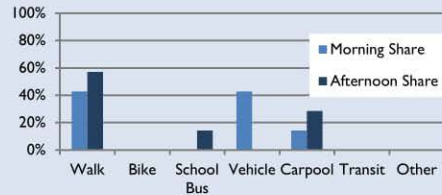


Travel Mode Distribution of Surveys



Students Living Less than ¼ Mile from School

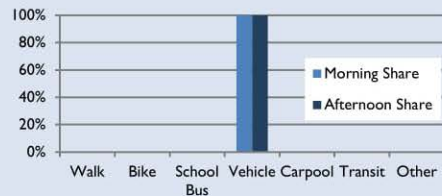
25%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Safety of Intersections & Crossings – 43%
 Speed of Traffic Along Route – 29%
 Adults to Bike/Walk With – 29%
 Weather or Climate – 29%
 Participation in After-School Programs – 14%

Students Living Between ¼ and ½ Mile from School

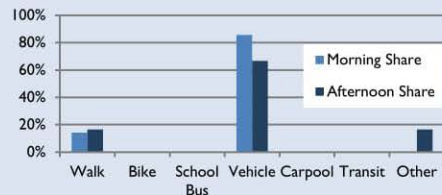
4%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Convenience of Driving – 100%
 Speed of Traffic Along Route – 100%
 Violence or Crime – 100%
 (No other issues ranked.)

Students Living Between ½ and 1 Mile from School

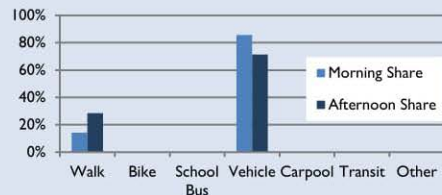
25%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Participation in After-School Programs – 43%
 Convenience of Driving – 29%
 Time – 14%
 Amount of Traffic Along Route – 14%
 Adults to Bike/Walk With – 14%

Students Living Between 1 and 2 Miles from School

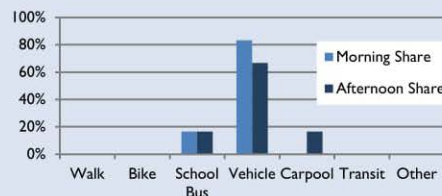
25%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Weather or Climate – 86%
 Safety of Intersections & Crossings – 71%
 Violence or Crime – 71%
 Participation in After-School Programs – 57%
 Amount of Traffic Along Route – 57%

Students Living Farther than 2 Miles from School

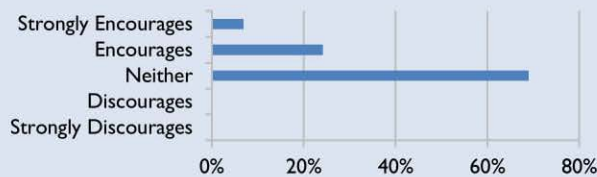
21%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Distance – 67%
 Time – 33%
 Participation in After-School Programs – 33%
 Safety of Intersections & Crossings – 33%
 Convenience of Driving – 17%

Parents' Perspectives

Whether School Encourages Walking/Biking



76%
consider walking/biking healthy or very healthy.

38%
would not feel comfortable having their child walk/bike at any age with current conditions.

NEEDLES MIDDLE SCHOOL - Fact Sheet

OVERVIEW

General Information:



Jurisdiction - City of Needles
 School Enrollment - 228
 Free or Reduced Lunch - 70.70%

Environmental Indicators:



Cal Enviro Score % Range - 61-65%
 Cal Enviro Score (CES2.0*) - 31.88

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

Walk Audit Highlights

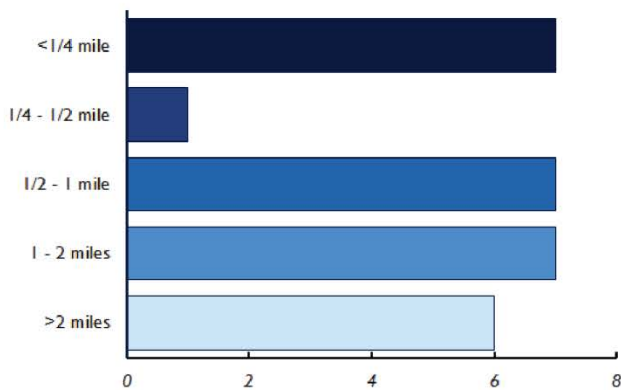


of Walk Audit Participants - 4
 # of Surveys Received - 29

WALKSHED (1/4 and 1/2 mile)



COMMUTE DISTANCE (%)



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

COLLISION ANALYSIS

Pedestrian Related Collisions



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

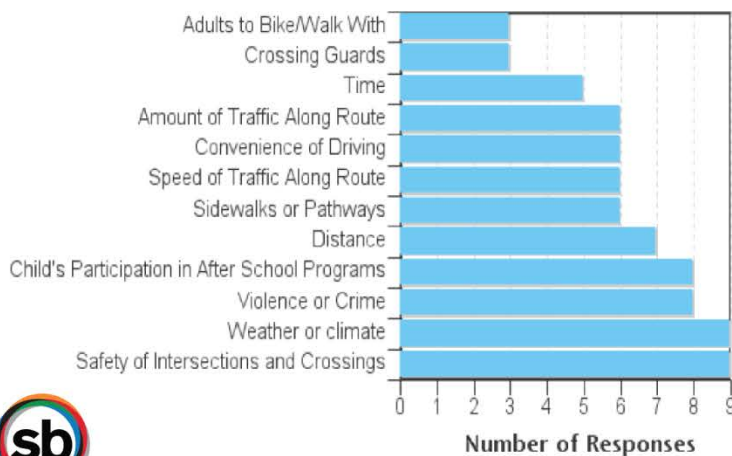
Bicyclist Related Collisions



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

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

REASONS FOR NOT WALKING/BIKING



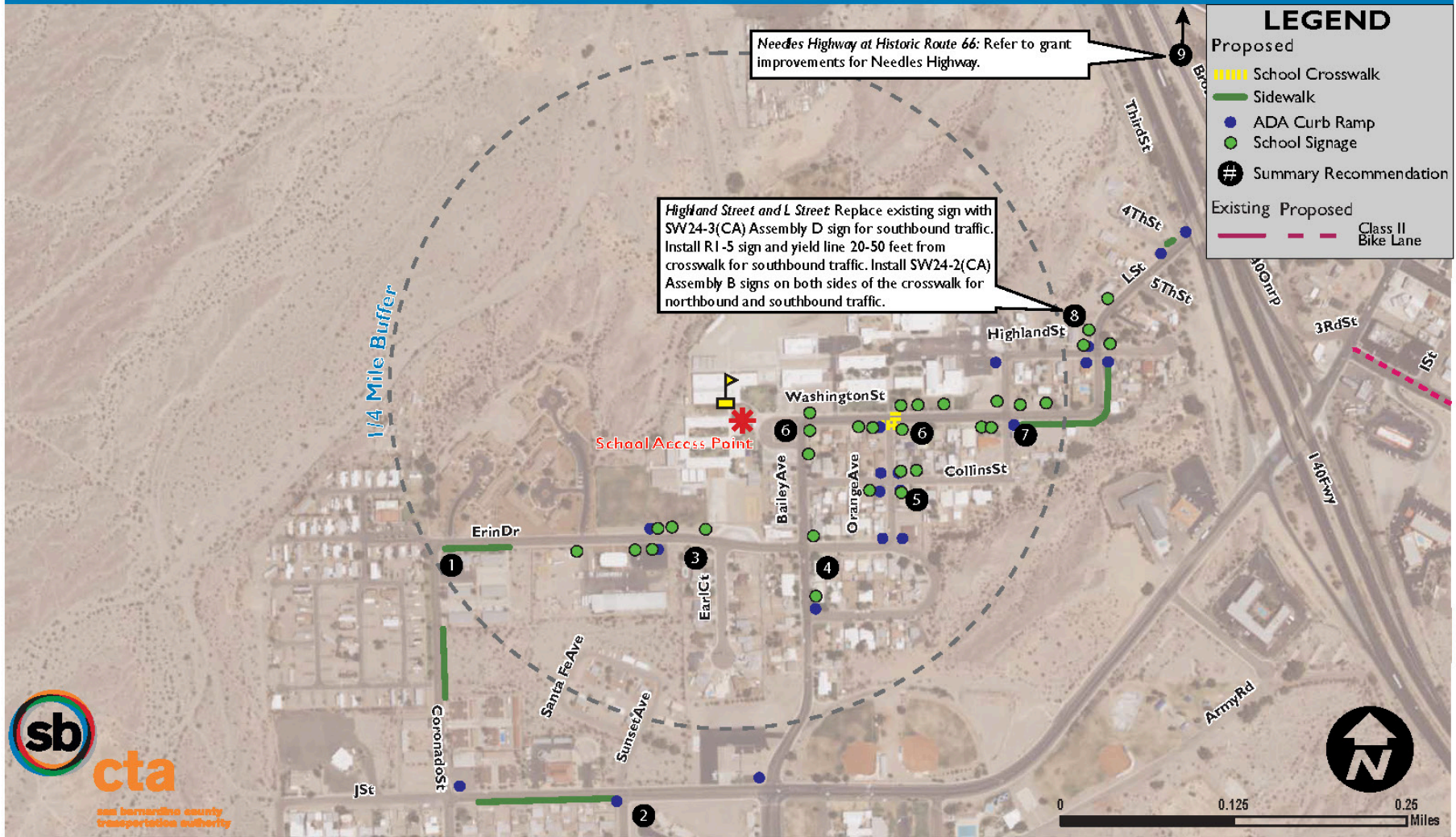
Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

TRAVEL MODE BEHAVIOR

| Mode | morning | afternoon |
|---------|---------|-----------|
| walk | 5 | 7 |
| bike | 0 | 0 |
| bus | 1 | 2 |
| vehicle | 21 | 14 |
| carpool | 1 | 3 |
| transit | 0 | 0 |
| other | 0 | 1 |

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

SBCTA SRTS PHASE II: NEEDLES MIDDLE SCHOOL, NEEDLES



PROPOSED ENGINEERING RECOMMENDATIONS

- Erin Drive and Coronado Street:** Remove high visibility crosswalk across east leg.
- Balboa Street at J Street:** Remove high visibility crosswalk across east leg.
- Erin Drive near Earl Court:** Install/replace SW24-3(CA) Assembly D signs for eastbound and westbound traffic. Install R1-5 signs and yield lines 20-50 feet from crosswalk for eastbound and westbound traffic. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.
- Bailey Avenue:** Relocate power pole to install ADA curb ramp. Replace signs with new SW24-3(CA) Assembly D signs for northbound traffic. Replace existing sign with SW24-1(CA) Assembly A with W16-6P school sign.
- Collins Street at Orange Avenue:** For eastbound and westbound traffic, install R1-5 signs and yield lines 20-50 feet from crosswalk at east leg. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.
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Background/Discussion of the Engineering Recommendations

| | | Recommendation # | Location | Improvement | Background/Discussion |
|-----------------------|--|------------------|------------------------------------|---|--|
| Needles Middle School | | 1 | Erin Drive and Coronado Street | Remove high visibility ladder style crosswalk | Improvements suggest removing a crosswalk in order to have pedestrians cross at a different and safer crossing. |
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Cost Estimates: Needles Middle School

The following cost estimation table details the Needles Middle School network engineering recommendations by corridor.

| CORRIDOR | IMPROVEMENT | UNIT | COST | QTY | TOTAL |
|--|---|-----------------|-------------|------------|------------------|
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| | Segment Total | | | | \$28,557 |
| Highland Ave. | New Sign on Post | Each | \$181 | 2 | \$362 |
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| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 100 | \$5,192 |
| | Segment Total | | | | \$20,044 |
| Broadway St. (Historic U.S. 66) | ADA Curb Ramps | Each | \$3,623 | 1 | \$3,623 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 560 | \$29,077 |
| | Segment Total | | | | \$32,699 |
| J St. | ADA Curb Ramps | Each | \$3,623 | 3 | \$10,868 |
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| | Segment Total | | | | \$39,425 |
| L St. | New Sign on Post | Each | \$181 | 2 | \$362 |
| | ADA Curb Ramps | Each | \$3,623 | 3 | \$10,868 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 50 | \$2,596 |
| | Segment Total | | | | \$13,826 |
| Washington St. | New Sign on Post | Each | \$181 | 12 | \$2,174 |
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| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 800 | \$41,538 |
| | Segment Total | | | | \$65,488 |
| ALL SEGMENTS | | | | | \$215,714 |

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Vista Colorado Elementary School

Vista Colorado Elementary School is a Needles Unified School District (NUSD) school located in a low-density residential area of Needles, California. The school is positioned along Washington Street at the corner of Bailey Avenue. The Vista Colorado Elementary School walk audit took place on December 6th, 2016 from 7:30AM to 9:30AM, following the morning start bell. Eight participants were briefed and debriefed in the on-site cafeteria as well as in front of the school. Observations extended into the surrounding neighborhood along Highland Avenue, Park Avenue, Bailey Avenue, Erin Drive, Fairmont Avenue, L Street, and J Street.

“My child walks to school because we live very nearby. However, if we lived farther from the school I would not let him walk due to my safety concerns.”

“It is very unsafe for kids to walk down Collins St. Parents and high school students speed down this street to avoid traffic on Washington St.”

“It is too hot to walk to and from school.”

****All remarks received from walk audit participants at Vista Colorado Elementary****



Vista Colorado Elementary School Survey Data



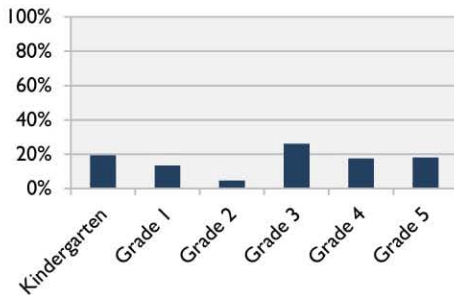
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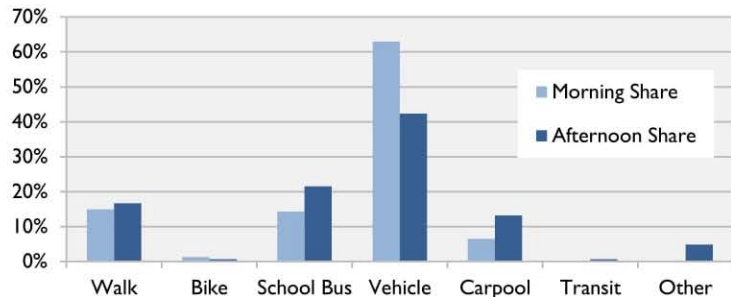
Surveys were printed on two-page forms and distributed to parents to take home. Tally data are not available for this school.

| | |
|---|----------------|
| Students who walk or bike to school | 16.8% |
| Students who don't walk/bike but have asked parents for permission | + 31.5% |
| Students who walk/bike or have asked parents for permission | 48.3% |
| Student enrollment | x 439 |
| Potential walking/biking student base | 212 |

Grade Distribution of Surveys

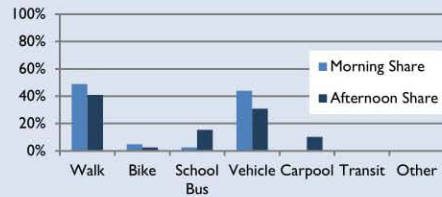


Travel Mode Distribution of Surveys



Students Living Less than ¼ Mile from School

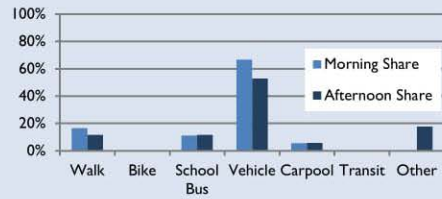
28%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Amount of Traffic Along Route – 37%
 Safety of Intersections & Crossings – 34%
 Speed of Traffic Along Route – 32%
 Violence or Crime – 32%
 Weather or Climate – 27%

Students Living Between ¼ and ½ Mile from School

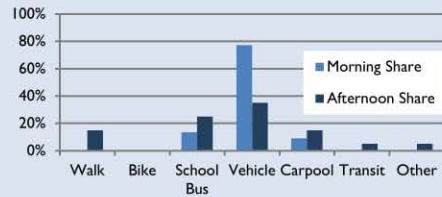
12%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Violence or Crime – 44%
 Speed of Traffic Along Route – 39%
 Weather or Climate – 39%
 Amount of Traffic Along Route – 33%
 Safety of Intersections & Crossings – 33%

Students Living Between ½ and 1 Mile from School

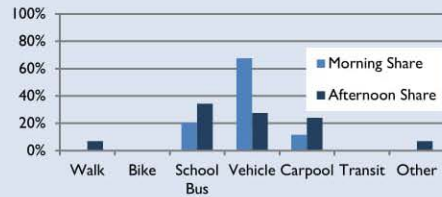
15%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Safety of Intersections & Crossings – 59%
 Distance – 50%
 Amount of Traffic Along Route – 50%
 Weather or Climate – 50%
 Violence or Crime – 50%

Students Living Between 1 and 2 Miles from School

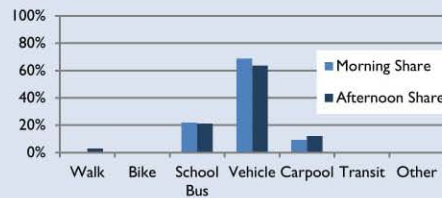
23%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Distance – 41%
 Violence or Crime – 38%
 Weather or Climate – 38%
 Amount of Traffic Along Route – 35%
 Safety of Intersections & Crossings – 32%

Students Living Farther than 2 Miles from School

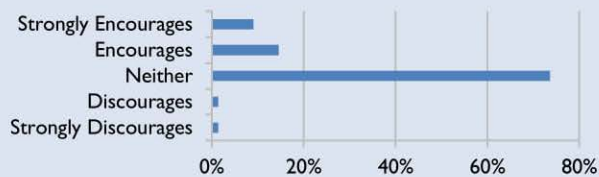
22%
of survey responses



Top 5 Issues Affecting Likelihood to Walk/Bike:
 Distance – 48%
 Amount of Traffic Along Route – 27%
 Safety of Intersections & Crossings – 21%
 Violence or Crime – 21%
 Time – 18%

Parents' Perspectives

Whether School Encourages Walking/Biking



66%
consider walking/biking healthy or very healthy.

48%
would not feel comfortable having their child walk/bike at any age with current conditions.

VISTA COLORADO ELEMENTARY - Fact Sheet

OVERVIEW

General Information:



Jurisdiction - City of Needles
 School Enrollment - 439
 Free or Reduced Lunch - 78.80%

Environmental Indicators:



Cal Enviro Score % Range - 61-65%
 Cal Enviro Score (CES2.0*) - 31.88

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

Walk Audit Highlights

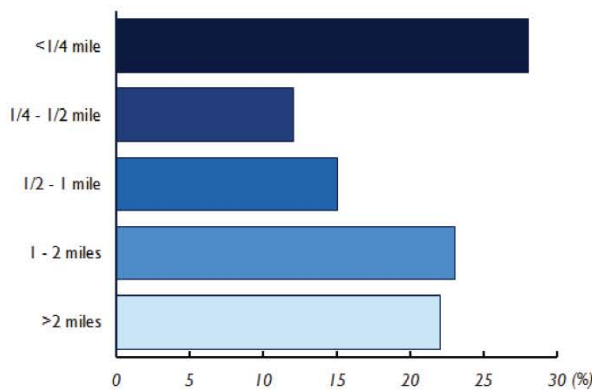


of Walk Audit Participants - 8
 # of Surveys Received - 156

WALKSHED (1/4 and 1/2 mile)



COMMUTE DISTANCE (%)



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

COLLISION ANALYSIS

Pedestrian Related Collisions



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

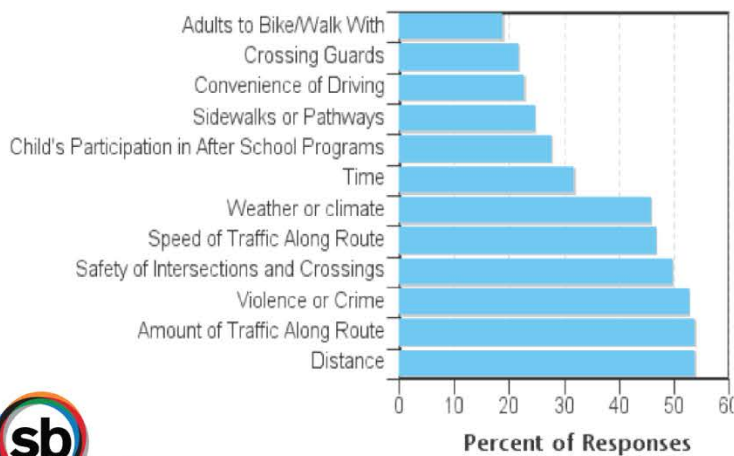
Bicyclist Related Collisions



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

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

REASONS FOR NOT WALKING/BIKING



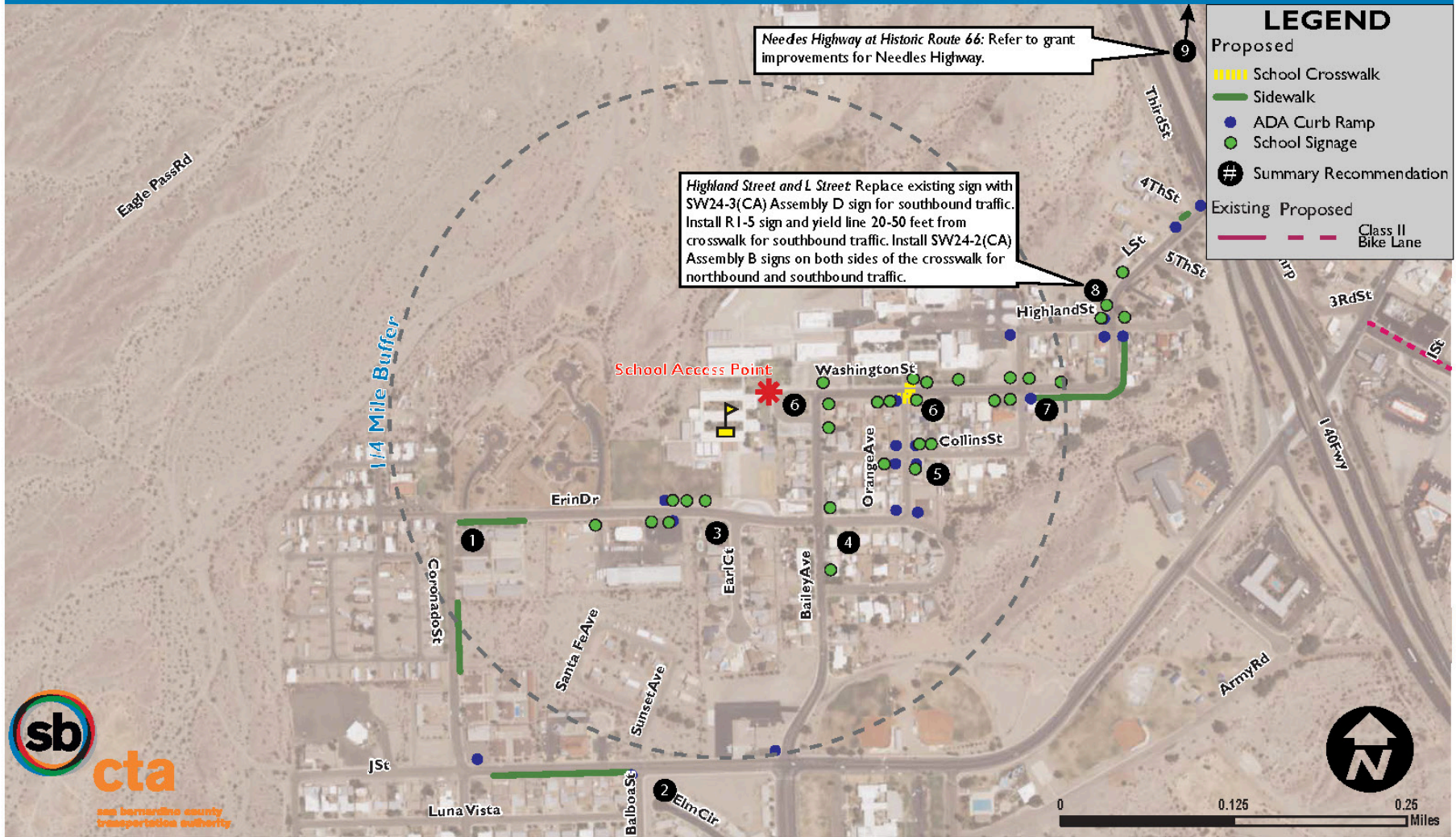
Source: SBCTA SRTS Consultant Team - School Specific National SRTS Center Data

TRAVEL MODE BEHAVIOR

| Mode | morning | afternoon |
|---------|---------|-----------|
| walk | 15% | 17% |
| bike | 1% | 0.7% |
| bus | 14% | 21% |
| vehicle | 63% | 42% |
| carpool | 6% | 13% |
| transit | 0% | 0.7% |
| other | 0% | 5% |

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

SBCTA SRTS PHASE II: VISTA COLORADO ELEMENTARY SCHOOL, NEEDLES



PROPOSED ENGINEERING RECOMMENDATIONS

- 1 Erin Drive and Coronado Street:** Remove high visibility crosswalk across east leg.
- 2 Balboa Street at J Street:** Remove high visibility crosswalk across east leg.
- 3 Erin Drive near Earl Court:** Install/replace SW24-3(CA) Assembly D signs for eastbound and westbound traffic. Install R1-5 signs and yield lines 20-50 feet from crosswalk for eastbound and westbound traffic. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.
- 4 Bailey Avenue:** Relocate power pole to install ADA curb ramp. Replace signs with new SW24-3(CA) Assembly D signs for northbound traffic. Replace existing sign with SW24-1(CA) Assembly A with W16-6P school sign.
- 5 Collins Street at Orange Avenue:** For eastbound and westbound traffic, install R1-5 signs and yield lines 20-50 feet from crosswalk at east leg. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.
- 6 Washington Street at Orange Avenue:** Remove existing sign with SW24-3(CA) Assembly D sign for eastbound traffic. Install SW24-3(CA) Assembly D sign for westbound traffic. Install R1-5 signs and yield lines 20-50 feet from crosswalk for eastbound and westbound traffic. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic. Restripe all pavement markings in front of the school, including high visibility crosswalks. Replace R1-1 signs at Bailey Avenue. Repave circle drive in front of school.
- 7 Washington Street at Park Avenue:** Replace existing sign with SW24-3(CA) Assembly D sign for westbound traffic. Install R1-5 signs and yield lines 20-50 feet from crosswalk for eastbound and westbound traffic. Install SW24-2(CA) Assembly B signs on both sides of the crosswalk for eastbound and westbound traffic.

Background/Discussion of the Engineering Recommendations

| Recommendation # | Location | Improvement | Background/Discussion |
|------------------|------------------------------------|--|---|
| 1 | Erin Drive and Coronado Street | High visibility ladder style crosswalk | Removal of high visibility crosswalk across east leg of Erin Drive to discourage crossing at that point and encourage crossing at a safer spot. |
| 2 | Balboa Street at J Street | High visibility ladder style crosswalk | Removal of high visibility crosswalk across east leg of J Street to discourage crossing at that point and encourage crossing at a safer spot. |
| 3 | Erin Drive near Earl Court | School signage and striping | Installation of school signs will increase visibility and safety for eastbound and westbound traffic. Yield lines and signs will make drivers aware of upcoming pedestrian crossings. |
| 4 | Bailey Avenue | relocate power pole, ADA compliance and school signage | See below, "General - ADA curb ramps". Relocation of power pole will allow for an ADA curb ramp to be installed. School signs will help northbound drivers awareness for the upcoming school. |
| 5 | Collins Street at Orange Avenue | School signage and striping | Installation of school signs will increase visibility and safety for eastbound and westbound traffic. Yield lines and signs will make drivers aware of upcoming pedestrian crossings. |
| 6 | Washington Street at Orange Avenue | School signage and striping, school pavement markings and high visibility crosswalk, and repave road | Installation of school signs will increase visibility and safety for eastbound and westbound traffic. Yield lines and signs will make drivers aware of upcoming pedestrian crossings and help keep pedestrians safe. Restriping of pavement markings in front of school will ensure visibility for drivers. Repaving of circle drive in front of school ensures safe conditions for vehicles, bicyclists and pedestrians. |
| 7 | Washington Street at Park Avenue | School signage and striping | Installation of school signs will increase visibility and safety for eastbound and westbound traffic. Yield lines and signs will make drivers aware of upcoming pedestrian crossings. |
| 8 | Highland Street and L Street | School signage and striping | Installation of school signs will increase visibility and safety for northbound and southbound traffic. Yield lines and signs will make drivers aware of upcoming pedestrian crossings. |
| General | School area | ADA curb ramps | Improvements made to comply with ADA standards for increased accessibility for students/parents along their primary routes to school. |

Vista Colorado Elementary School

Cost Estimates: Vista Colorado Elementary School

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

| CORRIDOR | IMPROVEMENT | UNIT | COST | QTY | TOTAL |
|--|---|-----------------|---------|-----|------------------|
| Bailey Ave. | New Sign on Post | Each | \$181 | 4 | \$724 |
| | Segment Total | | | | \$724 |
| Collins St. | New Sign on Post | Each | \$181 | 4 | \$725 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 4 | \$208 |
| | Segment Total | | | | \$932 |
| Coronado St. | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 270 | \$14,019 |
| | Segment Total | | | | \$14,019 |
| Erin Dr. | New Sign on Post | Each | \$181 | 6 | \$1,087 |
| | ADA Curb Ramps | Each | \$3,623 | 4 | \$14,490 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 250 | \$12,981 |
| | Segment Total | | | | \$28,557 |
| Highland Ave. | New Sign on Post | Each | \$181 | 2 | \$362 |
| | ADA Curb Ramps | Each | \$3,623 | 4 | \$14,490 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 100 | \$5,192 |
| | Segment Total | | | | \$20,044 |
| Broadway St. (Historic U.S. 66) | ADA Curb Ramps | Each | \$3,623 | 1 | \$3,623 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 560 | \$29,077 |
| | Segment Total | | | | \$32,699 |
| J St. | ADA Curb Ramps | Each | \$3,623 | 3 | \$10,868 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 550 | \$28,557 |
| | Segment Total | | | | \$39,425 |
| L St. | New Sign on Post | Each | \$181 | 2 | \$362 |
| | ADA Curb Ramps | Each | \$3,623 | 3 | \$10,868 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 50 | \$2,596 |
| | Segment Total | | | | \$13,826 |
| Washington St. | New Sign on Post | Each | \$181 | 12 | \$2,174 |
| | School Area Pavement Marking (Per Word) | Each | \$254 | 15 | \$3,804 |
| | High Visibility Ladder Crosswalk | Each | \$1,788 | 6 | \$10,728 |
| | ADA Curb Ramps | Each | \$3,623 | 2 | \$7,245 |
| | Concrete Sidewalk (1 side of street) | Per Linear Foot | \$52 | 800 | \$41,538 |
| | Segment Total | | | | \$65,488 |
| ALL SEGMENTS | | | | | \$215,714 |