

# Walk Audit Report



SafeRoutes



Napa County

ST. HELENA  
ELEMENTARY SCHOOL

# ST. HELENA ELEMENTARY SCHOOL

1325 ADAMS STREET  
ST. HELENA, CA

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## ACKNOWLEDGEMENTS

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# EXECUTIVE SUMMARY

## THE NAPA COUNTY SAFE ROUTES TO SCHOOL PROGRAM

The Napa County Safe Routes to School (SRTS) Program is a partnership between the Napa County Office of Education (NCOE), Napa County Bicycle Coalition (NCBC) and Napa Valley Transportation Authority (NVTA). Since 2008, the Program has provided high-quality bicycle and pedestrian safety education and encouragement programs and has worked closely with the public agency and school stakeholders to make walking and bicycling safer and more accessible for children throughout Napa County.

According to 2015 California Office of Traffic Safety (OTS) data, the data available when the SRTS program was applying for grant funding, Napa County ranked 1st in per capita number of collisions of bicyclists under the age 15, 2nd in total fatal and injury-causing collisions, and 3rd in overall pedestrian collisions. According to the most recent OTS data (2018), Napa County ranked 8th for bicyclist collisions statewide (58 counties), 7th for speed-related collisions, and 6th for total fatal and injury-causing collisions. A decades-long decline in the number of students walking and biking to school, as well as increased awareness of the significant traffic congestion, air pollution, and related issues associated with students being driven to school galvanized local agency partners to expand the existing program.

The goal of the Walk Audit Report is to **identify, evaluate, prioritize, and offer solutions** to infrastructure and non-infrastructure barriers to students safely walking and biking to school in Napa County.

In 2017, the Napa County SRTS program secured funding through the Caltrans Active Transportation Program (ATP) and One Bay Area Grant (OBAG) Cycle II programs to expand education programs and initiate a series of evaluations at each public school countywide. NCOE has been leading education and engagement programs under the current program, while NCBC has led evaluations of active transportation barriers at all 36 school sites.

### WHY SAFE ROUTES TO SCHOOL?

Safe Routes to School is national initiative committed to increasing the number of students who walk or bike to school, and making it safe, convenient, and fun for kids to do so. In doing so, SRTS aims to improve kids' safety and increase health and physical activity. Concerned by the declining number of students walking and biking to school over recent decades and the related long-term health and traffic consequences, Congress made federal funding available for SRTS programs nationwide in 2005. Since then, SRTS programs have been implemented at more than 14,000 schools in all 50 states.

Studies have linked SRTS programs to increased walking and biking to school<sup>ab</sup> and reduced pedestrian-motorist collisions<sup>cd</sup>. This can lead to safer, healthier, and more focused students, while also benefitting local and school communities.

Regularly walking or biking increases children's daily levels of physical fitness and improves their cardiovascular health<sup>e</sup>.

Student health has been linked to improved academic performance<sup>g</sup>. When students walk or bike to school, the fresh air and exercise allow them to arrive refreshed, energized and ready to focus. Children have a greater sense of spatial awareness and knowledge when they are actively engaged in their transportation, allowing them to better recognize and navigate their neighborhoods independently<sup>h</sup>. Families are also provided with a low-cost transportation option that can significantly reduce their annual expenses<sup>i</sup>.

When a greater share of students walk or bike to school, local and school communities benefit too. Fewer cars being driven to school can improve the air quality of surrounding neighborhoods by decreasing air pollutant emissions and increase street safety through reduced traffic congestion and noise pollution. This can also improve campus safety and reduce circulation hazards around the school site. Walking or biking is a reliable form of transportation, which can reduce student absence and tardiness. By reducing the number of short-distance school bus trips, increased student walking and biking can also help school districts save funds by decreasing costly bus service.

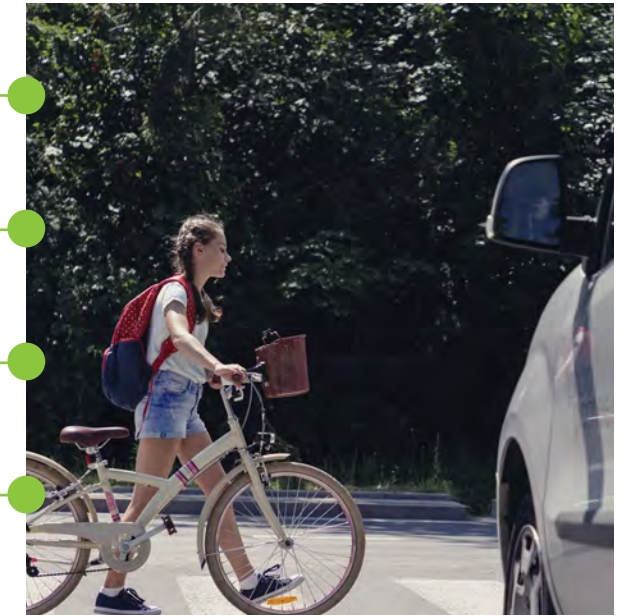
Schools and the community benefit immensely when students choose to walk or bike.

Student health has been linked to improved academic performance.

Walking or biking can provide a reliable form of transportation, leading to reduced student absence and tardiness.

Children arrive ready to learn and are less likely to experience discipline issues.

Fewer cars dropping off and picking up students improves campus safety and reduces circulation hazards.



### THE SIX E'S

Safe Routes to School programs originally followed a comprehensive approach that addressed the "Five E's" – education, encouragement, enforcement, evaluation, and engineering. In 2017, when the Napa County SRTS program obtained funding to perform Walk Audit evaluations, the "Five E's" had recently been altered to add a sixth "E" – equity. In June 2020, after a significant portion of the Walk Audit evaluation work had been completed, the "Six E's" framework was again altered, dropping enforcement and adding engagement. These changes were led by the Safe Routes to School National Partnership.

The current "Six E's" framework is described below. Although enforcement is no longer one of the "Six E's", a brief definition of enforcement is included, as it was part of the approach used by the Napa County SRTS program during the majority of the Walk Audit evaluation process.



#### Engagement

Listen to community members and work with existing community organizations.



#### Equity

Recognize the unique barriers that different people face in living healthy, fulfilled lives, and craft policies, programs, and overall approaches with those various challenges and needs in mind.



#### Engineering

Design streets and schools for walkers and bikers to use safely and conveniently.



#### Encouragement

Promote walking and biking in the school community through events, programs and incentives.



#### Education

Ensure that everyone learns how to travel safely and why biking and walking are important.



#### Evaluation

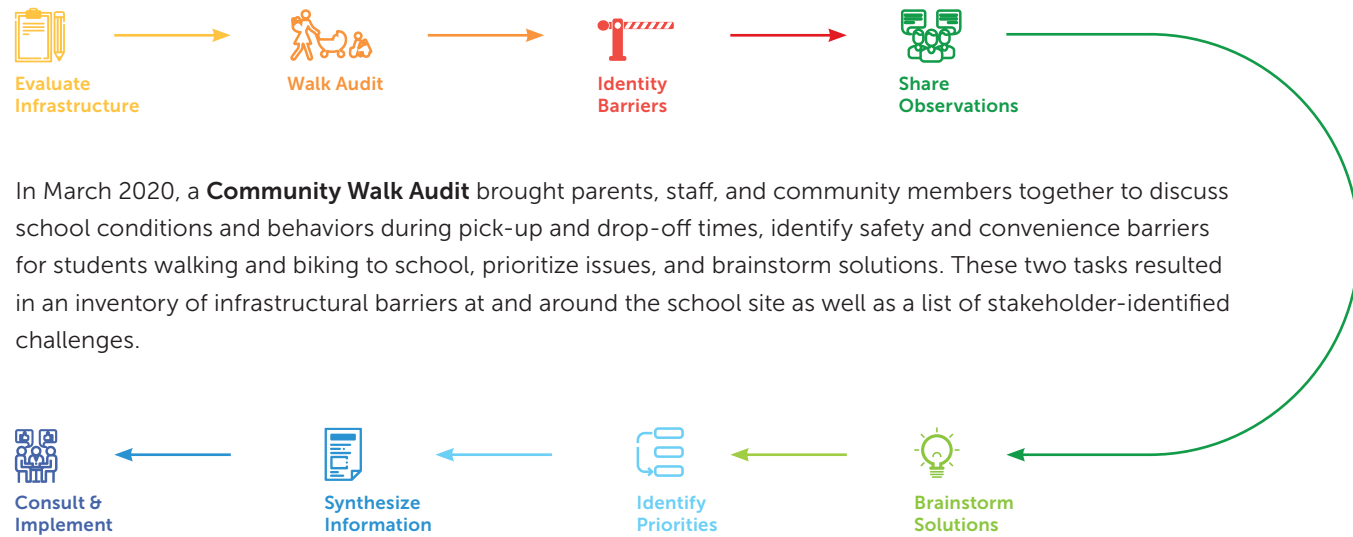
Track progress toward our shared safety goals, develop programs accordingly.

#### Enforcement (no longer an "E"):

Enforce traffic safety laws and school policies and target risky behaviors. No longer recommended as foundational to the start, maintenance, or growth of Safe Routes to School programs.

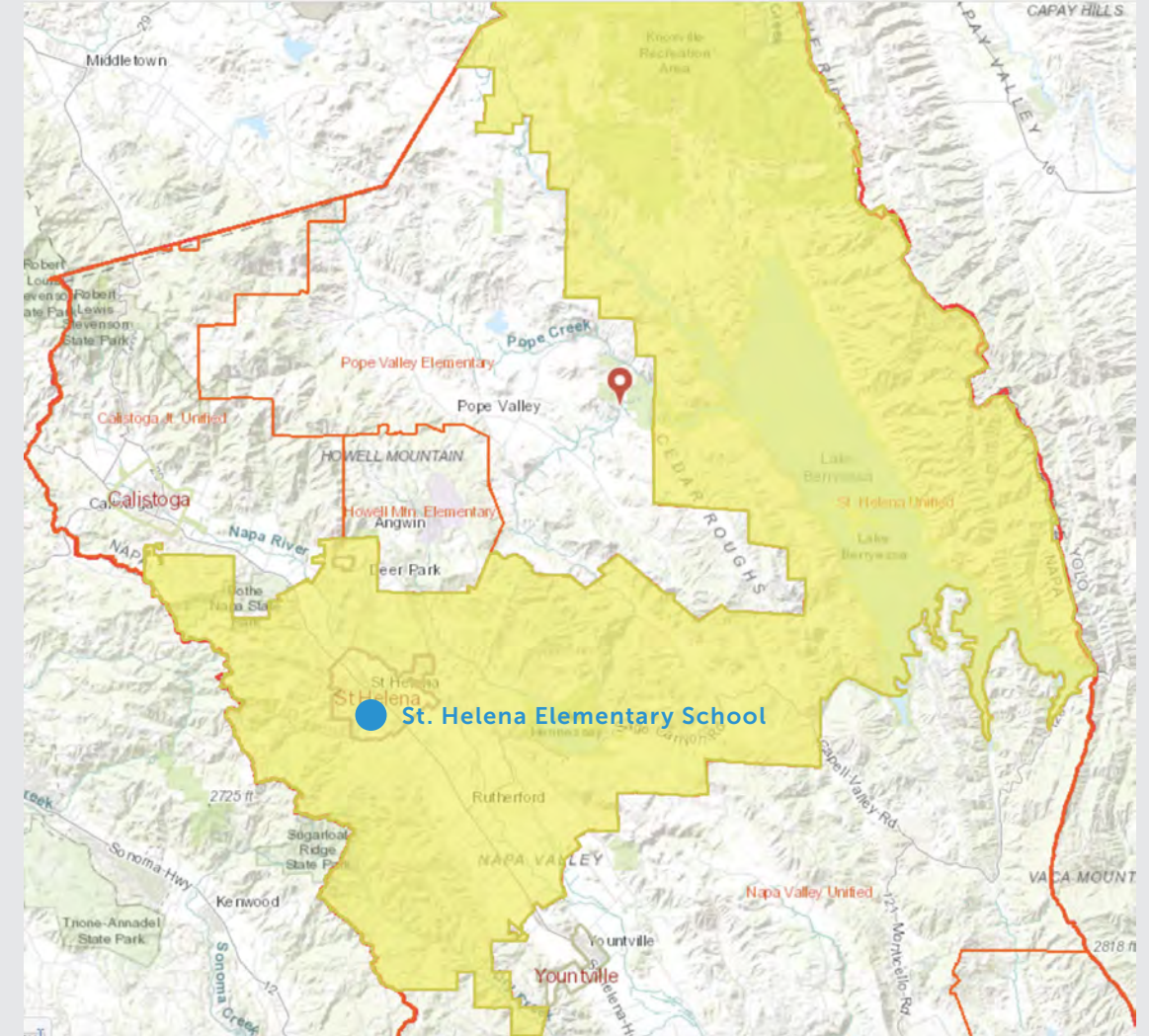
## REPORT PROCESS

The SRTS team conducted a comprehensive evaluation of the barriers to students walking and biking to and from St. Helena Elementary School over the course of 2 years, starting in the summer of 2018. Information on physical and behavioral challenges was collected in two phases. In September 2018, the SRTS team completed an **initial infrastructure audit** of the school site and the surrounding neighborhood within a half-mile of the school. SRTS team members walked and rode bicycles throughout the school neighborhood, taking photographs of barriers and logging them into Fulcrum, a GPS-enabled data collection smartphone app.



In March 2020, a **Community Walk Audit** brought parents, staff, and community members together to discuss school conditions and behaviors during pick-up and drop-off times, identify safety and convenience barriers for students walking and biking to school, prioritize issues, and brainstorm solutions. These two tasks resulted in an inventory of infrastructural barriers at and around the school site as well as a list of stakeholder-identified challenges.

A report draft was shared with the Napa Valley Transportation Authority, the Napa County Office of Education, law enforcement, public works and planning representatives from the City of St. Helena, the local school district, and school stakeholders, and their feedback was incorporated into the final version. As part of the larger countywide project, the SRTS team engaged EMC Research, a national public opinion research firm to conduct a comprehensive survey of parents' perceptions around walking and biking to school (see Appendix A). The Walk Audit report outlines the information gathered during this multi-year process and provides recommendations for improvements.



Map 1: Enrollment Boundary of St. Helena Elementary School (school marked by blue dot)

As St. Helena Elementary School is the only elementary school in St. Helena Unified School District, its enrollment boundaries cover the entire school district, including the northeast portion and a middle section of Napa County.

## ST. HELENA ELEMENTARY SCHOOL (SHES) SCHOOL SUMMARY

Principal	Tanya Pearson	Grades	3-5
District	St. Helena Unified	Enrollment	248
First Bell	8:35 AM	Street	1325 Adams Street
Last Bell	3:10 PM (1:45 PM on W)	City	St. Helena, CA 94574

Overall Facility Rating<sup>1</sup>: **Good**

## DATA

No data is currently available regarding the number of students who walk and bike to the school. The school's principal estimates that roughly 30% of students walk or bike to school on an average day, suggesting that the school may experience higher active transportation rates compared to countywide data (see Figure 1). Additional work is needed to establish a baseline of active transportation use for this school.

According to the results of the countywide EMC Research survey conducted in Spring 2021, 16% of respondents report that their K-8th grade children primarily walk to and/or from school and ~4% primarily bike. While nearly half (43%) say that their child has walked or biked to/from school at some point, 73% report using a single-family vehicle as the primary transportation method to and from school.

### Total Enrollment by Group (2019-20)

ETHNICITY	ST. HELENA ELEMENTARY SCHOOL	DISTRICT
Black or African American	0.0%	0.4%
American Indian or Alaska Native	0.0%	0.5%
Asian	2.0%	1.1%
Filipino	0.0%	0.2%
Hispanic or Latino	54.8%	51.6%
White	41.1%	45.1%
Native Hawaiian or Pacific Islander	0.0%	0.0%
Two or More Races	2.0%	1.1%
Not Reported	0.1%	0.0%

EXPERIENCE	ST. HELENA ELEMENTARY SCHOOL	DISTRICT
Socioeconomically Disadvantaged	48.8%	44.7%
English Learners	24.2%	18.8%
Students with Disabilities	8.5%	8.9%
Foster Youth	0.4%	0.4%

Figure 2: Enrollment Data by Group

### Countywide K-8 Primary Transportation to/from School (EMC Research)

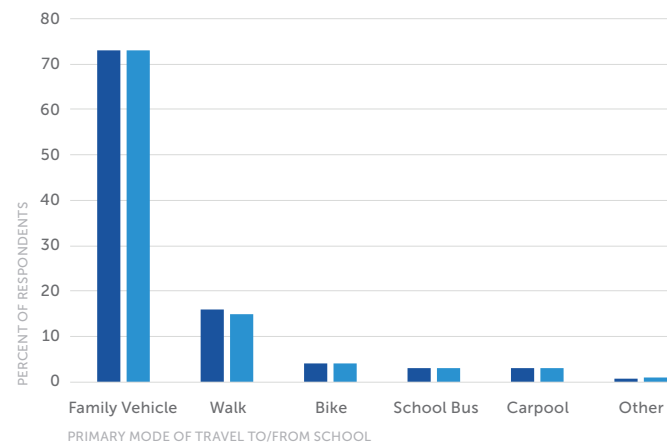


Figure 1: EMC Research Polling Results

**Note:** Data from EMC Research survey represents countywide behaviors, and school or city-level breakdowns are not available. See Appendix A for details on survey methods and respondent profiles.

### Student Enrollment by Grade Level (2019-2020)

	NUMBER OF STUDENTS
Grade 3	83
Grade 4	77
Grade 5	88
<b>Total</b>	<b>248</b>

Figure 3: Enrollment Data by Grade

## NEIGHBORHOOD CONTEXT

St. Helena Elementary School is located in central St. Helena on the corner of Oak Avenue and Adams Street. The school is bordered by Adams Street to the north, Oak Avenue to the east, Tainter Street to the south, and Stockton Street to the west. A row of single-family houses prevents access to the school from Stockton Street. Oak Avenue is a downtown/mixed-use street, while all the other bordering streets are classified as residential.

Medium-density residential neighborhoods surround the school to the north and west, though an office building and the Sun and Stars Montessori School sit just north of the school on Adams Street. The neighborhoods to the north were primarily built between the 1910s and 50s, though there are some older residences dating back to as early as the 1880s. The neighborhoods to the west of the school range greatly in age, though the majority were built in the 1910s to 1940s. South of the school are primarily high-density residential neighborhoods, with some medium-density residential neighborhoods and small parks. Most of these residences were built in the 1980s and 1990s. Physical infrastructure varies due to the range and period of construction in these neighborhoods.

East and southeast of the school is the city's central business zone; just one block east of the school is SR 29, the city's Main Street, which is lined with small businesses and restaurants. SR 29 is also one of two regional highways that connects St. Helena to neighboring towns to the north and south. The east side of Oak Avenue is considered part of this central business zone.

The street patterns of the neighborhoods around the school are mostly fragmented parallel, with some lollipops mostly to the south. Fragmented parallel streets make blocks longer than gridiron streets, reducing walkability and pedestrian route choice. While lollipops decrease traffic volumes and speeds in neighborhoods, they can also greatly reduce walkability.

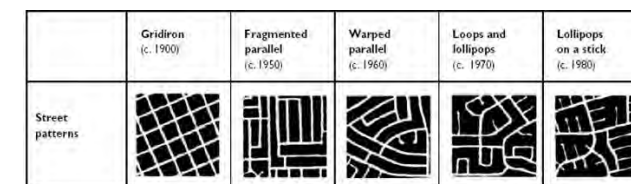
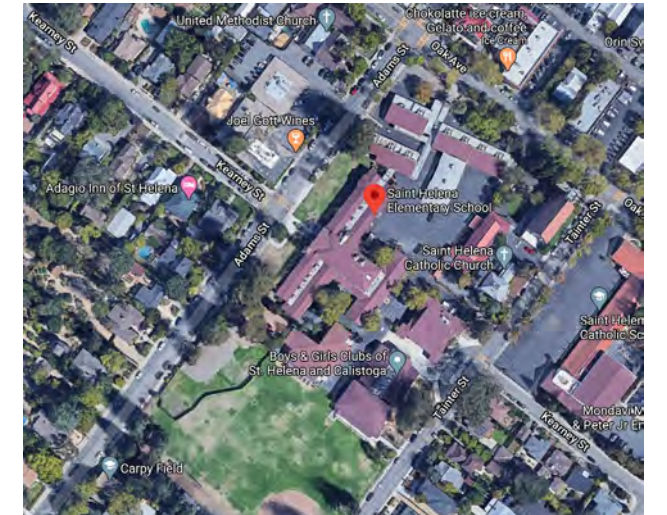
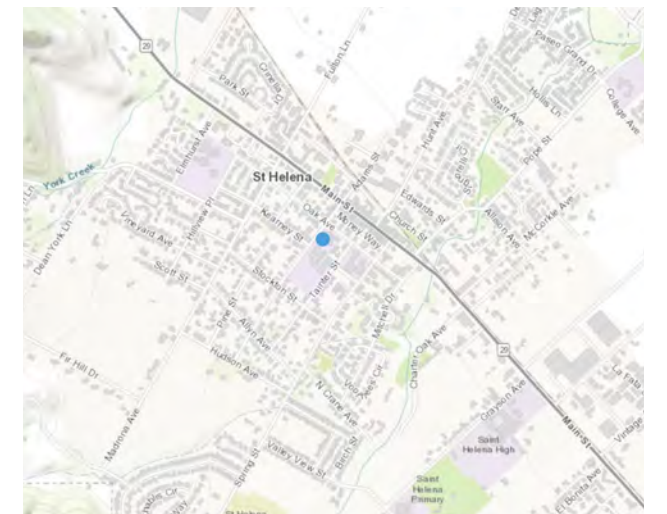


Figure 4: Examples of Street Patterns (Source: Southworth, 1997)

Popular student destinations within walking distance of the elementary school include the Boys and Girls Club, which is on the school's campus, Chokolatte ice cream store on Oak Avenue, and the Napa Valley Roasting Company on the opposite corner of Oak Avenue and Adams Street.



An aerial photo of St. Helena Elementary School, labeled with a red marker.



Map 2: School site location in the city. St. Helena Elementary School (blue dot) is located in central St. Helena, just one block away from Main Street (SR 29).



Main Street (SR 29) has sidewalks, on-street parking, two travel lanes, and a left-turn lane. Signage prohibits riding bicycles, skateboards, and roller skates on the sidewalks.

# EXISTING CONDITIONS

The Safe Routes to School Team conducted an initial evaluation of the school site and surrounding region's infrastructure prior to conducting the Community Walk Audit. The Fulcrum App software was used to map and record significant point and segment issues within a half-mile range of the school. The team also collected information on local and school transportation policies and programs from conversations with the school's staff and administrators, as well as documents from the school and City websites. Prior to circulation of the draft report among partners, the team conducted an additional site visit to confirm conditions.

## SITE CIRCULATION

St. Helena Elementary School can be accessed from Adams Street, Oak Avenue, and Tainter Street. There are five entrances on Adams Street, two on Oak Avenue, and three on Tainter Street. One of the entrances on Adams and one on Tainter are informal entrances, as they are gates to the school's field which does not have a formal path to campus. As students arrive at the school from all directions, entrances on all streets are utilized. There is at least one entrance that is bicycle-accessible on each street.



The northernmost Oak Avenue entrance (left). The gated entrance on Tainter Street leads to the school field (right).

The school's official loading zone is located on eastbound Adams Street in front of the school's entrance to the playground and main office and is marked by a yellow curb and signage. The loading zone can be used as parking outside of school drop-off and pick-up hours.

Most of the curb on southbound Oak Avenue, the side the school is on, is designated as the bus loading zone during school hours, which runs from Adams Street to near the campus's south edge. There are some unpainted parking spots that parents can use for drop-off and pick-up just south of the bus loading zone.

Tainter Street has a short loading curb on the eastbound side just east of the school's back entrance, as well as a U-shaped circulation zone across the street from Kearney Street. Though this circulation zone was created for the Boys and Girls Club, motorists often use it to drop

off and pick up elementary school students. Walk Audit participants reported that the green curbs in the circulation zone often result in parents parking in the circulation zone for extended periods of time, leading to some congestion.



The loading zone on Adams Street is marked by a yellow curb and signage that indicates loading hours.

Parents can also drop students off along the unpainted curb on westbound Adams Street, northbound Oak Street, and westbound Tainter Street.

A pick-up/drop-off policy (Figure 5) is sent out in the Parent/Student handbook, which is also available on the school's website. Reminders of the policy are sent out to parents on an as-needed basis. The school also includes sections on Pedestrian and Bicycle Safety in the Parent/Student handbook (Figure 6).

The St. Helena Unified School District used to contract with



The bus loading zone on Oak Avenue is marked by a yellow curb and signage.

the Napa Valley Unified School District to provide limited bus service to SHUSD students, which included service to St. Helena Elementary School. Following school bus driver shortages, SHUSD worked with a consultant to develop and implement their own transportation program beginning during the 2020-21 school year. As of the 2021-22 school year, SHUSD is contracting with Michael's Transportation for bus drivers. As the school district

continues to recruit drivers, routes are sometimes temporarily cancelled based on capacity; the district alternates which route is cancelled when cancellations last longer than one day.

All students must submit a completed application form and ridership agreement form to ride the bus. Four bus routes serve all of the schools in the district, though one of them (the College Avenue Short Route/Local Route) is for assigned students only. These bus routes serve students in the city of St. Helena, Lake Berryessa, and Angwin and Deer Park.

The St. Helena Shuttle, which provides both fixed and on-demand services within the City of St. Helena, does not stop directly in front of St. Helena Elementary School campus as part of its Fixed Route service, but does stop at the end of the block at Adams Street and Stockton Street in both the morning and afternoon. The nearest Vine public bus stops for the Route 10 Up Valley Connector are either at Main Street and Pine Street or Main Street and Pope Street/Mitchell Drive. All of these Vine bus stops have sheltered benches except for the northbound stop on Pope Street, which has two small seats connected to the bus stop sign.



The U-shaped circulation zone near the main Tainter Street entrance to the school.

### Pedestrian Safety

In order to keep our children safe as they come and go from the Elementary School, it is important to follow these procedures:

- Parents should only drop students off in the designated drop off zones on Adams and Tainter Streets so students can safely walk into the school without crossing lanes of traffic.
- Adults and children must use the sidewalks around the school.
- Adults and children must use the marked crosswalks on Adams and Tainter Streets.

### Bicycle Safety

The school is not responsible for theft or vandalism of bicycles. Bikes must be LOCKED while on campus. Be certain that the bike and helmet are properly marked to identify ownership. Riding is prohibited anywhere on campus. California law requires riders to wear a safety helmet.

Figure 5: Pick-up/Drop-off Policy at St. Helena Elementary School.

### Beginning and End of the School Day

Student safety is extremely important at the start and end of the school day. Before your students leaves for school in the morning, be sure that after-school plans have been made. Students who are dropped off at school in the morning are expected to come directly onto the school grounds. There are two drop off zones: in front of the Elementary School and the circular drive at the entrance to the Boys and Girls Club. To assure student safety, parents are asked to drop students off in these zones, not in any other area. The Oak Avenue entrance to the campus is a bus loading zone; please do not drop off there.

Please remember to follow these procedures.

- Please wait for cars to exit if the zone is full.
- Follow the directions of any adult personnel present in the drop off zone.
- Students are to exit on the curbside of the zone as quickly as possible.
- Please make sure that you child has gathered his/her things and pleasantries have been exchanged when you load up the car at home so that students are able to unload at school without holding others up.
- DOUBLE PARKING IS NEVER ALLOWED.
- DO NOT ALLOW YOU CHILD TO EXIT YOUR CAR EXCEPT IN THE DROP OFF ZONE.

We are limited to on-street parking at St. Helena Elementary. Cars may be parked on the street areas with unpainted (grey) curbs on Adams Street at the front of the school, and on Tainter Street, at the back of the school. Please do not park in areas with yellow curb marking; the St. Helena Police Department will issue parking citations for these areas.

At the beginning and end of the school day, please be cognizant of the importance of safety for each and every child. If everyone exercises patience and remains calm, the process of getting everyone safely to school and back home every day can be efficiently accomplished.

Figure 6: Pedestrian and Bicycle Safety, included in the St. Helena Elementary Parent/Student Handbook.



Photo Credit: Saint Helena Shuttle Facebook Page

## SCHOOL PARKING LOT AND GROUNDS

St. Helena Elementary School does not have a school parking lot. Instead, staff, parents, and visitors may park along the unpainted curbs on Adams Street, Oak Avenue, or Tainter Street. Motorists may also park in the loading zones on Adams Street and Oak Avenue if they are outside the designated time frames for pick-up and drop-off.



Loading zone time frames on Adams Street.



Bikes overflow the bike rack during encouragement events, such as Walk and Roll Wednesdays.



Tainter Street narrows considerably along the campus's edge – this can be a significant barrier to parents walking with strollers or people using wheelchairs.

## BICYCLE AND PEDESTRIAN INFRASTRUCTURE

There are no bicycle facilities adjacent to the school. The nearest bicycle facilities are a mix of Class II bike lanes and Class III bike boulevards on Pope Street, about a quarter-mile away from the school across SR 29.

The school provides two bike racks for its students – one near the main Tainter Street entrance, and one near the southernmost Oak Avenue entrance. These racks are highly-utilized and cannot accommodate high volumes of students biking to school, such as is seen during Walk and Roll Wednesdays. Additionally, both bike racks are located against surfaces such as fences or walls, so only half of the parking spaces are accessible. Neither of the racks are bolted to their surfaces, leaving the bikes vulnerable to theft or vandalism. Only the Tainter Street bike rack is near a lighting structure.



Bike parking near the Oak Avenue entrance (left) and near the Tainter Street entrance (right).

The area surrounding the school has a connected network of continuous sidewalks. The sidewalks narrow on some of the residential streets, such as Tainter Street and Pine Street. Further west of the school, some residential streets, such as Hudson Avenue and Crane Avenue, either have sidewalk gaps or do not have sidewalks at all. Spring Street, an important street connecting several residential blocks to the school area, has two gaps in its eastbound sidewalk with no crosswalks to the continuous westbound sidewalk. All of the crosswalks around the school have high-visibility striping patterns. The school does not have any crossing guards.

## MAP OF EXISTING BICYCLE FACILITIES



Legend:  
 Shared Use Path (Class I) (Green line)  
 Bike Lane (Class II) (Blue line)  
 Bike Route (Class III) (Orange line)  
 Bike Boulevard (Class III) (Brown line)  
 Separated Bike Lane (Class IV) (Purple line)  
 Trail (Pink line)

Map 3: Existing Bicycle Facilities  
 (Map source: Napa Valley Transportation Authority Napa Countywide Bicycle Plan (2019)).

**MAP OF EXISTING PEDESTRIAN FACILITIES**



Map 4: Existing Pedestrian Facilities  
 (Map source: Napa Valley Transportation Authority Napa Countywide Pedestrian Plan (2016)).

**POLICIES AND PROGRAMS**

**Encouragement and Education:**

St. Helena Elementary School has participated several times in the two annual countywide events, Bike to School Day and Walk and Roll to School Day. Bike to School Day and Walk and Roll to School Day are annual encouragement events facilitated by Napa County Safe Routes to School in the spring and fall, respectively, that celebrate students making the healthy choice to walk or bike to school.



St. Helena Elementary School students stop at an "energizer station" on Oak Avenue on Bike to Work and School Day 2019.

In September 2019, the City of St. Helena partnered with Napa County Safe Routes to School and members of the City's Active Transportation and Sustainability Committee to hold a Walk and Roll to School month for St. Helena students. The month included weekly Walk and Roll Wednesdays at the elementary school leading up to International Walk and Roll to School Day in October, free bike tune-ups at a kick-off party, and a Walk and Roll coloring contest through Sunshine Foods Market. Walk and Roll Wednesdays encourage students to walk, bike, or otherwise roll to school by holding a welcome table that recognizes students who use active transportation and often hands out incentives.

Following Walk and Roll to School month, the school began promoting walking and biking to school through monthly Walk and Roll Wednesdays and continued implementation of the Golden Sneaker contest initiated during Walk and Roll month. The Golden Sneaker contest is an award presented to the class that has the most participants in a Walk and Roll Wednesday.

The school has provided a couple of bike rodeos to its students, though it has not provided any pedestrian safety education. Bike rodeos are mainly on-bike lessons where students learn the rules of the road by navigating a roadway-designed obstacle course. Bike rodeos typically provide roughly 45 minutes of instruction and riding.

YEAR	EVENT	STUDENT PARTICIPANTS
2016/17	Bike to School Day	62
2017/18	Bike to School Day	50
2018/19	Walk and Roll to School Day	76
2018/19	Bike to School Day	36
2019/20	Walk and Roll to School Day	171
2019/20	Bike Rodeos (2)	147
Sep 2019	Walk and Roll Wednesdays (3)	458
Nov 2019	Walk and Roll Wednesday	137
Feb 2020	Walk and Roll Wednesday	121
March 2020	Walk and Roll Wednesday	171
2019/20	Bike Safety Education	N/A – cancelled due to Covid-19

Figure 7: Encouragement and Education Data



**Enforcement:**

St. Helena Police Department provided citywide enforcement data for 2014 to 2019 on violations for passing a school bus, speeding, failing to stop at a stop sign, and failing to yield to pedestrians. Data on roads around the school and along significant pedestrian and bicyclist travel routes to the school were selected for analysis. For St. Helena Elementary School, this included but was not limited to Oak Avenue, Tainter Street, Adams Street, Kearney Street, and Main Street from Spring Street to Adams Street.

For the examined time period, there were 11 citations for passing a school bus on Oak Avenue/Tainter Street. There were 26 citations for failure to stop at a stop sign, many of which were at intersections on Oak Avenue, including Adams Street, Tainter Street, and Spring Street. There were also a handful of citations at Spring Street and Main Street. There were no citations for failure to yield to pedestrians in the St. Helena Elementary School area.

Most significant of the provided enforcement data was the speeding data – there were 33 citations for speeding in the school area. 27 of those citations were located along Main Street, with 17 citations being administered at Main and Spring Street. As crossing SR 29 at the three nearest locations to the school (Adams Street, Hunt Avenue, and Spring Street), were major safety concerns for Walk Audit participants, this data suggests that speeding may influence the sense of pedestrian safety at these intersections.

**CITATIONS IN SCHOOL AREA BY TYPE**

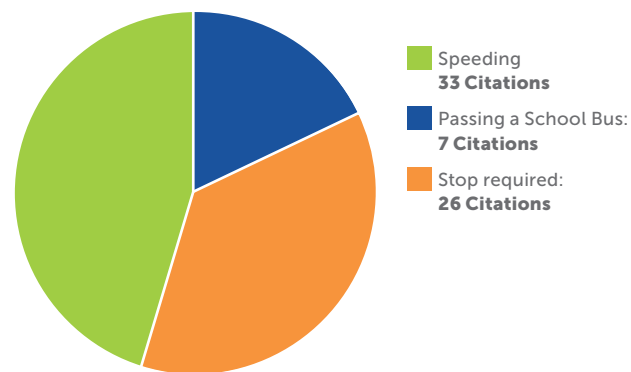


Figure 8: Citations by Type

**SPEEDING CITATIONS ALONG MAIN STREET IN SCHOOL AREA (2014-2019)**

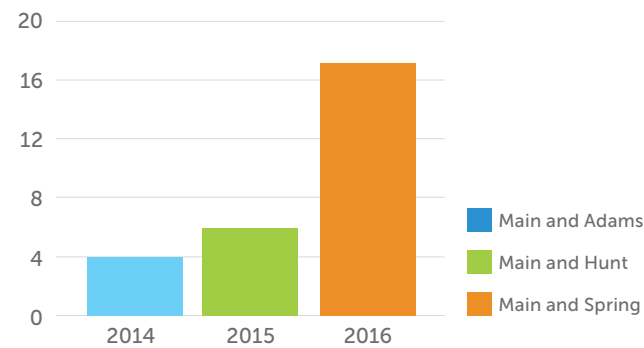
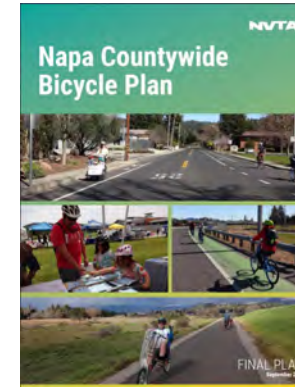


Figure 9: Citations – Speeding (Main Street)

**EXISTING PLANS**



**NVTA Napa Countywide Bicycle Plan (2019):**

The Countywide Bicycle Plan lists several recommended improvements around St. Helena Elementary School. Adams Street from Allyn Avenue to Railroad Avenue is proposed for a Class III bike boulevard. Oak Avenue from Mitchell Drive to Madrona Avenue is designated as a study corridor in consideration of being part of the regional Vine Trail shared-use path alignment. Several nearby residential streets along routes to the school, such as Spring Street, Allyn Avenue, and Madrona Avenue, are recommended for Class II bike lanes.

**SHUSD High Priority Project List/Funding Plan (2017):**

According to the most updated version of SHUSD’s High Priority Project List/Funding Plan, created in December 2017, there are no major projects for 2020-2022 that will impact circulation around the school site.



**NVTA Napa Countywide Pedestrian Plan (2016):**

The majority of the Pedestrian Plan’s improvements for St. Helena are along SR 29. Near the school, proposed improvements include assessment of pedestrian signal timing improvements on SR 29 from Pine Street to Mitchell Drive, crosswalk enhancements at SR 29 and Adams Street, enhanced marked crosswalks at SR 29’s intersections with Hunt Avenue and Spring Street.

**Caltrans District 4 (2018):**

Caltrans District 4 Bicycle Plan lists bicycle improvements at the intersection of SR 29 and Mitchell Drive/Pope Street, about a quarter-mile away from the school. These improvements include bike boxes, green markings, and a bike through offset intersection of Mitchell Drive/Pope Street at SR 29.



**Downtown Streetscape Project Preferred Plan (2019):**

The Downtown Streetscape Project seeks to expand pedestrian areas, create sense of place through art, historic, and agrarian references, and expand the downtown core. Organized into two phases, the Downtown Vision Masterplan (Phase 1) focuses on improving connections to Main Street and the pedestrian experience along Main Street, while the

Downtown Streetscape Improvement Plan (Phase 2) provides detailed design and construction plans for sidewalk improvements along Main Street. Sidewalk improvements include curb extensions, new sidewalk paving, street trees, and lighting improvements. Improvements near the school include improvements to Telegraph Alley and curb extensions on Main Street at Adams Street, Hunt Avenue, Spring Street, and Pope Street/Mitchell Drive.



# WALK AUDIT

**Date:** 03/13/2020  
**Day of the Week:** Friday

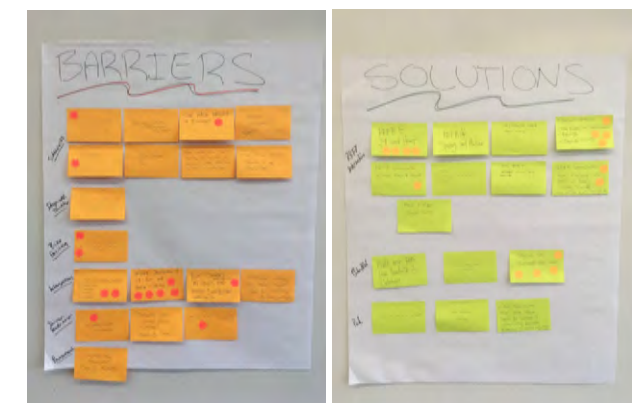
**Meeting Time:** 7:50am  
**Weather:** Overcast / Misty

## METHODOLOGY

The Community Walk Audit brought school stakeholders together to observe existing conditions during drop-off time, identify barriers to safe walking or biking, and explore solutions. The Walk Audit team consisted of five parents, the school's principal, and the St. Helena Boys and Girls Club director. The group met 30 minutes prior to the school bell for a brief presentation on the SRTS program and the process and purpose of Walk Audits.

The team then split up into two groups. One group walked west on Adams Street to Kearney Street, east on Adams Street to SR 29, north on Oak Avenue, west on Pine Street, and south on Kearney Street, with a brief stop by the Tainter Street main

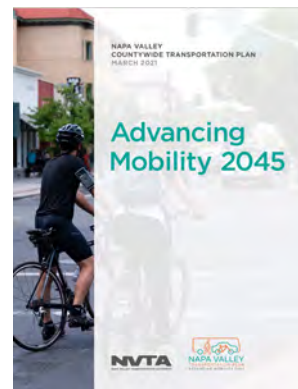
school entrance. The second group walked east on Adams Street, south on Oak Avenue, east across Money Way to Main Street, south on Main Street, west on Spring Street and north on Oak Avenue. During this walk, participants observed and discussed the physical infrastructure around the school as well as the behavior of motorists, pedestrians, and bicyclists in the school site area. They also shared their own experiences traveling to and from school on foot and by car. Fifteen minutes after the bell, the team returned to the classroom to discuss their observations, map issue areas, and record and prioritize the major barriers identified during the exercise.



During the prioritization exercise, participants wrote down several barriers that were of high priority to them on sticky notes, placed them on a poster on the wall, and organized them into sections based on similar topics. Then, participants were given five round stickers to place on issues that they felt were most important and needed to be solved most urgently. Participants could spread their stickers out or put multiple stickers on one issue. The group then reviewed the major barriers and explored potential solutions to each issue. Participants repeated the prioritization process with potential solutions to the barriers identified.

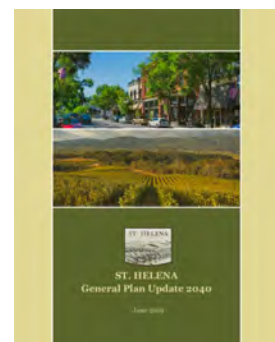
### NVTA Napa Valley Countywide Transportation Plan: Advancing Mobility 2045 (2021):

The NVTA Countywide Transportation Plan is a long-range plan of countywide transportation priorities that provides a direction for the four- to five-year plan while considering a 25-year planning horizon. This plan is part of the regional planning process for the Regional Transportation Plan by the Metropolitan Transportation Commission. There are 15 projects by the City of St. Helena listed in the Plan – most of the multimodal projects focus on improvements to the downtown Main Street corridor, such as traffic-calming, sidewalk upgrades, and bicycle infrastructure, or construction of Class I bikeways. Projects with a high potential to impact the school zone include extensions of Oak Avenue and Adams Street and main street corridor improvement projects. NVTA projects that impact the City of St. Helena include construction of the Class I Vine Trail and expanded service hours and enhanced frequency of regional route 10.



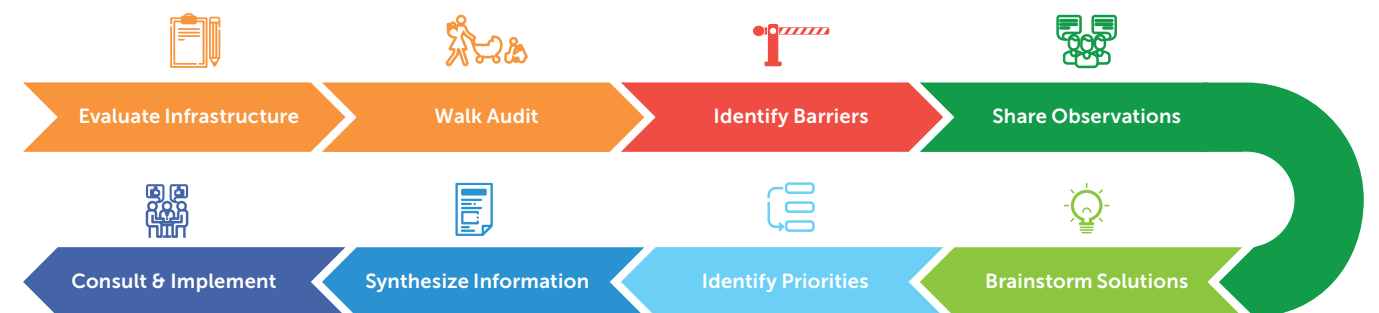
### St. Helena General Plan 2040 (2019):

The St. Helena General Plan states that the unifying goal of 1993 Plan "to protect the rural, small town quality and agricultural character of St. Helena" remains a primary focus of the 2040 General Plan while the Plan also integrates new topics such as sustainability, local mobility, heritage tourism, and local mobility through active transportation. The circulation element describes benefits of a shift from automobile-based transportation to alternative transportation and organizes policies and implementing actions in topic areas including: Balanced and Multimodal System; Safe, Accessible, and Comprehensive Bicycle and Pedestrian Network; Sustainable Mobility Practices; Safe and Well-Maintained Circulation System; Parking; and Improvements and Phasing.



### GHD Active Transportation Plan (2021):

In 2021, the City of St. Helena adopted a contract with GHD to develop a two-phase active transportation safety project. Phase I focuses on the Madrona Avenue and Spring Street corridors and Phase II focuses on a citywide Active Transportation and Safe Routes to School Plan. At the time of this report, the project is in Phase I and recommendations for the Madrona and Spring corridors are being developed.



## WALK AUDIT FINDINGS

This section of the report lists the barriers and solutions identified by Walk Audit participants during the Walk Audit activity. The barriers and treatments listed in the following tables are the results of the Walk Audit prioritization activities – the content and language used reflect what Walk Audit participants wrote on their sticky notes.

The barrier identification and prioritization exercise resulted in a list of location-specific and geographically general barriers and solutions, organized by Vote Score in the tables below. Vote Score was determined during the prioritization exercise by the number of stickers and sticky notes addressing a particular issue, with a higher number correlating to a higher Vote Score, indicating a higher importance to Walk Audit participants.

### Stakeholder-Identified Barriers:

DESCRIPTION	LOCATION	VOTE SCORE
Unsafe crosswalk – low visibility, cars failing to yield to pedestrians	Main St and Hunt Ave	12
Unsafe crossing	Hudson Ave and Spring St	6
No bike facilities	Oak Ave, Adams St	3
Unsafe crosswalk – low visibility	Kearney St and Spring St	3
Unsafe crosswalk – low visibility	Money Way	3
Narrow sidewalks	General area (Kearney St, Oak Ave, Spring St)	3
Unsafe crosswalk – low visibility	Main St and Spring St	3
Lack of sidewalks and crosswalks	Spring St between Valley View and Kearney St	2
Blind corners	Alleys and major intersections (Money Lane, Spring St and Allyn Ave)	2
Speeding	Main St, Hunt Ave	2
No sidewalk	Elmhurst Ave	2
Uneven sidewalks	General area	2
No clearly visible sidewalk/designated path	Money Way to Oak Ave	1
Empty tree planter square	Oak Ave	1
Chaotic drop-off zone	Tainter Street	1
Inattentive driving	Adams St at Main St	1
Crumbling pavement	Oak Ave at Adams St	1

Figure 10: Walk Audit Ratings - Dot Exercise (Barriers)

### Stakeholder-Identified Treatments:

DESCRIPTION	BARRIER ADDRESSED	LOCATION	PRIORITY
Rectangular Rapid Flashing Beacons	Low pedestrian visibility, poor motorist yielding behavior	Main St and Hunt Ave	8
Install high-visibility crosswalk; Rectangular Rapid Flashing Beacons; curb extensions	No crosswalk, low pedestrian visibility	Spring St and Hudson Ave	7
Buffered bike lane	No bike facilities	Spring St	5
Rectangular Rapid Flashing Beacons	Lack of crosswalk	Across Oak Ave, near SHES fire lane and ChokoLatte	3
Rectangular Rapid Flashing Beacons	Low pedestrian visibility, poor motorist yielding behavior	Kearney St and Spring St	1
Curb extensions	Poor motorist yielding behavior	Main St and Adams St	1
Multi-use path	Disconnected active transportation network	Yountville to Calistoga	1
Protected bike lane	No bike facilities	Oak Ave	1
Curb extension	Cars park next to crosswalk, poor motorist yielding behavior	Main St and Spring St	1
Widen sidewalk	Narrow sidewalk	Kearney St	1
Widen sidewalk	Narrow sidewalk	Oak Ave from Spring St to Tainter St	1
Multi-use path	No bike facilities	Oak Ave from Spring St to Tainter St	1

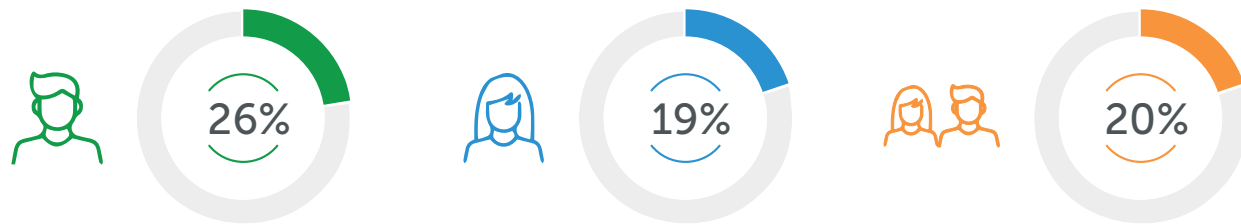
Figure 11: Walk Audit Ratings - Dot Exercise (Solutions)

# CONTEXT FOR RECOMMENDATIONS

## IMPACT OF BARRIERS/HAZARDS ON COMMUNITY

Barriers to safe walking and bicycling, both infrastructure and non-infrastructure, can greatly discourage communities from engaging in active transportation. The quality, accessibility, and connectivity of bicyclist and pedestrian travel networks strongly influence the rates of walking and bicycling as a mode of daily transport<sup>1</sup>. Public policies and attitudes, such as traffic-calming measure enforcement and parking limitations, also contribute to the efficacy of pedestrian/bicycle networks. Thus, barriers to accessibility and connectivity must be addressed in order to encourage increased and safe walking and cycling.

Barriers that discourage walking and bicycling prevent communities from gaining the health benefits offered by active transportation. For children, physical activity can improve cognitive function, bone health, cardiorespiratory and muscular fitness, and mental wellness<sup>2</sup>. Adults benefit from lower risk of cardiovascular disease, hypertension, dementia, anxiety, and falls for older adults, as well as improved quality of life, physical function, bone health, and sleep.



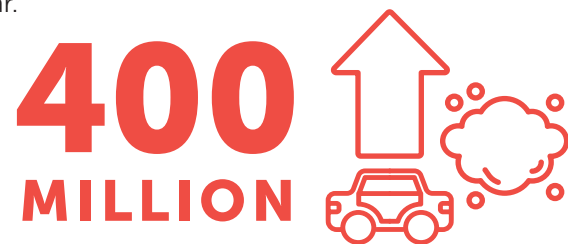
However, only about **26% of men**, **19% of women**, and **20% of adolescents** are meeting the aerobic and muscle-strengthening guidelines developed by the Department of Health. Increased walking and biking to school can help boost that percentage by incorporating physical activity into one's daily routine and encouraging further active transportation choices.

Lack of safe bicycle/pedestrian facilities can also negatively impact the environment, as more people will choose to drive rather than bike or walk. Passenger cars and light-duty trucks produced **over half of the transportation sector emissions in 2017**<sup>3</sup>.



**29%** The transportation sector produced the most greenhouse gas emission of any economic sector, releasing **up to 29% of total US greenhouse gas emissions** for the year.

Furthermore, **transportation emissions have increased around 400 million metric tons** since 1990 due to increased vehicle demand. Thus, decreasing vehicle use by creating bicycle/pedestrian networks that are safe from potential hazards and barriers can help mitigate these environmental effects.



In addition to the consequences already discussed, barriers to safe walking and bicycling can lead to increased collisions and conflicts between motorists, pedestrians, and bicyclists. Safety barriers can lead to more people choosing to drive, even if the destination is within walking or biking distance, increasing traffic congestion. Children have fewer opportunities to develop their sense of independence through walking and biking to school, and the community is hindered from enjoying the social and economic benefits of bicycling and walking. Safety barriers and hazards that discourage increased walking and bicycling can considerably impact many different parts of a community, which is why it is so crucial to address and resolve them.

<sup>1</sup> Kuzmyak, Richard J., Dill, Jennifer. "Walking and Bicycling in the United States: The Who, What, Where, and Why." TR News May-June 2012: 4-15. Web. <sup>2</sup> U.S. Department of Health and Human Services. Physical Activity Guidelines for Americans, 2nd edition. Washington, DC: U.S. Department of Health and Human Services; 2018. <sup>3</sup> Sources of Greenhouse Gas Emissions, United States Environmental Protection Agency. Web.

# RECOMMENDATIONS

Recommendations were determined by Napa County Safe Routes to School staff, taking into account the feedback and results from the Walk Audit activity, Fulcrum data, existing plans, and local stakeholder input. Priority levels for recommendations were calculated through consideration of vehicle, pedestrian, and bicyclist traffic volumes; vehicular traffic speed; collision history; presence of existing bicycle/pedestrian facilities; proximity to major identified routes to school; high-level potential cost/complexity of recommendation; and Walk Audit participant input.

This section outlines and explains high and medium priority recommendations specific to the school site. School site-specific recommendations of all priority levels can be found in the "Table of Recommendations" section. Universal recommendations that apply to all school sites are described in Appendix B. Recommendations that are focused on infrastructure treatments are denoted by "SHI," and recommendations that suggest programmatic treatments are denoted by "SHP."



## RECOMMENDATION #SHI-001: MAIN STREET & HUNT AVENUE PEDESTRIAN IMPROVEMENTS

**Narrative** – The Main Street and Hunt Avenue intersection was the top participant-identified barrier to students walking and biking to school. This intersection is in the heart of downtown St. Helena and provides a key connection between the neighborhoods east of Main Street (SR 29) and the school on the west side of Main Street, as Hunt acts as a significant collector on the east side of town. This intersection has low pedestrian visibility, especially for vehicles travelling along Main Street, due to long crossing distances, parked vehicles blocking curb visibility, and the lack of traffic control and calming for Main Street traffic. This low pedestrian visibility results in motorists failing to yield to pedestrians, and often leads to pedestrians being required to enter the street to be seen. As Hunt Avenue is a key corridor for students travelling from the east neighborhoods to the school, it is crucial that pedestrian visibility at this intersection meets the needs of young students.



Main Street and Hunt Avenue intersection.

### IDENTIFIED BARRIERS

- **Low pedestrian visibility** – Walk Audit participants identified low pedestrian visibility at the Main Street and Hunt Avenue intersection due to long crossing distances, parked vehicles obstructing visibility, and lack of traffic control as a safety concern for student pedestrians and bicyclists, as this reduces motorist yielding behavior.

### RECOMMENDATIONS

- **Curb extensions** – We recommend that curb extensions be installed at the Main Street and Hunt Avenue intersection to slow vehicle speeds, improve pedestrian visibility, shorten pedestrian crossing distances, and improve motorist yielding behavior. Implementation of this proposal will minimally impact parking near adjacent businesses due to existing red curbs.
- **High-visibility crosswalks** – Upgrading the existing crosswalks at Main Street and Hunt Avenue to high-visibility crosswalks can supplement other proposed solutions in increasing driver yielding behavior.

While Walk Audit participants suggested Rectangular Rapid Flashing Beacons at this location, we are not making that recommendation at this time. While Rectangular Rapid Flashing Beacons do help increase pedestrian visibility, we believe curb extensions are more appropriate for this location because they address pedestrian visibility in addition to crossing distance, speeding, and illegal parking/loading in red zones. Furthermore, Rectangular Rapid Flashing Beacons would likely be blocked by the presence of street trees.



## RECOMMENDATIONS #SHI-002 AND SHI-003: OAK AVENUE BIKE/PED IMPROVEMENTS

**Narrative** – Oak Avenue was also identified as a barrier by Walk Audit participants for several reasons. There are no bicycle facilities on Oak Avenue, the presence of which would indicate how to share the road to bicyclists and motorists and would make the road more welcoming for riders. Oak Avenue experiences significant vehicle traffic due to its vicinity to Main Street, the many destinations along the street, and its use as a route to both the elementary school and the middle school. Consequently, clear bicycle facilities are critical for this road. Furthermore, the road surface is in poor quality, particularly at and north of Adams Street, which makes biking uncomfortable and in cases of large cracks and potholes, a fall hazard. Poor road quality can also facilitate unsafe road behaviors such as swerving to avoid potholes. Finally, the southbound sidewalk between Tainter Street and Spring Street narrows significantly, failing to accommodate groups of student pedestrians or students walking with their families.

### IDENTIFIED BARRIERS

- **No bicycle facilities** – Walk Audit participants identified the lack of bicycle facilities on Oak Avenue as one of the top-ranking barriers to students bicycling to school.
- **Poor road quality** – Walk Audit participants identified poor road quality as a deterrent to students bicycling to school.
- **Narrow sidewalk** – Walk Audit participants identified the narrow southbound sidewalk on Oak Avenue as a safety barrier to students walking to school.



Poor road quality at Oak Avenue and Pine Street (left) discourages bicycling. The narrow southbound sidewalk (right) is a barrier for pedestrians walking in groups or with their family.

### RECOMMENDATIONS

- **SHI-002 Repave and Class III** – We recommend that the road be repaved between Hillview Place and Mitchell Drive to make the road conducive to bicycling and that Class III bike boulevards be installed with sharrows, signage, and traffic-calming. Installation or repainting of Class III facilities should be a requirement of repaving; however, initial installation of bike facilities should not be unnecessarily delayed in wait of a repaving project.
- **SHI-003: Widen sidewalk** – We recommend that the southbound sidewalk between Tainter Street and Spring Street be widened to a minimum of 6’ to better accommodate groups of pedestrians walking together.



**Note:** At the time of this report, Oak Avenue is being considered as part of the future Vine Trail alignment through the City of St. Helena. If this moves forward, a Class I shared-use path or two-way Class IV protected bikeway will likely be installed. As is the case with repaving, Class III facilities should still be installed at the earliest opportunity to provide bike facilities in the interim if the Vine Trail alignment is approved.



## RECOMMENDATIONS #SHI-004 AND SHI-005: ADAMS STREET BIKE/PED IMPROVEMENTS

**Narrative** – Walk Audit participants identified multiple barriers to students walking and biking on Adams Street, one of the main access roads to the school. The Adams Street corridor is a significant east-west connector in St. Helena that experiences high use by all modes of transportation, as it provides a direct route to residential neighborhoods, the elementary school, SR 29 and the downtown area, Safeway grocery store, and the public library. Walk Audit participants identified the lack of bicycle facilities on Adams Street as one of the top-ranking barriers, the presence of which would indicate how to share the road to bicyclists and motorists and would make the road more welcoming for riders. Walk Audit participants also discussed a need for additional lighting along the corridor near Kearney Street, which is especially critical in the winter season when the days are shorter. Finally, the segment of Adams Street between Main Street and Oak Avenue is narrow and difficult to navigate with multiple road users, especially for young bicyclists.

### IDENTIFIED BARRIERS

- **No bicycle facilities** – Walk Audit participants identified the lack of bicycle facilities as a significant barrier to students biking to school.
- **Not enough lighting** – Walk Audit participants noted that the need for more lighting on Adams Street at and around Kearney Street is a safety concern for students walking and biking to school, particularly during wintertime.
- **Narrow street** – The narrow segment of Adams Street between Main Street and Oak Avenue was identified by Walk Audit participants as a barrier to students biking to school, as it can feel chaotic and unwelcoming to bicyclists during high-traffic hours.



The stretch of Adams Street between Oak Avenue and Main Street can be narrow and crowded and has no bicycle facilities, making it challenging and uncomfortable to navigate on a bicycle, especially for newer or younger riders.

### RECOMMENDATIONS

- **SHI-004 Class III/Class I bike facilities** – We recommend that Class III bike boulevards with sharrows and signage be installed from Allyn Avenue to Railroad Avenue, and that a Class I shared-use path be installed from Railroad Avenue to the end of Adams Street, as per the 2019 Bike Plan. Class III bike boulevards will help inform bicyclists where to ride in the road while reminding motorists that bicyclists are allowed to ride in the travel right-of-way.
- **SHI-005 Lighting** – We recommend that pedestrian scale lighting be installed along the school frontage and overhead lighting be installed at intersections to improve pedestrian visibility and sense of safety.

**Note:** At the time of this report, Adams Street from Oak Avenue to Railroad Avenue is being considered as part of the future Vine Trail alignment through the City of St. Helena. If this moves forward, a Class I shared-use path or two-way Class IV protected bikeway will likely be installed. Class III facilities should still be installed at the earliest opportunity to provide bike facilities in the interim if the Vine Trail alignment is approved.



## RECOMMENDATIONS #SHI-006 AND SHI-007: TANTER STREET BIKE/PED IMPROVEMENTS

**Narrative** – Barriers to bicyclists and pedestrians were also identified on Tainter Street, which provides access to the back entrance to the school and the main entrance of the Boys and Girls Club building. Tainter Street is relatively narrow, particularly when cars are parked along the westbound side, and can feel chaotic during pick-up and drop-off when there are high volumes of vehicle traffic. There are no bicycle facilities on Tainter Street, despite the high volumes of students who enter the campus via Tainter and that half of the school’s bike parking is located at the Tainter Street entrance. Additionally, the sidewalks along Tainter Street are extremely narrow, particularly on the school block, which may force students to walk in the road or prevent families or groups of students from walking together. In areas where the narrow sidewalk is obstructed by objects such as utility poles, the sidewalk is not ADA-accessible (Americans with Disabilities Act).

### IDENTIFIED BARRIERS

- **No bicycle facilities** – The lack of bicycle facilities on Tainter Street is a barrier to students bicycling to school, particularly during busy drop-off and pick-up times.
- **Narrow sidewalks** – Walk Audit participants noted that the extremely narrow sidewalks on Tainter Street, particularly on the westbound side, pose a barrier to students walking to school and are not ADA-accessible.



Narrow sidewalks on Tainter Street are not ADA-accessible.

### RECOMMENDATIONS

- **SHI-006: Class III bike boulevards** – We recommend the installation of Class III bike boulevards with sharrows and signage along Tainter Street from Allyn Avenue to Oak Avenue. Installation of bike facilities would discourage unsafe side-by-side sharing of the road between motorists and bicyclists on this narrow street by informing bicyclists and motorists that bicyclists may bike in the travel lane.
- **SHI-007: Widen sidewalk** – We recommend widening the westbound sidewalk of Tainter Street from Oak Avenue to Stockton Street to permit safe pedestrian access and improve ADA accessibility.
- **Underground utilities** – As a long-term response, we recommend that the City consider undergrounding the utilities on Tainter Street from Oak Avenue to Stockton Street to remove utility poles that obstruct the already narrow sidewalk.



## RECOMMENDATIONS #SHI-013 AND SHI-058: SPRING STREET BIKE LANES AND TRAFFIC-CALMING

**Narrative** – Spring Street is one of two significant east-west connector streets on the west side of St. Helena. Spring Street is a highly travelled corridor, providing a direct route to several residential neighborhoods, SR 29, and three of the four public schools (elementary, primary, and high schools). At the time of this report, Spring is currently being assessed by GHD as a priority corridor for safety improvements following community concern regarding speeding and pedestrian and bicyclist safety. Spring Street was also discussed frequently during the Walk Audit, though discussions generally focused on specific intersections rather than the corridor at large (see SHI-009-SHI-014, SHI-018). The two highest priority barriers identified along this corridor were the lack of bicycle facilities and speeding. Without bicycle facilities, bicyclists are uncertain where to ride on the road and feel unwelcome; additionally, many road users mistake the striped parking lane to be a bike lane, which can lead to visibility hazards and bicyclists unsafely swerving around parked cars. Speeding has frequently been reported to be a hazard on Spring Street and is facilitated by the lack of traffic control and traffic-calming along the long, straight corridor.

### IDENTIFIED BARRIERS

- **No bicycle facilities** – The lack of bicycle facilities on Spring Street makes biking on the corridor feel unsafe and unwelcoming, particularly for young or new bicyclists.
- **Speeding** – Walk Audit participants expressed concern about speeding along Spring Street creating hazardous conditions for students walking and biking to school.

### RECOMMENDATIONS

- **SHI-013: Class II bike lanes** – We recommend installing Class II bike lanes along Spring Street from Valley View Street to Main Street, as per the adopted Countywide Bike Plan.
- **SHI-058 Traffic calming** – We recommend that the City evaluate and implement appropriate traffic-calming measures along the corridor in addition to those listed in other recommendations (SHI-009, SHI-010, SHI-012). Future bicycle facilities (SHI-013) and crosswalks (SHI-010, SHI-011) must be accommodated in traffic-calming plans.



Spring Street west of Kearney Street.



## RECOMMENDATION #SHI-018: MAIN STREET & SPRING STREET INTERSECTION IMPROVEMENTS

**Narrative** – The Main Street and Spring Street intersection was identified as feeling unsafe for pedestrians and bicyclists, especially for students. This intersection experiences high volumes of vehicle traffic, as Main Street is both the heart of downtown St. Helena and part of SR 29, consequently carrying both local and regional traffic. Furthermore, Spring Street acts as a collector street for west St. Helena, providing access between residential neighborhoods and SR 29. There is no traffic control for Main Street traffic at this intersection. Vehicles turning from Spring Street onto Main Street often block the crosswalk across Spring Street in order to see oncoming traffic or to turn more quickly during peak traffic hours. In addition to the high traffic volumes and unsafe driving behaviors, parked vehicles along Main Street reduce pedestrian visibility at the crosswalks, particularly on the east side of Main Street. Consequently, traffic travelling along Main Street frequently fails to yield for pedestrians.

### IDENTIFIED BARRIERS

- **Low pedestrian visibility** – Walk Audit participants identified low pedestrian visibility caused by vehicles parked nearby or blocking the crosswalks at the Main Street and Spring Street intersection as a significant safety concern for student pedestrians and bicyclists. The lack of traffic control or traffic-calming along Main Street combined with this low pedestrian visibility results in motorists failing to yield to pedestrians.



*Motorists attempting to turn onto SR 29 from Spring Street frequently block the Spring Street crosswalk. Large vehicles parked near the Main Street crosswalk (see white truck on left) greatly reduce pedestrian visibility.*

### RECOMMENDATIONS

- **Curb extensions** – We recommend that curb extensions be installed at all crosswalk curbs in the intersection to improve pedestrian visibility, shorten crossing distance, and improve yielding of motorists to pedestrians.
- **High-visibility crosswalks** – Upgrading the existing crosswalks at Main Street and Spring Street to high-visibility crosswalks can supplement other proposed solutions in increasing driver yielding behavior.
- **Rectangular Rapid Flashing Beacons consideration** – Installing Rectangular Rapid Flashing Beacons at this location would help increase driver yielding behavior by improving pedestrian visibility through pedestrian-activated rapid flashing lights. This allows for a safer crossing experience for pedestrians while avoiding concerns regarding traffic congestion that might be created at a signalized crossing. We recommend that Rectangular Rapid Flashing Beacons be considered for the crosswalk across Main Street if curb extensions and high-visibility crosswalks do not meet safety/comfort needs.



## RECOMMENDATION #SHI-026: OAK AVENUE & ADAMS STREET RAISED INTERSECTION

**Narrative** – The intersection of Oak Avenue and Adams Street is a key intersection located immediately adjacent to the campus. It acts as one of the entrances to the City’s downtown area from the west side of town and serves nearby businesses such as Napa Valley Roasting Company and Chokolatte ice cream store. It is highly travelled throughout the day and especially during school hours by motorists, bicyclists, and pedestrians, including students from both the elementary and middle school frequenting the nearby businesses, the downtown area, or travelling to and from their neighborhoods. It also attracts spillover traffic from SR 29, as motorists use Oak Avenue to bypass highway traffic or look for parking when SR 29 is full. This intersection has a four way stop and high-visibility crosswalks. However, Walk Audit participants reported that motorists regularly roll through the intersection without stopping, creating a significant safety hazard for students crossing. This intersection was one of the focus spots that received volunteer crossing guards during Walk and Roll to School month (see ‘Encouragement and Education’ section).



*A raised intersection at Adams and Oak would prioritize active transportation users while communicating to drivers to proceed cautiously.*

### IDENTIFIED BARRIERS

- **Motorist failure to stop** – Walk Audit participants identified motorists’ failure to fully stop at the intersection as a safety barrier for students walking and biking to school.

### RECOMMENDATIONS

- **Raised intersection** – We recommend that the City install a raised intersection at this crosswalk. Raised intersections prioritize bicyclist and pedestrian safety by elevating them to be more visible to vehicles, while also improving stopping behavior by motorists. Raised intersections also help regulate speeding behavior by motorists, which would be beneficial in the school zone.



## RECOMMENDATION #SHI-029: KEARNEY AND MADRONA PEDESTRIAN IMPROVEMENTS

**Narrative** – The Madrona Avenue and Kearney Street intersection is a key intersection for students travelling to neighborhoods north of the school or to Robert Louis Stevenson Middle School, where students may have siblings. Madrona Avenue (east of Riesling Way) is the other major east-west connector street on the west side of St. Helena, in addition to Spring Street. Like Spring Street, Madrona Avenue connects to several residential neighborhoods, provides access to SR 29, and is a key route to both the middle and elementary school. Also similar to Spring Street, Madrona is a long, straight road with no traffic-calming and almost no traffic control; the only stop signs along the corridor are located at Riesling Way, Oak Avenue, and SR 29. Consequently, speeding has been identified as a major concern along this corridor by school stakeholders and the broader community, particularly as Madrona Avenue is often used as part of a “backroads route” to bypass SR 29 traffic. As there are no crosswalks across Madrona Avenue west of Kearney Street, where many of the residences are, and Kearney Street leads directly to the front of the elementary school, Madrona and Kearney is a natural crossing point for student pedestrians and bicyclists. However, motorist yielding behavior and pedestrian visibility are extremely poor at this intersection, given motorist speeding, lack of traffic control and calming, wide curb radii on the north corners, and the long crossing distance on the north side.

### IDENTIFIED BARRIERS

- **Long crossing distance** – The long crossing distance on the north leg of the intersection requires pedestrians to be in the roadway for a longer time than necessary, increasing the risk of collisions.
- **Wide curb radii** – Wide curb radii on the north leg of the intersection facilitate fast right turns by motorists, which is particularly hazardous given that motorists turning right onto northbound Kearney Street do not have a stop sign.
- **Speeding/lack of traffic control** – Motorist speeding, largely facilitated by the lack of traffic control and calming, reduce motorist’s range of vision and motorist yielding behavior, and increase risk and potential severity of collisions with bicyclists and pedestrians.
- **Poor pedestrian visibility** – Pedestrian visibility at this intersection is poor due to motorist speeding reducing range of vision, low-visibility crosswalks, set-back curbs, and vehicles parking next to crosswalks on Kearney Street, in addition to the barriers listed above.

### RECOMMENDATIONS

- **Curb extensions** – We recommend the installation of curb extensions on the northwest, northeast and southeast corners to improve pedestrian visibility and motorist yielding behavior, reduce speeding and crossing distances, and narrow curb radii.
- **High-visibility crosswalk** – Upgrading the existing crosswalk across Madrona Avenue to a high-visibility pattern can supplement other proposed solutions in increasing driver yielding behavior.



Motorist speeding, lack of traffic control, and low pedestrian visibility reduce motorist yielding behavior and increase collision risk for pedestrians crossing Madrona Avenue.



## RECOMMENDATION #SHI-056: SCHOOL BIKE PARKING

**Narrative** – The school provides two bike racks for students: one near the Tainter Street entrance next to the Boys and Girls Club building and one near the southmost Oak Avenue entrance. While these bike parking facilities suffice for current average levels of bicycling, they do not provide enough bike parking for higher levels of bicycling to school, such as seen during Walk and Roll Wednesdays. This can create a barrier to students biking to school as biking levels increase, as unavailable parking facilities may deter students from biking to school.

### IDENTIFIED BARRIERS

- **Insufficient bike parking** – Walk Audit participants noted that the low levels of existing bike parking act as a barrier to students biking to school.

### RECOMMENDATIONS

- **Increase bike parking facilities** – We recommend that the school increase its bike parking capacity by adding bike parking facilities near other school entrances, such as those located along Adams Street. The school should also reposition existing bike parking to make all parking spaces accessible. See Appendix D for bike parking guide.



School bike parking on an average day (top) compared to the overflowing bike parking on Walk and Roll Wednesday (bottom).







## RECOMMENDATION #SHP-003: BIKE SAFETY EDUCATION

**Narrative** – Walk Audit participants reported witnessing elementary school students riding on sidewalks or riding on the left side of the road, demonstrating a need for bike safety education. This behavior is hazardous for students biking to school, even when it is done unknowingly, as the behavior is unpredictable to other road users and can increase risk of collisions. While many of these behaviors can be addressed by improved infrastructure, such as clearly marked bicycle facilities, implementing annual education on street safety within the school system can help raise awareness of rules of the road and encourage safe biking.

### IDENTIFIED BARRIERS

- **Students unaware of rules of the road** – Walk Audit participants identified bicyclists riding on sidewalks and on the left side of the road as safety concerns.

### RECOMMENDATIONS

- **Annual bike safety education** – We recommend that annual bike safety education be provided for all students, such as in-class/on-bike hybrid classes or bike rodeos. Such programming is available to all Napa County public schools through the Napa County Safe Routes to School program.



*Bike rodeos, pictured above, teach students how to safely maneuver various traffic situations, such as railroad crossings. Photo credit: Napa County Office of Education.*



## RECOMMENDATION #SHP-004: ONGOING ENCOURAGEMENT PROGRAMS

**Narrative** – St. Helena Elementary School regularly participates in the annual encouragement events facilitated by Napa County Safe Routes to School: Bike to School Day and Walk and Roll to School Day. While annual programming can remind and excite students about the option of using active transportation to travel to school, the infrequency of these events makes them less effective at encouraging students to adopt active transportation as an everyday form of transportation. Increasing the frequency of encouragement events, in conjunction with infrastructure improvements, can help increase mode shift towards active transportation. St. Helena Elementary experienced such mode shift during Walk and Roll month, where regular encouragement (Walk and Roll Wednesdays) and education (bike rodeos) events helped increase active transportation mode share 27% in just one month.

### IDENTIFIED BARRIERS

- **Infrequent encouragement programs** – While annual countywide encouragement events are a great place to start, infrequent encouragement events are not effective enough in normalizing active transportation as an everyday mode of transportation.

### RECOMMENDATIONS

- **Increase encouragement programming** – We recommend that the school provide ongoing encouragement programming throughout the school year and continue growing participation in annual countywide encouragement events. Age-appropriate ongoing encouragement programs include, but are not limited to, Walk and Roll Wednesdays, bike trains, and walking school buses. Programs should begin on a monthly basis with the goal of increasing frequency over time.



*Encouragement events, such as the tropical-themed Walk and Roll Wednesday held during Walk and Roll Month in 2019, generate enthusiasm around walking and rolling to school and provide a positive environment for students to try active transportation. (Photo: Briana Marie Photography).*



## RECOMMENDATION #SHP-018: PARENT CHAMPIONS TEAMS

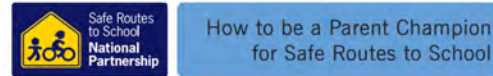
**Narrative** – An essential part of any Safe Routes to School Program are Parent Champion teams at local schools. Parent Champions provide valuable insight on challenges and opportunities in implementing a Safe Routes to School program that will be successful in their unique school community. The overarching role of a Parent Champion is to support and grow the Safe Routes to School program at their school, which can be done in many ways, including but not limited to planning education and encouragement events, volunteering at annual or regularly scheduled events, and advocating for changes in the built environment for a safer school zone. Development of Parent Champion teams ensures that students have consistent access to an effective Safe Routes to School program.

### IDENTIFIED BARRIERS

- **No Parent Champion program** – There is currently no Safe Routes to School Parent Champion program or structure at the school.

### RECOMMENDATIONS

- **Develop Parent Champion program** – We recommend that the school develop a team of Parent Champions to support education and encouragement programs. The school should create a defined structure for the Parent Champion team so that new parents are encouraged to join every school year to ensure continuation of programs and longevity. See Appendix F for the Safe Routes Partnership handout on becoming a Parent Champion.



The Safe Routes National Partnership provides many resources for Safe Routes programs, including the handout on Parent Champions included in Appendix F.



## RECOMMENDATION #SHI-009: KEARNEY STREET & SPRING STREET CROSSWALK IMPROVEMENTS

**Narrative** – The intersection at Kearney Street and Spring Street, just south of the school, has low-visibility crosswalks and no traffic control or traffic-calming along Spring Street. This intersection concerned Walk Audit participants, as the combination of frequent speeding on Spring Street and low-pedestrian visibility in the crosswalks reduces motorist yielding behavior to student pedestrians crossing Spring Street. This crosswalk is commonly used both to travel to neighborhoods south of the school and to access non-residential facilities on Spring Street, including the Native Sons Hall, which hosts student-friendly programs such as Legacy Dance Collective (formerly Little Feet School of Dance).

### IDENTIFIED BARRIERS

- **Low pedestrian visibility** – Walk Audit participants identified low pedestrian visibility in the crosswalk across Spring Street at Kearney Street due to the low-visibility crosswalk pattern and motorist speeding reducing range of vision as a safety barrier for students walking to school.

### RECOMMENDATIONS

- **Curb extensions** – We recommend the installation of curb extensions on the northeast and southeast corners of the intersection to improve visibility of pedestrians crossing Spring Street and slow motorists through the intersection.
- **High-visibility crosswalk** – Upgrading the existing crosswalk across Spring Street to a high-visibility pattern can supplement other proposed solutions in increasing driver yielding behavior.

While Walk Audit participants suggested Rectangular Rapid Flashing Beacons for the crosswalk across Spring Street at Kearney Street, we are not making that recommendation at this time. We believe that curb extensions and a high-visibility crosswalk improve pedestrian visibility, like Rectangular Rapid Flashing Beacons, while also addressing speeding concerns.



The low-visibility crosswalk and lack of traffic-calming at the Spring Street and Kearney Street crosswalk makes crossing feel unsafe for student pedestrians.



## RECOMMENDATIONS #SHI-010 AND SHI-014: SPRING STREET PEDESTRIAN IMPROVEMENTS

**Narrative** – Spring Street was a major corridor of concern for Walk Audit participants. While the highest priority barriers were lack of bicycle facilities and speeding (see SHI-013 and SHI-058), pedestrian infrastructure gaps were also identified as safety barriers to students. Spring Street has two significant sidewalk gaps on the eastbound side between Valley View Street and Stockton Street, and there are no crosswalks across Spring Street between Valley View Street and Kearney Street. This requires pedestrians travelling from south Hudson Avenue or Crane Avenue to either walk in the roadway along the sidewalk gaps or cross the street without a crosswalk. Community members have reported close calls with students crossing Spring Street in this area.

### IDENTIFIED BARRIERS

- **Sidewalk gaps** – The eastbound sidewalk has two large sidewalk gaps between Valley View Street and Stockton Street, which when combined with the lack of crosswalks, forces pedestrians to walk in the roadway or cross in an unmarked location.
- **Lack of crosswalks** – Walk Audit participants identified the lack of crosswalks across Spring Street as a safety hazard to students walking to school.
- **Speeding** – Walk Audit participants expressed concern about motorist speeding along Spring Street creating hazardous conditions for students walking to school.

### RECOMMENDATIONS

- **SHI-010 Crosswalks** – We recommend installing crosswalks with curb extensions across Spring Street at south Hudson Avenue and Crane Avenue to provide traffic-calmed, marked locations for pedestrians to cross.
- **SHI-014 Fill sidewalk gaps** – We recommend that the sidewalk gaps on the eastbound sidewalk be filled.



One of the locations where the sidewalk ends on eastbound Spring Street with no crosswalks to the existing westbound sidewalk.



## RECOMMENDATION #SHI-015: MONEY WAY RAISED CROSSWALK

**Narrative** – Money Way, a narrow alley street between Main Street and Oak Avenue, is part of a bicyclist and pedestrian shortcut to the elementary school from neighborhoods east of SR 29. Bicyclists and pedestrians can cut through Telegraph Alley on Main Street, located across SR 29 from Hunt Avenue, cross Money Way, and reach Oak Avenue via a small sidewalk parallel to the Oak Avenue parking lot. While there is a traditional striped crosswalk across Money Way at this location, pedestrian visibility is extremely poor due to parked cars and building setback lines. Walk Audit participants identified this crosswalk as a hazard due to the low pedestrian visibility. This can be particularly dangerous, as motorists avoiding SR 29 and large delivery and waste service vehicles frequently traverse Money Way.

### IDENTIFIED BARRIERS

- **Low-visibility midblock crosswalk** – Walk Audit participants identified the Money Way midblock crosswalk as a safety hazard due to low pedestrian visibility caused by parked cars and building setback lines.

### RECOMMENDATIONS

- **Raised crosswalk** – We recommend that the existing crosswalk be upgraded to a raised crosswalk. Raised crosswalks elevate pedestrians to be more visible to vehicles, while also acting as a speed table, slowing vehicles down and improving stopping behavior at stop signs.



The Money Way crosswalk facing Oak Avenue from Telegraph Alley.



## RECOMMENDATIONS #SHI-021-SHI-023: HUNT AVENUE BIKE/PED IMPROVEMENTS

**Narrative** – Hunt Avenue is a significant east-west route and acts as a collector on the east side of SR 29. Just off of SR 29, Hunt Avenue provides access to Safeway and Smiths Pharmacy; further east, it is a direct route to several neighborhoods, including Hunt’s Grove Apartments. Hunt Avenue is also used by motorists to travel to and from the Silverado Trail via Starr Avenue and Pope Street. Consequently, while classified as a residential road, Hunt experiences significant use by all modes of transportation. However, the lack of bicycle facilities along the corridor and challenging pedestrian infrastructure near Main Street make the corridor feel unsafe and unwelcoming for student bicyclists and pedestrians.

### IDENTIFIED BARRIERS

- **No bicycle facilities** – The SRTS team identified the lack of bicycle facilities along Hunt Avenue from Main Street (SR 29) to Starr Avenue as a barrier to students biking to school.
- **Informal eastbound sidewalk** – A segment of the eastbound sidewalk between Main Street and Church Street near the railroad tracks becomes an informal asphalt path. Along with the lack of a crosswalk across Church Street at Hunt Avenue, this reduces pedestrian sense of safety, especially for young students.
- **Long crossing distance** – The crosswalk at Hunt Avenue and Railroad Avenue extends to the railroad tracks, acting as a “painted sidewalk” along and beyond a row of parked cars. This greatly reduces pedestrian visibility and sense of safety, particularly given the challenging configuration of the Railroad/Church/Hunt intersection.



The crosswalk across Railroad Avenue at Hunt Avenue acts as an informal sidewalk to the railroad tracks. Note the obstructed visibility due to adjacent parking stalls.

### RECOMMENDATIONS

- **SHI-021 Bike boulevard** – We recommend that a Class III bike boulevard with sharrows, signage, and traffic-calming be installed on Hunt Avenue from Main Street to Starr Avenue.
- **SHI-022 Sidewalk and crosswalk** – We recommend that the informal eastbound sidewalk near Church Street be formalized and a crosswalk be added across Church Street.
- **SHI-023 Crosswalk improvement** – We recommend that vertical delineation or other formalized separation be installed on the west side of the railroad tracks between the tracks and Railroad Avenue to shorten the crosswalk and improve pedestrian safety. Additionally, the two parking stalls immediately adjacent to the crosswalk should be removed to greatly improve pedestrian visibility.



## RECOMMENDATION #SHI-024: MAIN STREET & ADAMS STREET LEADING PEDESTRIAN INTERVAL

**Narrative** – Walk Audit participants identified the Main Street (SR 29) and Adams Street intersection, one of the city’s major central intersections, as a safety barrier to students walking and biking to school. This intersection is highly travelled by all modes of transportation and experiences high volumes of vehicle traffic, particularly due to north-south SR 29 traffic. Walk Audit participants expressed concern about pedestrian safety crossing SR 29 due to unprotected left turn movements. As there is no left turn lane or protected left turn signal for motorists on Adams Street, motorists turning left onto SR 29 tend to focus on oncoming traffic and make fast turns to enter SR 29. This is especially hazardous for young student pedestrians who rely on traffic signals to indicate their safety in the crosswalk and are less visible to motorists.

### IDENTIFIED BARRIERS

- **Inattentive driving** – Walk Audit participants identified inattentive driving, particularly during unprotected left turns, as a safety hazard to student pedestrians in the Main Street and Adams Street intersection.

### RECOMMENDATIONS

- **Leading Pedestrian Interval** – We recommend that the traffic lights at the Main Street and Adams Street intersection be reconfigured to include Leading Pedestrian Intervals across each leg, which gives pedestrians crossing the street a head-start before traffic is allowed move through the intersection, improving motorist yielding behavior.



Motorists making fast unprotected left turns from Adams Street onto SR 29 pose a hazard for pedestrians crossing SR 29.



## RECOMMENDATION #SHI-027: SPRING STREET & OAK AVENUE HIGH-VISIBILITY CROSSWALKS

**Narrative** – Spring Street and Oak Avenue, an intersection just one block south of the school, is along routes from the school to the downtown area, residential neighborhoods on the east side of SR 29, and the Native Sons Hall, making it a highly-travelled intersection. However, despite the crosswalks being painted yellow, indicating that the intersection is within a school zone, the traditional striping pattern does not provide sufficient visibility for young student pedestrians.

### IDENTIFIED BARRIERS

- **Low-visibility crosswalks** – The Spring and Oak intersection was identified as a safety concern for students walking to school due to its low-visibility crosswalks. Recommendations

### RECOMMENDATIONS

- **High-visibility crosswalks** – We recommend that the existing crosswalks be upgraded to high-visibility crosswalks, which will improve pedestrian visibility and motorist yielding behavior.



High-visibility crosswalks would improve pedestrian visibility at Oak Avenue and Spring Street.

## ADDITIONAL CONSIDERATIONS

Improvements listed in this section are those within a half-mile radius that are either considered significant to the school area but are not located along routes to the school based on the school's enrollment boundary or were ranked as a higher priority during the Walk Audit for another nearby school. These barriers are listed as high or medium priority due to their impact on routes to nearby schools in the neighboring areas and will be analyzed in more depth in the reports for the affected schools.

### RECOMMENDATION #SHI-017: KEARNEY STREET BICYCLE FACILITIES

#### IDENTIFIED BARRIERS

- No bike facilities from Hillview Place to Adams Street

#### RECOMMENDATIONS

- Class III bike boulevard with sharrows and signage from Adams to Madrona
- Engage school community and residents in redesign of street segment from Madrona Avenue to Hillview Place. Potential options for redesign include:
  - Class III bike boulevard with road redesign and traffic-calming
  - Class II bike lanes
  - Northbound Class I shared-use path

Relevant Reports: Robert Louis Stevenson Middle School Walk Audit Report

### RECOMMENDATION #SHI-048: MITCHELL DRIVE/POPE STREET AND SR 29 INTERSECTION IMPROVEMENTS

#### IDENTIFIED BARRIERS

- Large, offset intersection
- Unsafe motorist behavior

#### RECOMMENDATIONS –

- Intersection evaluation for bicyclist/pedestrian safety improvements

Relevant Reports: St. Helena High School Walk Audit Report

### RECOMMENDATION #SHI-050: HILLVIEW AND KEARNEY INTERSECTION IMPROVEMENTS

#### IDENTIFIED BARRIERS

- Low-visibility crosswalks
- Long crossing distance across Kearney Street
- No traffic control/traffic-calming for Hillview traffic
- Crosswalk visibility reduced – parked vehicles
- Narrow sidewalk at crosswalk

#### RECOMMENDATIONS –

- High-visibility crosswalks
- Curb extensions
- Sharks' teeth on eastbound Hillview
- Widen sidewalk in front of crosswalk

Relevant Reports: Robert Louis Stevenson Middle School Walk Audit Report

### RECOMMENDATION #SHI-053: HILLVIEW PLACE BICYCLE FACILITIES

#### IDENTIFIED BARRIERS

- No bicycle facilities from Oak Avenue to Spring Mountain Road

#### RECOMMENDATIONS

- Class III bike boulevard (sharrows, signage, traffic-calming)
- Widen campus pedestrian path to Class I standard

Relevant Reports: Robert Louis Stevenson Middle School Walk Audit Report

### RECOMMENDATION #SHI-059: SPRING MOUNTAIN ROAD BICYCLE FACILITIES

#### IDENTIFIED BARRIERS

- No bicycle facilities (Madrona Avenue to Spring Mountain Court)

#### RECOMMENDATIONS

- Class II bike lanes

Relevant Reports: Robert Louis Stevenson Middle School Walk Audit Report

### RECOMMENDATION #SHI-060: SPRING MOUNTAIN ROAD AND ELMHURST AVENUE INTERSECTION

#### IDENTIFIED BARRIERS

- Poor motorist yielding behavior
- Obstructed pedestrian visibility
- Low-visibility crosswalk
- Large curb radius

#### RECOMMENDATIONS

- Curb extensions
- High-visibility crosswalk

Relevant Reports: Robert Louis Stevenson Middle School Walk Audit Report

### RECOMMENDATION #SHI-068: OAK AVENUE AND MADRONA AVENUE INTERSECTION

#### IDENTIFIED BARRIERS

- High-traffic intersection (vehicles, pedestrians, bicyclists)

#### RECOMMENDATIONS

- Curb extensions
- Extend red curbs
- High-visibility crosswalks

Relevant Reports: Robert Louis Stevenson Middle School Walk Audit Report

### RECOMMENDATION #SHI-072: MADRONA AVENUE CORRIDOR

#### IDENTIFIED BARRIERS

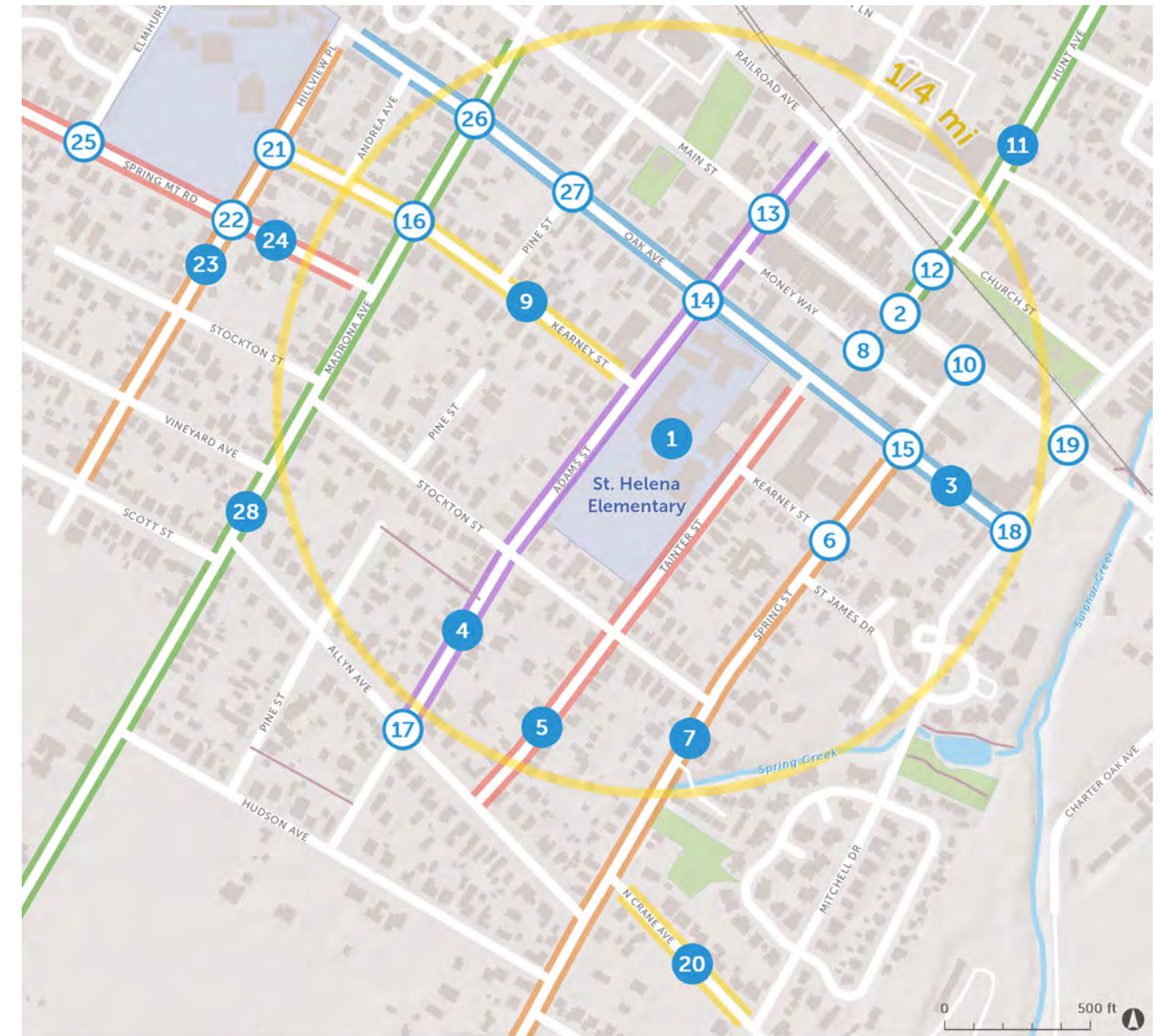
- No bicycle facilities
- Motorist speeding

#### RECOMMENDATIONS

- Class II bike lanes
- Traffic-calming along corridor

Relevant Reports: Robert Louis Stevenson Middle School Walk Audit Report

## MAP OF RECOMMENDATIONS



● Street segment ○ Intersection

Map 5: Recommendations

## TABLE OF RECOMMENDATIONS

### Infrastructure:

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
1	School campus	SHI-056	Insufficient bike parking	Add more bike racks around other school entrances; reposition existing bike racks to access all parking spaces.	\$	High
2	Main Street and Hunt Avenue intersection	SHI-001	Low pedestrian visibility (long crossing distances, parked vehicles near crosswalks, lack of traffic control), motorists fail to yield to pedestrians	Install curb extensions* on all corners of crosswalks and upgrade existing crosswalks to high-visibility crosswalks*	\$\$	High
3	Oak Avenue from Hillview Place to Mitchell Drive	SHI-002	No bike facilities from Hillview Place to Mitchell Drive*. Rough road surface is difficult to bike on	Repave road and install Class III bike boulevards with sharrows, signage, and traffic-calming	\$\$\$	High
		SHI-003	Narrow southbound sidewalk between Tainter Street and Spring Street	Widen southbound sidewalk to minimum 6'	\$-\$	Medium
		SHI-019	Missing northbound sidewalk between Madrona Avenue and Hillview Place	Install northbound sidewalk where missing	\$\$	Low
4	Adams Street from Allyn Avenue to Railroad Avenue	SHI-004	No bike facilities along entire corridor, narrow roadway width between Main Street and Oak Avenue	Install Class III bike boulevards with sharrows and signage from Allyn Avenue to Railroad Avenue. Install a Class I shared-use path from Railroad Avenue to the end of Adams Street.*	\$\$-\$\$\$	High
		SHI-005	Not enough lighting from Oak Avenue to Stockton Street	Install pedestrian scale lighting along school frontage and overhead lighting at the intersections	\$\$	Medium
5	Tainter Street from Allyn Avenue to Oak Avenue	SHI-006	No bike facilities from Allyn Avenue to Oak Avenue	Install Class III bike boulevards with sharrows and signage	\$\$	High
		SHI-007	Narrow sidewalks from Oak Avenue to Stockton Street	Widen westbound sidewalk; long-term: consider undergrounding utilities	\$\$-\$\$\$	High
		SHI-008	Chaotic, congested drop-off zone at Boys and Girls Club	Repaint inner green curbs to yellow, repaint yellow curb in front of ADA spots to red, upgrade crosswalks to high-visibility pattern	\$	Low
6	Kearney Street and Spring Street intersection	SHI-009	Low-visibility crosswalk, traffic on Spring Street is uncontrolled, speeding on Spring Street	Paint high-visibility crosswalk pattern across Spring Street, add curb extensions for crosswalk across Spring Street	\$-\$	Medium

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
7	Spring Street from Valley View Street to Oak Avenue	SHI-010	Lack of crosswalks across Spring Street	Install crosswalks with curb extensions across Spring Street at south Hudson Avenue and Crane Avenue	\$\$	Medium
		SHI-011	Lack of crosswalks along Spring Street	Install crosswalks across north Hudson Avenue, Allyn Avenue, and Stockton Street parallel to Spring Street	\$	Low
		SHI-012	Speeding	Upgrade speed limit sign on westbound side past Kearney Street to Speed Feedback Sign	\$	Low
		SHI-058		Evaluate and implement appropriate traffic-calming measures along corridor (between Valley View Street and Oak Avenue) in addition to those listed in recommendations (SHI-009, SHI-010, SHI-012). Future bicycle facilities (SHI-013) and crosswalks (SHI-010, SHI-011) must be accommodated in traffic-calming plans.	\$-\$\$\$	High
		SHI-013	No bike facilities from Valley View Street to Main Street	Install Class II bike lanes*	\$\$	High
8	Money Way at Telegraph Alley	SHI-014	Sidewalk gaps (eastbound side between Valley View Street and Stockton Street)	Fill sidewalk gaps*	\$\$	Medium
		SHI-015	Low-visibility midblock crosswalk near Telegraph Alley	Upgrade existing crosswalk to a raised crosswalk	\$	Medium
		SHI-016	Path between Oak Avenue and Main Street unapparent	Install wayfinding signage on Oak Avenue between Tainter Street and Spring Street*	\$	Low
9	Kearney Street from Hillview Place to Adams Street	SHI-017	No bike facilities	Install Class III bike boulevards with sharrows and signage from Adams to Madrona. Engage school community and residents for redesign of segment from Madrona to Hillview. Options include Class III bike boulevard with road redesign and traffic-calming, Class II bike lanes, or northbound Class I shared-use path.	\$\$	Medium
10	Main Street and Spring Street intersection	SHI-018	Low-visibility crosswalk, pedestrian visibility obstructed by parked vehicles or vehicles in crosswalks, motorists fail to yield to pedestrians	Install curb extensions on all crosswalk curbs*, install high-visibility crosswalks* and consider Rectangular Rapid Flashing Beacons across Main Street.	\$\$	High

Infrastructure (continued):

LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
11 Hunt Avenue from Main Street to Starr Avenue	SHI-020	Speeding	Upgrade speed limit sign between Edwards and June to a speed feedback sign. Install curb extensions at existing Edwards crosswalk.	\$\$	Low
	SHI-021	No bike facilities from Main Street (SR 29) to Starr Avenue	Install Class III bike boulevards with sharrows, signage, and traffic-calming*	\$\$	Medium
	SHI-022	Informal eastbound sidewalk from Main Street (SR 29) to Church Street	Formalize sidewalk. Add crosswalk across Church Street.*	\$	Medium
12 Hunt Avenue and Railroad Avenue intersection	SHI-023	Long crossing distance across Railroad Avenue	Add vertical delineation or other formalized separation on west side of railroad tracks between tracks and Railroad Avenue to shorten crosswalk across the parking spaces. Remove the two parking stalls immediately adjacent to the crosswalk to improve pedestrian visibility.	\$	Medium
13 Main Street and Adams Street intersection	SHI-024	Inattentive driving (especially while turning)	Enable Leading Pedestrian Interval	\$	Medium
	SHI-025	Limited pedestrian waiting space at curbs	Moderate curb extensions*	\$\$	Low
14 Oak Avenue and Adams Street intersection	SHI-026	Motorists failing to stop at stop signs	Install raised intersection	\$\$	High
15 Spring Street and Oak Avenue intersection	SHI-027	Low-visibility crosswalks	Upgrade crosswalks to high-visibility pattern	\$	Medium
	SHI-028	Missing crosswalk on south side of intersection	Add crosswalk leg where missing	\$	Low
16 Kearney Street and Madrona Avenue intersection	SHI-029	Long crossing distance and wide curb radii on north leg. Poor pedestrian visibility at crosswalks. Vehicles speeding along Madrona and no stop control along Madrona at this intersection make it difficult for pedestrians to cross. Crosswalks do not incorporate curb ramps	Install curb extensions on northwest, northeast, and southeast corners. Upgrade existing crosswalk across Madrona to high-visibility pattern. Upgrade curb ramps to be ADA-accessible.	\$\$	High
17 Adams Street and Allyn Avenue intersection	SHI-030	No crosswalks	Add crosswalks across Allyn Avenue on both sides	\$	Low
18 Mitchell Drive and Oak Avenue intersection	SHI-031	Long crossing distance, little traffic control, large curb radii	Square up to T-intersection and remove free right turn	\$\$-\$\$\$	Low
19 Mitchell Drive/Pope Street and SR 29 intersection*	SHI-048	Large, offset intersection that is difficult to navigate. High risk of collisions from motorists turning right onto SR 29 on a red light.	Evaluate intersection for pedestrian/bicyclist safety improvements, with focus on east/west travel	\$\$\$	Medium
20 North Crane Avenue from Spring Street to Mitchell Drive	SHI-049	Sidewalk gap along southbound sidewalk	Continue southbound sidewalk to Spring Street*	\$\$	Low

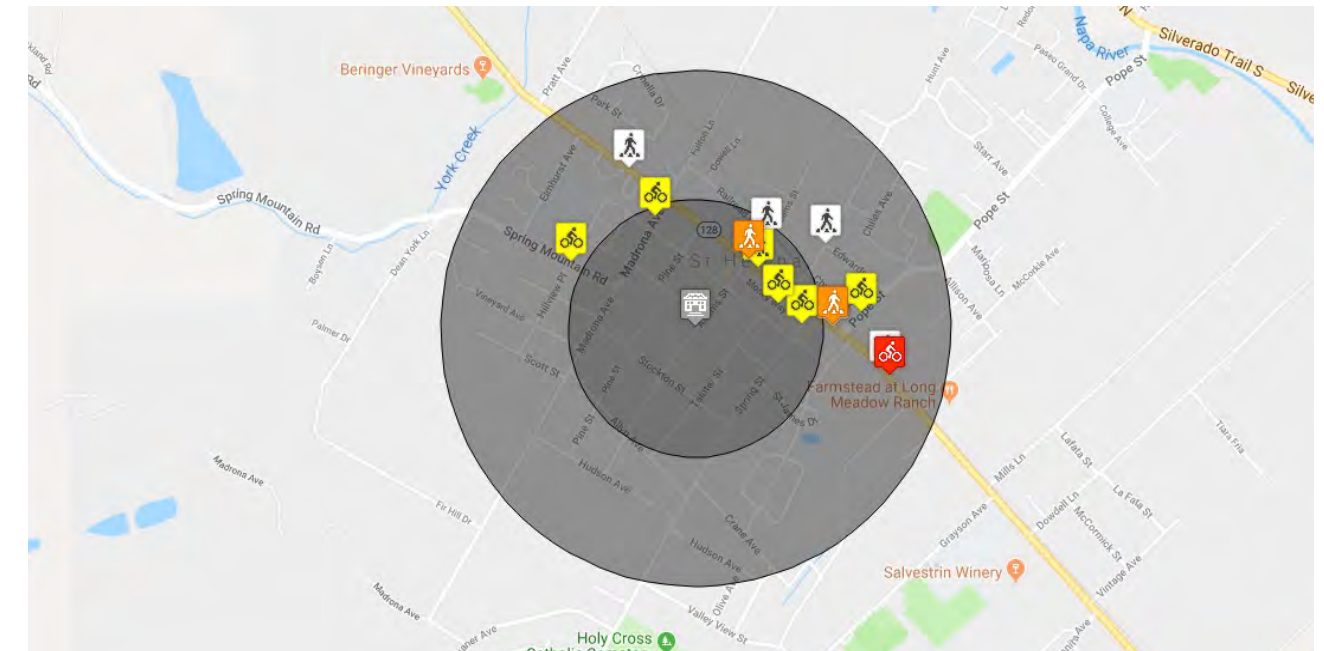
21 Hillview Place and Kearney Street intersection	SHI-050	Low-visibility crosswalks in school zone. Long crossing distance across Kearney Street. Hillview Place traffic uncontrolled and no traffic-calming. Painted curb extensions indicate desired safety improvements. Vehicles parking next to crosswalks reduce pedestrian visibility. Narrow sidewalk on Hillview Place at crosswalk.	Upgrade existing crosswalks to high-visibility pattern. Install physical curb extensions with bollards or concrete on all crosswalk legs. Paint sharks' teeth on eastbound Hillview approaching intersection. Widen sidewalk on Hillview Place in front of crosswalk.	\$-\$\$	High
22 Spring Mountain Road and Hillview Place intersection	SHI-051	Low-visibility crosswalks in school zone with uncontrolled Spring Mountain Road traffic	Upgrade existing crosswalks to high-visibility pattern. Add curb extensions to all corners to reinforce 15 mph speed limit.	\$\$	Low
23 Hillview Place from Oak Avenue to Scott Street	SHI-053	No bike facilities from Oak Avenue to Spring Mountain Road	Install Class III bike boulevard with sharrows, signage, and traffic-calming features.* Widen pedestrian path on campus that leads to Hillview/Kearney intersection to Class I standards.	\$\$	Medium
	SHI-054	Missing westbound sidewalk from Kearney Street to Spring Mountain Road. No sidewalks from Spring Mountain Road to Scott Street	Install sidewalks where missing.* Relocate campus fence where necessary.	\$\$	Low
24 Spring Mountain Road from Madrona Avenue to Spring Mountain Court	SHI-055	Missing northbound sidewalk from Hillview Place to Elmhurst Avenue. Missing southbound sidewalk from Elmhurst Avenue to Spring Mountain Court	Add sidewalks where missing*	\$\$	Low
	SHI-059	No bike facilities from Madrona Avenue to Spring Mountain Court	Install Class II bike lanes*	\$	Medium
25 Spring Mountain Road and Elmhurst Avenue intersection	SHI-060	Poor motorist yielding behavior and poor pedestrian visibility across Spring Mountain Road, (vehicle parking next to crosswalk on west side). Low-visibility crosswalk across Elmhurst Ave. Large curb radius turning right onto Spring Mountain Road from Elmhurst Avenue.	Install curb extensions on all legs of crosswalks (will also help reduce speeding on Spring Mountain Road). Upgrade existing crosswalk across Elmhurst Ave to high-visibility crosswalk.	\$\$	Medium
26 Oak Avenue and Madrona Avenue intersection	SHI-068	High-traffic intersection (vehicles, pedestrians, bicyclists)	Curb extensions on all corners. Extend red curbs on Oak Ave sides of north corners and southeast corner. Upgrade to high-visibility pattern.	\$\$	High
27 Oak Avenue and Pine Street intersection	SHI-070	Faded crosswalk, rough road quality, crosswalk does not incorporate curb ramp.	Repave road, repaint crosswalks, upgrade curbs to be ADA-compliant	\$	Low
28 Madrona Avenue from Main Street to Riesling Way	SHI-072	No bike facilities. Motorists speeding.	Install Class II bike lanes from SR 29 to Hudson Avenue*. Widen path on south side to Class I standards from Hudson Avenue to Riesling Way.* Install traffic-calming elements along corridor, with a focus around intersections near schools.	\$\$\$	High

## TABLE OF RECOMMENDATIONS (CONTINUED)

### Programmatic Improvements:

ISSUE	ID #	RECOMMENDATION	LOCATION	FREQUENCY	COST	PRIORITY
1 Double parking near the school	SHP-001	Increase driver education about double parking dangers, increase enforcement during school hours	Adams Street from Stockton Street to Oak Avenue	Driver education annually; enforcement as needed	\$	Low
2 Motorists block intersection, sometimes parents drop off in intersection	SHP-002	Increase driver education about blocking intersection; increase enforcement - school patrol	Adams Street and Kearney Street intersection	Driver education annually; enforcement as needed	\$	Low
3 Kids biking on sidewalks and on left side of the road; irregular education	SHP-003	Provide annual bike safety education for all students	School site	Annual	\$	High
4 Infrequency of encouragement events	SHP-004	Provide ongoing encouragement programming throughout the school year and continue growing participation in annual countywide encouragement events.	School site	Monthly, with the goal of increasing frequency over time	\$	High
5 No Parent Champion program	SHP-018	Develop teams of Parent Champions to support education and encouragement programs at all school sites.	School site	Throughout school year	\$	High

## COLLISION MAP AND DATA



Map 6: Collision Map (2012-2017) (Source: UC Berkeley Transportation Injury Mapping System: SRTS Collision Map Viewer)

### Summary Statistics

RADIUS	FATAL	SEVERE INJURY	VISIBLE INJURY	COMPLAINT OF PAIN	PEDESTRIAN	BICYCLE	TOTAL
< .25 mi.	1	4	1	3	3	3	6
.25-.5 mi.	1	2	4	4	4	5	8
Total	2	6	5	7	7	8	14

### Collision List

DATE	TIME	PRIMARY	SECONDARY	BIKE/PED
2013-03-04	17:00	Railroad Av	Adams St	No/Yes
2013-02-06	14:13	Money Wy	Spring St	Yes/No
2013-04-02	14:30	Main St	Pope St	Yes/Yes
2013-08-31	11:03	Main St	Charter Oak Av	Yes/No
2013-09-20	15:37	Madrona Av	Oak Av	Yes/No
2017-08-25	10:54	Main St	Adams St	No/Yes
2016-12-08	20:10	Main St	Adams St	No/Yes
2016-11-14	08:35	Main St	Crinella Dr	No/Yes
2016-10-29	17:30	Hunt Av	Edwards St	No/Yes
2016-10-13	15:15	Main St	Pope St	No/Yes
2015-05-26	13:49	RT 29	Charter Oak Av	Yes/No
2015-04-07	16:43	Hillview Pl	Spring Mountain Rd	Yes/No
2015-04-02	17:32	Money Wy	Spring St	Yes/No
2015-01-15	10:55	Church St	Pope St	Yes/No

Figure 8: Collision Data (Source: UC Berkeley Transportation Injury Mapping System: SRTS Collision Map Viewer)





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## FOOTNOTES

<sup>a</sup> Noreen McDonald, Ruth Steiner, Chanam Lee, Tori Rhoulac Smith, Xuemei Zhu and Yizhao Yang (2014). "Impact of the Safe Routes to School Program on Walking and Bicycling." Journal of the American Planning Association. Vol 80, Iss 2, p 153-167.

<sup>b</sup> Orion Stewart, Anne Vernez Moudon, and Charlotte Claybrooke (2014) Multistate Evaluation of Safe Routes to School Programs. American Journal of Health Promotion: January/February 2014, Vol. 28, No. sp3, pp. S89-S96.

<sup>c</sup> Peter A Muennig et al., 'The Cost-Effectiveness Of New York City's Safe Routes To School Program', American Journal Of Public Health, iss 0 (2014): 1-6.

<sup>d</sup> David Ragland, S Pande, J Bigham and FJ Cooper. (2014, January). Ten years later: examining the long-term impact of the California Safe Routes to School program. Presented at the Transportation Research Board 93rd Annual Meeting, Washington DC. Available at <http://docs.trb.org/prp/14-4226.pdf>.

<sup>e</sup> Davison K, Werder J and Lawson, C. "Children's Active Commuting to School: Current Knowledge and Future Directions." Preventing Chronic Disease, 5(3): A100, July 2008.

<sup>f</sup> Hillman CH, Pontifex MB, Raine LB, Castelli DM, Hall EE, Kramer AF. The effect of acute treadmill walking on cognitive control and academic achievement in preadolescent children. Neuroscience. 2009;159(3):1044-1054. doi:10.1016/j.neuroscience.2009.01.057

<sup>g</sup> Castelli, D.M., Glowacki, E., Barcelona, J.M., Calvert, H.G., & Hwang, J. (2015). Active Education: Growing Evidence on Physical Activity and Academic Performance. [Research brief.] Active Living Research. [http://activelivingresearch.org/sites/default/files/ALR\\_Brief\\_ActiveEduc....](http://activelivingresearch.org/sites/default/files/ALR_Brief_ActiveEduc....)

<sup>h</sup> Appleyard, B. (2017). The meaning of livable streets to schoolchildren: An image mapping study of the effects of traffic on children's cognitive development of spatial knowledge. Journal of Transport & Health, 5.

<sup>i</sup> AAA. Cost of Owning and Operating Vehicle in U.S. Increased 1.9% According to AAA's 2012 Your Driving Costs Study. 2012. <http://newsroom.aaa.com/2012/04/costof-owning-and-operating-vehicle-in-u...>

<sup>j</sup> Overall Facility Rating determined from 2019-20 School Accountability Report Card

# **APPENDIX A**

## **EMC Survey Toplines**

**Safe Routes to School Walk Audit Report  
and Active Transportation Action Plan**

# Evaluation: Research & Methodology

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- ▶ **Purpose: Gain insight into parent practices, perceptions, and attitudes around children walking and riding bicycles to and from school; explore barriers to behavior change**
- ▶ **Quantitative survey of 459 parents of K-8 students in Napa County**
  - Conducted online and by telephone, offered in English and Spanish
  - Conducted March 11 – April 12, 2021
  - Participants recruited via communications from school districts and targeted online and telephone contacts
  - *Survey methods were designed to include as many participants as possible; not a random sample*
- ▶ **Qualitative follow-up research**
  - One online focus group with 7 participants in English; 4 in-depth telephone interviews in Spanish
  - Conducted May 20 – 28, 2021
  - Targeted parents who lived within two miles of their school site and would like their children to walk or bike to school



Survey of Parents/Guardians of at least one child in K-8<sup>th</sup> Grade  
Napa County, California  
Hybrid Email-to-Web/Text-to-Web/Live Telephone Survey  
Conducted March 11-April 12, 2021  
n=459  
EMC Research #21-6420

**All numbers in this document represent percentage (%) values, unless otherwise noted.  
Please note that due to rounding, percentages may not add up to exactly 100%.**

**INTRO:** Your opinions are important! Thank you for participating in this survey EMC Research is conducting on behalf of the Napa County Safe Routes to School program in partnership with local school districts. You may have been contacted previously to complete this survey via telephone and we ask each individual only complete the survey once.

Your responses will remain completely confidential. Please try to answer every question even if you're not sure. If you need to, you may skip a question.

---

1. Are you the parent or guardian of any children currently attending kindergarten through eighth grade in one or more of the school districts located in Napa County below? *Please select the District(s) that your K-8<sup>th</sup> grade student(s) is/are currently enrolled in, check all that apply. (MULTIPLE RESPONSES ACCEPTED)*

Calistoga Joint Unified School District	0
Howell Mountain Elementary School District	-
Napa Valley Unified School District	97
Pope Valley Union Elementary School District	0
Saint Helena Unified School District	2
Another District or school in Napa County (please specify)	1
None of the above → <b>TERMINATE</b>	-
(No response) → <b>TERMINATE</b>	-

2. Please indicate below what grade(s) your child/children are in. *Please select all that apply. (MULTIPLE RESPONSES ACCEPTED)*

Kindergarten	22
1 <sup>st</sup> grade	17
2 <sup>nd</sup> grade	15
3 <sup>rd</sup> grade	20
4 <sup>th</sup> grade	15
5 <sup>th</sup> grade	15
6 <sup>th</sup> grade	14
7 <sup>th</sup> grade	12
8 <sup>th</sup> grade	9
9 <sup>th</sup> through 12 <sup>th</sup> grade → <b>TERMINATE IF ONLY RESPONSE SELECTED</b>	14
(No response) → <b>TERMINATE</b>	-

**(IF MORE THAN ONE K-8 STUDENT:** “Although you have multiple children in K-8, we ask that you please think about your **oldest K-8** child when answering the next questions.”)

For these next few questions, please think back to when your (child was/children were) attending school **before** the COVID-19 pandemic.

- |    |  |    |
|----|--|----|
| 3. | On most days, what was the primary way your (K-8 child/oldest K-8 child) travelled <b>to</b> school?       |    |
|    | Family vehicle (only children in your family)  | 73 |
|    | Carpool (children from other families)   | 3  |
|    | School bus   | 3  |
|    | Other public transportation  | 0  |
|    | Bike   | 4  |
|    | Walk   | 16 |
|    | Other (scooter, skateboard, inline skates, etc.)   | 0  |
|    | (No response)  | 0  |
| 4. | And on most days, what was the primary way your (K-8 child/oldest K-8 child) travelled <b>from</b> school? |    |
|    | Family vehicle (only children in your family)  | 73 |
|    | Carpool (children from other families)   | 3  |
|    | School bus   | 3  |
|    | Other public transportation  | 1  |
|    | Bike   | 4  |
|    | Walk   | 15 |
|    | Other (scooter, skateboard, inline skates, etc.)   | 0  |
|    | (No response)  | 0  |
| 5. | How long did it normally take your (K-8 child/oldest K-8 child) to get to/from school?                     |    |
|    | Less than 5 minutes  | 18 |
|    | 5-10 minutes   | 42 |
|    | 11-15 minutes  | 22 |
|    | 16-20 minutes  | 8  |
|    | More than 20 minutes   | 9  |
|    | (No response)  | 0  |
| 6. | Has your (K-8 child/oldest K-8 child) ever walked or biked to/from school?                                 |    |
|    | Yes  | 43 |
|    | No   | 56 |
|    | (No response)  | 0  |

7. **(ONLY ASKED IF Q6=1, 'Yes, has walked/biked to/from school')** In what grade did your child begin to walk or bike to/from school? (n=199)
- |                        |    |
|------------------------|----|
| Pre-school             | 7  |
| Kindergarten           | 30 |
| 1st grade              | 9  |
| 2nd grade              | 6  |
| 3rd grade              | 10 |
| 4th grade              | 8  |
| 5th grade              | 9  |
| 6th grade              | 13 |
| 7th grade              | 6  |
| 8th grade              | 1  |
| 9th through 12th grade | 1  |
| (No response)          | 2  |
8. Thinking generally, what grade would you feel comfortable with a child walking or biking to/from school?
- |   |    |
|---|----|
| Pre-school                                | 1  |
| Kindergarten                              | 5  |
| 1st grade                                 | 2  |
| 2nd grade                                 | 2  |
| 3rd grade                                 | 5  |
| 4th grade                                 | 14 |
| 5th grade                                 | 12 |
| 6th grade                                 | 16 |
| 7th grade                                 | 10 |
| 8th grade                                 | 7  |
| 9th through 12th grade                    | 13 |
| I would not feel comfortable at any grade | 14 |
| (No response)                             | 1  |

9INT. Continuing to think about times **before** the COVID-19 pandemic, please indicate how comfortable **you** were with your (K-8 child/oldest K-8 child) doing each of the following.

SCALE:	Very Comfortable	Somewhat Comfortable	Not too Comfortable	Not at all Comfortable	(No Response)	Total Comfort.	Total Not Comfort.	
<b>(RANDOMIZE)</b>								
9.	Taking a bus to school							
	32	33	17	15	3	65	32	
10.	Walking to school without an adult							
	8	18	19	54	1	26	73	
11.	Riding a bike to school without an adult							
	7	17	22	53	2	23	75	
12.	Walking to school with an adult							
	66	19	6	8	1	85	14	
13.	Riding a bike to school with an adult							
	45	29	11	13	2	74	24	

**(END RANDOMIZE)**

14. **(ONLY ASKED IF Q10=3 OR 4, 'not comfortable')** What would you say is the **main** reason you were not comfortable with your (K-8 child/oldest K-8 child) **walking** to school without an adult?

**(VERBATIM RESPONSES CODED INTO BELOW CATEGORIES) (n=335)**

Worry for child's safety/Crime	28
Not old enough	19
Live too far away	17
Traffic/Busy streets	11
Street crossing/Intersections	6
Not enough sidewalks	5
Crossing Highway 29	3
Other	8
Don't know	1

15. **(ONLY ASKED IF Q11=3 OR 4, 'not comfortable')** What would you say is the **main** reason you were not comfortable with your (K-8 child/oldest K-8 child) **riding a bike** to school without an adult?

**(VERBATIM RESPONSES CODED INTO BELOW CATEGORIES) (n=324)**

Worry for child's safety/Crime	29
Not old enough	18
Traffic/Busy streets	13
Live too far away	9
Street crossing/Intersections	5
Crossing Highway 29	4
Can't ride a bike	4
Not enough sidewalks	3
No bike lanes	3
Other	10
Don't know	1

For these next few questions, please think back to when your (child was/children were) attending school before the COVID-19 pandemic.

16INT. Please indicate whether you agree or disagree with each of the following statements.

SCALE:	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	(No Response)	Total Agree	Total Disagree
<b>(RANDOMIZE)</b>							
16.	I would generally like my K-8 (child/children) to be able to walk or bike to/from school.						
	43	32	12	12	0	76	24
17.	My K-8 (child enjoys/children enjoy) walking and/or biking places.						
	57	31	8	4	0	88	12
18.	I would never let my K-8 (child/children) walk or bike to/from school.						
	20	24	27	28	0	44	55
19.	It is safe for children to walk or bike in my area.						
	13	45	22	20	-	58	42
20.	There are enough bike paths and sidewalks for my K-8 (child/children) to walk or bike to/from school.						
	13	27	20	39	1	40	60
21.	I am concerned about speeding or distracted drivers if/when my (child/children) walk or bike to/from school.						
	81	15	2	2	0	96	4
22.	The school is too far away for my K-8 (child/children) to walk or bike there.						
	37	19	15	29	0	55	45
23.	My K-8 (child/children) cannot bike to and from school because of their before- or after-school commitments.						
	13	26	25	35	1	39	60
24.	Walking or biking to and from school is a good way for my K-8 (child/children) to get physical exercise.						
	69	25	3	3	1	93	6
25.	Walking or biking to and from school is a good way for me to spend quality time with my K-8 (child/children).						
	55	30	7	6	1	85	14
26.	I would only allow my K-8 (child/children) to walk or bike to and from school if I, or another adult, can accompany them.						
	54	25	12	8	0	79	21

**(END RANDOMIZE)**



27INT. Next, you will see some things that local schools and other organizations could do that may affect how you feel about your (K-8 child/oldest K-8 child) biking to school once the COVID-19 pandemic has ended. For each, please indicate if the item would make you feel more comfortable about allowing your (K-8 child/oldest K-8 child) to walk or bike to school once the COVID-19 pandemic has ended.

SCALE:	Much More Comfortable	Somewhat More Comfortable	A Little More Comfortable	(No Difference)	(Don't Know)
<b>(RANDOMIZE)</b>					
27.	Limit how much children have to carry in their backpacks				
	36	25	14	24	1
28.	Provide children and parents with information and maps on safe routes to and from school				
	37	24	16	22	1
29.	Offer free bicycle safety courses for children to learn how to ride safely on local streets				
	43	21	21	15	0
30.	Provide opportunities for children to practice biking in a car-free environment				
	42	23	14	20	-
31.	Offer free pedestrian safety classes for children				
	39	20	21	19	1
32.	Provide crossing guards at major intersections				
	62	22	10	6	-
33.	Organize groups of students to walk or bike to/from school together				
	42	26	17	14	1
34.	Provide a local parent or adult volunteer to walk or bike with children to/from school				
	36	27	15	20	1
35.	Add designated bike lanes to roads				
	46	24	15	14	-
36.	Improve the condition of existing bike lanes				
	47	23	14	16	1
37.	Add more bike paths that are separated from the road				
	62	17	11	9	0
38.	Add more sidewalks				
	53	21	13	12	1
39.	Fix missing or broken sidewalks				
	56	19	15	10	1
40.	Increase the visibility and safety of crosswalks				
	61	20	11	8	0
41.	Increase the police presence on routes that lead to schools				
	52	23	13	12	1
42.	Reduce the speed of traffic on streets that kids use to walk or bike to school				
	53	21	15	11	1

**(END RANDOMIZE)**

43. Is there something else that could be done that would make you feel more comfortable about allowing your (K-8 child/oldest K-8 child) to walk or bike to school once the COVID-19 pandemic has ended? **(VERBATIM RESPONSES CODED INTO BELOW CATEGORIES)**

Nothing/No additional comments	42
Add or improve bike paths/Sidewalks/Crosswalks	15
Increase crossing guards/Supervision/Police presence	11
School is too far away/Can't use active modes	9
Speeding concerns/Increased road law enforcement	5
Increase safety related to Highway 29	2
Already walks/bikes/etc.	2
Provide bikes/Equipment/Storage	2
Other	10
Don't know/Refused	2

44. About how far does your (K-8 child/oldest K-8 child) live from school? If you're not sure, give your best guess.

Less than ½ mile	14
½ mile up to 1 mile	19
1 mile up to 2 miles	21
2 miles up to 3 miles	14
3 miles up to 5 miles	15
5 miles or more	16
(No response)	1

45. Does your (K-8 child/oldest K-8 child) currently have their own working bicycle?

Yes	79
No	21
(No response)	-

46. Did you ride a bicycle when you were your K-8 (child's/children's) age?

Yes	78
No	21
(No response)	0

These last questions are for statistical purposes only. Your responses will remain completely confidential.

47. Do you identify as...

Male	14
Female	83
Non-binary	-
Another gender identity	-
Prefer not to respond	3

48.	What year were you born? (YEARS CODED INTO CATEGORIES)	
	18-29 (2003-1992)	5
	30-39 (1982-1991)	36
	40-49 (1972-1981)	45
	50-64 (1957-1971)	12
	65 or older (1956 or earlier)	1
	Prefer not to respond	1
49.	Do you consider yourself to be...	
	Hispanic or Latino	38
	White or Caucasian	41
	African American or Black	1
	Asian or Pacific Islander	7
	Something else	3
	Prefer not to respond	10
50.	Do you...	
	Own or are buying the home or apartment where you live	55
	Rent or lease	35
	Prefer not to respond	10

**THANK YOU!**

# **APPENDIX B**

## **Universal Recommendations**

**Safe Routes to School Walk Audit Report  
and Active Transportation Action Plan**

## **Appendix B**

### **Napa County SRTS Walk Audit Report**

#### **Universal Recommendations**

The Napa County Safe Routes to School (SRTS) Walk Audit Report Universal Recommendations apply to all public schools in Napa County, which reflects the schools served under the SRTS program. Universal recommendations are meant to supplement site-specific recommendations and address common barriers in the bicycle/pedestrian network around schools in a concise and consistent manner.

#### **Universal Recommendation 1: High-Visibility School Zone Crosswalks**

Federal Highway Administration data<sup>1</sup> indicates that high-visibility crosswalk striping improves the visibility of crosswalks compared to standard parallel lines and can improve yielding behavior by drivers<sup>2</sup>. Additionally, crosswalk visibility enhancements, which include but are not limited to high-visibility crosswalks, can reduce crashes by 23-48%<sup>1</sup>.

- Recommendation: High-visibility (continental or ladder pattern) crosswalks should be implemented at the following locations:
  - Utilizing the California Vehicle Code (CVC) §21368 requirements for designating crosswalks as “school zone” crosswalks (painted yellow), all school zone crosswalks;
  - And, all marked crosswalks at an intersection with a designated collector or arterial roadway within 1320 feet (0.25 miles) of a school (following the same measuring method as CVC §21368)

This recommendation applies to existing and future crosswalks. It does not provide guidance for new crosswalk warrants; it is primarily focused on the improvement of crosswalks within the roughly ¼ mile radius examined through the Walk Audit process.

#### **Universal Recommendation 2: Intersection Daylighting**

Daylighting is the practice of removing visual barriers, including parked vehicles, within a certain distance of a crosswalk or intersection to greatly improve visibility for pedestrians, bicyclists, and motorists. The National Association of City Transportation Officials recommends removing parking within 20-25 feet of an intersection. Daylighting can be accomplished through permanent infrastructure, such as concrete curb extensions, or more cost-effective materials, such as paint and bollards.

---

<sup>1</sup> [https://safety.fhwa.dot.gov/ped\\_bike/step/docs/TechSheet\\_VizEnhancemt\\_508compliant.pdf](https://safety.fhwa.dot.gov/ped_bike/step/docs/TechSheet_VizEnhancemt_508compliant.pdf)

<sup>2</sup> Pulugartha, S. S., V. Vasudevan, S. S. Nambisan, and M. R. Dangeti. Evaluating the Effectiveness on Infrastructure-Based Countermeasures on Pedestrian Safety. Presented at the 91st Annual Meeting of the Transportation Research Board, Washington, D.C., 2012.

- Recommendation: Daylighting strategies should be implemented at the following intersections:
  - Those that are in the school zone as defined by CVC §21368;
  - Those that are intersections with a designated collector or arterial roadway within 2640 feet (0.5 miles) of a school (following the same measuring method as CVC §21368).

### **Universal Recommendation 3: Sidewalk Width Adjacent to School Campus**

A barrier frequently identified during Walk Audits throughout the county was that sidewalks immediately adjacent to the school were too narrow for the high volumes of pedestrians generated during school arrival and dismissal times. Most of these sidewalks were roughly 4 feet wide, including space for utility and signage poles. While these sidewalks may meet specific municipal standards, they do not accommodate high volumes of school-related pedestrians and can deter or prevent students from walking to school if they travel with their families, in groups, or use a mobility assistance device. This is especially so when sidewalks are obstructed by utility poles, signal boxes, and other objects.

- Recommendation: All sidewalks that lead to a school campus entrance should be a minimum of 6 feet wide within at least 250 feet of the school entrance; if a school has only one entrance, the sidewalk leading to that entrance should be a minimum of 8 feet wide within 250 feet of that entrance.

### **Universal Recommendation 4: Class III Bike Boulevard Traffic-Calming**

Class III bicycle boulevards are on-street bicycle facilities that have traditionally been marked by signage and share-the-road stencils (“sharrows”) painted in the vehicle travel lane. Class III facilities do not provide any separation between bicyclists and motorists and instead indicate to road users that bicyclists and motorists must share the road. Such facilities are intended to be installed on low-speed (25 mph or less\*) and low-volume (<3,000 vehicles/day\*) roadways; however, the current practice of implementing only signage and sharrows for Class III routes frequently does not meet the comfort and safety perception needs of the “Interested but Concerned” user profile of bicyclists, which includes an estimate of 51%-56% of the population and is typically the profile assumed for most school-age children. To create a lower stress bicycle network, the Federal Highway Administration describes improving bicycle boulevards by “slowing motor vehicle speeds and implementing other speed management measures.”

- Recommendation: All Class III bicycle boulevards should be marked with sharrows and signage and must be treated with traffic-calming strategies to enforce the desired speed limit and prevent motorist speeding. Class III bicycle boulevards adjacent to school campuses or along roadways that facilitate

motorist speeding (long, straight, and/or minimal traffic control) should be prioritized for traffic-calming treatments.

\* Metrics established by the Federal Highway Association in their 2019 Bikeway Selection Guide.

### **Universal Recommendation 5: Curb Ramps (Americans with Disabilities Act)**

Some of the early Walk Audit reports specifically call out intersections or other pedestrian access points where curb ramps compliant with the Americans with Disabilities Act were missing, which creates a significant connectivity barrier for pedestrians who use mobility assistance devices. However, following these reports, the Napa County Safe Routes to School team recognized that many intersections and pedestrian access points were missing these curb ramps and that individually identifying each missing curb ramp would be redundant, particularly given data from the Napa Countywide Pedestrian Plan (2016). Consequently, though some early reports do mention lack of accessible curb ramps, a universal recommendation was created to address this important pedestrian barrier while avoiding redundancy in reports.

- Recommendation: In alignment with the Americans with Disabilities Act, when implementing recommendations made in Napa County Safe Routes to School reports that impact the curb at intersections, pedestrian crossings, or other pedestrian access points, curb ramps that are compliant with the Americans with Disabilities Act should be installed.

# **APPENDIX C**

## **Quick Build Brochure**

**Safe Routes to School Walk Audit Report  
and Active Transportation Action Plan**



# QUICK-BUILD BIKEWAY NETWORKS FOR SAFER STREETS

## Delivering Safer Streets in Weeks or Months, Instead of Years

*How to Meet Public Demand for Safe Bikeway Networks—Affordably, Quickly, and Inclusively*



*Photo credit: Alta Planning + Design*

### CASE STUDY

Adeline Street in Berkeley got protected bike lanes 20 years ahead of schedule, when Bike East Bay worked closely with the city to incorporate planned lanes into the repaving schedule, saving time and money by simply adding bike infrastructure to an existing project, one funded through a local infrastructure bond measure. The City of Berkeley garnered extensive public input on the Adeline Corridor, making this a great example of quick-build speeding up existing bike infrastructure planning, bringing bike lanes to Berkeley in 2019 instead of 2039.

### WHY QUICK-BUILD? WHY NOW?

Biking is up in many communities in California, including those that started with low rates of bicycling, as people seek out healthy and safe transportation and recreation. Californians are discovering they can be healthier and happier simply by getting out on two wheels.

Meanwhile, agency budgets are down. Plans to spend millions on infrastructure may no longer be realistic. More than ever, the public demands that transportation projects are equitable and responsive to the needs of neglected communities.

Quick-build is a method of building bike and pedestrian safety improvements—protected bike lanes, pedestrian crossings, slow streets, parklets, and more—now, within your budget. In challenging times, quick-build projects are crucial to building trust in the government’s ability to deliver public benefit. And quick-build infrastructure can engage the public better than ever, and be more inclusive and equitable than traditional infrastructure.

***“We as transportation experts need to be thinking strategically about whether or not we need to spend three years talking about doing something important, or three weeks to just try something.”***

— Warren Logan

*Transportation Policy Director of  
Mobility and Interagency Relations at  
Oakland Mayor’s Office*

# WHAT IS QUICK-BUILD?

## The Basics

- Quick-build projects use materials that can be installed quickly and at low cost. Build projects from posts, planters, and stripes of paint, not new pavement or curb alignments.
- **Quick-build projects are installed on a trial basis.** Temporary installations allow for adjusting or removing elements in response to public feedback. Successful projects may become permanent, exactly as installed, or upgraded with more durable materials.
- **Quick-build should incorporate rigorous community engagement.** A project on the ground can serve much more effectively than a PowerPoint or rendering for trying something out and allowing community residents to respond. Gather feedback and input, and change designs accordingly.

## Materials

From paint, traffic cones, and A-boards to concrete curb barriers, planters, and temporary raised crosswalks, a wide variety of materials work well for creating quick-build projects. The full Quick-Build Toolkit provides thorough, detailed descriptions of materials that can make for an effective and inexpensive project to meet your community's needs.

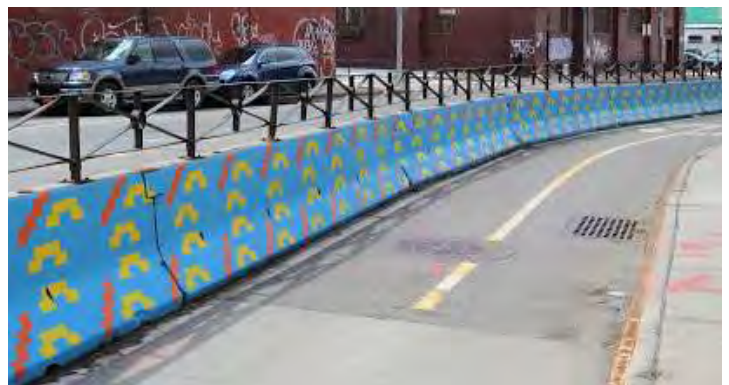


Photo credits, top to bottom: Alta Planning + Design; Real Hartford; Alta Planning + Design; Street Plans Collaborative



## CASE STUDY

In August of 2020, the City of San Luis Obispo converted one of the three motor vehicle lanes of downtown Higuera Street into a buffered bike lane, as part of Open SLO, the city's pilot program to expand the use of public spaces (with parklets and bike/ped spaces) during the COVID-19 pandemic. The project was installed with paint, took less than a week to install, and cost a mere \$15K instead of the more than \$150K it would have taken to put in a traditional bike lane by sealing and restriping the whole street as the city would normally do.

Photo credit: Bike SLO County

# WHO?

## Your Quick-Build Project Team



**Team leader.** Quick-build projects need a “chief” (usually city staff) tasked with project facilitation, keeping the momentum going, establishing lines of communication, and accepting and evaluating feedback.



**Community leaders.** Because evaluation and adjustment are essential for successful quick builds, make sure community leaders are on board from the beginning. Look to businesses, residential associations, places of worship, and nearby schools. Bring in bike/ped advocacy organizations and other CBOs, including those based in disadvantaged communities and led by people of color.



**Department liaisons.** Your project may impact transit, street sweeping, parking enforcement, maintenance, waste management and recycling, and emergency response. Involve other agencies as necessary to ensure you don't forget a critical aspect.



**Elected Officials.** They have the power to marshal funding for quick-build projects. They will hear from constituents, so communication channels between the project team and electeds must be open for effective project evaluation.



**Communications.** Ideally, include a dedicated communications person on your team. Because this is a new method, and people are used to years of discussion, publicize quick-build's temporary nature. Talk about the project's intended benefits, and listen to feedback about the actual impacts.

## Community Engagement

Community engagement is essential and also very effective, because it's easy to engage people in providing feedback on real-world solutions that they can see and use. Here are the keys:

- Start engaging with the community before you install the project so that residents' opinions are included from the get-go.
- Be inclusive in your outreach, including perspectives from disadvantaged communities and people of color.
- Emphasize the project's temporary nature, and the ability to change the project after it's installed.
- Implement effective feedback mechanisms during the project, making sure to plan and budget for project adjustments in response to input.

### CASE STUDY

The El Cajon Boulevard Business Improvement Association ("The Boulevard") got city councilmembers and the mayor on board to fund a pilot bus and bike lane along a 3-mile stretch of San Diego's El Cajon Boulevard. The Boulevard staff brought in diverse stakeholders and built on longstanding relationships to push the city to dedicate a lane for El Cajon Boulevard's new bus rapid transit line, and got bikes included on this Vision Zero corridor. The entire three-mile project, which launched in January 2020, cost \$100K, funded by San Diego's general fund.

*Photo credit: Holly Raines*



## WHERE?

### Which Projects are Best for Quick-Build?

Some projects are better than others for the quick-build method.

- **Look to existing plans.** Your community's current active transportation plan already identifies key improvements and priorities. Most such plans will take decades to complete with traditional methods and funding. Quick-build can take those plans to reality much sooner.
- **Fill gaps in the bikeway network, especially now when more people are bicycling.** Look to improve intersections that are dangerous to navigate, short sections of crosstown routes that use busy streets, or long sections of streets that could become "slow streets" to connect neighborhoods.
- **Put disadvantaged communities first.** If your plan doesn't already incorporate an equity analysis to set priorities, this is your chance. Look at a model plan like Oakland's "Let's Bike Oakland" bicycle plan which incorporates a framework of equity and a focus on improving well-being for the city's most vulnerable groups.

If a project is funded and on schedule to be built within a year or two, turn your attention to projects that will take years without quick build. Projects that require expensive modifications—new traffic signals, bridges, reconfigured curbs—are not good quick-build candidates.



Photo credit: Alta Planning + Design

### Funding for Quick-Build

#### POTENTIAL FUNDING SOURCES IN CALIFORNIA

Available funding for quick-build projects varies a lot from one municipality to the next. But here are a few ideas.

- Public works departments' essential repaving and repair projects are great opportunities to put in quick-build projects at low cost.
- Local and regional funds such as general fund, sales tax revenue, and Air Quality Management District funds can be used for quick-build projects.
- Tack on costs to another publicly-funded transportation project, or even a private project. For example, a development project that is required to repave and stripe new bike lanes might install a protected bike lane using quick-build materials instead.
- In 2020, the **Active Transportation Program** piloted a special quick-turnaround funding pot for quick-build projects, with an earlier (summer) deadline. Keep an eye on the ATP to see if they continue to offer this funding in future years. CalBike will be pushing them to do so.
- PeopleForBikes has a **small grant program** for infrastructure projects.
- AARP's **Community Challenge grant** could fund a quick-build project.

This resource was prepared in partnership with Alta Planning + Design. For more information see our complete **Quick-Build Guide**.



# **APPENDIX D**

## **Bike Parking Guidance**

**Safe Routes to School Walk Audit Report  
and Active Transportation Action Plan**

ESSENTIALS OF

# BIKE PARKING

Selecting and installing bicycle parking that works



*apbp*  
Association of Pedestrian  
and Bicycle Professionals  
Expertise for Active  
Transportation

## Essentials of Bike Parking

Revision 1.0, September 2015

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### Acknowledgments

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**Cover image:** Sign D4-3 from *Standard Highway Signs, 2004 Edition*, [http://mutcd.fhwa.dot.gov/ser-shs\\_millennium\\_eng.htm](http://mutcd.fhwa.dot.gov/ser-shs_millennium_eng.htm)

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*APBP is an association of professionals who plan, implement and advocate for walkable and bicycle-friendly places.*

### Association of Pedestrian and Bicycle Professionals

bikeparking@apbp.org  
www.apbp.org



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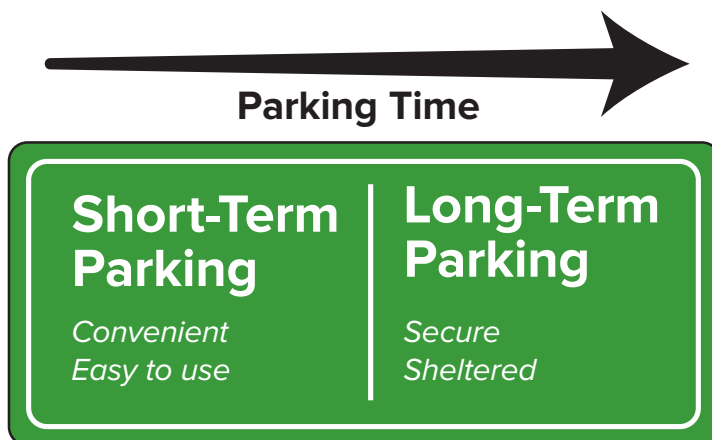
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## INTRODUCTION

Among the necessary supports for bicycle transportation, bike parking stands out for being both vital and easy. Still, it requires some attention to get it right. Bike parking may go unused if it's not more appealing to users than the nearest sign post. A minor mistake in installation can make a quality rack unusable. The variety of bicycle sizes, shapes, and attachments continues to increase, and good bike parking should accommodate all types.

The Association of Pedestrian and Bicycle Professionals (APBP) prepared this guide for people planning to purchase or install bike parking fixtures on a limited scale. It is a brief overview of APBP's comprehensive *Bicycle Parking Guidelines* handbook, available at [www.apbp.org](http://www.apbp.org).

This guide divides bike parking into short-term and long-term installations. These two kinds of parking serve different needs, and the starting point for most bike parking projects is recognizing whether the installation should serve short-term users, long-term users, or both. If users will typically be parking for two hours or longer, they are likely to value security and shelter above the convenience and ease that should characterize short-term parking.





# SHORT-TERM PARKING

Effective bike parking for short-term users depends on two main factors: 1) proximity to the destination and 2) ease of use.

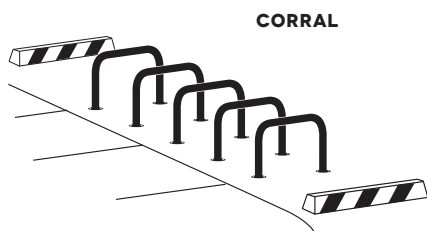
Short-term parking is designed to meet the needs of people visiting businesses and institutions, and others with similar needs—typically lasting up to two hours. Short-term users may be infrequent visitors to a location, so the parking installation needs to be readily visible and self-explanatory.



**INVERTED U**



**POST & RING**



**CORRAL**

## SITE PLANNING

### Location

Short-term bike parking should be visible from and close to the entrance it serves—50' or less is a good benchmark. Weather-protected parking makes bicycle transportation more viable for daily and year-round use, and it can reduce the motivation for users to bring wet bicycles into buildings. Area lighting is important for any location likely to see use outside of daylight hours.

### Security

All racks must be sturdy and well-anchored, but location determines the security of short-term parking as much as any other factor. Users seek out parking that is visible to the public, and they particularly value racks that can be seen from within the destination. Areas with high incidence of bicycle theft may justify specific security features such as specialty racks, tamper-proof mounting techniques, or active surveillance.

### Quantity

Many jurisdictions have ordinances governing bike parking quantity. APBP's full *Bicycle Parking Guidelines* offers complete recommendations for the amount and type of parking required in various contexts. In the absence of requirements, it's okay to start small—but bear in mind that perceived demand may be lower than the demand that develops once quality parking appears.

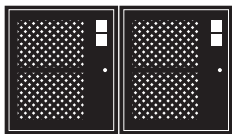
## BIKE CORRALS

Some cities with limited sidewalk space and strong bicycle activity place bike parking in on-street "bike corrals" located in the street area adjacent to the curb. Bike corrals can sometimes make use of on-street areas that are unsuitable for auto parking. When replacing a single auto parking space, a corral can generally fit 8 to 12 bicycles. APBP's full *Bicycle Parking Guidelines* provides details about designing and siting bike corrals. [➔ apbp.org](https://apbp.org)

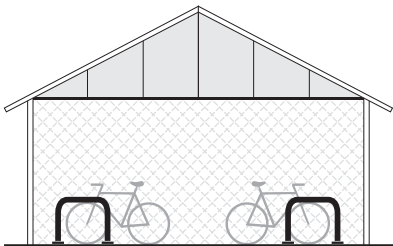
# LONG-TERM PARKING

Users of long-term parking generally place high value on security and weather protection. Long-term parking is designed to meet the needs of employees, residents, public transit users, and others with similar needs. These users typically park either at home or at a routine destination such as a workplace. They often leave their bicycles unmonitored for a period of several hours or longer, so they require security and weather protection that let them park without unreasonable concern for loss or damage.

Long-term parking can take a variety of forms, including a room within a residential building or workplace, a secure enclosure within a parking garage, or a cluster of bike lockers at a transit center. Some long-term parking is open to the public—such as a staffed secure enclosure at a transit hub—and some of it is on private property with access limited to employees, residents, or other defined user groups.



**BIKE LOCKERS**



**SHELTERED SECURE ENCLOSURE**

## SITE PLANNING

### Location

Appropriate locations for long-term parking vary with context. Long-term parking users are typically willing to trade a degree of convenience for weather protection and increased security. Long-term installations emphasize physical security above public visibility. Signage may be needed for first-time users.

### Security

Security is paramount for quality long-term parking. Access to parked bicycles can be limited individually (as with lockers) or in groups (as with locked bike rooms or other secure enclosures). Options for access control include user-supplied locks, keys, smart cards, and other technologies.

### Quantity

Refer to local ordinances or the comprehensive APBP *Bicycle Parking Guidelines* to determine the amount and type of parking required for various contexts.

## SPECIAL CONSIDERATIONS FOR LONG-TERM PARKING

In many ways, short-term and long-term parking function similarly and are served by the same guidelines. Some exceptions are noted below.

### Density

The competition of uses for high-security and sheltered locations creates particular pressure on long-term parking to fit more bicycles in less space. When parking needs cannot be met with standard racks and spacing recommended in this guide, consider rack systems designed to increase parking density. See the high-density racks table on page 7. Note that increasing density without careful attention to user needs can create parking that excludes people because of age, ability, or bicycle type. This may result in people parking bicycles in other less desirable places or choosing not to bike at all.

### Bicycle design variety

Long-term parking facilities should anticipate the presence of a variety of bicycles and accessories, including—depending on context—recumbents, trailers, children’s bikes, long-tails, and others. To accommodate trailers and long bikes, a portion of the racks should be on the ground and should have an additional 36” of in-line clearance.

### Performance criteria

The bike rack criteria in the next section apply to racks used in any installation, regardless of its purpose. Long-term installations often use lockers and group enclosures not discussed in this guide. Such equipment raises additional considerations that are discussed in detail in APBP’s full *Bicycle Parking Guidelines*. [➔ apbp.org](https://apbp.org)

# INSTALLATION

Selecting an appropriate installation surface and technique is key to creating bicycle parking that remains secure and attractive over time.

## INSTALLATION SURFACE

A sturdy concrete pad is an ideal surface for installing bicycle parking. Other surfaces often encountered include asphalt, pavers, and soft surfaces such as earth or mulch. These surfaces can accommodate in-ground mounting or freestanding bike racks such as inverted-U racks mounted to rails. See APBP's *Bicycle Parking Guidelines* for details. [➔ apbp.org](https://apbp.org)

## INSTALLATION FASTENERS

When installing racks on existing concrete, consider the location and select appropriate fasteners. Drill any holes at least three inches from concrete edges or joints. Some locations benefit from security fasteners such as concrete spikes or tamper-resistant nuts on wedge anchors. Asphalt is too soft to hold wedge and spike anchors designed for use in concrete. Installing bike parking on asphalt typically requires freestanding racks and anchor techniques specific to asphalt.

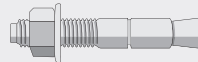
### FASTENERS

#### CONCRETE SPIKE



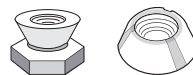
Installs quickly in concrete with a hammer. Tamper-resistant. Removal may damage concrete and/or rack.

#### CONCRETE WEDGE ANCHOR



Allows for rack removal as needed. Not tamper-resistant, but can accommodate security nuts (below).

#### SECURITY NUTS



Use with concrete wedge anchors. Security nuts prevent removal with common hand tools.

## INSTALLATION TECHNIQUES

When installing racks on existing concrete, choose those with a surface-mount flange and install with a hammer drill according to the specifications of the mounting hardware selected. When pouring a new concrete pad, consider bike parking fixtures designed to be embedded in the concrete. Because replacing or modifying an embedded rack is complicated and costly, this installation technique requires particular attention to location, spacing, rack quantity, and material.



# BICYCLE RACK SELECTION

## PERFORMANCE CRITERIA FOR BIKE PARKING RACKS

*These criteria apply to any rack for short- or long-term use.*

CRITERIA	DETAILS
<b>Supports bike upright without putting stress on wheels</b>	The rack should provide two points of contact with the frame—at least 6” apart horizontally. Or, if a rack cradles a bicycle’s wheel, it must also support the frame securely at one point or more. The rack’s high point should be at least 32”.
<b>Accommodates a variety of bicycles and attachments</b>	The racks recommended on page 6 (“racks for all applications”) serve nearly all common bike styles and attachments—if installed with proper clearances (see placement section). Avoid designs and spacing that restrict the length, height, or width of bicycles, attachments, or wheels.
<b>Allows locking of frame and at least one wheel with a U-lock</b>	A closed loop of the rack should allow a single U-lock to capture one wheel and a closed section of the bike frame. Rack tubes with a cross section larger than 2” can complicate the use of smaller U-locks.
<b>Provides security and longevity features appropriate for the intended location</b>	Steel and stainless steel are common and appropriate materials for most general-use racks. Use tamper-resistant mounting hardware in vulnerable locations. Rack finish must be appropriate to the location (see materials and coatings section).
<b>Rack use is intuitive</b>	First-time users should recognize the rack as bicycle parking and should be able to use it as intended without the need for written instructions.

# RACK STYLES

The majority of manufactured bike racks fall into one of the categories on pages 6-8. Within a given style, there is wide variation among specific racks, resulting in inconsistent usability and durability. APBP recommends testing a rack before committing broadly to it.

## RACKS FOR ALL APPLICATIONS

When properly designed and installed, these rack styles typically meet all performance criteria and are appropriate for use in nearly any application.

### INVERTED U

also called  
staple, loop



Common style appropriate for many uses; two points of ground contact. Can be installed in series on rails to create a free-standing parking area in variable quantities. Available in many variations.

### POST & RING



Common style appropriate for many uses; one point of ground contact. Compared to inverted-U racks, these are less prone to unintended perpendicular parking. Products exist for converting unused parking meter posts.

### WHEELWELL-SECURE



Includes an element that cradles one wheel. Design and performance vary by manufacturer; typically contains bikes well, which is desirable for long-term parking and in large-scale installations (e.g. campus); accommodates fewer bicycle types and attachments than the two styles above.

This guide analyzes the most common styles of bike racks, but it is not exhaustive. Use the performance criteria on page 5 to evaluate rack styles not mentioned. Custom and artistic racks can contribute to site identity and appearance, but take care that such racks don't emphasize appearance over function or durability.

## HIGH-DENSITY RACKS

These rack styles do not meet all performance criteria but may be appropriate in certain constrained situations.

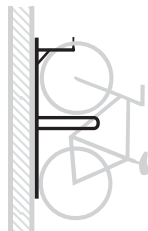
High-density rack systems can maximize the use of limited parking space, but they don't work for all users or bicycles. If installing these racks, reserve additional parking that accommodates bicycles with both wheels on the ground for users who are not able to lift a bicycle or operate a two-tier rack, or for bikes that are not compatible with two-tier or vertical racks.

### STAGGERED WHEELWELL-SECURE



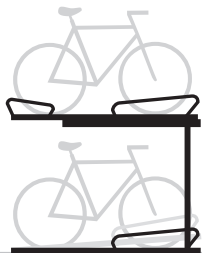
Variation of the wheelwell-secure rack designed to stagger handlebars vertically or horizontally to increase parking density. Reduces usability and limits kinds of bikes accommodated, but contains bikes well and aids in fitting more parking in constrained spaces.

### VERTICAL



Typically used for high-density indoor parking. Not accessible to all users or all bikes, but can be used in combination with on-ground parking to increase overall parking density. Creates safety concerns not inherent to on-ground parking.

### TWO-TIER



Typically used for high-density indoor parking. Performance varies widely. Models for public use include lift assist for upper-tier parking. Recommend testing before purchasing. Creates safety concerns not inherent to on-ground parking, and requires maintenance for moving parts.

## RACKS TO AVOID

Because of performance concerns, APBP recommends selecting other racks instead of these.

**WAVE**  
also called undulating  
or serpentine



Not intuitive or user-friendly; real-world use of this style often falls short of expectations; supports bike frame at only one location when used as intended.

**SCHOOLYARD**  
also called  
comb, grid



Does not allow locking of frame and can lead to wheel damage. Inappropriate for most public uses, but useful for temporary attended bike storage at events and in locations with no theft concerns. Sometimes preferred by recreational riders, who may travel without locks and tend to monitor their bikes while parked.

**COATHANGER**



This style has a top bar that limits the types of bikes it can accommodate.

**WHEELWELL**



Racks that cradle bicycles with only a wheelwell do not provide suitable security, pose a tripping hazard, and can lead to wheel damage.

**BOLLARD**



This style typically does not appropriately support a bike's frame at two separate locations.

**SPIRAL**



Despite possible aesthetic appeal, spiral racks have functional downsides related to access, real-world use, and the need to lift a wheel to park.

**SWING ARM  
SECURED**



These racks are intended to capture a bike's frame and both wheels with a pivoting arm. In practice, they accommodate only limited bike types and have moving parts that create unneeded complications.

## RACK MATERIALS & COATINGS

Most bicycle parking racks are made of carbon steel or stainless steel. Carbon steel requires a surface coating to resist rust while appropriate grades of stainless steel need no coating. Not all materials and coatings with the same name perform equally. Square tubing provides a security advantage as round tubing can be cut quietly with a hand-held pipe cutter. Before purchasing racks, talk to suppliers about your particular conditions and choose a material and coating that suit your needs. The following are common choices, depending on local considerations and preferences.

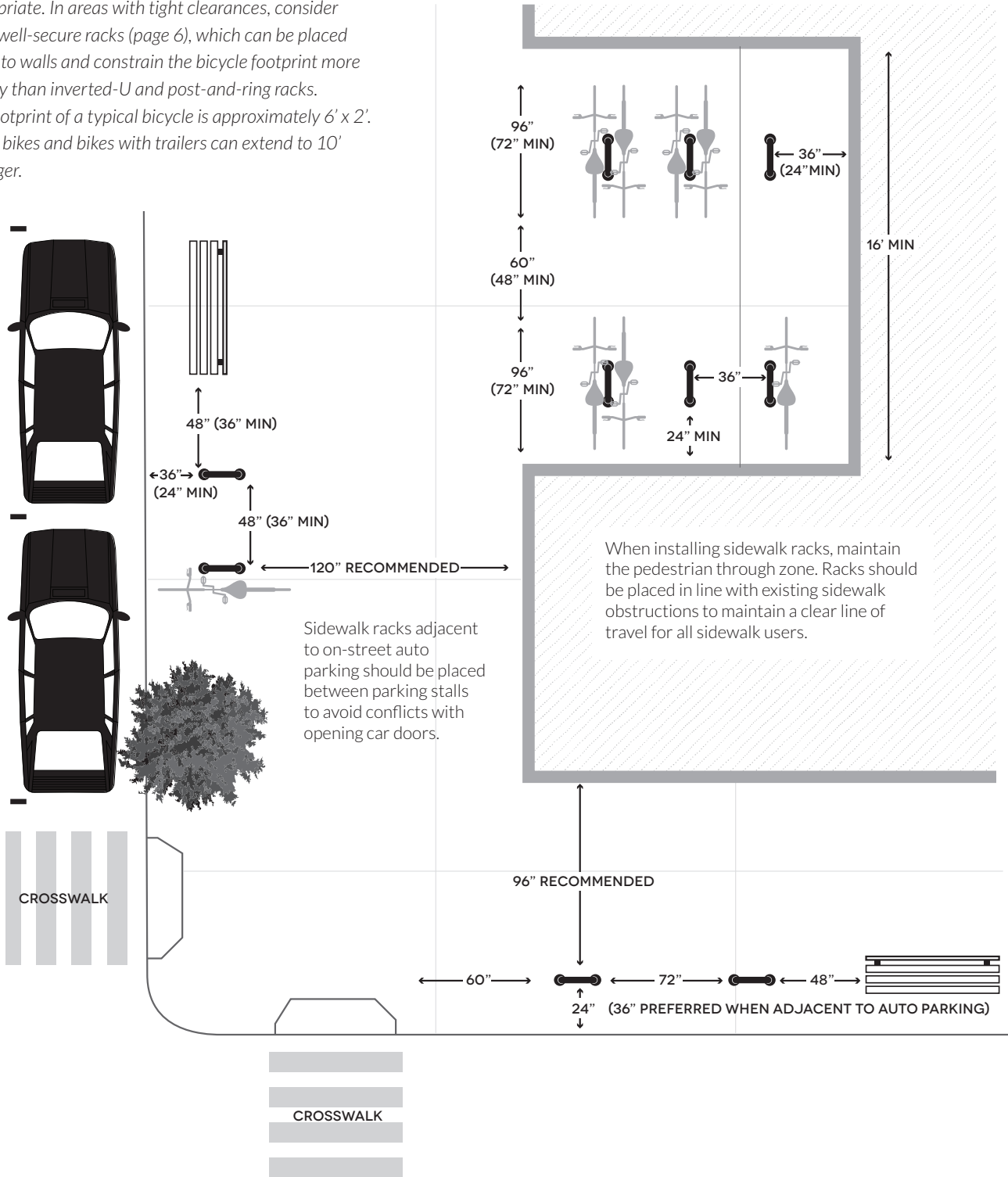
RACK MATERIAL - COATING	RELATIVE PURCHASE COST	DURABILITY	CAUTIONS
<b>Carbon steel - galvanized</b>	Usually lowest	Highly durable and low-maintenance; touch-up, if required, is easy and blends seamlessly	Utilitarian appearance; can be slightly rough to the touch
<b>Carbon steel - powder coat* (TGIC or similar)</b>	Generally marginally higher than galvanized	Poor durability	Requires ongoing maintenance; generally not durable enough for long service exposed to weather; not durable enough for large-scale public installations
<b>Carbon steel - thermoplastic</b>	Intermediate	Good durability	Appearance degrades over time with scratches and wear; not as durable as galvanized or stainless
<b>Stainless steel - no coating needed, but may be machined for appearance</b>	Highest	Low-maintenance and highest durability; most resistant to cutting	Can be a target for theft because of salvage value; maintaining appearance can be difficult in some locations

\* When applied to carbon steel, TGIC powder coat should be applied over a zinc-rich primer or galvanization to prevent the spread of rust beneath the surface or at nicks in the finish.



# PLACEMENT

The following minimum spacing requirements apply to some common installations of fixtures like inverted-U or post-and-ring racks that park one bicycle roughly centered on each side of the rack. Recommended clearances are given first, with minimums in parentheses where appropriate. In areas with tight clearances, consider wheelwell-secure racks (page 6), which can be placed closer to walls and constrain the bicycle footprint more reliably than inverted-U and post-and-ring racks. The footprint of a typical bicycle is approximately 6' x 2'. Cargo bikes and bikes with trailers can extend to 10' or longer.



# **APPENDIX E**

## **Recommendation Cost Range Estimates**

**Safe Routes to School Walk Audit Report  
and Active Transportation Action Plan**

## Appendix E: Recommendation Cost Range Estimates

Cost estimate was one of many factors considered when prioritizing recommendations for Napa County Safe Routes to School Walk Audit reports. Recommendations in which a high cost estimate would considerably delay implementation of the recommendation may have been given a lower priority level in order to prioritize recommendations that are lower cost and therefore more likely to be installed more quickly. Cost was considered on a high-level scale; real cost ranges of recommendations may differ from cost range estimates included in Walk Audit reports.

Cost range estimates for Safe Routes to School Walk Audit recommendations are as follows:

\$	< \$25,000
\$\$	Between \$25,000 and \$250,000
\$\$\$	\$250,000 to \$1 million
\$\$\$\$	> \$1 million

# **APPENDIX F**

## **Parent Champions Handout**

**Safe Routes to School Walk Audit Report  
and Active Transportation Action Plan**



Safe Routes  
to School  
**National  
Partnership**

# How to be a Parent Champion for Safe Routes to School



Schools, cities, parents, and students are embracing the Safe Routes to School movement and establishing tens of thousands of Safe Routes to School programs throughout the United States. This document describes how parents and families can get involved in Safe Routes to School, though data collection, school and neighborhood improvements, policy change, and programs to enable and encourage more walking and bicycling.

## **Education, Encouragement, and Enforcement**

Education, encouragement, and enforcement are additional strategies for implementing Safe Routes to School in your community. Often they require few resources and can be started right away. Discuss with other families, school staff, and neighbors which ideas below could be good options for your school. Ensure education, encouragement, and enforcement methods are inclusive of all members in your school. Consider language and cultural barriers when producing materials.

### *Organize a Walk or Bike to School Day Event*

Encouragement activities such as Walk to School or Bike to School Day can show families how easy and fun it is to walk or bike. Start campaigns for these national events and get teachers, staff members, students, and parents committed to participating. Register your event online at [walkandbike.org](http://walkandbike.org). For tips on walk or bike to school day read our [Bike to School Day blog](#).

### *Organize a Walking School Bus or Bike Train*

Walking school buses or bike trains are safe and fun ways for children to get physical activity as they travel to and from school with adult supervision. Each “bus” or “train” walks or bikes along a set route with one or more adults leading it, picking children up at designated stops along a predetermined route and using active travel to get them to school. The process is reversed in the afternoons on the way home from school. It is that easy! For information about starting a walking school bus or bike train refer to [Step In to a Walking School Bus Program](#) and [Get Rolling with a Bike Train Program](#).

### *Bicycle and Pedestrian Curricula in the Classroom*

To ensure that children receive appropriate safety training, work with your school to provide education about walking and bicycling safely. This type of training helps to address parent and school administrator concerns about traffic safety. For more information about why this training is important and what to look for in a training program refer to [Bicycle and Pedestrian Safety Curriculum for Safe Routes to School](#).

### *Remote Drop Off*

Many schools that struggle with including students that live too far to walk or bicycle to school have created remote drop off programs. Programs work with schools and school district transportation departments (including school buses) to designate student drop off locations at a short distance from the school. This helps to reduce traffic congestion around the school and encourages students to get additional exercise. [Read tips on remote drop off](#).

### *Create Partnerships with Law Enforcement*

Creating partnerships between law enforcement, schools, and community organizations can help bolster Safe Routes to School programs. Working with your local police department to increase patrols during school commute hours or implement measures to decrease speeding are two examples of partnerships with law enforcement. Work with families and law enforcement to make sure that a police presence will not end up targeting students of color.

### *Addressing School Bus Cuts*

When school districts face financial challenges, a common target for cuts is the school transportation system -- cutting back bus routes and stops as well as widening the walk zone around a school. However, reducing busing without also addressing student safety risks often leads to more traffic congestion, poorer air quality, increased safety risks, and higher family transportation costs as more parents drive children to school. If your school district is talking about transportation cuts, work with district and school staff members to ensure that a Safe Routes to School program is being implemented simultaneously.



## **Understanding the Problem and Opportunity**

Understand the challenges preventing many students from safely walking or biking to school. Using the [National Center for Safe Routes to School](#)'s parent survey you can begin gathering information on issues specific to your school. Survey parents every two to three years. Work with your school to understand how students are getting to and from school by conducting student travel tallies at the beginning and end of each school year.

Conduct a walk audit by surveying walking conditions around the school. Look for sidewalks, crosswalks, school zone signs, parent behavior during arrival and dismissal to better understand the challenges families and students face. Refer to [Let's Go For A Walk: A Toolkit for Planning and Conducting a Walk Audit](#) for more information and templates for conducting a walk audit. Walk audits are not the only method for establishing baseline data. Interviewing school staff, students, and parents is also a great way to discover your school's strengths and weaknesses when it comes to opportunities for walking and bicycling to and from school. When interviewing school staff members, students, and parents, make sure educational and marketing materials are accessible, and consider all languages and cultures in your school.

Historically, low income communities and communities of color have streets and schools with fewer sidewalks, crosswalks, bike lanes, bike racks, and less lighting than communities whose residents have higher incomes. These communities shoulder the burden of increased rates of death and injury because of missing or unsafe places to walk and bike. Many things contribute to street safety, but the presence or lack of safe places to walk and bike plays a major role. For more information on disparities in street infrastructure refer to "[At the Intersection of Active Transportation and Equity](#)."

## **School and Neighborhood Changes**

While changing the way streets and sidewalks function in your community may seem intimidating, it is quite possible. Cities and counties make decisions about traffic speeds, crosswalks, signage and other neighborhood design issues. School campus design can also support walking and bicycling. By talking with the principal, city traffic engineer, city councilperson, or other officials, families can change the environment in and around the school and throughout the neighborhood. You can help improve the school and neighborhood environment with the actions listed below.

### *Getting Bike Racks at the School*

Students won't bicycle to school if there isn't a place to safely store their bicycles. Creating space and securing funding or a donation for school bike racks assures the safety of bikes while children are in class. Work with the school and school district to make sure bike racks are secure, in a visible place, and easily accessible from school entrances. Asking the school district or city to provide needed bike racks is a great place to start.

## Maintenance

Regular maintenance of streets, sidewalks, trees, and bushes means the difference between a pleasant walk or bicycle ride to school and a harrowing experience tiptoeing over shards of glass and dodging overhanging bushes that push you into the street. The city often decides when to trim bushes and sweep streets, and what streets and paths to clear first when it snows. A walk audit with city officials can make maintenance a higher priority. Work with city staff or start by talking with an elected official, to address maintenance issues—they are often easy to solve. Consider organizing a cleanup party that brings families, students, and the community together to make sidewalks and paths clear and beautiful.

## Painting Crosswalks and Signage

Encourage communication between your city and school. Discuss problems that students encounter walking and bicycling to school with the city engineer and/or elected officials and help gather information for needed city projects. Share walk audit findings with city officials. Remember that the key to successful change is to share specific problems, such as busy intersections, pedestrian lights that don't allow enough time, or missing crosswalks, instead of telling the city 'the solution.' Ask about organizing temporary or low cost improvements such as a community crosswalk or intersection painting at your school.

## Safe Routes to School Grant Application

If your walk audit shows that the area around the school needs extensive improvements, work with your local decision makers at the city and school to apply for funding to initiate these projects. There may be local, regional, state, or private funding available. A well thought out proposal that includes strong partnerships in the community will lead to a powerful funding application that can improve the streets around your school.

## Policy Changes

The idea of changing government and school policies may seem overwhelming, but it doesn't have to be. Schools, cities, and counties all make policies that govern use of agency resources including funding. With parents and families advocating for changes, you can help these agencies support opportunities for children to walk and bicycle to school and in daily life. The following are policy changes that can improve walking and bicycling to schools. We suggest that you pick one or two policies that interest you, and work together with other concerned families to encourage changes.

### Reversing a No Walk/Bike Policy

Does your school prohibit walking or bicycling to school? If so, you can change this! There are many examples across the country of schools that have changed their policies after parents have asked them to be reviewed or reconsidered. For more information, see our [Safe Routes to School Local Policy Guide](#) and [Safe Routes to School District Policy Workbook](#).



## Integrating Safe Routes to School in Wellness Policies

Federal law requires all school districts that participate in the federal school meal program to adopt wellness policies that focus on nutrition and physical activity. Many schools have policies that focus on nutrition, but they need more ways to increase physical activity. Getting more students to walk and bike through this simple change is an excellent way to support your Safe Routes to School program. Find out if your school has a wellness policy, how it can be amended, and get Safe Routes to School included! This will help later with getting additional programs and policies initiated. For more information reference the [Safe Routes to School District Policy Workbook](#).

## School Siting and Closure Policies

When school districts grow, budgets contract, or the student population changes, there are often discussions around building or closing schools. Local districts have wide discretion regarding where they locate schools; where a school is built or which school is closed are critical components in enabling or preventing students from walking or bicycling to school. Find out more about school siting and closures [here](#). These policy initiatives provide preliminary ideas for how parents and community advocates can start implementing policies that support Safe Routes to School, changes to the built environment, and increased physical activity. Children can also get involved as advocates for better walking and bicycling conditions.

## Complete Streets

The design of streets is essential to the livability of the area around the school. Getting your city to pass a complete streets policy can lead to roads being designed and maintained for all modes of travel. By ensuring that streets are accessible to people walking, biking, driving, and taking transit, you can maximize the use of the street while creating a healthy place for everyone to move about. For more information, read our guide [Complete Streets: Making Roads Safe and Accessible for All Users](#).

**Be a champion for Safe Routes to School today! Find a strategy you're interested in and help make walking and biking to and around your school safer.**

# **APPENDIX G**

## **Next Steps**

**Safe Routes to School Walk Audit Report  
and Active Transportation Action Plan**



## From Recommendations to Action: Next Steps

Napa County Bicycle Coalition (NCBC) has concluded the final task under the Napa County Safe Routes to School Program in coordination with the Napa County Office of Education, funded under the One Bay Area Grant and the Active Transportation Program.

Evaluation of active transportation barriers at school sites are complete and final reports of recommendations for each school in Napa County will be published in the spring of 2022. The NCBC team is already planning the next phase of Safe Routes to School that will help bring these recommendations into reality. Supported by a “Quick Strike” grant through the Metropolitan Transportation Commission (MTC), NCBC will continue its SRTS work over the course of this next year.

### **NCBC SRTS Quick Strike Program Elements (2022-2023):**

- Engage parents in advocating for implementing the recommendations. Hold safety summits at various school sites that raise awareness of the recommendations and provide a forum for parents to discuss strategies and to plan next steps. Work with schools and other stakeholders to implement recommendations. Build a Safe Routes to School (SRTS) Advisory Committee, including “parent champions” from key school sites, to help guide the SRTS program into the next phase of growth and engagement and to help ensure the long-term viability of the program, providing a structure both for stakeholder feedback and input, as well as for increased local investment in future program activities.
  - Action Steps:
    - Hold up to seven safety summits at various school sites
    - Form SRTS advisory committee
- Provide education and encouragement programming at elementary and middle schools that includes bike rodeos throughout the year, Bike Month (and Bike to School Day) in the spring, and Walk and Roll to School Day in the fall. This programming aims to increase the number of students who walk or bike to school and to ensure that, as barriers are removed and facilities are improved, youth have the skills and confidence to take advantage of improvements.
  - Action Steps:
    - Hold up to 14 Bike Rodeos at elementary and middle schools
    - Provide outreach and support for Walk and Roll to School Day and Bike Month activities at up to seven school sites
    - Support local Agricultural & Hospitality Industry workers with bicycle safety education
- Conduct community-based safety education programming that reaches identified populations of concern. Through bilingual Family Biking Workshops, community rides in partnership with other local organizations, and safety education outreach to agricultural

and hospitality workers, NCBC will tailor our programming to help engage the full spectrum of our community.

- Action Steps:
  - Conduct up to nine bilingual Family Biking Workshops
  - Conduct up to six community events and rides
- Secure future funding for the Safe Routes to School Partnership (SRTS). We believe that every student should be able to safely walk or ride a bike to school. The SRTS program provides vital safety education, encouragement, and community engagement programs to thousands of students annually while advocating for facilities that make active transportation safe and accessible. SRTS will be a key force in helping to make the Walk Audit recommendations a reality. Napa County is one of the only counties in the region that lacks dedicated, long-term funding for these programs and efforts, and without that support implementing the recommendations will face more barriers.
  - Action Steps:
    - Apply for competitive and discretionary grant funding
    - Seek funding support from jurisdictions
    - Seek funding support from community health
    - Provide annual program reports to stakeholders