Walk Audit Report

SafeRoutes
Napa County

ROBERT LOUIS STEVENSON
MIDDLE SCHOOL

ROBERT LOUIS STEVENSON MIDDLE SCHOOL

1316 HILLVIEW PLACE
ST. HELENA, CA

—

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

NAPA COUNTY SAFE ROUTES TO SCHOOL PROGRAM

Napa County Bicycle Coalition
Madeline Oliver, Program Coordinator
Carlotta Sainato, Program Coordinator
Patrick Band, Executive Director
Kara Vernor, Executive Director

Napa County Office of Education
Grant Dinsdale, Community Programs Site Coordinator, Safe Routes to School
Willow Williams, Community Programs Outreach Coordinator
Christine Wedding, Community Programs Manager
Sara Sitch, Community Programs Director

Napa Valley Transportation Authority
Diana Meehan, Senior Planner

SCHOOL OFFICIALS

St. Helena Unified School District
Dr. Marylou Wilson, Superintendent
Karin Cox, Principal
Jan Flynn, Campus Supervisor

CITY STAFF

St. Helena Public Works
St. Helena Planning Department
St. Helena Fire Department
St. Helena Police Department

WALK AUDIT PARTICIPANTS

Patrick Band, Napa County Safe Routes to School Program
Carlotta Sainato, Napa County Safe Routes to School Program

REPORT DESIGN

Ana Rizzo, Graphic Design
Amber Manfree, GIS Mapping

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[ab] and reduced pedestrian-motorist collisions[cd]. 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[e].

Student health has been linked to improved academic performance[fg]. 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[h]. Families are also provided with a low-cost transportation option that can significantly reduce their annual expenses[i].

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.

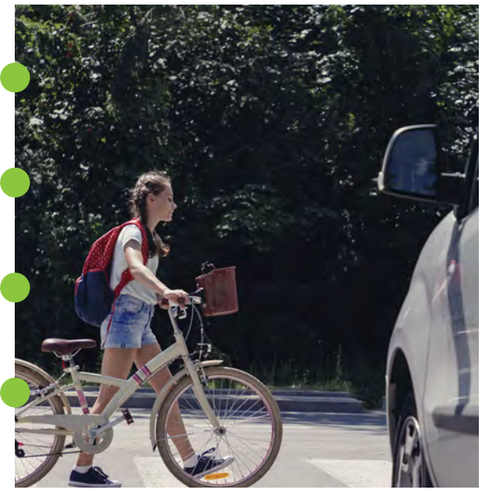
Schools and the community benefit immensely when students choose to walk or bike.

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.

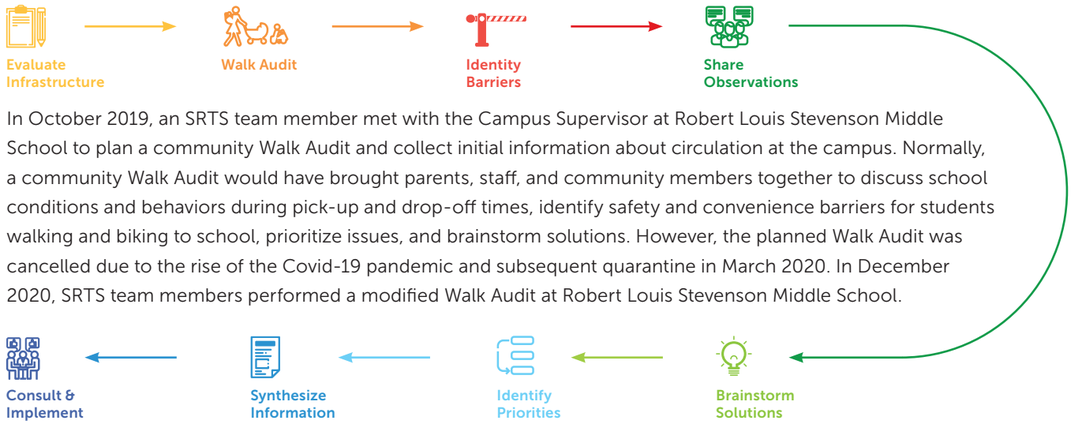
Education
Ensure that everyone learns how to travel safely and why biking and walking are important.

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

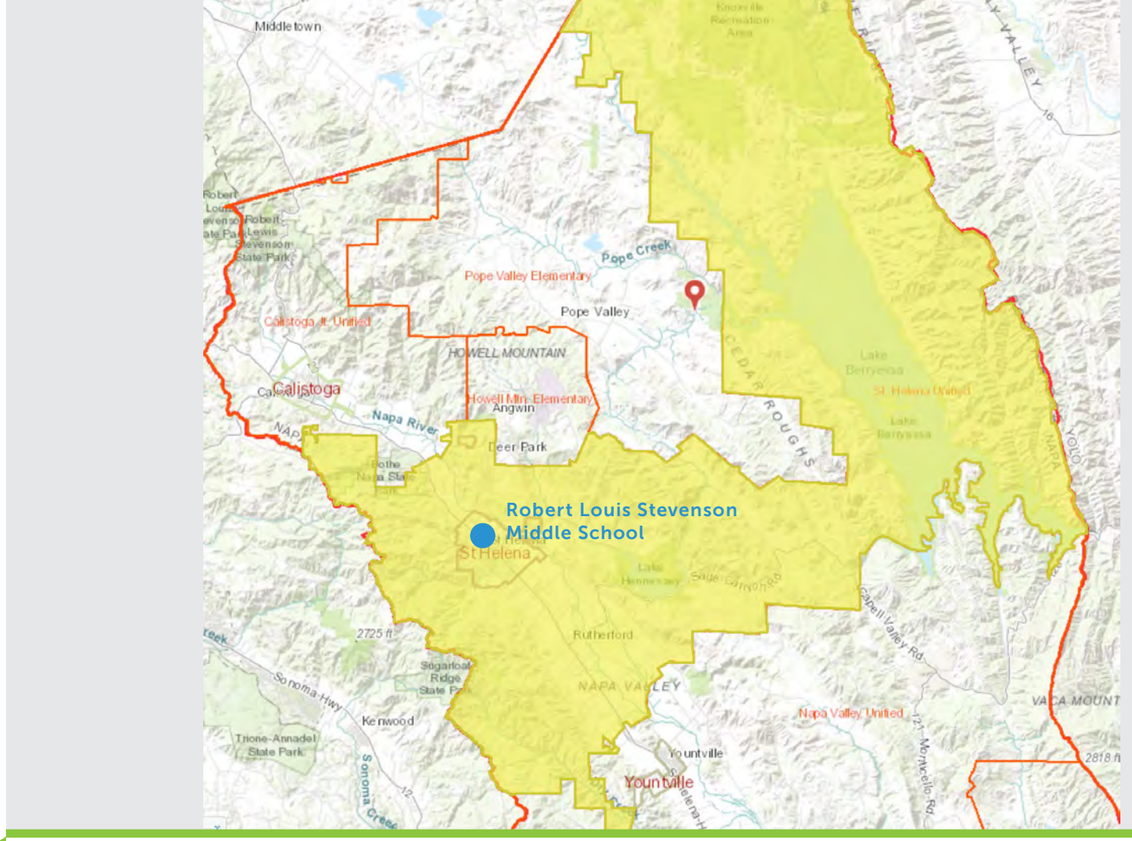
The SRTS team conducted a comprehensive evaluation of the barriers to students walking and biking to and from Robert Louis Stevenson Middle School over the course of 2 years, starting in the summer of 2018. Information on physical and behavioral challenges was collected in three phases. In September 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 October 2019, an SRTS team member met with the Campus Supervisor at Robert Louis Stevenson Middle School to plan a community Walk Audit and collect initial information about circulation at the campus. Normally, a community Walk Audit would have 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. However, the planned Walk Audit was cancelled due to the rise of the Covid-19 pandemic and subsequent quarantine in March 2020. In December 2020, SRTS team members performed a modified Walk Audit at Robert Louis Stevenson Middle School.

These three phases resulted in an inventory of infrastructural barriers at and around the school site.

A report draft was shared with the Napa Valley Transportation Authority, the Napa County Office of Education, public works and planning representatives from the City of St. Helena, the local school district, law enforcement, 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 Robert Louis Stevenson Middle School (school location marked by blue dot)

As RLS is the only middle 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.

ROBERT LOUIS STEVENSON (RLS) MIDDLE SCHOOL **SCHOOL SUMMARY**

Principal	Karin Cox	Grades	6-8
First Bell	8:26 AM	Enrollment	255
Last Bell	3:30 PM	Street	1316 Hillview Place
District	St. Helena Unified	City	St. Helena, CA 94574

Overall Facility Rating[j]**:** Good

DATA

No data is currently available regarding the number of students who walk and bike to the school. 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	ROBERT LOUIS STEVENSON MIDDLE SCHOOL	DISTRICT
Black or African American	0.0%	0.4%
American Indian or Alaska Native	0.0%	0.5%
Asian	0.4%	1.1%
Filipino	0.0%	0.2%
Hispanic or Latino	54.5%	51.6%
White	43.9%	45.1%
Native Hawaiian or Pacific Islander	0.0%	0.0%
Two or More Races	1.2%	1.1%
Not Reported	0.0%	0.0%
EXPERIENCE		
Socioeconomically Disadvantaged	49%	44.7%
English Learners	20%	18.8%
Students with Disabilities	11.4%	8.9%
Foster Youth	0.4%	0.4%

Figure 2: Enrollment Data by Group

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

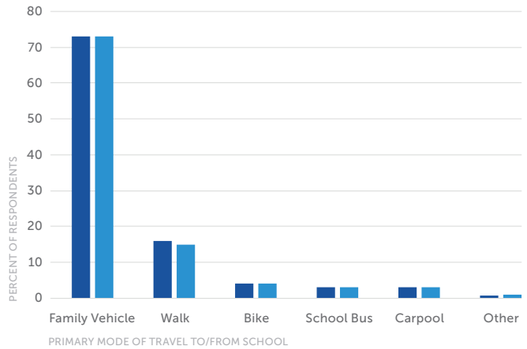


Figure 1: EMC Research Polling Results

***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 6	83
Grade 7	75
Grade 8	96
Total	**255**

Figure 3: Enrollment Data by Grade

NEIGHBORHOOD CONTEXT

RLS Middle School is located in northwest St. Helena on Hillview Place. The school is bordered by Elmhurst Avenue to the north, Main Street (SR 29) to the east, Hillview Place to the south, and Spring Mountain Road to the west. A row of single-family houses along St Andrews Court and St. Helena Seventh-Day Adventist Church separates RLS campus from Main Street. Spring Mountain Road is classified as an open space/rural street, Main Street as a regional connector, and Hillview Place and Elmhurst Avenue as residential.

Medium-density residential neighborhoods surround the school on all sides. The neighborhoods to the north were primarily built between the 1970 through the 1990s and those to the west were built during the 1940s through the 1960s. The neighborhoods south of the school were mostly built in the 1950s and 1960s, though there are some historical residences built as early as 1907. This range of construction periods may contribute to physical infrastructure variations. The street patterns of the neighborhoods around the school are mostly fragmented parallel with some lollipops. 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.

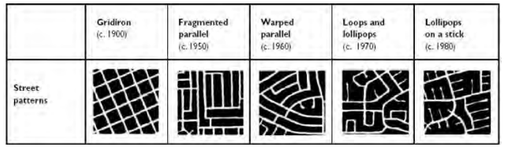


Figure 4: Examples of Street Patterns (Source: Southworth, 1997)

A few blocks south of the school is the city's central business zone along Main Street (SR 29). South of Pine Street, Main Street transitions from primarily residential use to commercial use and 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. RLS Middle School campus, separated from SR 29 by a block of residences and a church, is close to the north edge of St. Helena where land use transitions from residential to agriculture and SR 29 transitions from a downtown/residential speed limit (25 mph) to a regional connector speed limit (35-45 mph).

Popular student destinations within walking distance of the middle school include St. Helena Elementary School directly south of RLS, where students may have siblings, the St. Helena Teen Center located on the south side of the elementary school campus, Chokolatte ice cream store on Oak Avenue, and the Napa Valley Roasting Company on the northeast corner of Oak Avenue and Adams Street. Also within walking distance of the school is the St. Helena Public Library southeast of the school, a local family dentistry office on Railroad Avenue southeast of the school, and the Native Sons Hall on Spring Street south of the school, where after-school activities such as dance classes take place.

An aerial photo of RLS Middle School, labeled with a red marker.

Map 2: Site Community Context. RLS Middle School (blue dot) is located in north St. Helena, just one block away from SR 29.

Main Street (SR 29) is lined with small businesses and restaurants as part of St. Helena's downtown area (left), and transitions to a higher-speed, residential area further north near RLS Middle School (right).

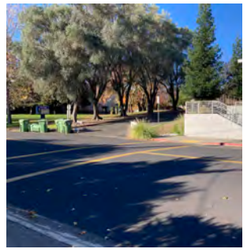
Chokolatte Ice Cream shop (left) and Napa Valley Roasting Company (right) are two popular student destinations within walking distance of RLS Middle School.

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 modified 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

RLS Middle School campus has entrances on Elmhurst Avenue and Hillview Place. The main entrance to the school is on Hillview Place, just west of Oak Avenue; a midblock crosswalk across Hillview Place provides access from the only continuous sidewalk on the south side to school campus on the north side. The Campus Supervisor reported that she helped as a crossing guard at this crosswalk some mornings. Next to the crosswalk is the driveway to the school parking lot and traffic circle, the only access point for vehicles on campus. Student pedestrians and bicyclists can also enter campus at the intersection of Kearney Street and Hillview Place, where a meandering asphalt path runs along the school lawn to the school's blacktops and central campus.



There are two entrances to the school on Hillview Place: one near Oak Avenue (left) and one at the Kearney Street intersection (right).

There are two entrances to campus on Elmhurst Avenue. The west entrance is at the end of the bus loading zone and leads directly the school's quad. The east entrance is near the perpendicular street parking and leads to the northeast classrooms. Both Elmhurst Avenue entrances are gated, as the campus is fenced on all sides except Hillview Place from Kearney Street to Oak Avenue.

The school has an on-campus traffic circle off of Hillview Place. This traffic circle was historically used for student pick-up and drop-off; at the time of this report, only staff are permitted to use the traffic circle. There is only one driveway to the traffic circle, so all motorists using the traffic circle must enter and exit on Hillview Place. Signage prohibits motorists from making left turns onto Hillview Place from the traffic circle driveway.

The on-campus traffic circle was historically used for student loading. Signage when exiting campus allows only right turns onto Hillview Place.

RLS Middle School does not have a formal circulation policy. The school's principal and guidance counselor explain pick-up/drop-off guidelines, bicycle policies, and other transportation-related information during a meeting for incoming 6th graders, new 7th and 8th graders, and their parents. The school also includes a note about school zone circulation in the annual welcome letter sent to families.

> For traffic safety reasons, the drop off circle in front of RLS is open for staff only. Student drop-off and pick-up is on Hillview Place or Elmhurst. Please remind your student to use the crosswalk and not to run across Hillview, which is very dangerous.

Figure 5: Pick-up/Drop-off Guidelines. General guidance on school zone circulation, as provided in the school's welcome letter to families for the 2021-2022 school year.

Student pick-up and drop-off occurs on Hillview Place and Elmhurst Avenue. Curbside parking, which can be used by motorists loading passengers, is permitted along both sides of Hillview Place and parts of Elmhurst Avenue, mostly east of the bus loading zone. The bus loading zone on Elmhurst Avenue between Quail Court and Granger Way is marked by yellow curbs and signage prohibiting parking during school days.

Signage and yellow curbs designate the bus loading zone on Elmhurst Avenue.

The St. Helena Unified School District used to contract with the Napa Valley Unified School District to provide limited bus service to SHUSD students, which included service to RLS Middle 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, also stops in front of RLS Middle School on Hillview Place as part of its morning and afternoon Fixed Routes. There are also Vine public bus stops along SR 29 near RLS Middle School as part of the Route 10 Up Valley Connector: the nearest northbound bus stops are at Pratt Avenue and Pine Street and the nearest southbound bus stop is between Elmhurst Avenue and St. Andrews Court. The northbound stop at Pratt has three seats connected to the sign, the stop at Pine has a covered bench, and the southbound stop near Elmhurst has two seats connected to the sign.

The St. Helena Shuttle bus stop is in front of RLS campus on Hillview Place (left), and the nearest southbound Vine transit stop is on SR 29 near Elmhurst Avenue (right).

SCHOOL PARKING LOT AND GROUNDS

The school parking lot is located in front of the school's main office between the driveway off of Hillview Place and the traffic circle. The parking lot is reserved for staff use only, though this is not marked by signage or paint stencils. There are 16 parking spaces, two of which are compliant with the Americans with Disabilities Act (ADA).

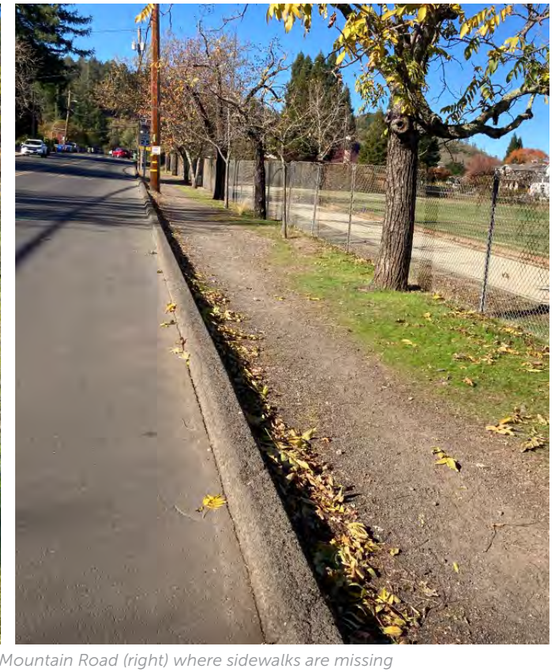
The school parking lot is located between the Hillview Place driveway and the traffic circle.

Bike and skateboard parking are provided near the school's main office.

BICYCLE AND PEDESTRIAN INFRASTRUCTURE

There are no bicycle facilities within a half-mile of the school. The school provides two wave style bike racks (10 total spaces) and a skateboard rack (6 spaces) near the main office, close to the eastmost campus access point on Hillview Place. These facilities are securely installed and well-located, as they are close to a school entrance but far from view from the street and are located near the main office and classrooms, where there is greater visibility by school staff. There is also lighting provided from the overhead structure adjacent to the racks, which is particularly necessary during the winter season when days are shorter.

Most of the streets around the school have sidewalks; however, there are a few significant sidewalk gaps near the campus. Westbound Hillview Place has a sidewalk gap in front of the school's campus from Kearney Street and Spring Mountain Road; a desire path in the dirt along this segment indicates pedestrian use. West of Spring Mountain Road, Hillview Place and the branching neighborhood streets do not have sidewalks at all. Spring Mountain Road has two sidewalk gaps near the school: a northbound gap between Hillview and Elmhurst and a southbound gap between Elmhurst and Spring Mountain Court. A crosswalk across Spring Mountain Road at Elmhurst Avenue provides connectivity between the two sidewalk gaps; however, the crosswalk is uncontrolled and has low pedestrian visibility. Elmhurst Avenue is missing a sidewalk on the eastbound side along the school's campus from Spring Mountain Road to the bus loading zone.



Desire lines in the dirt along Hillview Place (left) and Spring Mountain Road (right) where sidewalks are missing demonstrate existing pedestrian use.

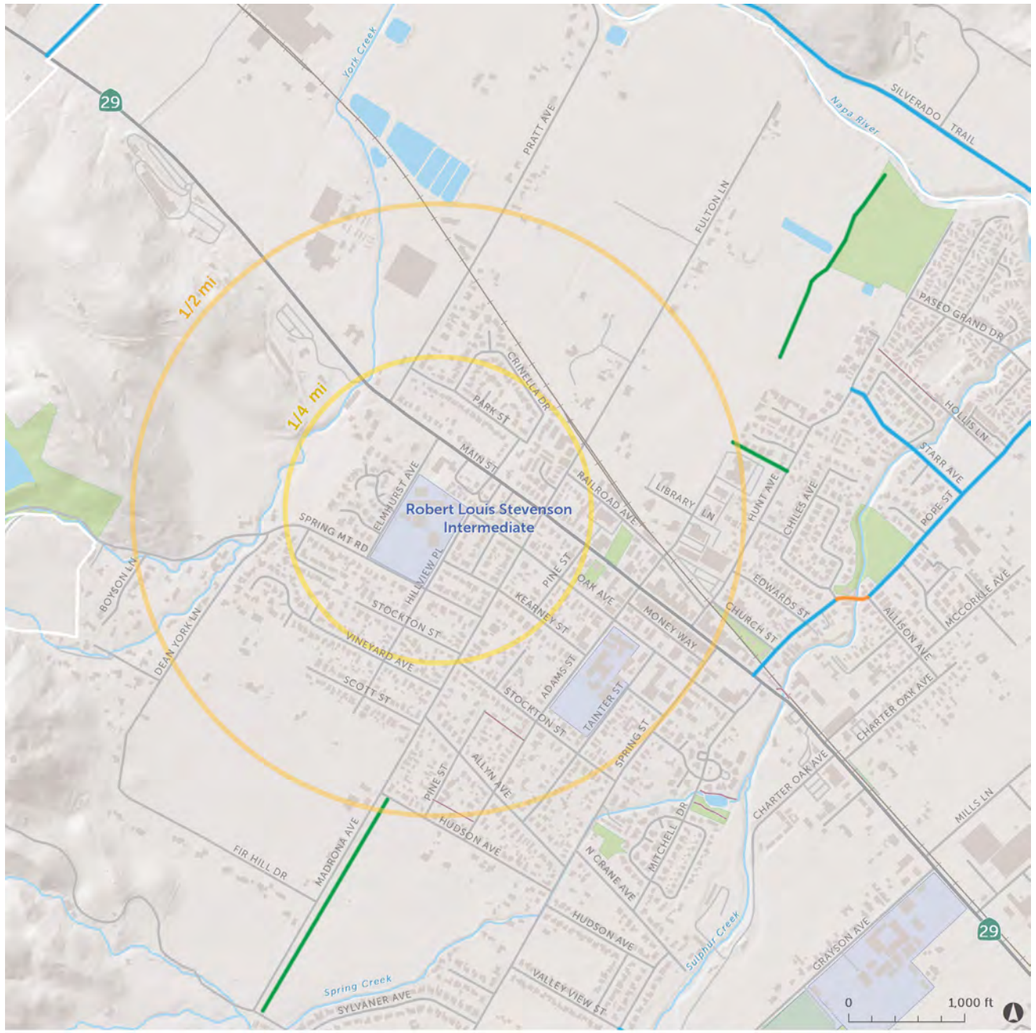
Oak Avenue from Madrona Avenue to Hillview Place is missing a sidewalk on the northbound side, forcing student pedestrians travelling along Oak Avenue onto the southbound sidewalk, which does not accommodate high volumes of pedestrians. This also requires all students walking to school along Oak Avenue to cross Hillview Place at the midblock crosswalk to access the campus. As the midblock crosswalk is next to the driveway to the school traffic circle and parking lot, this has the potential to result in high conflict risk during peak school hours; however, the school has reduced this conflict risk significantly in recent years by limiting motorist access to the traffic circle to staff only and prohibiting left turns onto Hillview Place.

As of October 2019, the Campus Supervisor reported that she and Principal Karin Cox would informally perform crossing guard duties at the midblock crosswalk on Hillview Place due to conflict risk between pedestrians and motorists. At the time of this report, the school district has begun a crossing guard program across all of its schools, and there is now a staff member regularly stationed at the Hillview midblock crosswalk every morning and afternoon performing crossing guard duties.

Oak Avenue is missing a sidewalk on the northbound side approaching the school.

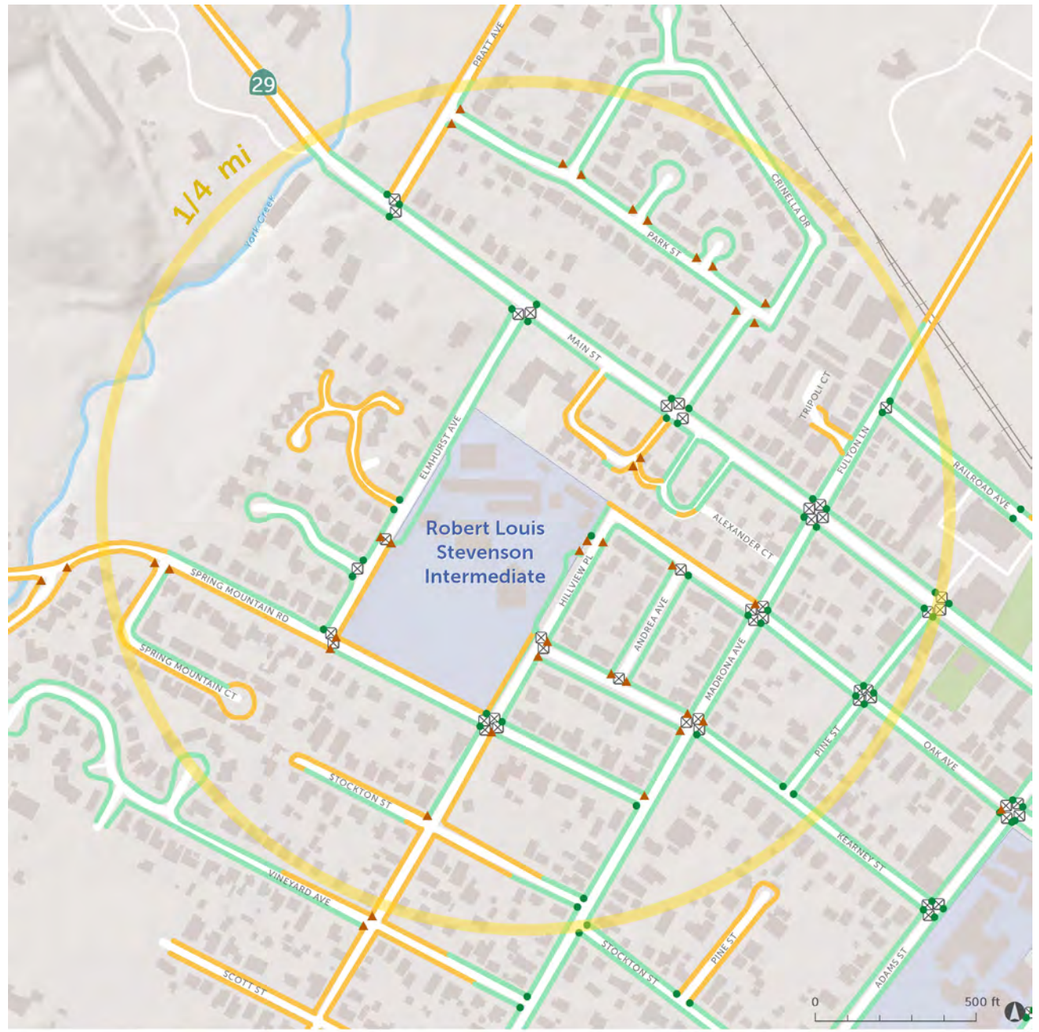
The Hillview Place midblock crosswalk.

MAP OF EXISTING BICYCLE FACILITIES



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:

RLS Middle School has recently participated in the two annual countywide encouragement events facilitated by the Napa County Safe Routes to School Program, Walk and Roll to School Day and Bike to School Day. These encouragement events celebrate students making the healthy choice to walk or roll to school by hosting welcome tables with snacks and incentive prizes like stickers. However, the school's encouragement program is limited to these annual events. The school does not provide regular on-campus bicycle or pedestrian safety education to students.

Walk and Roll to School Day at RLS Middle School.

YEAR	EVENT	STUDENT PARTICIPANTS
2018/19	Walk and Roll to School Day	43
2019/20	Walk and Roll to School Day	61

Figure 6: 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 RLS Middle School, this included but was not limited to Spring Mountain Road from Dean York Lane to Hillview Place, Madrona Avenue from Hudson Avenue to Main Street, and Main Street from Pine Street to Pratt Avenue.

For the examined time period, there were 62 citations for failure to stop at a stop sign; the majority were at Spring Mountain Road and Spring Mountain Court (39) or Madrona Avenue and Oak Avenue (20). Spring Mountain Road and Madrona Avenue, Spring Mountain Road and Elmhurst Avenue, and Madrona Avenue and Main Street each had one citation for failure to stop at a stop sign. Of the 36 citations for speeding in the school area, 20 were on Main Street between Pine and Pratt, 13 were on Spring Mountain Road between Dean York Lane and Hillview Place, and the final 3 were on Madrona and Kearney. There were no citations for passing a school bus or failure to yield to pedestrians in the RLS Middle School area.

CITATIONS IN SCHOOL AREA BY TYPE

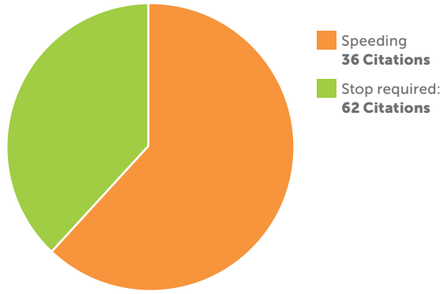


Figure 7: Citations by Type

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

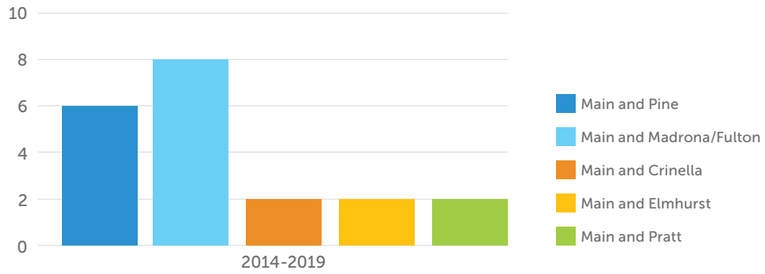
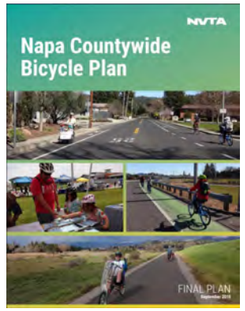


Figure 8: Speeding Citations Along Main Street

EXISTING PLANS

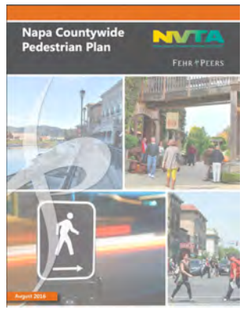


NVTA Napa Countywide Bicycle Plan (2019):

The Napa Countywide Bicycle Plan lists several recommended improvements around RLS Middle School. Elmhurst Avenue, Hillview Place from Oak Avenue to Spring Mountain Road, and Oak Avenue from Hillview Place to Madrona Avenue are recommended for Class III bike boulevards. Spring Mountain Road south of Dean York Lane and Madrona Avenue between Hudson Avenue and Oak Avenue are proposed for Class II bike lanes. Madrona Avenue east of Oak Avenue, Oak Avenue south of Madrona Avenue, and a segment of Fulton Lane are designated as study corridors for a Class I shared-use path as part of the regional Vine Trail alignment.

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, the only project for 2020-2022 that will impact circulation around the school site is striping/slurry/asphalt work in the school area, which was the highest priority project districtwide.



NVTA Napa Countywide Pedestrian Plan (2016):

While the majority of the Pedestrian Plan's improvements for St. Helena are along SR 29, there is one project focused on the school area. The RLS Middle School Sidewalk and Hunt Avenue Improvements project includes installing sidewalks on Hillview Place, Spring Mountain Road, and Elmhurst Avenue at the middle school. Along SR 29 near the school, proposed improvements include crosswalk enhancements at Main and Pine Street, a raised median along SR 29 south of Madrona Avenue, and signal coordination study and assessment of pedestrian signal timing improvements between Pine Street and Mitchell Drive.

Caltrans District 4 (2018):

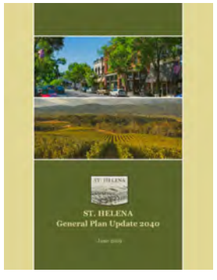
The Caltrans District 4 Bicycle Plan does not list any bicycle improvements in the RLS Middle School area.

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 curb extension at the Main Street and Pine Street intersection, curb extensions on Main Street in front of Lyman Park, and side street improvements to Pine Street east of Main Street.

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 construction of a Class I shared-use path on Spring Mountain Road, extension of Oak Avenue, Fulton Lane safety improvements, 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**

Date: 12/8/2020
Day of the Week: Tuesday

Meeting Time: 12:00pm
Weather: Sunny

METHODOLOGY

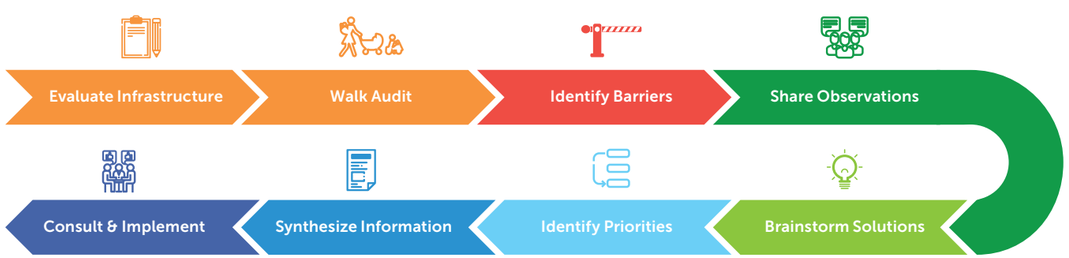
Normally, the Community Walk Audit process would bring together school stakeholders, including parents, school staff, students, and community members, with the SRTS team to observe existing conditions during pick-up or drop-off time, identify barriers to safe walking or biking, and brainstorm solutions. During the observation period, participants would discuss the physical infrastructure around the school as well as the behavior of motorists, pedestrians, and bicyclists in the area, while also sharing their own experiences traveling to and from school on foot, bike, and by car. Following observation, the team would discuss their observations, map issue areas, and record and prioritize the major barriers identified during the exercise.

Due to the spread of Covid-19 in early 2020 and subsequent Shelter-in-Place mandates and social distancing guidelines, the RLS Middle School Walk Audit that was scheduled for April 2020 was cancelled. In December 2020, members of the SRTS team performed a modified Walk Audit that mirrored the initial infrastructure audit. SRTS team members rode bikes in the area immediately around the school and along significant route corridors while taking notes and photographs of infrastructure and behavioral barriers to student pedestrians and bicyclists.

Streets examined included Hillview Place from Oak Avenue to Spring Mountain Road, Spring Mountain Road from Hillview Place to Spring Mountain Court, Elmhurst Avenue, Main Street from Elmhurst Avenue to Madrona Avenue, Madrona Avenue from Main Street to Hudson Avenue, Fulton Lane, Oak Avenue north of Madrona Avenue, and Kearney Street north of Madrona Avenue.

Safe Routes to School Walk Audits normally bring together the school community to discuss barriers and solutions to students walking and biking to school. Pictured above is part of the St. Helena Elementary School Walk Audit group.

Madrona Avenue, photographed above, was one of the corridors examined by the SRTS team to identify barriers to students walking and biking to RLS Middle School.

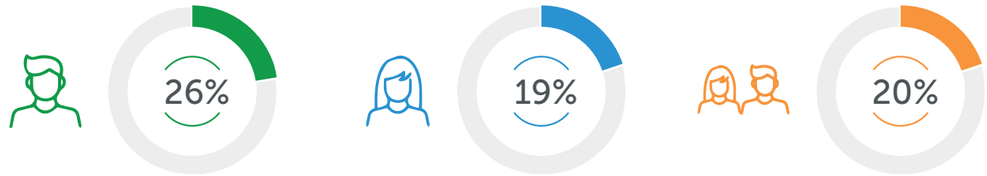


CONTEXT FOR **RECOMMENDATIONS**

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[1]. 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[2]. 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**[3].

50%

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.

400 MILLION

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.

[1] 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. [2] 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. [3] 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 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; and high-level potential cost/complexity of recommendation.

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-002: OAK AVENUE BICYCLE IMPROVEMENTS

Narrative – There are no bicycle facilities along the entire Oak Avenue corridor. The presence of bicycle facilities would indicate how to share the road to bicyclists and motorists through clear and instructive infrastructure and would make the road more welcoming for bicycle 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 south of Madrona Avenue, 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.

Poor road quality at Oak Avenue and Pine Street discourages bicycling.

IDENTIFIED BARRIERS

- ***No bicycle facilities –*** The lack of bicycle facilities on Oak Avenue is a significant barrier to students bicycling to school, as bicycle facilities inform road users how to share the road and alert motorists to the presence of bicyclists.
- ***Poor road quality –*** Poor road quality deters students from bicycling to school and can lead to unsafe behaviors by road users avoiding cracked or uneven pavement.

RECOMMENDATIONS

- ***Repave and Class IIIs –*** 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.

RECOMMENDATION #SHI-029: KEARNEY AND MADRONA PEDESTRIAN IMPROVEMENTS

Narrative – The Madrona Avenue and Kearney Street intersection is a major intersection for students travelling to neighborhoods south of the school or to St. Helena Elementary School campus, where students may have siblings and where the St. Helena Boys and Girls Club and Teen Center is located. Madrona Avenue (east of Riesling Way), one of the two major east-west connector streets on the west side of St. Helena, connects to several residential neighborhoods, provides access to SR 29, and is a key route to both the middle and elementary schools. 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 a pedestrian path onto RLS campus, the existing crosswalk at 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 low-visibility crosswalks, set-back curbs, and vehicles parking next to crosswalks on Kearney Street, in addition to the barriers listed above.

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

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.

RECOMMENDATION #SHI-073: SCHOOL BIKE PARKING

Narrative – The school provides two wave style bike racks (10 total spaces) and a skateboard rack (6 spaces) near the main office, close to the main pedestrian and bicyclist access point on Hillview Place. These facilities are securely installed and well-located, as they are close to a school entrance but far from view from the street and are located near the main office and classrooms, where there is greater visibility by school staff. However, this existing parking capacity would only allow 16 students, 6% of the school's student body, to bike, scooter, or skateboard to school. Additionally, there is no bike parking provided at the main school entrance on Elmhurst Avenue. Low levels of bicycle parking and lack of bike parking facilities near entrances acts as a barrier to students biking to school, as students may believe there is no secure place to store their bikes during the school day.

IDENTIFIED BARRIERS

- ***Not enough bike parking –*** The low quantity of existing bike parking acts as a barrier to students biking to school by limiting access to secure bike storage.

RECOMMENDATIONS

- ***Increase bike parking facilities –*** We recommend that the school increase its bike parking capacity by adding bike parking facilities near the other school entrance on Elmhurst Avenue and increasing bike parking near the Hillview Place entrance. See Appendix D for bike parking guide.

The school's limited bike parking only provides ten spaces for the entire school.

RECOMMENDATION #SHI-050: HILLVIEW AND KEARNEY INTERSECTION IMPROVEMENTS

Narrative – The Hillview Place and Kearney Street intersection is highly travelled by all modes of transportation, particularly during peak school hours. Bicyclists and pedestrians travelling along Kearney from south of the school or along Hillview Place from west of the school must cross this intersection to reach the pedestrian path on campus. High volumes of motorists also travel through the intersection, especially because any motorists who use the traffic circle on campus must turn right onto Hillview Place to exit the campus, requiring them to drive through the intersection. However, despite providing direct access onto campus for bicyclists and pedestrians, this intersection prioritizes motorist speed and convenience and can be a barrier to students walking and biking to school through the qualities outlined below. A desire for safety improvements at this intersection has been demonstrated by the installation of small painted curb extensions on the crosswalk across Hillview Place.

IDENTIFIED BARRIERS

- ***Low-visibility crosswalks –*** The crosswalks are painted with a standard, parallel line pattern, despite being located in a highly-travelled school zone.
- ***Long crossing distance –*** The crosswalk across Kearney Street is excessively long, decreasing pedestrian visibility and increasing the time a pedestrian spends in the roadway.
- ***Lack of traffic control/traffic-calming –*** There is no traffic control or traffic-calming for Hillview Place traffic, facilitating speeding and decreasing motorist yielding behavior to pedestrians and bicyclists in the crosswalk.
- ***Obscured visibility –*** Pedestrian visibility at both of the crosswalks is greatly reduced due to vehicles parking too close to the crosswalks. This is facilitated by the lack of red curbs around the Kearney crosswalk and minimal red curbs around the Hillview crosswalk.

The Kearney and Hillview intersection leads directly to a pedestrian path to campus.

- ***Narrow sidewalk –*** The sidewalk on the north side of the Hillview crosswalk is extremely narrow and does not accommodate students with bicycles or wheelchairs or students walking in groups.

RECOMMENDATIONS

- ***High-visibility crosswalks -*** Upgrading the existing crosswalks to high-visibility patterns can supplement other proposed solutions in increasing driver yielding behavior.
- ***Curb extensions –*** We recommend that physical curb extensions be installed for all crosswalk legs with bollards or concrete in order to provide more substantial safety and traffic-calming benefits.
- ***Sharks' teeth –*** We recommend the installation of sharks' teeth on eastbound Hillview approaching the intersection to improve driver awareness and anticipation of pedestrians crossing and prevent motorists from blocking the intersection.
- ***Widen sidewalk –*** We recommend that the north sidewalk in front of the Hillview Place crosswalk be widened to better accommodate student pedestrians and bicyclists.

RECOMMENDATIONS #SHI-052 AND SHI-053: HILLVIEW PLACE IMPROVEMENTS

Narrative – Hillview Place is the main access street to campus for all modes of transportation, with two pedestrian entrance points (one at Kearney Street and one near Oak Avenue) and the driveway to the traffic circle/staff parking lot. Since the school is in north St. Helena, the majority of students who live in town enter campus from Hillview Place because it is the south side entrance. Consequently, Hillview Place experiences significant use during peak school hours. However, the lack of bicycle infrastructure and low-visibility pedestrian infrastructure increase the risk of collisions. Students arriving to Hillview from Oak Avenue must cross uncontrolled traffic at the midblock crosswalk on Hillview, as there is no sidewalk on the east side of Oak Avenue leading up to the north side of Hillview Place. As this crosswalk is right next to an uncontrolled turn from Oak Avenue onto Hillview Place, there is a collision risk for pedestrians and bicyclists crossing the street and vehicles entering Hillview Place. There are also no bicycle facilities on Hillview Place, which makes bicycling difficult and unwelcoming during periods of high traffic, like during pick-up and drop-off.

IDENTIFIED BARRIERS

- ***Low-visibility, highly-used crosswalk –*** The midblock crosswalk is painted with a low-visibility striping pattern despite Hillview traffic being uncontrolled, high volumes of students crossing, and reduced visibility from the turn off of Oak Avenue. Painted curb extensions at this crosswalk indicate the school community's desire for safety improvements.
- ***No bicycle facilities –*** There are no bicycle facilities on Hillview Place from Oak Avenue to Spring Mountain Road.

RECOMMENDATIONS

- ***SHI-052 – High-visibility crosswalk –*** Upgrading the existing crosswalk to a high-visibility pattern can supplement other proposed solutions in increasing driver yielding behavior.
- ***SHI-052 Curb extensions –*** We recommend that physical curb extensions be installed on both sides of the crosswalk with bollards or concrete in order to provided more substantial safety and traffic-calming benefits.
- ***SHI-053 Install bicycle facilities –*** We recommend that Class III bike boulevards be installed with sharrows, signage, and traffic-calming, and that the pedestrian path on campus that leads to the Hillview/Kearney intersection be widened to Class I standards.

The Hillview midblock crosswalk is located very close to the turn-off from Oak Avenue (top). There are no bicycle facilities along the entire Hillview corridor (bottom).

RECOMMENDATION #SHI-064: ELMHURST AVENUE AND MAIN STREET INTERSECTION

Narrative – A significant barrier to students walking and biking to school that was identified by the St. Helena community during previous Walk Audits and other community events was crossing Main Street (SR 29). SR 29 is the most direct regional connector between the Napa County cities and one of only two north-south roads through the county, and consequently carries extremely high volumes of daily local and regional traffic. South of Pine Street, SR 29 is the heart of downtown St. Helena; north of Pine Street, SR 29 transitions to residential and agricultural use, and the speed limit increases as motorists travel towards the northern City limits. At the intersection of Elmhurst Avenue and Main Street, the closest Main Street crosswalk to campus, the speed limit is 35 mph, though the extremely wide roads facilitate motorist speeding, particularly for southbound traffic entering the city from a more rural area. SR 29 traffic is uncontrolled, the crosswalk is a white, standard low-visibility pattern, and there is no school zone signage. Visibility is further reduced by sunlight exposure during the day, lack of street lighting when it's dark, long crossing distances, and vehicles parking next to the crosswalk on the east side. Finally, the large curb radius on the northwest corner allows motorists to take fast right turns off of SR 29 onto Elmhurst Avenue, increasing risk and severity of potential collisions.

IDENTIFIED BARRIERS

- ***Low pedestrian visibility –*** Low visibility crosswalk patterns, parked vehicles, long crossing distances, sunlight exposure, and the lack of school zone signage and street lighting greatly reduce pedestrian visibility at this intersection.
- ***High traffic volumes/speeds –*** The high volumes and speeds of uncontrolled traffic along SR 29 contribute to low pedestrian visibility, poor motorist yielding behavior, and collision risk.
- ***Wide curb radius –*** The wide curb radius on the northwest corner of the intersection facilitates fast right turns by motorists off of SR 29, increasing the risk of potential collisions with pedestrians.

Several factors greatly reduce pedestrian visibility and motorist yielding behavior at the Main/Elmhurst intersection.

RECOMMENDATIONS

- ***School zone high-visibility crosswalks –*** Upgrading the existing crosswalks to high-visibility patterns and yellow school zone paint can supplement other proposed solutions in increasing driver yielding behavior.
- ***Curb extensions –*** We recommend that curb extensions be installed at all crosswalk curbs in the intersection to improve pedestrian visibility, shorten crossing distance, and reduce motorist speeding.
- ***Lighting –*** Street lighting should be added at this intersection to improve pedestrian visibility, which is especially crucial during the winter season when days are shorter.
- ***Rectangular Rapid Flashing Beacons –*** We recommend that Rectangular Rapid Flashing Beacons be considered for the crosswalk across Main Street if additional improvements are needed. Rectangular Rapid Flashing Beacons can help improve motorist yielding behavior, but will not provide the same traffic-calming and pedestrian visibility benefits as the above recommendations.

RECOMMENDATION #SHI-066: MAIN STREET AND MADRONA AVENUE INTERSECTION

Narrative – The intersection of Main Street and Madrona Avenue is another key intersection for students walking and biking to school. For students travelling from the neighborhoods east of SR 29 and south of Madrona, one of the most direct routes to RLS campus is to travel north on Railroad Avenue to Fulton Lane and cross SR 29 at Madrona Avenue/Fulton Lane. This intersection is controlled by traffic signals, making it easier for young pedestrians to navigate than nearby uncontrolled crosswalks (Pine Street, Crinella Court, etc.). Additionally, the proposed Vine Trail alignment will cross Fulton Lane, so the Main Street and Madrona Avenue/Fulton Lane intersection will provide future access to the Vine Trail shared-use path. However, as discussed in Recommendation #SHI-064, crossing SR 29 is one of the most significant barriers to students walking and biking due to motorist volumes, speeds, and behaviors. At the Main and Madrona intersection, motorists making turns during high traffic hours, particularly those taking unprotected left turns onto SR 29, often take turns quickly in order to turn in an earlier, smaller gap in traffic. Consequently, motorists pay more attention to oncoming vehicular traffic than the presence of bicyclists or pedestrians in the crosswalk. Furthermore, lack of bicycle detection and small pedestrian waiting spaces at the corners make this intersection unwelcoming and difficult to navigate for pedestrians and bicyclists.

IDENTIFIED BARRIERS

- ***Unsafe motorist behavior –*** Motorists making turns during high traffic hours, particularly when taking unprotected left turns, make fast turns to meet earlier gaps in traffic while directing attention mainly towards oncoming vehicle traffic, resulting in high potential conflict risk with pedestrians in the crosswalks.
- ***No bicycle detection –*** The lack of bicycle detection at this intersection results in long waiting times for bicyclists or requires bicyclists to leave and re-enter the roadway to push the pedestrian crossing button, which is challenging when navigating the intersection with vehicles.
- ***Small pedestrian waiting space –*** The small waiting space at the corners of the intersection deter students from walking together in groups and may result in students stepping out into the roadway.

Motorists turning onto SR 29 from Madrona Ave/Fulton Lane frequently make fast unprotected left turns.

RECOMMENDATIONS

- ***Curb extensions –*** We recommend the installation of small curb extensions on all corners of the intersection to improve pedestrian visibility and pedestrian waiting space.
- ***Leading Pedestrian Interval –*** We recommend that the traffic lights at the Main Street and Madrona Avenue intersection be reconfigured to include Leading Pedestrian Intervals across each leg, which gives pedestrians crossing the street a head-start before traffic is allowed to turn, improving motorist yielding behavior.
- ***High-visibility crosswalks –*** Upgrading the existing crosswalk to a high-visibility pattern can supplement other proposed solutions in increasing driver yielding behavior.
- ***Bicycle detection –*** Bicycle detection technology should be implemented on all four sides of the intersection to improve bicyclist accessibility and convenience.
- ***Bike facility improvements –*** We recommend that bike facilities, when installed along the Madrona/Fulton corridor, be upgraded approaching this intersection with green paint and flexiposts to deter motorists from encroaching in the bike lane and improve bicyclist visibility and safety.

RECOMMENDATION SHI-068: OAK AVENUE AND MADRONA AVENUE INTERSECTION

Narrative – The Oak Avenue and Madrona Avenue intersection is a key intersection along direct routes to school, making it highly travelled by all modes of transportation during peak school hours. Oak Avenue provides a direct route from the campus to the downtown area, St. Helena Elementary School where students may have siblings, St. Helena Boys and Girls Club and Teen Center, and neighborhoods south and east of the school, all of which are within reasonable walking or biking distance. This intersection also experiences significant vehicle traffic, as it is just one block west of SR 29. Although the school prohibits left turns towards Oak Avenue out of the school loading zone, many motorists travelling to or east of SR 29 still drive through the Oak/Madrona intersection by circling through Andrea Avenue or Madrona Avenue. Additionally, Oak Avenue and Madrona Avenue are used as part of a "backroads route" to bypass SR 29 traffic, which contributes to vehicle traffic at this intersection. Enforcement data provided by St. Helena Police Department (see "Enforcement") demonstrated that the Oak/Madrona intersection had the second highest number of citations for motorist failure to stop at a stop sign in the school area.

IDENTIFIED BARRIERS

- ***High-traffic intersection –*** The vicinity of the Oak/Madrona intersection to the school's main entrance and to SR 29 results in busy peak periods during school hours, with many student bicyclists and pedestrians navigating the intersection with high volumes of vehicle traffic.

RECOMMENDATIONS

- ***Curb extensions –*** We recommend the installation of curb extensions on all corners of the intersection to improve pedestrian visibility, improve motorist stopping behavior, and shorten crossing distances.
- ***Extend red curbs –*** We recommend that the red curbs along Oak Avenue on the north corners and the southeast corner be extended to improve pedestrian visibility at the intersection.
- ***High-visibility crosswalks –*** Upgrading the existing crosswalk to a high-visibility pattern can supplement other proposed solutions in increasing driver yielding behavior.

Short red curbs along Oak Avenue allow vehicles to park close to crosswalks, reducing pedestrian visibility.

RECOMMENDATION #SHI-072: MADRONA AVENUE CORRIDOR

Narrative – Madrona Avenue (from Riesling Way to SR 29) is one of the two major east-west streets on the west side of St. Helena. Madrona Avenue connects to several residential blocks, provides a direct route to SR 29, and is a key corridor along routes to both the middle and elementary schools. 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. Furthermore, there are no bicycle facilities on the Madrona corridor, making bicyclists feel unsafe and uncertain where to ride on the roadway. At the time of this report, Madrona Avenue is currently being assessed by GHD as a priority corridor for safety improvements following community concern regarding speeding and pedestrian and bicyclist safety.

IDENTIFIED BARRIERS

- ***No bicycle facilities –*** The lack of bicycle facilities on Madrona Avenue makes biking on the corridor feel unsafe and unwelcoming, particularly for young or new bicyclists.
- ***Motorist speeding –*** Speeding along Madrona Avenue has been identified by the broader community as a safety barrier for students walking and biking to school.

RECOMMENDATIONS

- ***Bicycle facilities –*** We recommend the installation of Class II bike lanes along Madrona Avenue from Hudson Avenue to SR 29, consistent with the adopted 2019 Bike Plan. We recommend that the path along the south side of Madrona Avenue from Hudson Avenue to Riesling Way be widened to Class I standards to accommodate both bicyclists and pedestrians.
- ***Traffic-calming –*** We recommend that traffic-calming elements be installed along the corridor to reduce speeding, with a focus around intersections along common school routes.

Madrona Avenue has no bicycle facilities, despite being a significant east-west connection corridor.

RECOMMENDATIONS SHP-014: BICYCLE SAFETY EDUCATION

Narrative – No bicycle safety education programs are currently provided at RLS Middle School, nor have any Safe Routes to School education programs been offered in the last five school years. Bicycle safety education is a crucial component of increasing biking mode share at a school site, as it teaches students rules of the road for bicyclists and safe biking behaviors such as scanning and signaling before turns. This understanding not only improves bicyclist safety, but also increases confidence and comfort for young bicyclists. Common unsafe behaviors that are done unknowingly due to lack of education, such as riding against traffic, riding on the sidewalk, and failing to stop at stop signs, are hazardous to student bicyclists, as this behavior is unpredictable to motorists 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 bicyclists safety within the school system can raise awareness of rules of the road and encourage safe behavior.

IDENTIFIED BARRIERS

- ***No bicycle safety education –*** No bicycle safety education programs are provided at RLS Middle School, which can result in unintentional unsafe bicyclist behavior and a sense of discomfort riding a bike.

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. Such programming is available to all Napa County public schools through the Napa County Safe Routes to School program.

Annual bike safety education helps prepare and encourage students to bike to school safely. Photo credit: Napa County Office of Education.

RECOMMENDATIONS SHP-017: ENCOURAGEMENT PROGRAMS

Narrative – The vehicle-oriented transportation culture in St. Helena was identified both in previous Walk Audits and during other community outreach events as discouraging students from walking and biking to school. In addition to infrastructure barriers, much of which exists due to this transportation culture, many students are driven to school either because it is the „cool" or „normal" thing to do, or because the existing transportation culture influences parents to default to vehicle transportation. It is also likely that many students are unaware of the impacts their everyday transportation choices have on their health, environment, and community. An increase in encouragement programming can help raise awareness of and enthusiasm towards active transportation and complement infrastructure improvements.

IDENTIFIED BARRIERS

- ***Vehicle-oriented transportation culture –*** The existing vehicle-oriented transportation culture deters students and parents from choosing to walk or bike to school.

RECOMMENDATIONS

- ***Encouragement programs –*** We recommend that the school continue growing their participation in annual countywide encouragement events and begin providing ongoing encouragement events throughout the school year. Encouragement programs can begin on a monthly basis, with the goal of increasing frequency of events. Age-appropriate encouragement events include but are not limited to Walk and Roll Wednesdays, Cycle/Carpool for Cocoa, and Bike Trains. These programs are also an excellent opportunity for student organizations and clubs to develop leadership skills by helping to organize and carry out events.

An example of a bike train group led by parent volunteers at El Roble Elementary School in Gilroy. (Photo by Ihui Lopez, Silicon Valley Bicycle Coalition).

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 out 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-017: KEARNEY STREET BICYCLE FACILITIES

Narrative – Kearney Street from Hillview Place to Adams Street is a residential street that provides a direct route between RLS Middle School campus and St. Helena Elementary School campus. Middle school students may travel between the campuses if they have siblings at the elementary school or to reach the Boys and Girls Club/Teen Center of St. Helena located on the elementary school campus. Kearney Street, particularly the segment between Hillview Place and Madrona Avenue, is also a key corridor along direct routes to residences south/southwest of the campus. Kearney Street also experiences high volumes of vehicle traffic during school pick-up and drop-off, particularly between Hillview Place and Madrona Avenue. Kearney Street currently has continuous sidewalks on both sides, but no bicycle facilities.

IDENTIFIED BARRIERS

- ***No bicycle facilities –*** The lack of bicycle facilities on Kearney Street can make student bicyclists feel uncomfortable and unwelcome biking to school, particularly during peak school hours. This may also facilitate students biking on sidewalks.

RECOMMENDATIONS

- ***Class III bike boulevard –*** We recommend that a Class III bike boulevard be installed on Kearney Street from Adams Street to Madrona Avenue with sharrows, signage, and traffic-calming features.

- ***Bike facilities –*** We recommend that the City engage the school community and residents on redesigning the segment of Kearney Street from Madrona Avenue to Hillview Place in order to implement safe bicycle facilities leading directly up to the middle school. Options for this segment can include (but is not limited to): Class III bike boulevard with road redesign and traffic-calming, Class II bike lanes, or a Class I shared-use path on the northbound side. This segment of Kearney Street is recommended for additional engagement and analysis due to more available Right of Way compared to the segment south of Madrona Avenue and its potential to act as a gateway to the campus.

Kearney Street from Madrona Avenue to Hillview Place has more available Right of Way than the rest of the corridor, creating more opportunity for different bike facility types.

RECOMMENDATION #SHI-059: SPRING MOUNTAIN ROAD BICYCLE FACILITIES

Narrative – Spring Mountain Road south of Dean York Lane is a residential street that runs along the west edge of RLS Middle School campus and ends at Madrona Avenue. The street is straight and there is no traffic control for northbound motorists; for southbound motorists there is only one stop sign at Spring Mountain Court, where Spring Mountain Road transitions from the northern rural segment to the southern residential segment. However, this intersection had the highest citations by St. Helena Police Department for motorist failure to stop at a stop sign in the school area. On-street parking is allowed on both sides of the street but is not marked, which can make the street appear extremely wide in areas where cars are not parked, such as alongside the school campus. These conditions facilitate motorist speeding along Spring Mountain Road in the school zone. There are also no bicycle facilities along residential Spring Mountain Court, which can make bicyclists feel unwelcome and unsafe when sharing the road with motorists. This may also cause bicyclists to weave around parked vehicles in order to stay as far to the right, and therefore as far from moving traffic, as possible, which can result in collision risk due to dooring and unpredictable visibility.

IDENTIFIED BARRIERS

- ***No bicycle facilities –*** The lack of bicycle facilities on residential Spring Mountain Road from Spring Mountain Court to Madrona Avenue acts a barrier to students biking to school by making it unclear and uncomfortable for young bicyclists to ride on the road with traffic.

RECOMMENDATIONS

- ***Class II bike lanes –*** We recommend that Class II bike lanes be installed on Spring Mountain Road from Madrona Avenue to Spring Mountain Court, consistent with the 2019 adopted Bike Plan. These bike lanes may also make the road appear narrower, which can reduce speeding.

Spring Mountain Road does not currently have bicycle facilities.

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

Narrative – The Spring Mountain Road and Elmhurst Avenue intersection plays a significant role in connecting the existing pedestrian infrastructure on Spring Mountain Road. There is no sidewalk on northbound Spring Mountain Road from Hillview Place to Elmhurst Avenue and no sidewalk on southbound Spring Mountain Road from Elmhurst Avenue to Spring Mountain Court. Consequently, the crosswalk across Spring Mountain Road provides a clear and visible link between the two existing segments of sidewalk. However, pedestrian visibility at the intersection is reduced by vehicles parking close to the crosswalks (particularly on the west side of Spring Mountain Road), a power line on the southeast corner, and the low visibility crosswalk pattern across Elmhurst Avenue. Furthermore, as speeding occurs on Spring Mountain Road (see Recommendation #SHI-059 narrative) and Spring Mountain Road traffic is uncontrolled at this intersection, motorist range of vision is likely to be reduced, further decreasing motorist yielding behavior at this location.

IDENTIFIED BARRIERS

- ***Poor motorist yielding behavior –*** As Spring Mountain Road experiences motorists speeding and traffic is uncontrolled at this intersection, motorists' range of vision is decreased due to speed, making motorists less likely to see and yield to pedestrians trying to cross.

- ***Obstructed pedestrian visibility –*** Vehicles parking close to the Spring Mountain Road crosswalk, particularly in front of the residence on the west side of the street, and the power line on the east side of the street block pedestrian visibility, reducing motorist yielding behavior and increasing risk of collisions.

- ***Low-visibility crosswalk –*** The low-visibility crosswalk across Elmhurst Avenue is less effective in improving pedestrian visibility in the school zone than other high-visibility patterns.

Vehicles that park adjacent to the red zone reduce visibility of crossing pedestrians to motorists.

- ***Large curb radius –*** The large curb radius on the northeast corner of the intersection facilitates motorists making fast right turns onto Spring Mountain Road.

RECOMMENDATIONS

- ***Curb extensions –*** We recommend that curb extensions be installed at all curbs touching crosswalks in order to reduce motorist speeds through the intersection and improve pedestrian visibility. A creative solution will likely have to be identified for southbound Spring Mountain Road due to the presence of a driveway next to the crosswalk.

- ***High-visibility crosswalk –*** Upgrading the existing crosswalk across Elmhurst Avenue to a high-visibility pattern can supplement other proposed solutions in increasing driver yielding behavior.

Note: While filling the sidewalk gaps along residential Spring Mountain Road is recommended (see SHI-055) and would be a more effective strategy to improve pedestrian safety and connectivity, the Spring Mountain Road and Elmhurst Avenue intersection recommendation received a higher priority because its significantly lower cost and design requirements make the recommendation more feasible in a timely manner.

RECOMMENDATIONS #SHI-062, SHI-063, AND SHI-074: ELMURST AVENUE BIKE/PED IMPROVEMENTS

Narrative – Elmhurst Avenue borders RLS Middle School campus on the north side and is one of the two streets with entrances to the school, the other being Hillview Place. Elmhurst Avenue widens significantly in front of the campus where there is the school's bus loading zone and a section of perpendicular vehicle parking. Just west of the bus loading zone is a yellow, high-visibility midblock crosswalk with small painted curb extensions. The eastbound sidewalk is missing from Spring Mountain Road to the location of the midblock crosswalk, so this crosswalk provides a clear, visible crossing location for pedestrians to access the existing westbound sidewalk. However, the eastbound sidewalk, particularly along the bus loading zone, is obstructed by extremely overgrown vegetation from the school campus. Additionally, there are currently no bicycle facilities along Elmhurst Avenue, which can make student bicyclists feel unwelcome and uncomfortable riding on the road, particularly during peak school hours.

IDENTIFIED BARRIERS

- ***Crosswalk improvements desired –*** Painted curb extensions at the Elmhurst Avenue midblock crosswalk indicate desired pedestrian visibility/ motorist yielding improvements at the crosswalk.

- ***Overgrown vegetation –*** Overgrown vegetation from the school campus obstructs the already narrow eastbound sidewalk leading to the school's Elmhurst Avenue entrance.

- ***No bicycle facilities –*** The lack of bicycle facilities along Elmhurst Avenue make student bicyclists feel unwelcome and unsafe, as there is no clear indication for how motorists and bicyclists should share the road.

RECOMMENDATIONS

- ***SHI-062 Curb extensions –*** We recommend that physical curb extensions be installed on both sides of the crosswalk with bollards or concrete in order to provided more substantial safety and traffic-calming benefits. If curbs are reconstructed during this process, curbs at the crosswalk should include curb cuts compliant with the Americans with Disabilities Act.

- ***SHI-063 Bicycle facilities –*** Due to changing Right of Way along the corridor and multiple road user types during school hours, we recommend that the City, school community, and Safe Routes to School team work together to identify appropriate bicycle facilities for the Elmhurst corridor. Bicycle facilities may require a higher level of separation than most residential streets due to multimodal school traffic volumes.

- ***SHI-074 Vegetation management –*** We recommend that the school increase maintenance of vegetation on the Elmhurst Avenue edge of campus to remove obstructions from the eastbound sidewalk.

Painted curb extensions at the Elmhurst midblock crosswalk indicate desire for pedestrian improvements at the crosswalk (top). Overgrown vegetation from the school campus blocks the sidewalk from the bus loading zone to the school entrance (bottom).

RECOMMENDATIONS #SHI-067 AND SHI-071: FULTON LANE BIKE/PED IMPROVEMENTS

Narrative – Fulton Lane (from Main Street to Railroad Avenue) is a key corridor for students travelling east of SR 29. This corridor is part of direct routes from the school to neighborhoods east of SR 29, the public library, and two dentistry offices on Railroad Avenue. Additionally, all current alignment options being considered for the future Vine Trail shared-use path propose that the Vine Trail cross Fulton Lane adjacent to the railroad tracks, which would make Fulton Lane the closest access point to the Vine Trail from the middle school. However, there are currently no bicycle facilities along Fulton Lane, and the eastbound sidewalk, which students are more likely to use to travel to Railroad Avenue due to the lack of crosswalk across Fulton at Railroad, is narrow and frequently obstructed by utility poles, signage, and overgrown vegetation.

IDENTIFIED BARRIERS

- ***Narrow, obstructed sidewalk –*** The eastbound sidewalk is too narrow to accommodate students walking in groups and pedestrians with strollers or in wheelchairs. This sidewalk is further narrowed by obstructions including vegetation, utility poles, and signage.

- ***No bicycle facilities –*** The lack of bicycle facilities along Fulton Lane make student bicyclists feel unwelcome and unsafe, as there is no clear indication for how motorists and bicyclists should share the road.

RECOMMENDATIONS

- ***SHI-067 Widen sidewalk –*** We recommend that the eastbound sidewalk be widened to accommodate pedestrians walking in groups, with strollers, or in wheelchairs.

- ***SHI-071 Class II bike lanes –*** We recommend that Class II bike lanes be installed from Main Street to Railroad Avenue to provide a continuous route from Madrona Avenue. Bike facilities should be continued to connect to the Vine Trail when the trail is built.

The eastbound sidewalk is obstructed by several utility and sign poles.

RECOMMENDATION #SHP-015: CIRCULATION POLICY

Narrative – RLS Middle School does not have an official circulation policy. Currently, circulation and other transportation-related topics, such as bicycle policies, are presented to incoming families at annual meetings with the school's principal and guidance counselor, and general information about school zone circulation is briefly listed in the school's annual welcome letter. While these are good steps towards regulating school zone circulation, the information provided is limited and can be forgotten when grouped with all other important school information. It may also be difficult for families to revisit throughout the school year, since the information provided is only one bullet on the welcome letter.

IDENTIFIED BARRIERS

- ***Lack of circulation policy –*** The lack of a formal, written circulation policy can result in increased unpredictable road user behavior in the school zone during drop-off and pick-up.

RECOMMENDATIONS

- ***Develop circulation policy –*** We recommend that the school develop a written circulation policy that outlines not only where vehicle drop-off and pick-up is permitted, but also guidelines for safe circulation and behavior expectations for all road users. This circulation policy can be updated as-needed and should be distributed to families annually and on an as-needed basis as well as accessible on the school website.

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-001: MAIN STREET AND HUNT AVENUE PEDESTRIAN IMPROVEMENTS

IDENTIFIED BARRIERS

- ***Low pedestrian visibility***
  - ***Long crossing distances, parked vehicles near crosswalks, lack of traffic control***
- ***Motorists fail to yield to pedestrians***

RECOMMENDATIONS

- ***Curb extensions***
- ***High-visibility crosswalks***

Relevant Reports:

- *St. Helena Elementary School Walk Audit Report*

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

IDENTIFIED BARRIERS

- ***No bike facilities along corridor***
- ***Not enough lighting from Oak Avenue to Stockton Street***

RECOMMENDATIONS

- ***Class III bike boulevards (Allyn to Railroad)***
- ***Class I shared-use path (Railroad to east end)***
- ***Pedestrian scale lighting and overhead lighting***

Relevant Reports:

- *St. Helena Elementary School Walk Audit Report*

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

IDENTIFIED BARRIERS

- ***No bicycle facilities***
- ***Informal eastbound sidewalk***
- ***Long crossing distance (Hunt and Railroad)***

RECOMMENDATIONS

- ***Class III bike boulevard***
- ***Formalize eastbound sidewalk, add crosswalk across Church Street***
- ***Crosswalk improvements at Railroad Avenue (formalized separation and removal of two parking stalls)***

Relevant Reports:

- *St. Helena Elementary School Walk Audit Report*

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

IDENTIFIED BARRIERS

- ***Inattentive driving***

RECOMMENDATIONS

- ***Leading Pedestrian Interval***

Relevant Reports:

- *St. Helena Elementary School Walk Audit Report*

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

IDENTIFIED BARRIERS

- ***Motorist failure to stop***

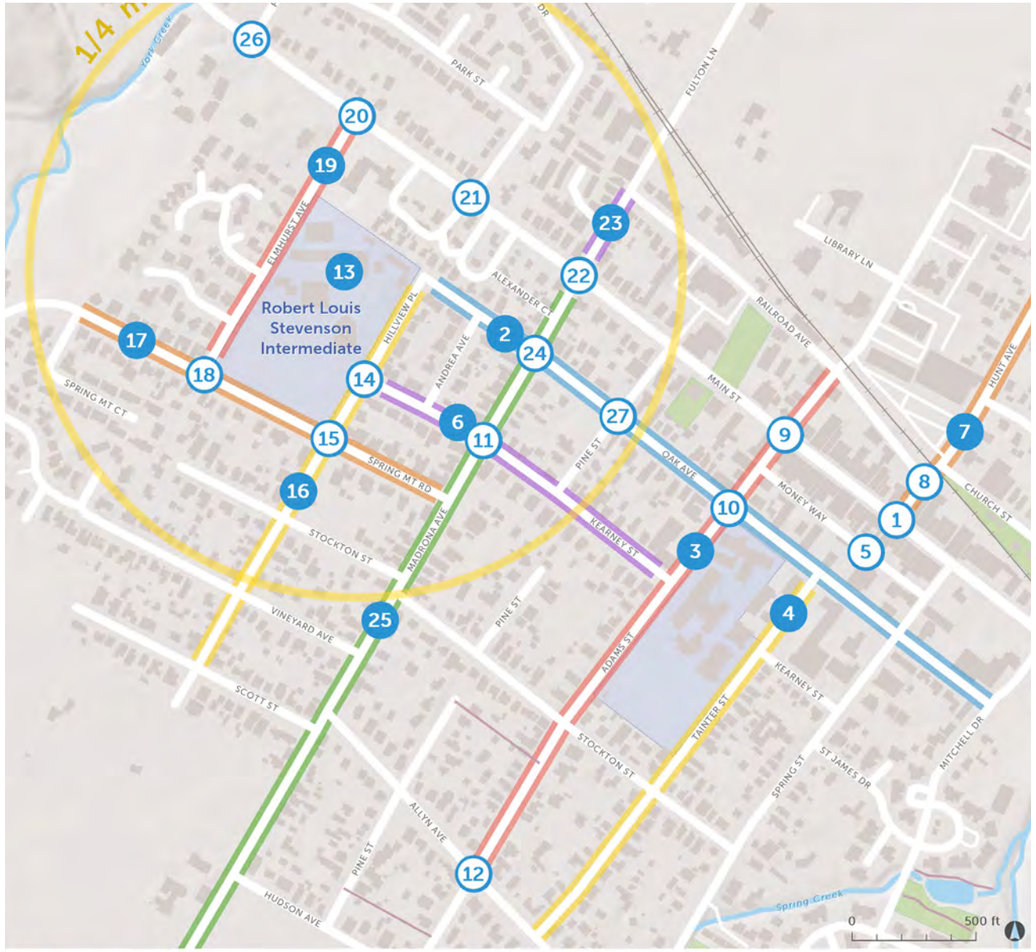
RECOMMENDATIONS

- ***Raised intersection***

Relevant Reports:

- *St. Helena Elementary School Walk Audit Report*

MAP OF RECOMMENDATIONS



Map 5: Recommendations

TABLE OF RECOMMENDATIONS

Infrastructure:

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
1	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*	$$	**High**
2	Oak Avenue from Hillview Place to Mitchell Drive	SHI-002	No bike facilities from Hillview Place to Mitchell Drive*. Rough road surface is difficult to bike on	Repave road and install Class III bike boulevards with sharrows, signage, and traffic-calming	$$$	**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**
3	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	$$	**Medium**
4	Tainter Street from Allyn Avenue to Oak Avenue	SHI-006	No bike facilities from Allyn Avenue to Oak Avenue	Install Class III bike boulevards with sharrows and signage	$$	**High**
		SHI-007	Narrow sidewalks from Oak Avenue to Stockton Street	Widen westbound sidewalk; long-term: consider undergrounding utilities	$$-$$$$	**High**
5	Money Way at Telegraph Alley	SHI-015	Low-visibility midblock crosswalk near Telegraph Alley	Upgrade existing crosswalk to a raised crosswalk	$	**Medium**
		SHI-016	Path between Oak Avenue and Main Street unapparent	Install wayfinding signage on Oak Avenue between Tainter Street and Spring Street*	$	**Low**
6	Kearney Street from Hillview Place to Adams Street	SHI-017	No bike facilities	Install Class III bike boulevards with sharrows and signage from Adams to Madrona. Engage school community and residents for redesign of segment from Madrona to Hillview. Options include Class III bike boulevard with road redesign and traffic-calming, Class II bike lanes, or northbound Class I shared-use path.	$$	**Medium**

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
7	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.	$$	Low
		SHI-021	No bike facilities from Main Street (SR 29) to Starr Avenue	Install Class III bike boulevards with sharrows and signage*	$$	Medium
		SHI-022	Informal eastbound sidewalk from Main Street (SR 29) to Church Street	Formalize sidewalk. Add crosswalk across Church Street.*	$	Medium
8	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
9	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*	$$	Low
10	Oak Avenue and Adams Street intersection	SHI-026	Motorists failing to stop at stop signs	Install raised intersection	$$	High
11	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 compliant with Americans with Disabilities Act.	$$	High
12	Adams Street and Allyn Avenue intersection	SHI-030	No crosswalks	Add crosswalks across Allyn Avenue on both sides	$	Low
13	School campus	SHI-073	Insufficient bicycle parking	Increase bike parking at Hillview entrance and install bike parking near Elmhurst entrance	$	High
14	Hillview Place and Kearney Street intersection	SHI-050	Low-visibility crosswalks in school zone. Long crossing distance across Kearney Street. Hillview Place traffic uncontrolled and no traffic-calming. Painted curb extensions indicate desired safety improvements. Vehicles parking next to crosswalks reduce pedestrian visibility. Narrow sidewalk on Hillview Place at crosswalk.	Upgrade existing crosswalks to high-visibility pattern. Install physical curb extensions with bollards or concrete on all crosswalk legs. Paint sharks' teeth on eastbound Hillview approaching intersection. Widen sidewalk on Hillview Place in front of crosswalk.	$-$$	High
15	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.	$$	Low
16	Hillview Place from Oak Avenue to Scott Street	SHI-052	Low-visibility crosswalk at midblock crosswalk at school entrance despite high volumes of pedestrians and vehicles passing through. Painted curb extensions at midblock crosswalk indicate desired safety improvements.	Upgrade existing crosswalk to high-visibility pattern. Install physical curb extensions with bollards or concrete on both sides of the street.	$	High
		SHI-053	No bike facilities from Oak Avenue to Spring Mountain Road	Install Class III bike boulevard with sharrows, signage, and traffic-calming features*	$$	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.	$$	Low
17	Spring Mountain Road from Madrona Avenue to Spring Mountain Court	SHI-059	No bike facilities from Madrona Avenue to Spring Mountain Court	Install Class II bike lanes*	$	Medium
		SHI-055	Missing northbound sidewalk from Hillview Place to Elmhurst Avenue. Missing southbound sidewalk from Elmhurst Avenue to Spring Mountain Court	Install sidewalks where missing*	$$	Low
18	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

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
19	Elmhurst Avenue from Spring Mountain Road to Main Street	SHI-061	Missing eastbound sidewalk from Spring Mountain Road to midblock crosswalk east of Quail Court. Narrow eastbound sidewalk (school side) from midblock crosswalk to Main Street.	Install sidewalk where missing* and widen eastbound sidewalk	$$	Low
		SHI-074	Overgrown vegetation along campus edge obstructs eastbound sidewalk	Increase vegetation management along campus boundaries on Elmhurst Avenue to remove overgrown vegetation obstruction of sidewalk.	$	Medium
		SHI-062	Painted curb extensions at midblock crosswalk east of Quail Court indicate desired safety improvements	Install physical curb extensions on both sides of midblock crosswalk with quick-build materials or concrete	$	Medium
		SHI-063	No bicycle facilities from Spring Mountain Road to Main Street*	City staff, school community, and Safe Routes to School team should work together to identify appropriate bicycle facilities for the Elmhurst corridor based on Right of Way and road user types during school hours.	$-$$	Medium
20	Main Street and Elmhurst Avenue intersection	SHI-064	Low pedestrian visibility, high volumes/speeds of uncontrolled traffic along Main Street, wide curb radius on northwest corner	Curb extensions on all curbs connecting to crosswalks. Upgrade both crosswalks to yellow school zone high-visibility crosswalks. Add lighting to improve crosswalk visibility at night. Consider Rectangular Rapid Flashing Beacon for crosswalk across Main Street.	$$-$$$	High
21	Main Street and Crinella Court intersection	SHI-065	Low pedestrian visibility, high volumes/speeds of uncontrolled traffic along Main Street. See collision history	Curb extensions on all curbs connecting to crosswalks. Upgrade crosswalks across Main Street to high-visibility pattern. Add lighting to improve crosswalk visibility at night.	$$	Low
22	Main Street and Madrona Avenue intersection*	SHI-066	Small pedestrian waiting space. Vehicles turning onto SR 29 (especially unprotected left turns) or turning off of SR 29 during high traffic hours often speed and pay more attention to vehicular traffic than bikes/peds. No bicycle detection at this intersection.	Install small curb extensions on all corners of the intersection to improve pedestrian visibility and increase pedestrian waiting space. Install Leading Pedestrian Interval for all crosswalks. Upgrade crosswalks to high-visibility to improve visibility of active users. Install bicycle detection. Enhance future bike facilities on Madrona/Fulton to have green paint and flexiposts approaching intersection.	$$	High
23	Fulton Lane from Main Street to Railroad Avenue	SHI-067	Narrow eastbound sidewalk, vegetation overgrowth obstructs already narrow sidewalk.	Widen eastbound sidewalk	$	Medium
		SHI-071	No bicycle facilities*	Install Class II bike lanes	$	Medium

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
24	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.	$$	High
25	Madrona Avenue from Main Street to Riesling Way	SHI-072	No bike facilities. Motorists speeding.	Install Class II bike lanes from SR 29 to Hudson Avenue*. Widen path on south side to Class I standards from Hudson Avenue to Riesling Way.* Install traffic-calming elements along corridor, with a focus around intersections near schools.	$$	Low
26	Pratt Avenue and Main Street intersection	SHI-069	High-speed and high-volume uncontrolled traffic on SR-29, low pedestrian visibility	City and Caltrans evaluate the intersection for significant traffic-calming solutions approaching and through the intersection (particularly for southbound traffic) and pedestrian and bicyclist safety improvements, especially for east-west crossing.	$-$$$	Low
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 compliant with Americans with Disabilities Act	$	Low

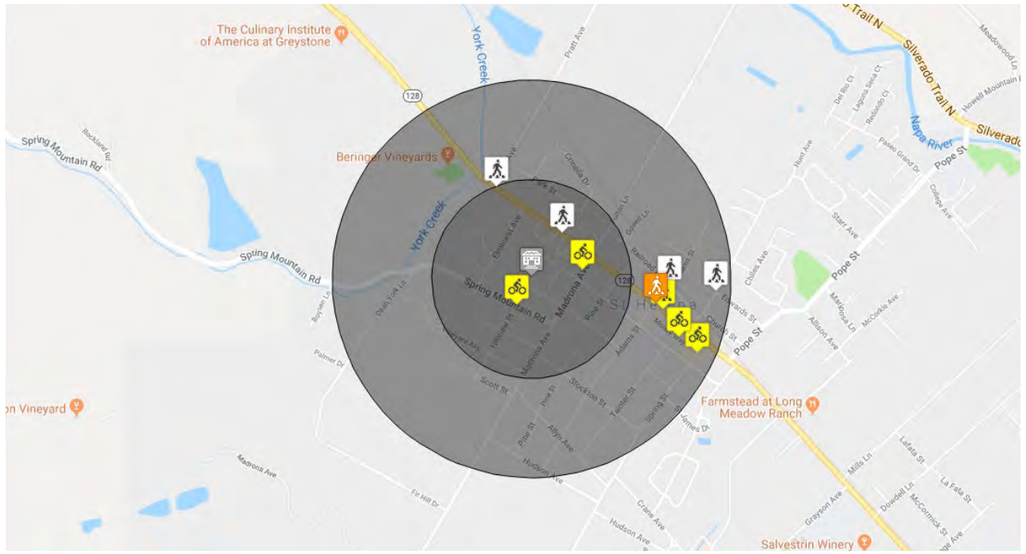
** = projects included in Napa Countywide Pedestrian Plan (2016) or Napa Countywide Bicycle Plan (2019)*

Programmatic Improvements:

	ISSUE	ID #	RECOMMENDATION	LOCATION	FREQUENCY	COST	PRIORITY
1	No bicycle safety education provided to students	SHP-014	Provide annual bike safety education for all students.	School grounds	Annual	$	High
2	Lack of circulation policy can create unpredictable drop-off/pick-up zone	SHP-015	Develop circulation policy and distribute to parents annually, with reminders as needed	School grounds	Annually	$	Medium
3	Vehicle-oriented transportation culture	SHP-017	Provide ongoing encouragement programming throughout the school year. Continue growing participation in annual countywide encouragement events.	School grounds	Monthly, with the goal of increasing frequency	$	High
4	No Parent Champion program	SHP-018	Develop teams of Parent Champions to support education and encouragement programs at all school sites.	School grounds	Annually	$	High

** = projects included in Napa Countywide Pedestrian Plan (2016) or Napa Countywide Bicycle Plan (2019)*

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.	0	0	0	0	0	0	0
.25-.5 mi.	0	1	3	2	4	2	6
Total	0	1	5	4	6	4	10

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
2013-09-20	15:37	Madrona Av	Oak Av	Yes/No
2017-08-25	10:54	Main St	Adams St	No/Yes
2017-02-27	12:45	Main St	Pratt Av	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
2015-04-07	16:43	Hillview Pl	Spring Mountain Rd	Yes/No
2015-04-02	17:32	Money Wy	Spring St	Yes/No

Figure 9: Collision Data (Source: UC Berkeley Transportation Injury Mapping System: SRTS Collision Map Viewer)

APPENDICES

FIGURES & MAPS

FOOTNOTES

[a] 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.

[b] 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.

[c] 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.

[d] 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.

[e] 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.

[f] 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

[g] 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....

[h] 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.

[i] 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....

[j] 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

- **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-8th 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-8th 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 → **TERMINATE**	-
(No response) → **TERMINATE**	-

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

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

(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 **to** 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 **from** 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.
(RANDOMIZE)							
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
(RANDOMIZE)							
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)
(RANDOMIZE)					
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[1] indicates that high-visibility crosswalk striping improves the visibility of crosswalks compared to standard parallel lines and can improve yielding behavior by drivers[2]. Additionally, crosswalk visibility enhancements, which include but are not limited to high-visibility crosswalks, can reduce crashes by 23-48%[1].

- 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.

---

[1] https://safety.fhwa.dot.gov/ped_bike/step/docs/TechSheet_VizEnhancemt_508compliant.pdf

2 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**.

CALIFORNIA BICYCLE COALITION

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

Acknowledgments

Lead author - Nathan Broom

Contributors - Eric Anderson, Vince Caristo, Ryan Dodge, Jennifer Donlon-Wyant, Sarah Figliozzi, Elco Gauw, Dan Jatres, David Loutzenheiser, Heath Maddox, Brian Patterson, Cara Seiderman

Alta Planning + Design donated their expertise in the design and illustration of this guide. Cat Cheng, lead designer, Jillian Portelance, production designer.

Cover image: *Sign D4-3 from Standard Highway Signs, 2004 Edition, http://mutcd.fhwa.dot.gov/ser-shs_millennium_eng.htm*

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

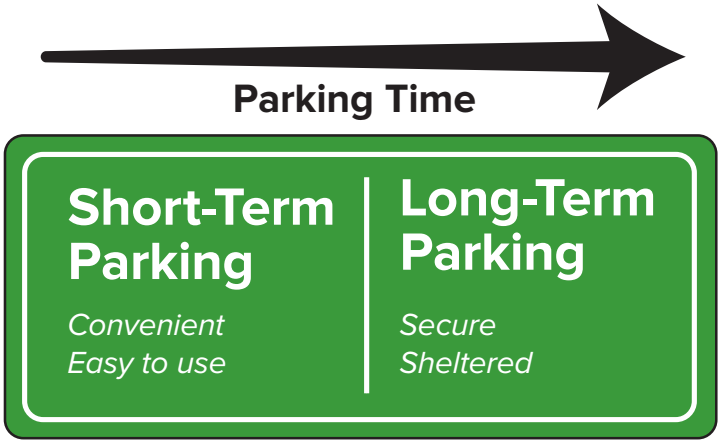
TABLE OF CONTENTS

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.

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

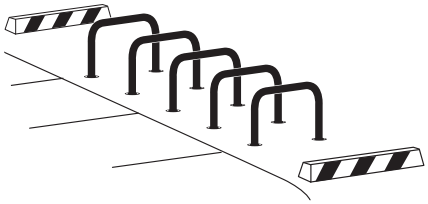
Effective bike parking for short-term users depends on two main factors: 1) proximity to the destination and 2) ease of use.

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.

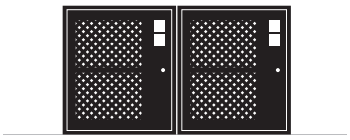
BIKE CORRALS

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**

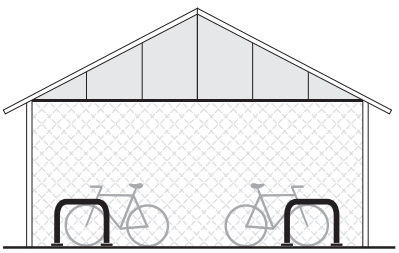
LONG-TERM PARKING

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**

INSTALLATION

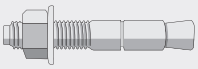
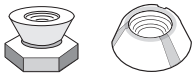
Selecting an appropriate installation surface and technique is key to creating bicycle parking that remains secure and attractive over time.

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**

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
Supports bike upright without putting stress on wheels	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".
Accommodates a variety of bicycles and attachments	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.
Allows locking of frame and at least one wheel with a U-lock	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.
Provides security and longevity features appropriate for the intended location	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).
Rack use is intuitive	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

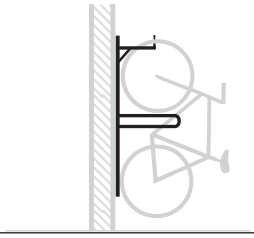
These rack styles do not meet all performance criteria but may be appropriate in certain constrained situations.

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

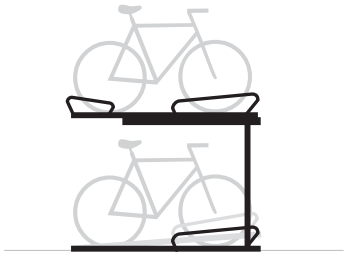
Variation of the wheelwell-secure rack designed to stagger handlebars vertically or horizontally to increase parking density. Reduces usability and limits kinds of bikes accommodated, but contains bikes well and aids in fitting more parking in constrained spaces.

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.

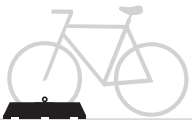
SCHOOLYARD
also called comb, grid

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

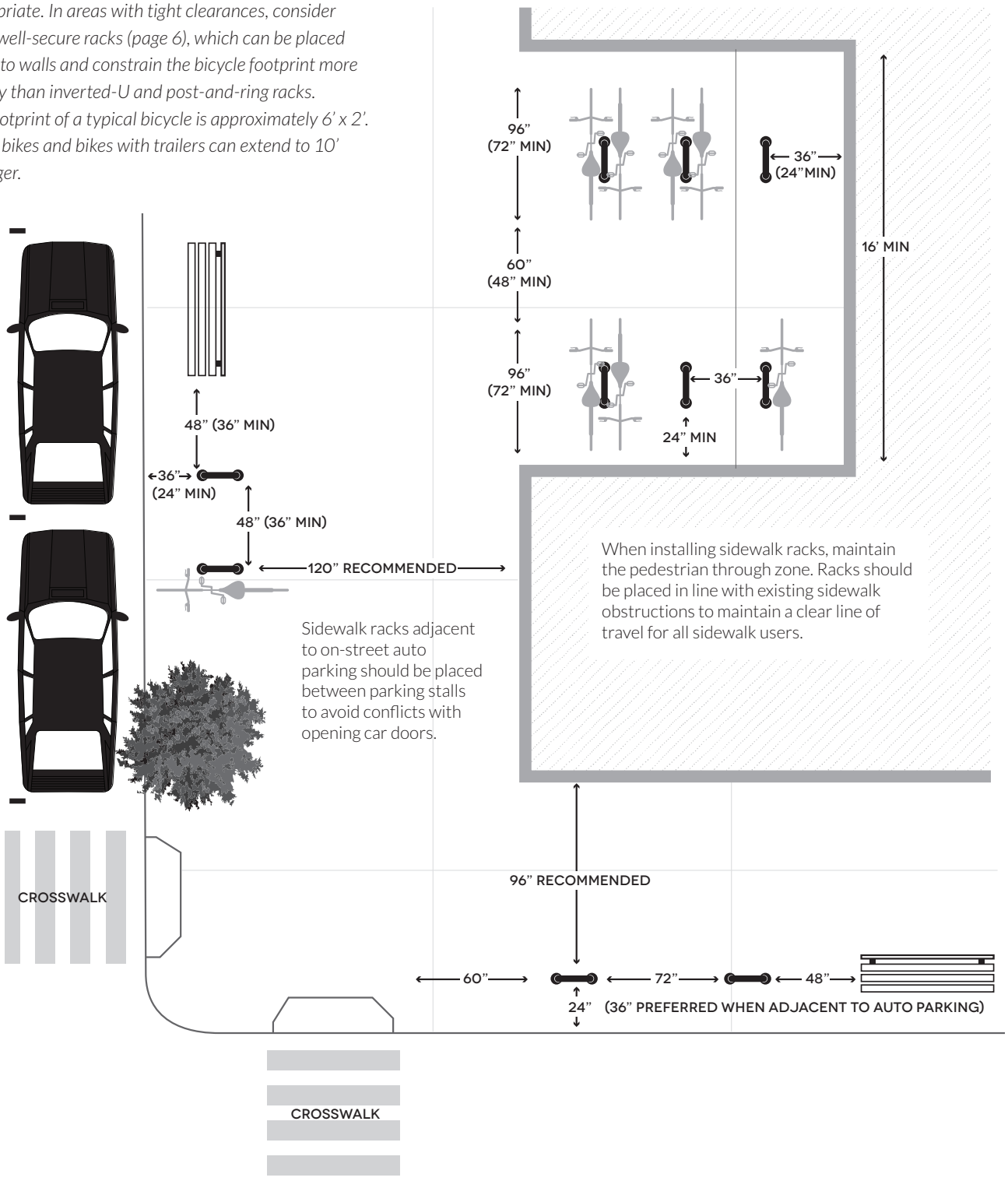
Most bicycle parking racks are made of carbon steel or stainless steel. Carbon steel requires a surface coating to resist rust while appropriate grades of stainless steel need no coating. Not all materials and coatings with the same name perform equally. Square tubing provides a security advantage as 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
Carbon steel - galvanized	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
Carbon steel - powder coat* (TGIC or similar)	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
Carbon steel - thermoplastic	Intermediate	Good durability	Appearance degrades over time with scratches and wear; not as durable as galvanized or stainless
Stainless steel - no coating needed, but may be machined for appearance	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. 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 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 powerfulfunding 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