

Walk Audit Report



SafeRoutes



Napa County

CALISTOGA
ELEMENTARY SCHOOL

CALISTOGA ELEMENTARY SCHOOL

1327 BERRY STREET
CALISTOGA, CA

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ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

THE NAPA COUNTY SAFE ROUTES TO SCHOOL PROGRAM

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

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

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

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

WHY SAFE ROUTES TO SCHOOL?

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

Studies have linked SRTS programs to increased walking and biking to school¹¹ and reduced pedestrian-motorist collisions¹². 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 health¹³.

Student health has been linked to improved academic performance¹⁴. 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 independently¹⁵. Families are also provided with a low-cost transportation option that can significantly reduce their annual expenses¹⁶.

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.

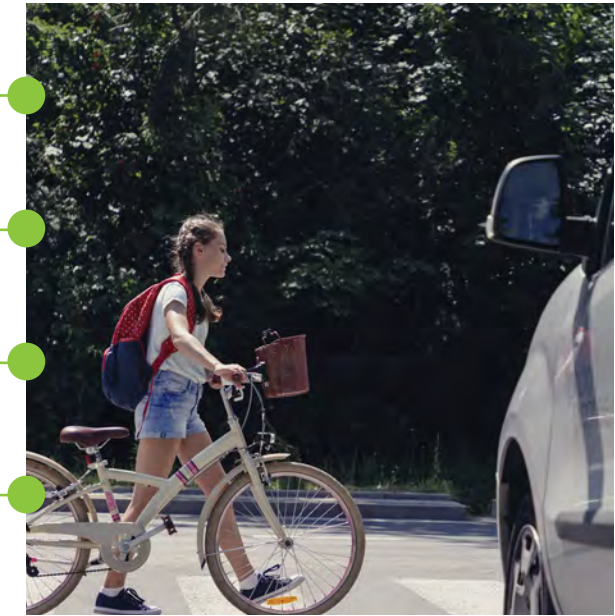
Schools and the community benefit immensely when students choose to walk or bike.

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

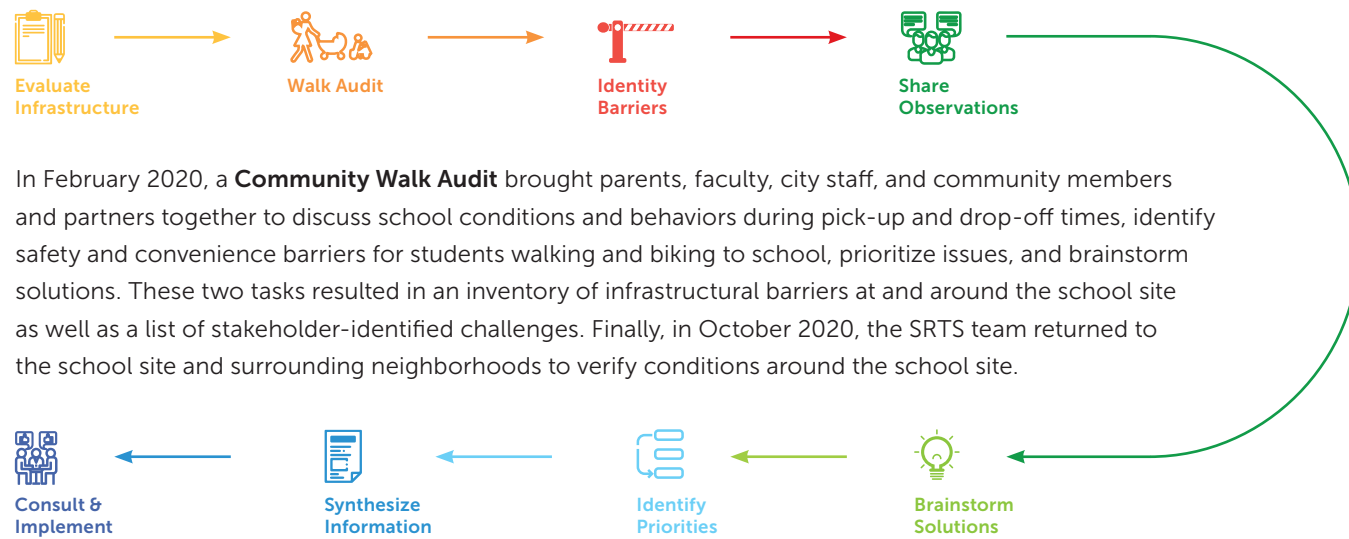
Track progress toward our shared safety goals, develop programs accordingly.

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.

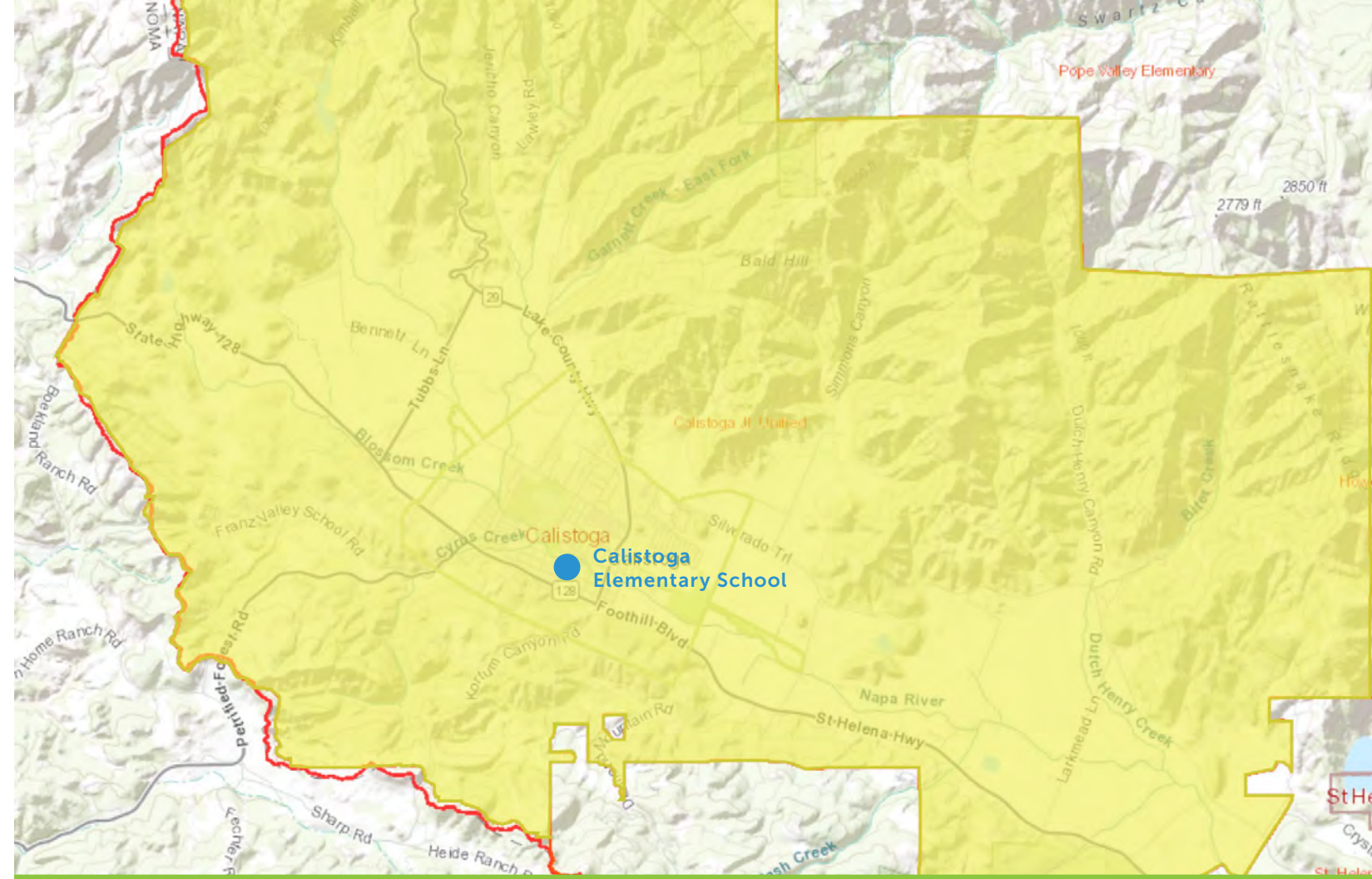
REPORT PROCESS

The SRTS team conducted a comprehensive evaluation of the barriers to students walking and biking to and from Calistoga Elementary School over the course of 2 years, starting in the summer of 2018. Information on physical and behavioral challenges was collected in multiple phases. In August 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 February 2020, a **Community Walk Audit** brought parents, faculty, city staff, and community members and partners together to discuss school conditions and behaviors during pick-up and drop-off times, identify safety and convenience barriers for students walking and biking to school, prioritize issues, and brainstorm solutions. These two tasks resulted in an inventory of infrastructural barriers at and around the school site as well as a list of stakeholder-identified challenges. Finally, in October 2020, the SRTS team returned to the school site and surrounding neighborhoods to verify conditions around the school site.

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



Map 1: Enrollment Boundary of Calistoga Elementary School

Enrollment boundary shown above. As Calistoga Elementary School is the only public elementary school in Calistoga, its enrollment boundary covers the entire Calistoga Joint Unified School District boundary, which includes the city of Calistoga and the surrounding area. According to the school's vice principal, less than ten students transfer in from outside of Calistoga's school boundaries per year.

CALISTOGA ELEMENTARY SCHOOL SUMMARY

Principal	Nicole Lamare	Grades	K-6
District	Calistoga Joint Unified	Enrollment	459
First Bell	8:30am	Street	1327 Berry Street
Last Bell	2:50pm (1:35pm on W)	City	Calistoga, CA 94515

Overall Facility Rating**: Good**

DATA

A hand tally survey collected by the Napa County Office of Education in Spring 2019 indicated that roughly one in three students at Calistoga Elementary School walk or bike to and from school, while nearly half (51%) arrive by family vehicle.

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	CALISTOGA ELEMENTARY	DISTRICT
Black or African American	0.2%	0.1%
American Indian or Alaska Native	0.0%	0.2%
Asian	0.2%	0.2%
Filipino	0.2%	1.3%
Hispanic or Latino	84.1%	85.2%
White	12%	10.9%
Native Hawaiian or Pacific Islander	0.0%	0.1%
Not Reported	3.3%	1.9%

EXPERIENCE	CALISTOGA ELEMENTARY	DISTRICT
Socioeconomically Disadvantaged	78%	78.8%
English Learners	61%	44.1%
Students with Disabilities	17%	14.2%
Foster Youth	0.2%	0.1%

Figure 3: Enrollment Data by Group

Average Percentage of Mode Share to School by Calistoga Elementary Students (NCOE Hand Tally)

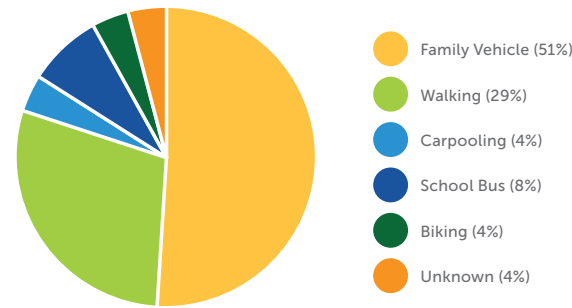


Figure 1: NCOE Hand Tally Data

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

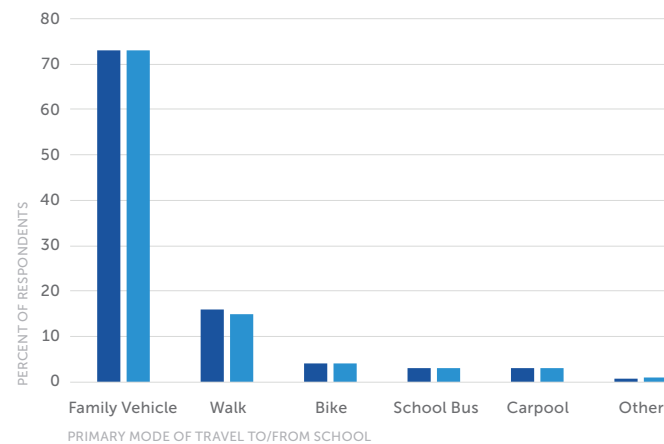


Figure 2: EMC Research Polling Results

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.

Total Enrollment by Grade Level

	NUMBER OF STUDENTS
Kindergarten	75
Grade 1	65
Grade 2	60
Grade 3	66
Grade 4	69
Grade 5	62
Grade 6	62
Total	459

Figure 4: Enrollment Data by Grade

NEIGHBORHOOD CONTEXT

Calistoga Elementary School is located on Berry Street in west Calistoga. Berry Street, a collector, borders the school to the south; Cedar Street, another collector, to the west; and Washington Street to the east. Washington Street is considered a collector north of the school, and an arterial east and south of the school to Lincoln Avenue. To the north, the school is bordered by single-family residences on Silver Street and Gold Street as well as the Napa River.

Within a half-mile radius of the school are Lincoln Avenue and Foothill Boulevard, two significant arterials. Lincoln Avenue, a segment of SR 29, provides the primary east-west connection through Calistoga, and is one of the few roads with a bridge crossing the Napa River. Lincoln Avenue also intersects with Highway 128 and the Silverado Trail on the north end of the City. Lincoln Avenue is Calistoga's "Main Street" in the heart of the City's downtown commercial area.

The school is primarily surrounded by single-family residential neighborhoods and some multi-family residences and religious facilities. Northeast of the school are a large apartment building, a small hotel,

and Logvy Community Park. The neighborhoods around the school are primarily low-density single-family homes, with some 2-story apartments. The neighborhoods to the west were primarily built in the 1960s and 1970s, though some were built as early as 1900. The residences to the east range in building age, from 1880 to early 2000s. Physical infrastructure varies due to the range and period of construction in these neighborhoods.

The street patterns in the neighborhoods around the school are primarily gridiron, with some fragmented parallel roads to the north. Gridiron street patterns are ideal for walkability, as they provide the most pedestrian route choice and interconnectivity, though this is reduced somewhat in fragmented parallel streets.

Destinations within walking distance of the elementary school include Logvy Community Park to the northeast, Pioneer Park and the commercial downtown area to the south, and Calistoga Junior/Senior High School to the east, where students may have siblings. There is also a snack stand that sets up in front of a church on Washington Street near the corner of Berry and Washington Street that is very popular amongst students.



Berry Street (left), Cedar Street (middle), Washington Street (right)



Map 2: School site location within the city of Calistoga.

EXISTING CONDITIONS

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

SITE CIRCULATION

Calistoga Elementary School is accessible from Berry Street and Cedar Street. There is no designated drop-off zone, as the parking lots on both streets are for staff only and the loading zone in front of the main entrance on Berry Street is for bus loading only.

Motorists may park along Berry, Cedar, and Washington Streets and drop off or walk their student to the school campus. Berry has red zones east of the loading zone entrance until the Washington Street intersection and just west of the loading zone exit. In front of the parking lot, the curb on Berry Street is designated for student loading only during school hours. North of the school until Berry Street, Washington Street only has street parking on the northbound (east) side, across the street from the school. South of the school, Washington Street has parking on the southbound side and a red zone on the northbound side for a block. Cedar Street has parking along both sides of the street. Residential parking and the many driveways along these streets may make finding a parking or loading spot difficult during the drop-off period.

The school provides two school district staff crossing guards before and after school, stationed at Berry Street’s intersections with Washington Street and Cedar Street. Temporary signage and traffic cones are also placed at these locations to further assist in alerting drivers.



No parking signage along the school frontage on Berry Street.

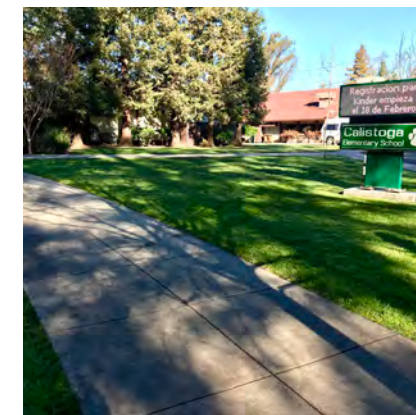


Red curb on Berry Street



A crossing guard, traffic cones, and signage are stationed at the Washington Street and Berry Street intersection.

On Berry Street, there are several entrances to the school campus that are accessible from the sidewalk. On Cedar Street, there is a sidewalk that runs along the south side of the staff parking lot and across a field to provide access to the school. Though some of these sidewalks are narrow, they are highly utilized, as students cannot be dropped off directly on campus.



One of the primary paths to campus from Berry Street.

The school provides pick-up and drop-off regulations (Figure 5) in its Parent and Student Handbook and Calendar, which is available on the school website. The Handbook is provided in both English and Spanish.

The school also includes a policy regarding bicycles in the Parent and Student Handbook and Calendar (Figure 6).

The Calistoga Joint Unified School District provides one bus route for both its Calistoga Elementary School students and Calistoga Junior/Senior High School students. This route provides for several stops along Highway 128 and throughout Calistoga. The school bus registration form includes safety tips on walking to and from school bus stops (Figure 7). As of the 2021-22 school year, the school district has temporarily eliminated bus service due to the driver shortage.

The Napa Valley Transportation Authority provides the Vine Transit Calistoga Shuttle, an on-demand transit service within Calistoga city limits for the general public that can be requested via phone, mobile app, or web page. Calistoga is also served through the Transportation Authority by the Vine Transit Route 10 Up Valley Connector, which runs from Napa Valley College in south Napa to Brannan Street in Calistoga. There are four stops in the City of Calistoga – the closest stop to Calistoga Elementary School is the Calistoga Lincoln Bridge stop on Lincoln Avenue near Cedar Street.

PICK UP and DROP OFF

Students may not arrive at school before 8:00 AM. There is no supervision for students before 8:00 am. **THE RED-PAINTED CURB IN FRONT OF THE SCHOOL IS FOR BUS LOADING AND UNLOADING ONLY.** Cars may not park in this area at any time. Parents may not use this area for dropping-off and picking up students. Children are not to cross through the bus area but should use the sidewalk or marked pedestrian walkway. **THE PARKING LOTS ARE FOR STAFF PARKING.** Parking across the street from the school and “jay walking” across Berry St. is very dangerous and highly discouraged. **UNDER NO CIRCUMSTANCES** should a student cross Berry St. in front of the school without an adult escort. Parents are also reminded that the Cedar Street Parking Lot is for **STAFF ONLY** and is not to be used as a pick-up or drop-off location for students. Please be considerate of the rules and do not double park or block other cars. **BE CAREFUL! CHILDREN ARE DIFFICULT TO SEE FROM A CAR!**

Figure 5: School pick-up and drop-off regulations

BICYCLES, SKATES, SCOOTERS AND SKATEBOARDS

Helmets must be worn when biking, skating, skateboarding or scootering to school. Bicycles, skates, skateboards and scooters brought to school without helmets will be held in the office for a parent to pick up. All bikes must be parked in the bike racks by the cafeteria. Locks are recommended. When leaving school, bikes must be walked from the racks to the street curb. Students, who skate, scooter or ride skateboards to school, must carry the skates or board onto the school campus. Skates are to be removed and put on at the brick steps in front of the school only. Skates, skateboards, scooters and bicycles may not be ridden on campus at any time.

Figure 6: School policy on bicycles

Walking To and From School Bus Stops

It is the responsibility of parents/guardians to insure their students arrive safely at the assigned bus stop and are ready to load the bus 5 minutes prior to the scheduled pick-up time of the route.

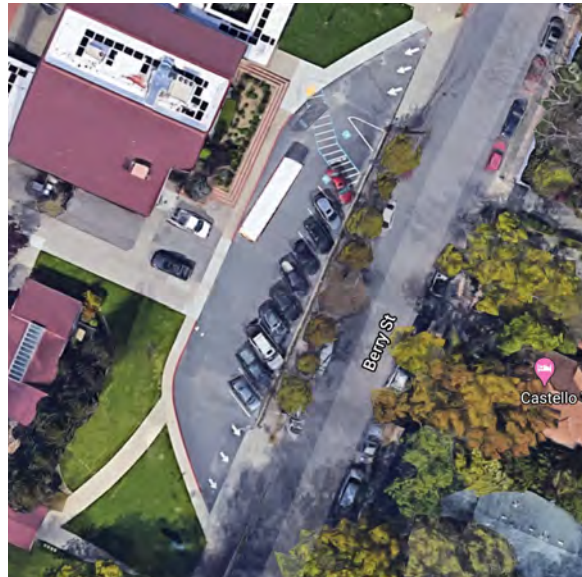
It is recommended that parents/guardians make arrangements to receive students when they are returned to their bus stop at the end of the day.

Parents/guardians and students are encouraged to develop a plan to ensure their student/s arrives safely home at the end of the day.

The safe loading and unloading of students is our main concern. Therefore, students should be cautious with the walking route chosen to get to the school bus stop. Pupils should stay on sidewalks and walking paths while approaching and leaving school bus stops. Students shall wear safe clothing that is visible in hours of darkness.

Go directly to and from the bus stop. Never run to the bus, always walk.
Plan the safest route with the fewest streets to cross.
If possible cross streets at corners, using crosswalks if available. Look in all directions before crossing, and when safe, walk across the street. Always obey traffic signals.
Do not run out in the street from between parked cars or shrubbery.
Walk to and from school bus stops, out of the roadway facing traffic.
Never accept a ride from a stranger.
Leave home early enough so you do not have to run to catch your bus.

Figure 7: School bus registration form safety tips



SCHOOL PARKING LOT AND GROUNDS

Calistoga Elementary School has two small parking lots – one on Berry Street and one on Cedar Street – that are for staff parking only.

BERRY STREET

The parking lot on Berry Street also acts as the bus loading zone. One-way circulation through this parking lot is directed by white painted arrows and signs at the entrance on the east end and exit on the west end. Only right turns are permitted when exiting the parking lot. There are 11 diagonal parking spaces in this lot, including two spaces compliant with the Americans with Disabilities Act (ADA), with a crosswalk to the front of the school between them. The entrance to this lot is kept closed by a sliding gate during drop-off and pick-up times to prevent parent use. There are sidewalks around the parking lot that connect to the Berry Street sidewalks, providing students with a path to campus that is separated from traffic.



CEDAR STREET

The Cedar Street parking lot has 16 perpendicular parking spaces, including one ADA-accessible space. Two-way circulation is indicated by painted arrows at the entrance/exit driveway onto Cedar Street. There are two signs at this parking lot indicating that it is staff-parking only, and that it is not to be used during pick-up and drop-off time. A narrow sidewalk exists along the south side of this parking lot that connects the Cedar Street sidewalk to the school campus, providing students with a separated path from Cedar Street to campus around the parking lot.

The school addresses parking lot use in its pick-up and drop-off regulations provided in the Parent and Student Handbook and Calendar (see "Site Circulation").



BICYCLE AND PEDESTRIAN INFRASTRUCTURE

Few bike facilities exist around Calistoga Elementary School. Cedar Street, Berry Street from Cedar Street to Washington Street, and Washington Street from North Oak Street to the Calistoga Little League Tedeschi Field are all Class III bike routes, marked by signage but not share-the-road markings.

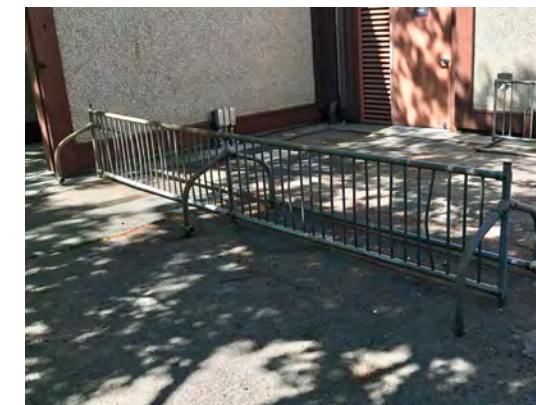
The school provides one long bike rack and one short bike rack for bike parking. The racks are well-placed, as they are near the main Berry Street entrance but are not visible from the street. However, there are no light fixtures around the bike racks, and the small rack is not bolted to the ground, leaving the rack and bikes potentially vulnerable to theft or vandalism.

Although the Calistoga Municipal Code defines official widths of City street roadways, including presence and widths of sidewalks, CMC 12.04.120 declares that these definitions "shall not apply to any street upon which the width of roadway or sidewalk has been or shall be established by action of the Council."

Most of the streets around the school have narrow (4') but connected sidewalks Cedar Street north of the school has several sidewalk gaps, which could force students to walk in the street and maneuver around parked cars. Berry and Washington Street have narrow, continuous sidewalks on both sides of the road. Some of the smaller residential streets in the school area are missing sidewalks on one or both sides of the street. Most intersections do not have ADA-accessible curb ramps.



Washington Street designated as a "bike route."



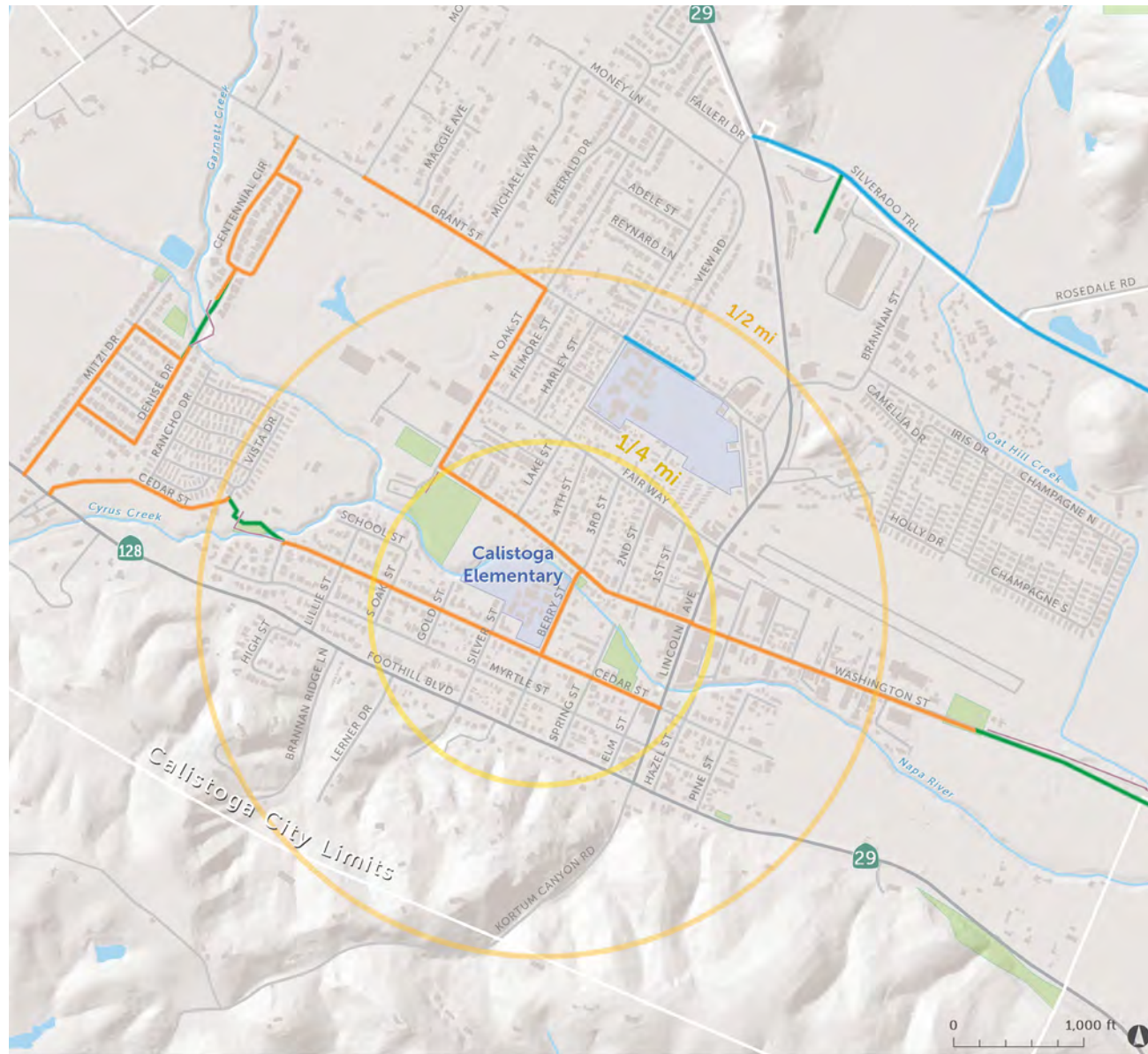
Bike parking on school campus.



Sidewalk ends on Cedar Street



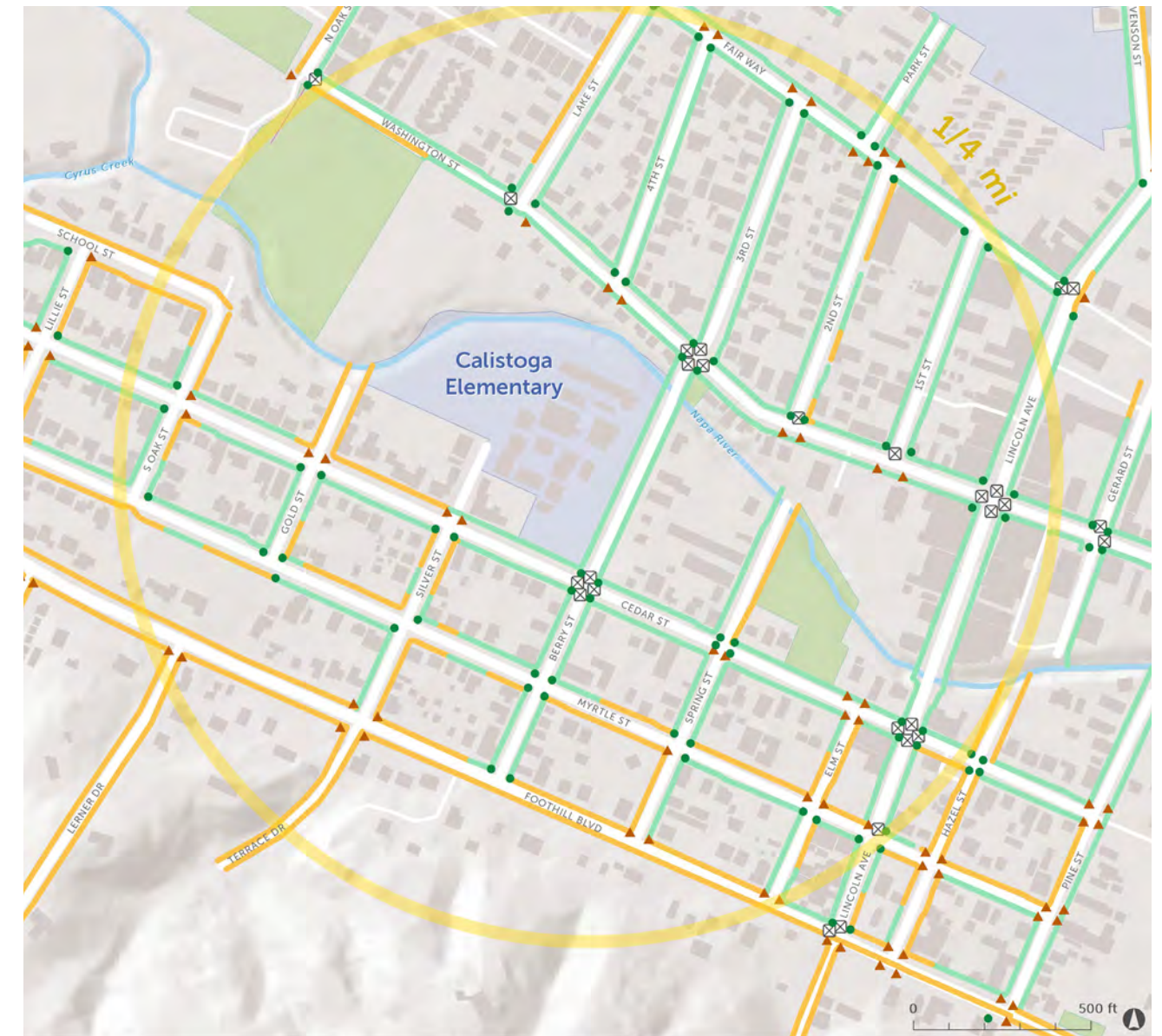
MAP OF EXISTING BICYCLE FACILITIES



- Shared Use Path (Class I)
- Bike Lane (Class II)
- Separated Bike Lane (Class IV)
- Trail
- Bike Route (Class III)
- Bike Boulevard (Class III)

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

MAP OF EXISTING PEDESTRIAN FACILITIES



- | Curb Ramp | Sidewalk | Crosswalk |
|------------------------|------------------------|-----------|
| ● Existing ▲ Missing | — Existing — Missing | ⊠ Present |

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

POLICIES AND PROGRAMS

Encouragement and Education:

Calistoga Elementary School has participated regularly in annual countywide encouragement events - namely Bike to School Day, an annual encouragement event facilitated by Napa County Safe Routes to School that celebrates students making the healthy choice to bike to school. However, the school's encouragement program is limited to annual countywide events. The City of Calistoga also hosts an annual community Safety Day at Logvy Park, which includes a bicycle rodeo and helmet giveaways, which are primarily focused on younger children.

The school does not provide regular on-campus bicycle or pedestrian safety education to students.



Calistoga students participate in a bike rodeo.

YEAR	EVENT	STUDENT PARTICIPANTS
2015/16	Bike to School Day	169
2016/17	Bike to School Day	43
2017/18	Bike to School Day	30
2018/19	Bike to School Day	61
2019/20	Walk and Roll to School Day	201

Figure 8: Encouragement and Education Data

Enforcement:

Calistoga 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 Calistoga Elementary School, this included but was not limited to Washington Street from First Street to Lake Street, Berry Street, Cedar Street from Gold Street to Spring Street, and Myrtle Street from Silver Street to Spring Street.

STOP SIGN CITATIONS WITHIN THE SCHOOL AREA:

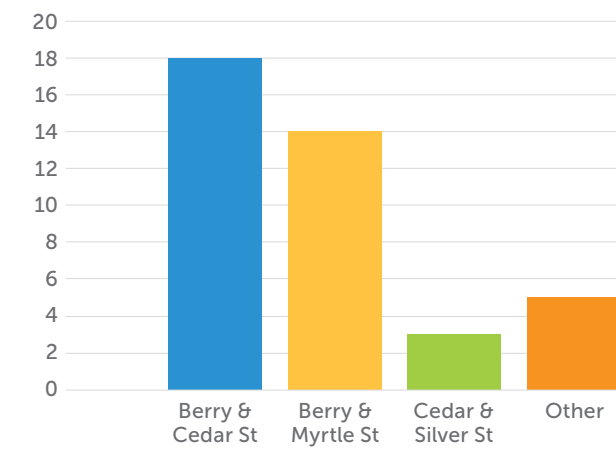


Figure 9: Stop Sign Citations

For the examined time period, there were no citations for failure to yield to pedestrians or passing a school bus. However, during the Walk Audit, some participants discussed witnessing motorists fail to yield to pedestrians in the Washington Street/Third Street/Berry Street intersection. There were 37 citations for speeding and 91 citations for failure to stop at a stop sign. Of the speeding citations, none were given in the Calistoga Elementary School area. This is consistent with Walk Audit feedback, as speeding was not a large concern for Walk Audit participants. Of the stop sign citations, 40 were given in the school area, nearly half of which were given at Berry Street and Cedar Street, and a significant amount at Berry Street and Myrtle Street. This is notable, as the two intersections with the highest citations are adjacent to each other and are two of the primary intersections in the school zone.

WARNINGS GIVEN AT BERRY STREET AND CEDAR STREET:

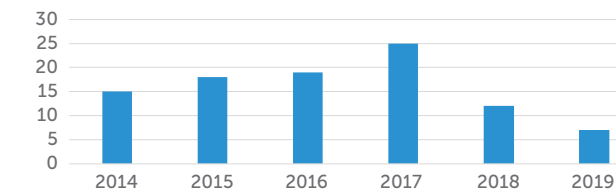
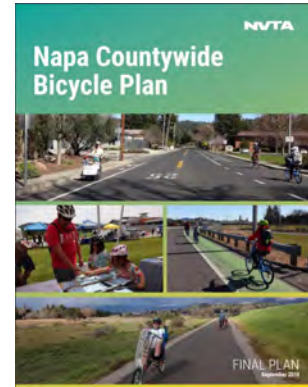


Figure 10: Traffic Stops Warnings (Berry and Cedar)

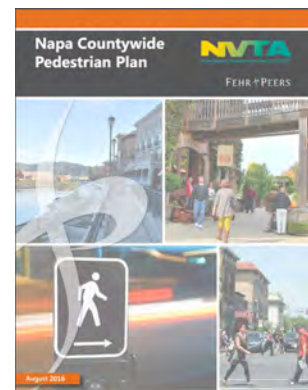
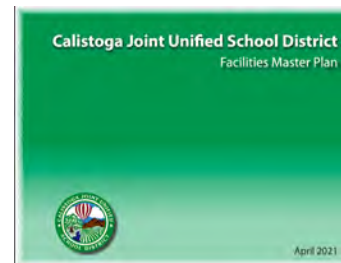
Data for traffic stops with warnings was also collected and analyzed to supplement citation data. For all years but 2019, the most warnings in Calistoga Elementary School's area were given at Berry Street and Cedar Street. Washington Street and Lake Street, Berry Street and Myrtle Street, and Washington and Berry Street also saw relatively high numbers of warnings distributed.

EXISTING PLANS



NVTA Napa Countywide Bicycle Plan (2019):
 The Napa Countywide Bicycle Plan recommends improving bicycle facilities around the school site. The Bicycle Plan recommends a series of Class III facilities on Fair Way, Lake Street, and along residential streets that connect with important arterials and collectors, such as 4th Street and 2nd Street. For Lincoln Avenue, a Class I shared-use path is recommended from the Silverado Trail to Fair Way and Class II bike lanes from Fair Way to Highway 128. Along the Napa River within city limits, the plan recommends installing a Class I shared-use path, which also connects with Silver Street behind the school’s campus.

CJUSD Facilities Master Plan (2021):
 The CJUSD Facilities Master Plan, updated in April 2021 from its 2015 version, lists several proposed improvements for Calistoga Elementary School. Issues identified by stakeholders that affect circulation include limited parking. Projects listed in the plan that may impact circulation include adding signs and “pedestrian safe guards” at Berry Street and Washington Street. New perimeter fencing was a listed project as well and has been completed at the time of this report. Bicyclist and pedestrian access points were not impacted by the fencing project.



NVTA Napa Countywide Pedestrian Plan (2016):
 Several improvements around the school site are proposed in the Napa Countywide Pedestrian Plan. The plan proposes Complete Streets enhancements on Washington Street from Lincoln Avenue to North Oak Street, and crosswalk enhancements at Gerard Street and Lincoln Avenue. Berry Street at Cedar Street is recommended for crosswalk enhancements. Lincoln Avenue has several proposed projects, including crosswalk enhancements at several intersections, traffic-calming, potential Rectangular Rapid Flashing Beacons at Cedar Street, and a roundabout feasibility study at Foothill Boulevard.

Caltrans District 4 (2018):
 Caltrans recently replaced the Napa River Bridge along SR 29/Lincoln Avenue just north of Cedar Street. The Caltrans District 4 Bike Plan recommends installing Class II bike lanes along the length of Lincoln Avenue, constructing an extension of the Vine Trail Class I path from Calistoga to the Sonoma County line, and improving the intersection of SR 29 and Larkmead Lane, possibly using Rectangular Rapid Flashing Beacons.

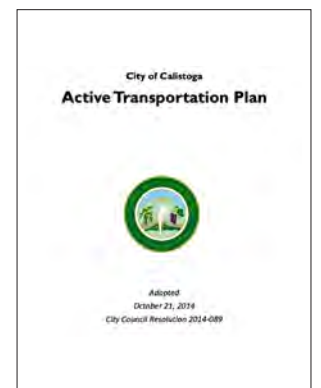


NVTA Napa Valley Countywide Transportation Plan: Advancing Mobility 2045 (2021):
 The NVTA Countywide Transportation Plan is a long-range plan of countywide transportation priorities that provides a direction for the four- to five-year plan while considering a 25-year planning horizon. This plan is part of the regional planning process for the Regional Transportation Plan by the Metropolitan Transportation Commission. There are 17 projects by the City of Calistoga listed in the Plan – those most relevant to the school include Complete Streets and utility enhancements along Washington Street, pavement and utility work on Cedar Street, and signalization changes at the SR 29 and Washington Street intersection. There are no major NVTA projects that impact the school zone.



Calistoga General Plan (2003):
 The Calistoga General Plan was last comprehensively updated in 2003, though several elements have been individually updated in more recent years. Its Vision Statement includes the goal that “Calistoga will remain a walkable, small town, made up of a vibrant, eclectic main street set within pedestrian-oriented neighborhoods.” The Circulation Element, last updated in 2014, states the City’s commitment to “Complete Streets” and includes sections on the vehicular circulation system, transit, the bicycle network, and pedestrian facilities. One of the several modifications to the Street Network that is listed is the installation of a dedicated left-turn pocket and acceleration lane on southbound SR 128 at Berry Street.

Calistoga Active Transportation Plan (2014):
 The Calistoga Active Transportation Plan is “intended to guide and influence transportation improvements for both bicyclists and pedestrians” through needs assessments, physical and programmatic improvements, funding eligibility, and cooperation between entities for planning purposes. The plan is consistent with the City of Calistoga General Plan and the City of Calistoga 2012 Bicycle Transportation Plan; however, the Plan’s maps of proposed bicycle and pedestrian networks does not match those in the Countywide Pedestrian and Bicycle Plans (see above). The Plan’s “Next Steps” section recommends the City work with the County, NCTPA, Caltrans, and other local stakeholder groups to implement projects identified in the Plan.



WALK AUDIT

Date: 2/7/2020
Day of the Week: Friday

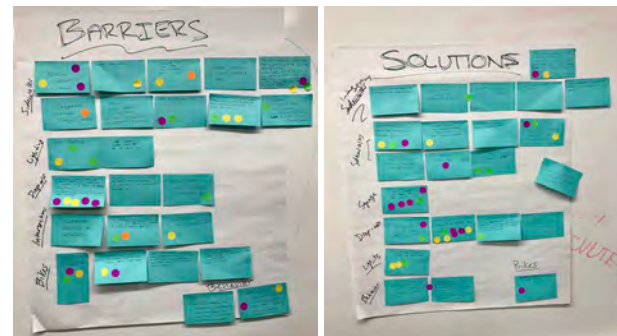
Meeting Time: 8:00am
Weather: Sunny and Cool

METHODOLOGY

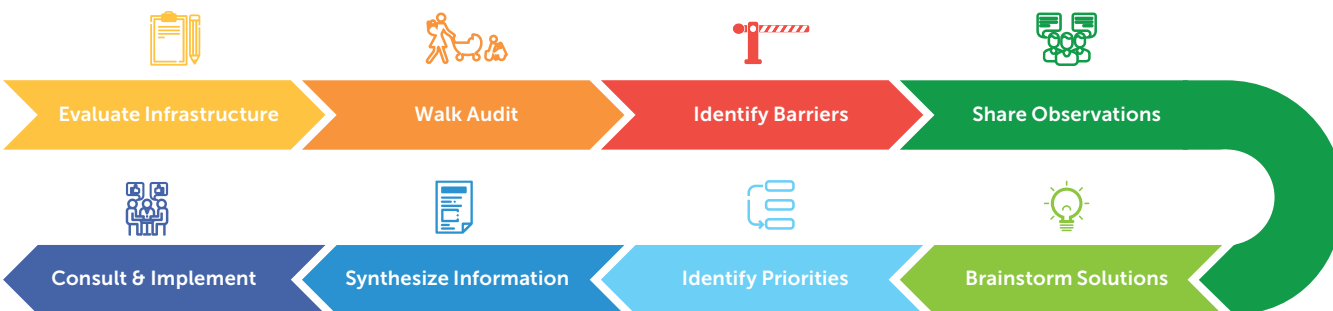
The Community Walk Audit brought school stakeholders together to observe existing conditions, identify barriers to students safely walking or biking, and brainstorm solutions. The Walk Audit team consisted of five parents, two grandparents, the school's Vice Principal, three city staff members, two community members, and a city partner. The group met and discussed the SRTS program and the process and purpose of the Walk Audit. The team then split up into two groups. Both groups walked to the front of the school on Berry Street. One group walked east on Berry Street and north on Washington Street. The other group walked west on Berry Street and north on Cedar Street. Throughout the walk, the groups identified major safety issues and shared their experiences traveling to and from the school.



The groups returned to the school to discuss their observations, map issue areas, and record and prioritize the major barriers identified during the exercise.



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



WALK AUDIT FINDINGS

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

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

Stakeholder-Identified Barriers:

DESCRIPTION	LOCATION	VOTE SCORE
Limited/lack of clear drop-off area	School site area (Berry Street and Cedar Street)	9
Inadequate street lighting	School site area (Berry Street)	6
No bike lanes	Washington Street	5
Crossing outside of a crosswalk	Cedar Street between Berry Street and Silver Street	4
Trip hazard – sidewalk/curb grade separation	Berry Street, near front of school	4
Narrow sidewalk and large meridian	Washington Street between Berry Street and Fourth Street	4
Narrow sidewalks	Washington Street	4
Narrow sidewalks	Cedar Street	3
Obstructed sidewalk	Berry Street	3
Unsafe pedestrian behavior (crossing outside of a crosswalk)	Washington Street between Third/Fourth Street	3
Bike lane difficult to identify	Berry Street	3
Narrow sidewalks	School site area	2
Sidewalk trip/slip hazard	Fair Way between Lake and 4th Street	2
Unsafe intersection (curb far set back)	Washington and 3rd Street	2
Obscured speed limit sign	Washington Street at 4th Street	1
Narrow sidewalk	Berry Street, in front of school	1
Missing sidewalk and no crosswalk	Silver Street	1
Sidewalk trip/slip hazard	Berry Street	1
Inadequate crosswalks	School site area	1
Bicyclist/pedestrian conflicts	School area (Berry Street)	1

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

Stakeholder-Identified Treatments:

DESCRIPTION	BARRIER ADDRESSED	LOCATION	PRIORITY
Widen sidewalk	Narrow sidewalk	Washington Street	11
Paint curbs to indicate drop-off zone	Limited/lack of clear drop-off area	Berry Street	11
School staff enforcement of drop-off zone	Limited/lack of clear drop-off area	School site	8
Add Bike Boulevard signage	Bike facility not apparent	Berry Street	6
High volume sidewalk	Narrow sidewalk	Berry Street (in front of school)	4
Add/repair street lights	Not enough lighting	Berry Street	4
Bulb outs	Motorist failure to yield	Washington and Third Street	3
Crosswalks and Rectangular Rapid Flashing Beacons	Low pedestrian visibility	Washington Street, Fourth Street, 3rd Street, Lake Street	3
Convert vegetation buffer to pedestrian/bicyclist facility	No bike facilities; narrow sidewalk	Cedar Street	3
High visibility crosswalks at school entrances	Low-visibility crosswalks/not enough crosswalks	Berry Street and Cedar Street	2
Convert vegetation buffer to pedestrian/bicyclist facility	No bike lanes; narrow sidewalk	Washington Street	2
Curb designation, signage, and curb paint	Limited/lack of clear drop-off area; crossing outside of a crosswalk	Cedar Street (both sides) from Berry Street to the staff parking lot	2
Parent and student pedestrian education	Crossing outside of a crosswalk	General	2
Protected or buffered bike lanes	No bike lanes	Washington Street and Cedar Street	2
Request snack carts to relocate to prevent unsafe pedestrian behavior	Crossing outside of a crosswalk	School site area	2
Use school horseshoe for drop-off	Limited/lack of clear drop-off area	School site	1
Widen crosswalk	Crosswalk does not accommodate high volumes of pedestrians	Washington and Third Street	1
Convert nearby streets to one-way to regulate circulation	Congestion, especially at intersections	Washington Street, North Oak Street, Fair Way	1

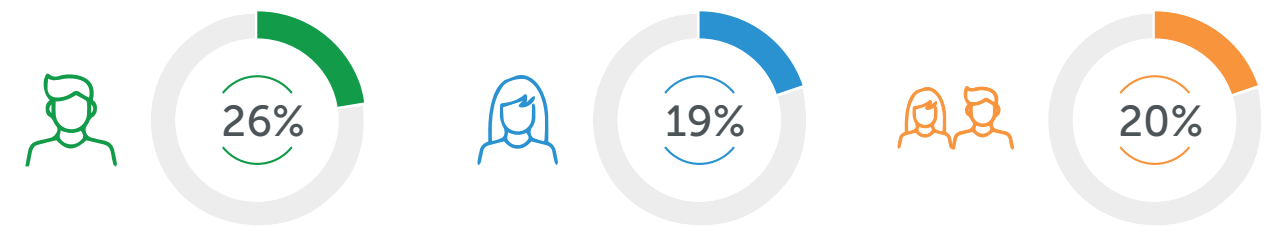
Figure 12: Walk Audit Ratings - Dot Exercise (Solutions)

CONTEXT FOR RECOMMENDATIONS

IMPACT OF BARRIERS/HAZARDS ON COMMUNITY

Barriers to safe walking and bicycling, both infrastructure and non-infrastructure, can greatly discourage communities from engaging in active transportation. The quality, accessibility, and connectivity of bicyclist and pedestrian travel networks strongly influence the rates of walking and bicycling as a mode of daily transport¹. 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 wellness². 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.



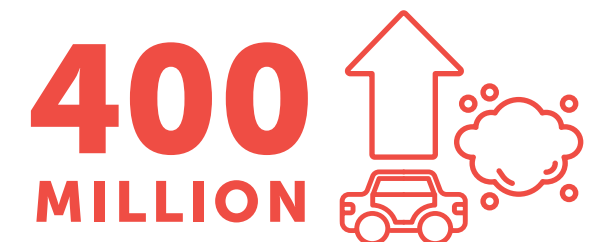
However, only about **26% of men**, **19% of women**, and **20% of adolescents** are meeting the aerobic and muscle-strengthening guidelines developed by the Department of Health. Increased walking and biking to school can help boost that percentage by incorporating physical activity into one's daily 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 2017³**.



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

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



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

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

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



RECOMMENDATIONS #CI-003, CI-009, AND CI-011: IMPROVED BICYCLE FACILITIES ON SURROUNDING STREETS

Narrative – A common barrier observed by Walk Audit participants was that significant streets around the school either did not have bicycle facilities or had bicycle facilities that were confusing. Walk Audit participants noted that Washington Street did not have bike lanes and that the Berry Street and Cedar Street facilities were difficult to understand because they are marked only by "Bike Route" signage and are not marked on the street. This was particularly challenging on Berry Street near Washington Street, where the roadway shoulder is mistaken for a bike lane that disappears in front of the school. All of these streets are designated as Class III bike routes in the Napa Countywide Bicycle Plan, meaning they are only marked by small signs at the beginning of the block for each street. These facilities are challenging for young children or beginning bike riders to utilize, as they do not specify where to ride on the road and can be missed by drivers, decreasing awareness of bicyclists. While education programs (see Recommendation #CP-002) can help equip students to identify and understand bicycle facilities, changes in infrastructure can help promote understanding of bicycle facilities communitywide.



Bike route signs on Berry Street (left), Washington Street (right), and Cedar Street (below) are the only signs of bike facilities on these streets around the school.

IDENTIFIED BARRIERS

- **Bicycle facilities missing or unclear to road users** – Washington Street, Berry Street, and Cedar Street were all identified by Walk Audit participants as lacking clear, defined bicycle facilities.

RECOMMENDATIONS

- **Class III bicycle boulevards** – Washington Street (CI-011) and Cedar Street (CI-009) should be upgraded to Class III bicycle boulevards with sharrows and more prominent signage in order to foster greater awareness of bicycles traveling around the school site and increase rider sense of safety.
- **CI-003 Berry Street bike facilities** – Class IV protected bike lanes should be installed adjacent to the red curbs on both sides of Berry Street from Washington Street to the front of the school, as the existing wide shoulders already provide ample space for this facility. The rest of the corridor should be upgraded to a Class III bicycle boulevard with sharrows and more prominent signage to create more apparent bicycle facilities around the school site. This recommendation is further supported by the parent perception research conducted by EMC as part of this project.

While comments at the Walk Audit showed some support for upgrading these streets to other bicycle facilities, such as Class I shared-use paths, Class II buffered bike lanes, or Class IV protected bike lanes, with the exception of a small segment of Berry Street, we do not recommend these facilities at this time.

The low-traffic, low-speed, residential nature of these streets, along with limited Right of Way, makes Class III bicycle boulevards a more appropriate and achievable approach. The Class IV recommended segment of Berry Street sees heavy traffic during pick-up and drop-off; consequently, a more protected facility is appropriate for this segment. However, future road redesign projects should integrate parents' desire for separation between student bicyclists and vehicles.



RECOMMENDATIONS #CI-022 AND CI-023: BERRY STREET AND CEDAR STREET INTERSECTION PEDESTRIAN VISIBILITY

Narrative – Walk Audit participants noted that pedestrian visibility was low at the Berry Street and Cedar Street intersection, largely due to shading by tree canopy. This intersection is highly travelled, as it is immediately adjacent to the school, and is affected by significant tree canopy and high nearby on-street parking occupancy, both of which can decrease visibility of bicyclists and pedestrians. Though the crosswalk has a high-visibility striping pattern, the paint is faded. A volunteer crossing guard is stationed at this crosswalk in the mornings and afternoons.

IDENTIFIED BARRIERS

- **Low pedestrian visibility** – Walk Audit participants identified low pedestrian visibility at the Berry Street and Cedar Street intersection due to tree canopy, nearby on-street parking, and faded paint as a barrier to students walking and biking to school.



The Berry Street and Cedar Street intersection.

RECOMMENDATIONS

- **CI-022 Repaint high-visibility crosswalks** – Repainting the existing crosswalks at Cedar Street and Berry Street with a high-visibility pattern can supplement other proposed solutions in increasing driver yielding behavior.
- **CI-023 Install curb extensions** – We recommend the installation of small curb extensions on all corners of this intersection to improve pedestrian visibility and driver yielding behavior. This will have the benefit of positioning pedestrians more directly in a driver's line-of-sight, reduce potential visibility barriers due to parked vehicles, and slowing vehicles through the intersection.



RECOMMENDATIONS #CI-014 AND CI-015: WASHINGTON STREET AND BERRY STREET INTERSECTION TRAFFIC-CALMING

Narrative – The Washington Street and Berry Street intersection was identified as a significant barrier for student bicyclists and pedestrians. This intersection is highly utilized by motorists, pedestrians, and bicyclists accessing the school, as it is adjacent to the school site. Long crossing distances and wide curb radii allow motorists to drive through this intersection quickly and make fast turning movements. Despite the presence of a crossing guard in the morning and afternoon, there were also reports from Walk Audit participants of motorists failing to yield to pedestrians in this intersection.



The Washington Street and Berry Street intersection.

IDENTIFIED BARRIERS

- **Long crossing distances** – Long crossing distances across the intersection was identified as a barrier for student pedestrians and bicyclists crossing this intersection, as it increases the amount of time vulnerable users spend in the roadway.
- **Wide curb radii** – Wide curb radii were identified as barriers to students walking and biking, as they allow higher vehicle speed turning movements through the intersection.
- **Motorists failing to yield to pedestrians** – Walk Audit participants identified the failure of drivers to yield to pedestrians despite the presence of marked crosswalks and a crossing guard as a safety concern.

RECOMMENDATIONS

- **CI-014 High-visibility crosswalks** – Upgrading the existing crosswalks at Washington Street and Berry Street to high-visibility crosswalks can supplement other proposed solutions in increasing driver yielding behavior.
- **CI-015 Curb extensions** - We propose installation of a curb extension on the northeast corner of the intersection of Washington Street and Berry Street to slow vehicle speeds, shorten crossing distances, and improve yielding of motorists to pedestrians.



RECOMMENDATIONS #CI-005: MIDBLOCK CROSSWALK ON BERRY STREET

Narrative – During Walk Audit discussions, participants identified the lack of a midblock crosswalk on Berry Street that leads directly to the school’s entrance as a barrier to students walking and biking to school. Students, including those who were dropped off from motor vehicles, have been reported to cross Berry Street directly in front of the school’s entrance between Washington Street and Cedar Street. While crossing outside of a crosswalk is also addressed by a programmatic recommendation (see recommendation #CP-002), a change in infrastructure prioritizes the safety of student pedestrians over vehicle speeds, responds to existing pedestrian desire paths (typically the shortest distance to the destination), and makes the school environment more welcoming to student pedestrians.

IDENTIFIED BARRIERS

- **Lack of direct crosswalk** – Walk Audit participants identified the lack of a direct crosswalk on Berry Street to the school’s entrance to be a barrier for students walking to school, especially given the high volume of vehicles travelling along Berry Street during pick-up and drop-off.

RECOMMENDATIONS

- **Midblock crosswalk with Rectangular Rapid Flashing Beacons** – We recommend the installation of a midblock crosswalk on Berry Street that provides direct access to the school’s entrance to prioritize safety and convenience of student pedestrians and bicyclists while meeting existing behavior. We propose that this midblock crosswalk have a high-visibility crosswalk pattern, curb extensions, and Rectangular Rapid Flashing Beacons installed to improve pedestrian visibility and motorist yielding. Parking spaces immediately adjacent to the crosswalk should be removed to ensure visibility of pedestrians waiting to cross the street.



There is no midblock crosswalk that leads to the front of the school on Berry Street.



RECOMMENDATION #CI-024: LAKE STREET AND WASHINGTON STREET INTERSECTION TRAFFIC CALMING

Narrative – Large curb radii at the Lake Street and Washington Street intersection were identified as safety barriers to student bicyclists and pedestrians. These large curb radii allow motorists to turn quickly through the intersection and create a long crossing distance across Lake Street. At the time of the Walk Audit, there were also concerns about speeding on Washington Street, especially through this intersection, which was not controlled on Washington Street. However, in June 2021, Calistoga City Council approved the installation of stop signs on Washington Street at the Lake Street intersection, which may help address speeding concerns through the intersection.

IDENTIFIED BARRIERS

- **Large curb radii** – Large curb radii were identified by the SRTS team as barriers at the intersection of Lake Street and Washington Street, as they allow motorists to make fast right turns through the intersection and increase pedestrian crossing distance.

RECOMMENDATIONS

- **Curb extensions** – We recommend installing curb extensions on all curbs facing crosswalks. This recommendation will complement installation of stop signs by improving motorist yielding behavior at the intersection, discouraging unsafe acceleration through the intersection, improving pedestrian visibility, and shortening pedestrian crossing distances.



The Lake Street and Washington Street intersection.



RECOMMENDATION #CP-002: ACTIVE TRANSPORTATION EDUCATION AND PARENT INVOLVEMENT

Narrative – During the Walk Audit, participants observed and discussed several unpredictable bicyclist and pedestrian behaviors by students, including crossing midblock outside of crosswalks, riding bikes against traffic, and not stopping at stop signs while on bikes. This behavior is hazardous for students walking and biking to school, even when it is done unknowingly, as the 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 street safety within the school system can help raise awareness of rules of the road and encourage safe walking and biking.

IDENTIFIED BARRIERS

- **Unpredictable bicyclist and pedestrian behavior** – Unpredictable bicyclist and pedestrian behavior by students, such as crossing outside of crosswalk, not stopping at stop signs while biking, and biking against traffic, were identified by Walk Audit participants as safety barriers.

RECOMMENDATIONS

- **Increased bicycle and pedestrian education** – We recommend annual bicycle and pedestrian safety education be provided annually to all students to ensure that all students learn safe pedestrian and bicyclist practices. Such programs are available through the Napa County Safe Routes to School program.
- **Increased parent involvement** – We recommend that the school encourage increased parent involvement, whether it is through biking with their child to school, walking their student to and across the nearest crosswalk, or volunteering for bicycle safety education programs at the school. Increased visibility of these good-practice roadway behaviors will help children naturally learn and understand the rules of the road.



Bike rodeos, such as the one photographed above from Calistoga Safety Day 2018, are one form of bike education that schools can provide to their students.



RECOMMENDATION #CP-007: ACTIVE TRANSPORTATION ENCOURAGEMENT PROGRAMMING

Narrative – Calistoga Elementary School regularly participates in annual encouragement events, namely Bike to School Day. While annual programming can remind and excite students about the option of using active transportation to travel to school, the infrequency of these events makes them less effective at encouraging students to adopt active transportation as an everyday form of transportation. Increasing the frequency of encouragement events, in conjunction with infrastructure improvements, can help increase mode shift towards active transportation.

IDENTIFIED BARRIERS

- **Vehicle-oriented transportation culture** – Despite Calistoga Elementary School’s consistent participation in annual countywide encouragement events, a high percentage of students still travel to and from school via family vehicle on an average school day (Figure 1).



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).

RECOMMENDATIONS

- **Implement new active transportation encouragement programs** – We recommend that the school implement new active transportation encouragement programs that focus on increasing consistent mode shift towards walking and biking while highlighting the benefits of active transportation. Age-appropriate programs include, but are not limited to, Walk and Roll Wednesdays, bike trains, and walking school buses. Programs should begin on a monthly basis with the goal of increasing frequency over time.

RECOMMENDATIONS #CI-004, CI-008, CI-012, CI-016: WIDENED SIDEWALKS AROUND THE SCHOOL ZONE

Narrative – Another barrier identified by Walk Audit participants was the narrow sidewalks on streets around the school. Narrow sidewalks cannot accommodate high volumes of student pedestrians and can lead to students walking in the street when there is not enough space. Sidewalk gaps on Cedar Street were also considered a barrier to students walking, as these gaps force students to walk in the roadway. prioritizes the safety of student pedestrians over vehicle speeds, responds to existing pedestrian desire paths, and makes the school environment more welcoming to student pedestrians.

IDENTIFIED BARRIERS

- **Narrow sidewalks** – Berry Street west of Cedar Street and in front of the school, Cedar Street around the school zone, Washington Street from Lake Street to Berry Street, and Fair Way from Lake Street to Lincoln Avenue were all identified as areas with narrow sidewalks.
- **Sidewalk gaps** – There are sidewalk gaps in Cedar Street’s northbound sidewalk from Silver Street to Gold Street and south of South Oak Street, which forces pedestrians to walk in the roadway



Narrow sidewalks on Cedar Street (above) and Washington Street (below).

RECOMMENDATIONS

- **CI-004, CI-008, CI-012, CI-016 Widen sidewalks** – Widening the sidewalks on the identified roads were among the top-ranked solutions discussed by Walk Audit participants and will better high volumes of student pedestrians walking to and from school. On Washington Street and Cedar Street, the large vegetation buffers can be downsized to provide more sidewalk space.
- **CI-008 Fill sidewalk gaps** – Filling the sidewalk gaps on Cedar Street will provide a cohesive route to the school and reduce occurrences of student pedestrians walking in the road.



RECOMMENDATIONS #CI-006, CI-010, AND CP-001: CLARIFY DROP-OFF ZONE

Narrative – The top barrier identified by Walk Audit participants was the lack of a clear drop-off/pick-up area around the school. Without clear loading zones, motorists do not have a designated area to circulate through, making the school zone more chaotic during pick-up and drop-off times and reducing parent perceptions of safety for student bicyclists and pedestrians in the school zone.

IDENTIFIED BARRIERS

- **Lack of a clear drop-off area** – Walk Audit participants identified the absence of a clear loading zone as the top barrier to students walking and biking to school, as it creates a more unpredictable school zone during school arrival and dismissal times.

RECOMMENDATIONS

- **CI-006 and CI-010 Designate loading zones** – We recommend that appropriate curb space on Cedar Street and Berry Street be designated to act as loading zones through signage and yellow curbs. Utilizing curb paint to designate loading zones on Cedar and Berry was suggested by Walk Audit participants, with the loading zone on Berry being the second-highest ranked stakeholder-identified solution.
- **CP-001 Circulation policy** – We propose that the school develop a comprehensive circulation policy that focuses on separating the modes of transportation and regularly distribute the policy to families.

RECOMMENDATIONS #CI-002, CI-007, CI-013, CI-017, CI-032, AND CI-060: PEDESTRIAN-SCALE LIGHTING

Narrative – A desire for increased lighting was another top concern of Walk Audit participants. Not enough lighting can be a significant barrier to students walking and biking, especially during the winter season when days are shorter, as it reduces visibility of pedestrians and bicyclists as well as sense of safety for active transportation users. This barrier was identified at several locations near the school site.

IDENTIFIED BARRIERS

- **Not enough lighting** – Walk Audit participants identified not enough lighting as a barrier on the following streets: Berry Street, Cedar Street, Washington Street, Myrtle Street, Fair Way, and the Cedar Street and Spring Street intersection.

RECOMMENDATIONS

- **Pedestrian-scale lighting** – We recommend that pedestrian-scale lighting be installed along the length of Berry Street (CI-002), Washington Street from Lake Street to Lincoln Avenue (CI-013), Cedar Street from South Oak Street to Lincoln Avenue (CI-007), Myrtle Street from South Oak Street to Lincoln Avenue (CI-060), Fair Way from Lake Street to Lincoln Avenue (CI-017), and at the Cedar Street and Spring Street intersection (CI-032).



Pedestrian-scale lighting already exists in the City of Calistoga at Logvy Park.

RECOMMENDATION #CI-001: LEVEL SIDEWALK ON BERRY STREET

Narrative – The sidewalk and curb on westbound Berry Street west of the school are extremely uneven, with the sidewalk being much higher than the curb, creating a trip hazard for students. This grade difference ranges along the sidewalk, reaching up to a foot in some areas. Students exiting vehicles on Berry Street or walking along Berry Street may trip on this steep grade difference and exposed concrete edge while travelling to school, resulting in potentially injury.

IDENTIFIED BARRIERS

- **Sidewalk/curb grade separation** – Walk Audit participants identified the grade separation of the Berry Street sidewalk and curb to be a safety hazard for students walking to school.

RECOMMENDATIONS

- **Level curb with sidewalk** – We recommend that the grade difference between the roadway and sidewalk be addressed, potentially by lowering the sidewalk grade to be level with the top of curb.



Displaced curb and sidewalk on westbound Berry Street.



Recommendations #CI-018 and CI-019: Fair Way Improvements

Narrative – Fair Way is a significant collector and provides an important north-south connection through Calistoga. In addition to being along routes to both the Elementary School and the Junior/Senior High School, Fair Way provides a direct route from residences to the downtown area and SR 29; consequently, it is highly-travelled by road users of all ages and travel modes. However, narrow and broken sidewalks and lack of bicycle facilities make this corridor feel unwelcoming to pedestrians and bicyclists.

IDENTIFIED BARRIERS

- **No bicycle facilities** – The lack of bicycle facilities makes Fair Way feel unwelcoming to bicyclists and fails to indicate to drivers that they should be prepared to share the road.
- **Hazardous sidewalk quality** – Broken sidewalks on the southbound side of Fair Way between 4th Street and Lake Street discourage pedestrian use and present a trip hazard.



Despite Fair Way's significant north-south connection through town, there are no bike facilities along this corridor.

RECOMMENDATIONS

- **CI-018 Class III bike boulevards** – We recommend that Class III bike boulevards be installed from Lake Street to Lincoln Avenue with sharrows, signage, and traffic-calming..
- **CI-019 Sidewalk reconstruction** – We recommend that the southbound sidewalk between 4th Street and Lake Street be reconstructed to repair damaged areas.



RECOMMENDATION #CI-028: MYRTLE STREET AND BERRY STREET CROSSWALKS

Narrative – The Myrtle Street and Berry Street intersection does not have crosswalks on any legs of the intersection. This creates a barrier for students walking and biking to school from west of the school, as this is a key intersection just one block west of the school. As this intersection is along routes between the school and SR 128 and residential areas within walking and biking distance, it has high traffic potential from all road users.

IDENTIFIED BARRIERS

- **No crosswalks** – The lack of crosswalks at the Myrtle Street and Berry Street intersection was identified as a barrier, as it reduces pedestrian visibility at a significant intersection near the school.

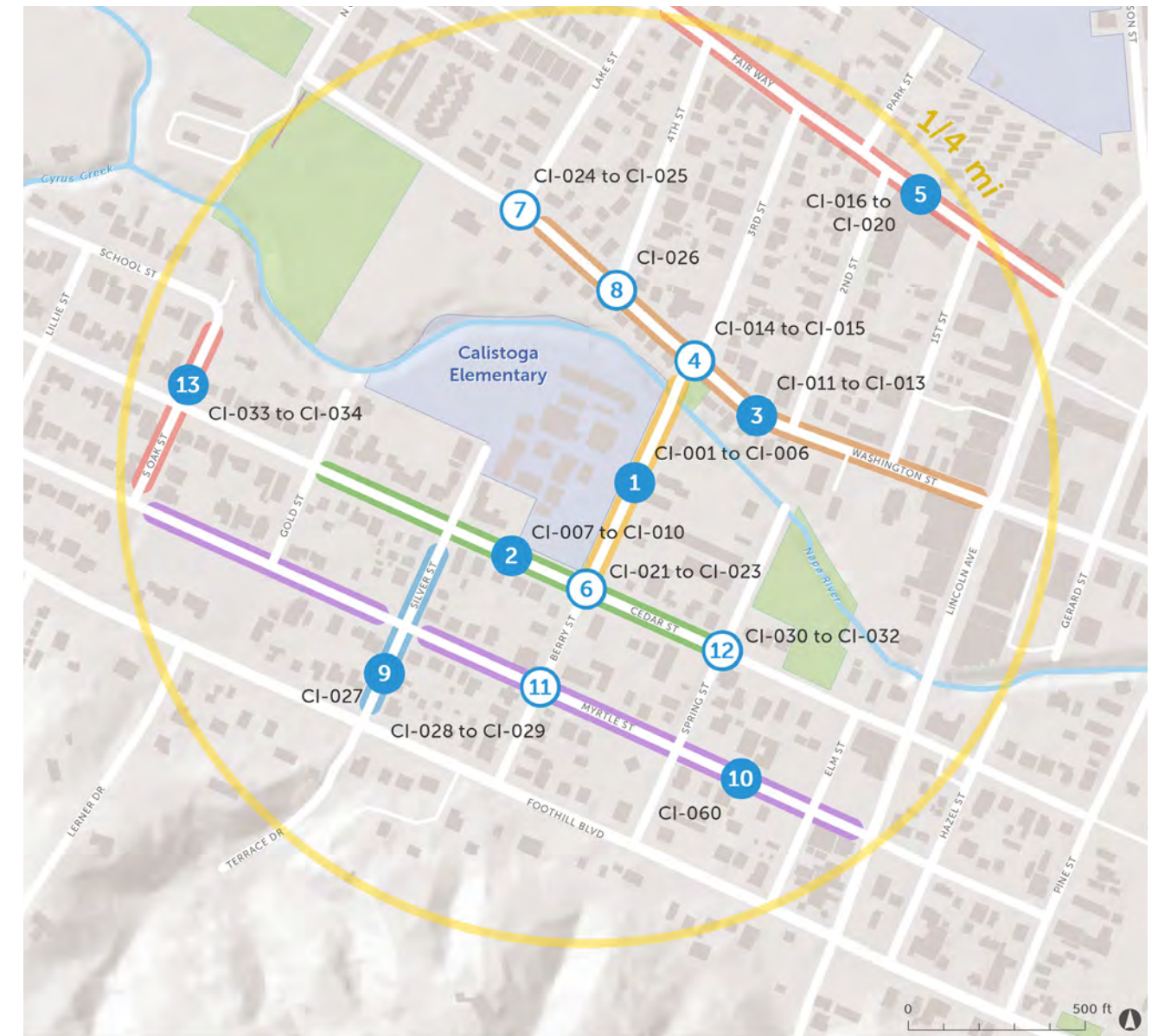


There are no crosswalks at the Berry Street and Myrtle Street intersection.

RECOMMENDATIONS

- **Crosswalks** – We recommend that crosswalks be painted on all legs of the intersection to improve pedestrian visibility and driver yielding behavior.

MAP OF RECOMMENDATIONS



● Street segment ○ Intersection

Map 5: Priority Recommendations

TABLE OF RECOMMENDATIONS

Infrastructure Improvements

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
1	Berry Street from Cedar Street to Washington Street	CI-001	Trip hazard – sidewalk/curb grade separation on west end (westbound side)	Address trip hazards, including broken sidewalk and elevation differential*	\$-\$	Medium
		CI-002	Not enough lighting	Install pedestrian-scale lighting	\$\$	Medium
		CI-003	Unclear bicycle facilities	Install Class IV protected bike lanes from Washington Street along red curbs across bridge on both sides of roadway. Upgrade the rest of the corridor to Class III bike boulevard with sharrows and more prominent signage	\$	High
		CI-004	Narrow sidewalks west of Cedar Street and in front of school area	Widen sidewalks	\$\$	Medium
		CI-005	Lack of direct crosswalk to school's entrance	Install high-visibility midblock crosswalk to front of school with curb extensions and Rectangular Rapid Flashing Beacons	\$\$	High
		CI-006	Lack of clear drop-off area	Identify clear loading zone on Berry Street and designate with yellow curbs and signage	\$	Medium
2	Cedar Street from Gold Street to Spring Street	CI-007	Not enough lighting	Install pedestrian-scale lighting from South Oak Street to Lincoln Avenue	\$\$	Medium
		CI-008	Narrow sidewalks and sidewalk gaps (Northbound: Silver Street to Gold Street, south of South Oak Street)	Fill sidewalk gaps* and widen sidewalks around the school site	\$\$	Medium
		CI-009	Unclear bicycle facilities	Upgrade to Class III bike boulevard with sharrows and more prominent signage	\$	High
		CI-010	Lack of clear drop-off area	Identify clear loading zone on Cedar Street between Silver Street and Berry Street and designate with yellow curbs and signage.	\$	Medium
3	Washington Street from Lake Street to Lincoln Avenue*	CI-011	Unclear bicycle facilities	Upgrade to Class III bike boulevard with sharrows and more prominent signage	\$\$	High
		CI-012	Narrow sidewalks	Widen sidewalks from Lake Street to Berry Street	\$\$	Medium
		CI-013	Not enough lighting	Install pedestrian-scale lighting	\$\$	Medium
4	Washington Street and Berry Street intersection*	CI-014	Long crossing distances, large curb radii on east corners, drivers not yielding to pedestrians	Upgrade to high-visibility crosswalks	\$	High
		CI-015		Install curb extensions at northeast corner (side with church)	\$	Medium

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
5	Fair Way from Lake Street to Lincoln Avenue	CI-016	Narrow sidewalks	Widen sidewalks	\$\$	Medium
		CI-017	Not enough lighting	Install pedestrian-scale lighting	\$\$	Medium
		CI-018	No bicycle facilities	Install Class III bike boulevards with sharrows, signage, and traffic-calming*	\$\$	Medium
		CI-019	Poor southbound sidewalk quality between Lake Street and 4th Street	Reconstruct southbound sidewalk between Lake Street and 4th Street*	\$	Medium
		CI-020	Missing crosswalks at 4th Street, 3rd Street, 2nd Street, and 1st Street	Paint crosswalks across 4th Street, 3rd Street, 2nd Street, and 1st Street	\$	Low
6	Berry Street and Cedar Street intersection*	CI-021	NE, SE, and SW curbs not ADA-compliant	Install ADA-compliant curbs	\$	Low
		CI-022	Low pedestrian visibility due to tree shade and vehicles parking close to crosswalk	Repaint high-visibility crosswalks	\$	Medium
		CI-023		Install small curb extensions on all corners	\$\$	High
7	Lake Street and Washington Street intersection*	CI-024	Large curb radii	Install curb extensions on all curbs facing crosswalks	\$\$	High
		CI-025	Missing crosswalk striping (portion missing across Washington Street)	Repaint crosswalk across Washington Street	\$	Low
8	4th Street and Washington Street intersection*	CI-026	Crosswalk missing across 4th Street	Paint crosswalk across 4th Street	\$	Low
9	Silver Street from Foothill Boulevard to Cedar Street	CI-027	Sidewalk gaps (Eastbound: Foothill Boulevard to Cedar Street; Westbound: Myrtle Street to Cedar Street)	Fill sidewalk gaps*	\$\$\$	Low
10	Myrtle Street from South Oak Street to Lincoln Avenue	CI-060	Not enough lighting	Install pedestrian-scale lighting	\$\$	Medium
11	Myrtle Street and Berry Street intersection	CI-028	No crosswalks	Paint crosswalks across all legs of the intersection	\$	Medium
		CI-029	NE, SE, and SW curbs not ADA-accessible	Install ADA-accessible curbs	\$	Low
12	Cedar Street and Spring Street intersection	CI-030	No crosswalks	Paint crosswalks across both sides of Spring Street	\$	Low
		CI-031	Not ADA-accessible	Install ADA-accessible curbs	\$	Low
		CI-032	Not enough lighting	Install pedestrian-scale lighting	\$	Medium
13	South Oak Street	CI-033	No crosswalks at intersection with Cedar	Paint crosswalks across both sides of South Oak Street	\$	Low
		CI-034	Missing sidewalks between Cedar Street and School Street	Fill sidewalk gaps	\$\$	Low

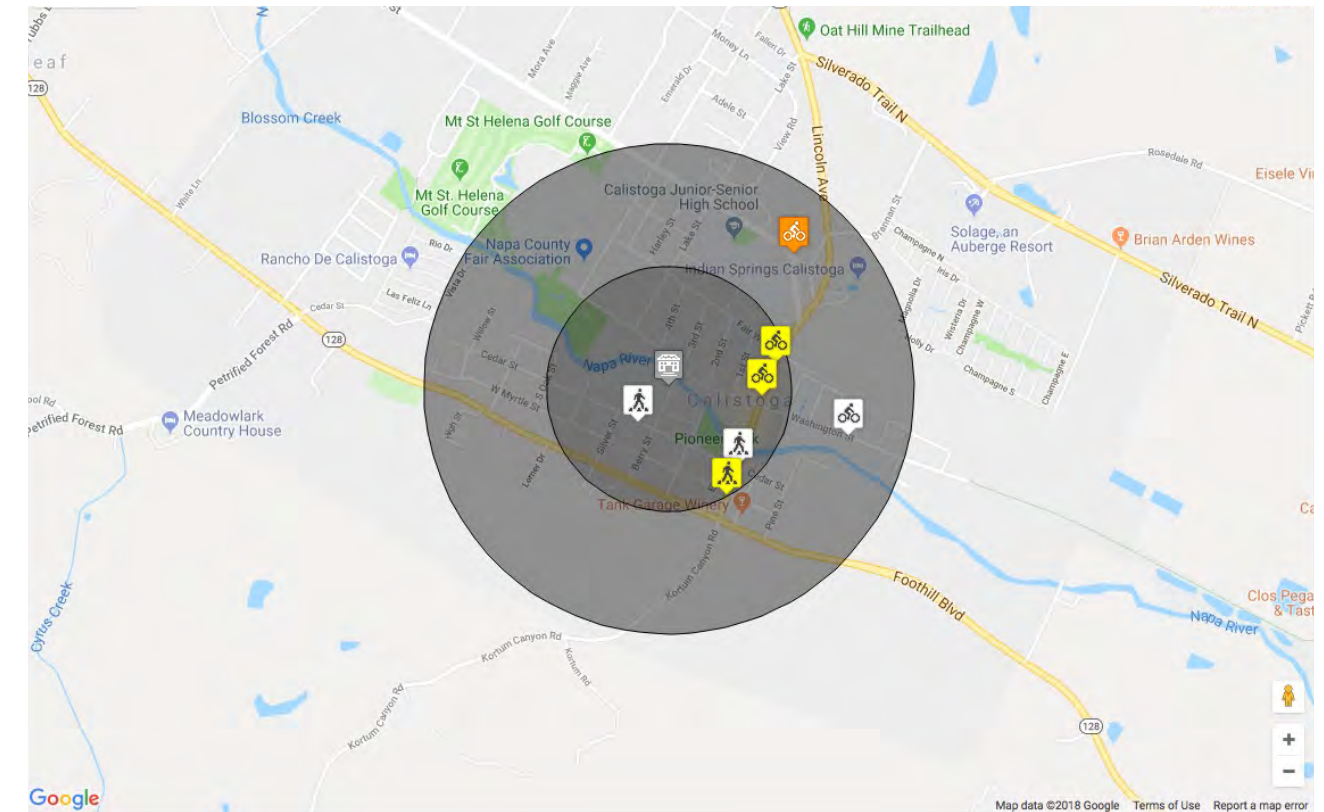
* = projects included in Napa Countywide Pedestrian Plan (2016) or Napa Countywide Bicycle Plan (2019)

TABLE OF RECOMMENDATIONS (CONTINUED)

Programmatic Improvements:

ISSUE	ID #	RECOMMENDATION	LOCATION	FREQUENCY	COST	PRIORITY
1 Limited/lack of clear drop-off area	CP-001	Develop circulation policy that emphasizes separating modes of transportation and appropriate use of drop-off zones and distribute to parents regularly.	Berry Street and Cedar Street	Develop once and update as needed. Distribute biannually or quarterly		Medium
2 Unpredictable bicyclist and pedestrian behavior	CP-002	Provide bicycle and pedestrian education programming and encourage increased parent involvement.	School site	Annually		High
3 Vehicle-oriented transportation culture	CP-007	Implement new active transportation encouragement programs (ex. Walk and Roll Wednesdays, bike trains, walking school buses)	Various	Monthly, with goal of increasing frequency over time		High

COLLISION MAP AND DATA



Map 6: Collision Map (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	3	2	3	2	5
.25-.5 mi.	0	1	0	1	0	2	2
Total	0	1	3	3	3	4	7

Summary Statistics

DATE	TIME	PRIMARY	SECONDARY	BIKE/PED
03/20/12	13:16	Fairway	Rt 29	Yes
03/06/13	17:00	Washington St	Eddy St	Yes
06/07/13	09:48	Cedar St	Berry St	Yes
10/04/17	20:17	Stevenson St	Grant St	Yes
11/29/16	08:35	Washington St	Lincoln Ave	Yes
08/01/14	07:45	Rt 29	Myrtle St	Yes
01/25/14	15:25	Cedar St	Rt 29	Yes

Figure 13: Collision Data (Source: UC Berkeley Transportation Injury Mapping System: SRTS Collision Map Viewer)



APPENDICES

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FOOTNOTES

*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.

†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.

‡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.

§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>.

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††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

‡‡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....

§§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.

***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...>

****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
1 st grade	17
2 nd grade	15
3 rd grade	20
4 th grade	15
5 th grade	15
6 th grade	14
7 th grade	12
8 th grade	9
9 th through 12 th 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 data¹ indicates that high-visibility crosswalk striping improves the visibility of crosswalks compared to standard parallel lines and can improve yielding behavior by drivers². 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.

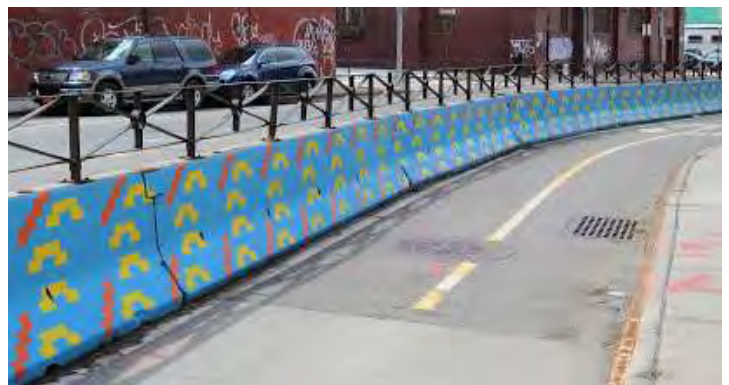


Photo credits, top to bottom: Alta Planning + Design; Real Hartford; Alta Planning + Design; Street Plans Collaborative



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**.



APPENDIX D

Bike Parking Guidance

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

ESSENTIALS OF

BIKE PARKING

Selecting and installing bicycle parking that works



apbp
Association of Pedestrian
and Bicycle Professionals
Expertise for Active
Transportation

Essentials of Bike Parking

Revision 1.0, September 2015

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Acknowledgments

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

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

Association of Pedestrian and Bicycle Professionals

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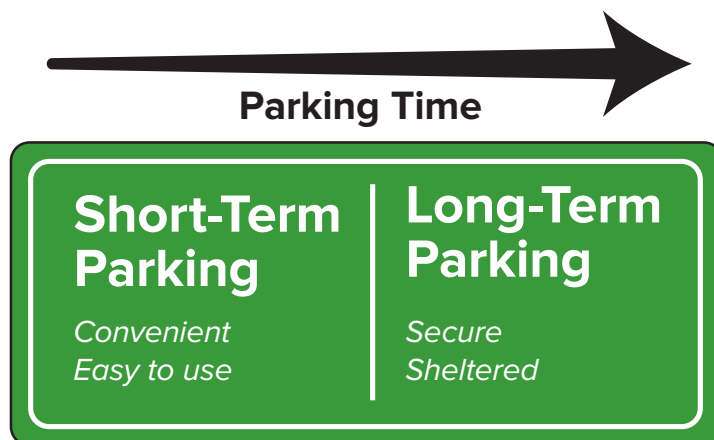
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- 02 SHORT-TERM PARKING**
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- 03 LONG-TERM PARKING**
 - Site planning
 - Special considerations for long-term parking
- 04 INSTALLATION**
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 - Installation techniques
- 05 BICYCLE RACK SELECTION**
 - Performance criteria for bike parking racks
 - Rack styles
 - Rack materials and coatings
- 10 PLACEMENT**

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.

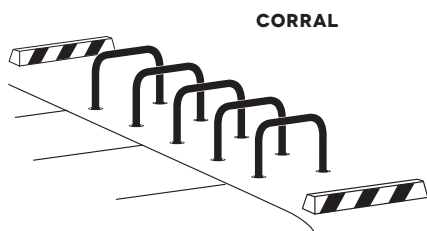
Short-term parking is designed to meet the needs of people visiting businesses and institutions, and others with similar needs—typically lasting up to two hours. Short-term users may be infrequent visitors to a location, so the parking installation needs to be readily visible and self-explanatory.



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.

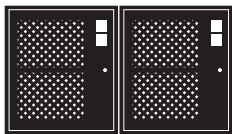
BIKE CORRALS

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](https://apbp.org)

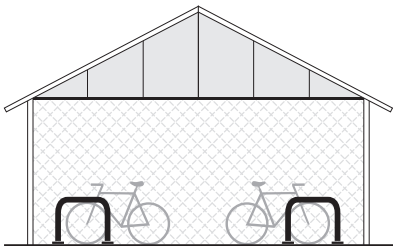
LONG-TERM PARKING

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

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



BIKE LOCKERS



SHELTERED SECURE ENCLOSURE

SITE PLANNING

Location

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

Security

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

Quantity

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

SPECIAL CONSIDERATIONS FOR LONG-TERM PARKING

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

Density

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

Bicycle design variety

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

Performance criteria

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

INSTALLATION

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

INSTALLATION SURFACE

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

INSTALLATION FASTENERS

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

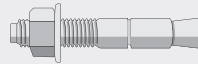
FASTENERS

CONCRETE SPIKE



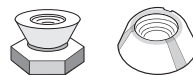
Installs quickly in concrete with a hammer. Tamper-resistant. Removal may damage concrete and/or rack.

CONCRETE WEDGE ANCHOR



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

SECURITY NUTS



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

INSTALLATION TECHNIQUES

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



BICYCLE RACK SELECTION

PERFORMANCE CRITERIA FOR BIKE PARKING RACKS

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

CRITERIA	DETAILS
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.

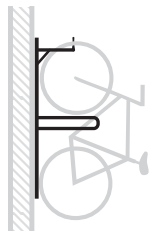
High-density rack systems can maximize the use of limited parking space, but they don't work for all users or bicycles. If installing these racks, reserve additional parking that accommodates bicycles with both wheels on the ground for users who are not able to lift a bicycle or operate a two-tier rack,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

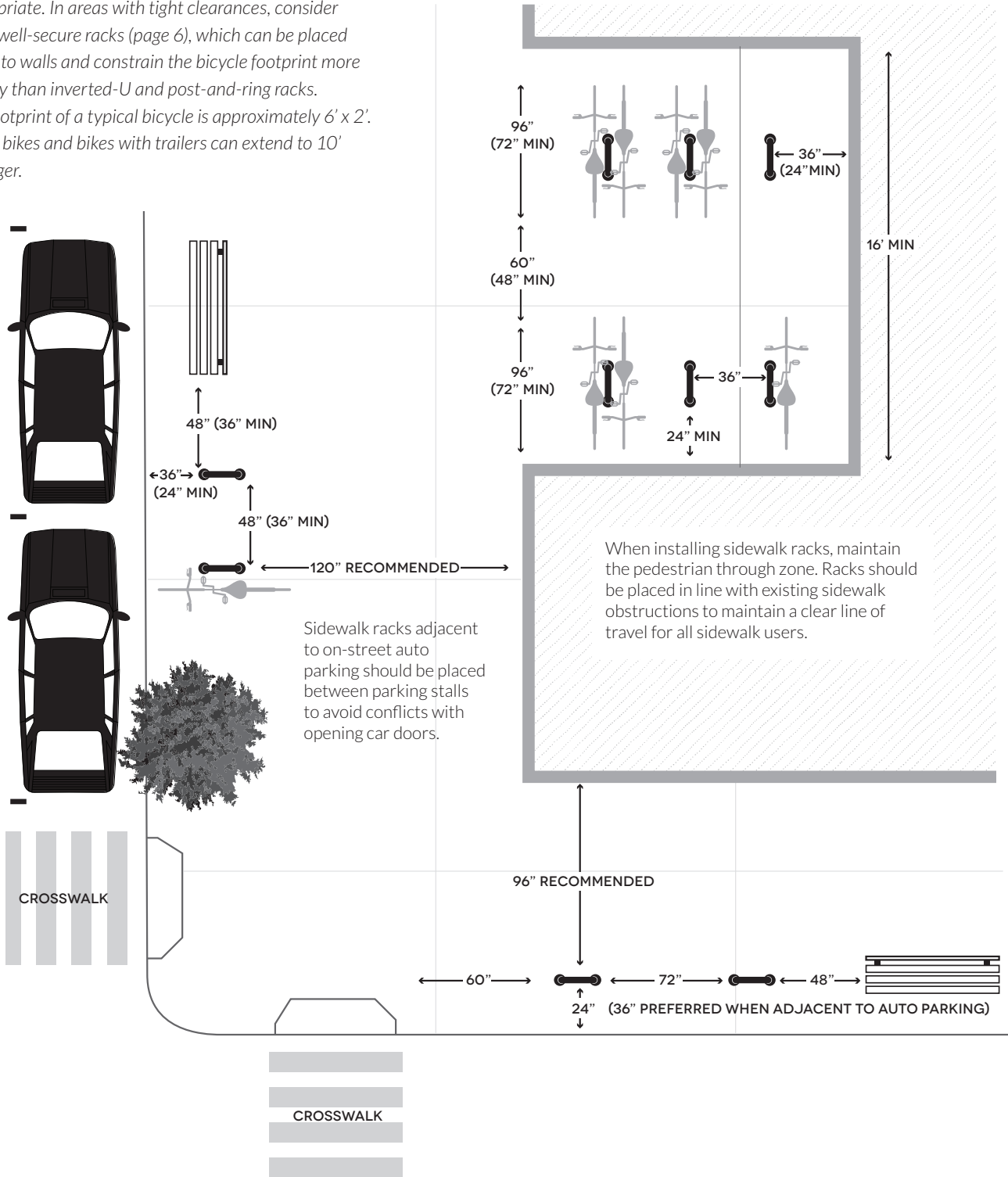
Most bicycle parking racks are made of carbon steel or stainless steel. Carbon steel requires a surface coating to resist rust while appropriate grades of stainless steel need no coating. Not all materials and coatings with the same name perform equally. Square tubing provides a security advantage as 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

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