

Walk Audit Report



SafeRoutes



Napa County

VICHY ELEMENTARY
SCHOOL

VICHY ELEMENTARY SCHOOL

3261 VICHY AVENUE
NAPA, CA

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EXECUTIVE SUMMARY

THE NAPA COUNTY SAFE ROUTES TO SCHOOL PROGRAM

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

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

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

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

WHY SAFE ROUTES TO SCHOOL?

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

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

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

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

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.

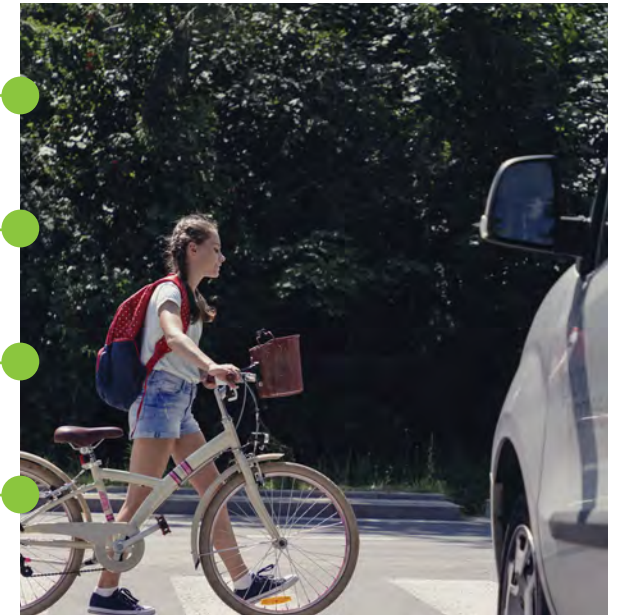
Schools and the community benefit immensely when students choose to walk or bike.

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. Enforcement statistics are not emphasized in this report, as this element needs more study and review.



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

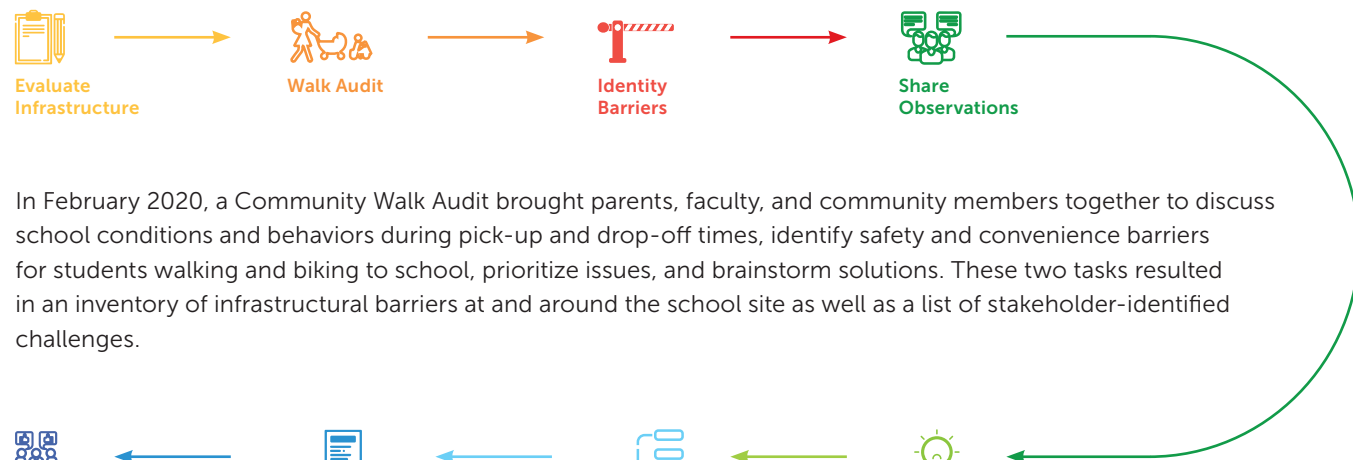
Track progress toward our shared safety goals, develop programs accordingly.

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 Vichy Elementary School, starting in the summer of 2018. Information on physical and behavioral challenges was collected in two phases. In September 2018, the SRTS team completed an initial infrastructure audit of the school site and the surrounding neighborhood within a half-mile of the school. SRTS team members walked and rode bicycles throughout the school neighborhood, taking photographs of barriers and logging them into Fulcrum, a GPS-enabled data collection smartphone app.



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



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

VICHY ELEMENTARY SCHOOL SCHOOL SUMMARY

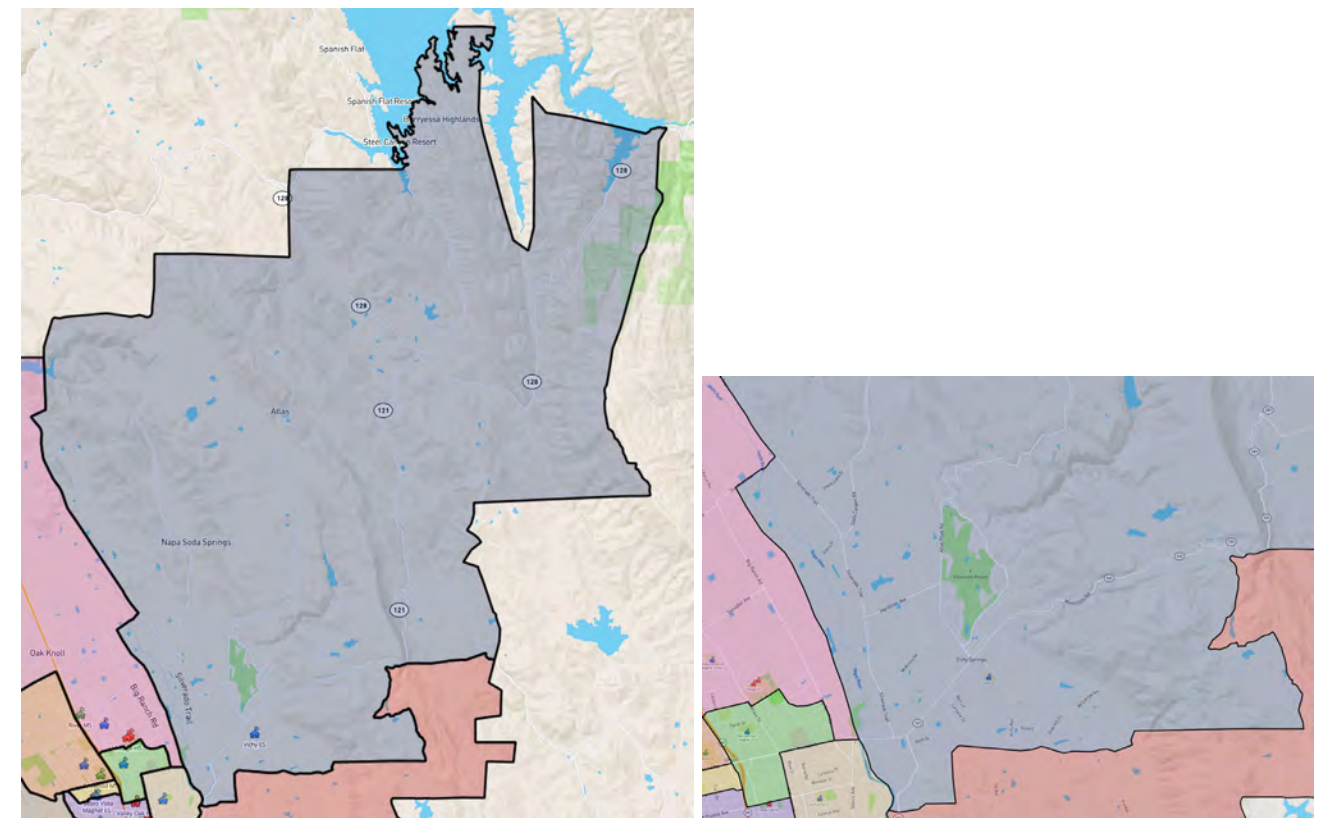
Principal	Sally Zikmund (current) Julie Jones (previous)	Grades	K-5
First Bell	8:10 AM	Enrollment	343
Last Bell	2:25 PM (1:45 K release) (1:00 PM on Wednesdays)	Street	3261 Vichy Avenue
District	Napa Valley Unified	City	Napa, CA 94558

Overall Facility Rating^j: **Good**

While NVUSD has an open enrollment policy, Vichy Elementary's default enrollment area covers the northeast portion of NVUSD, including a small northeast section of the City of Napa and a large span of unincorporated Napa County up to the Lake Berryessa area.

Through the open enrollment policy, families may apply to NVUSD for their student to attend a school other than their school of residence. Out-of-district students may also apply through the open enrollment process. This often results in students living farther away from school, making them more likely to rely on driving for transportation. At schools where open enrollment students constitute a high proportion of their enrollment, this can cause higher vehicular traffic volumes around the school during pick-up and drop-off.

According to the most recent data (2020-21 school year), 52.2% of students attending Vichy Elementary reside outside of the school's enrollment boundary.



Map 1: Enrollment boundary (shaded dark blue) of Vichy Elementary School (blue school icon)

DATA

No data is currently available regarding the number of students who walk and bike to the school at Vichy Elementary. However, the school's principal estimated that less than five students walk or bike to school.

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

Total Enrollment by Group (2019-20)

ETHNICITY	VICHY ELEMENTARY SCHOOL	DISTRICT
Black or African American	1.5%	2.1%
Asian	2.9%	2.4%
Filipino	0.9%	6.9%
Hispanic or Latino	18.1%	55.6%
Native Hawaiian or Pacific Islander	0.6%	0.2%
White	70.3%	28.4%
Two or More Races	5.8%	4.0%

EXPERIENCE

Socioeconomically Disadvantaged	19.8%	51.2%
English Learners	4.7%	20.5%
Students with Disabilities	8.2%	12.5%
Homeless	0.3%	1.1%

Figure 2: Enrollment Data by Group

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

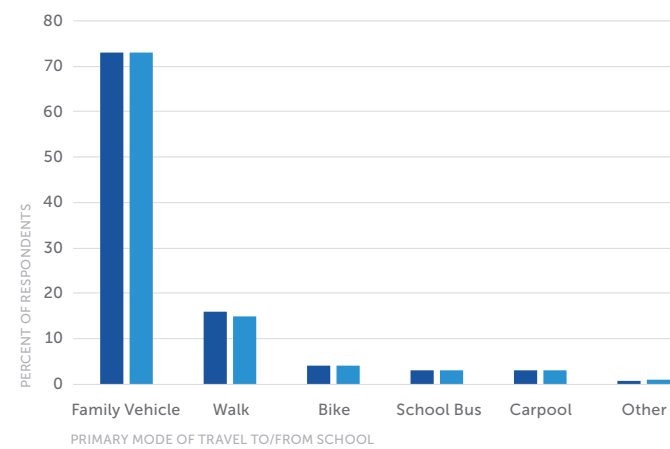


Figure 1: EMC Research Polling Results

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

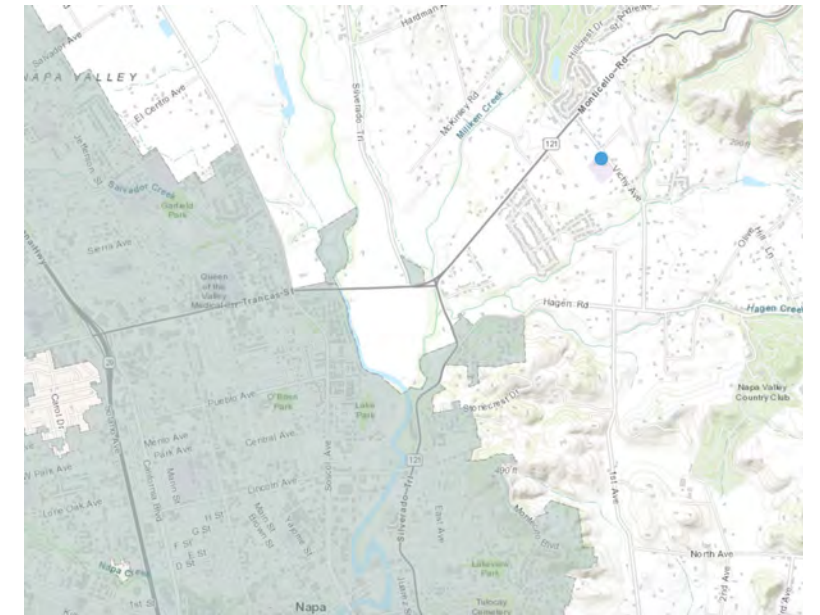
Student Enrollment by Grade Level (2019-2020)

	NUMBER OF STUDENTS
Kindergarten	55
Grade 1	55
Grade 2	61
Grade 3	54
Grade 4	68
Grade 5	50
Total	343

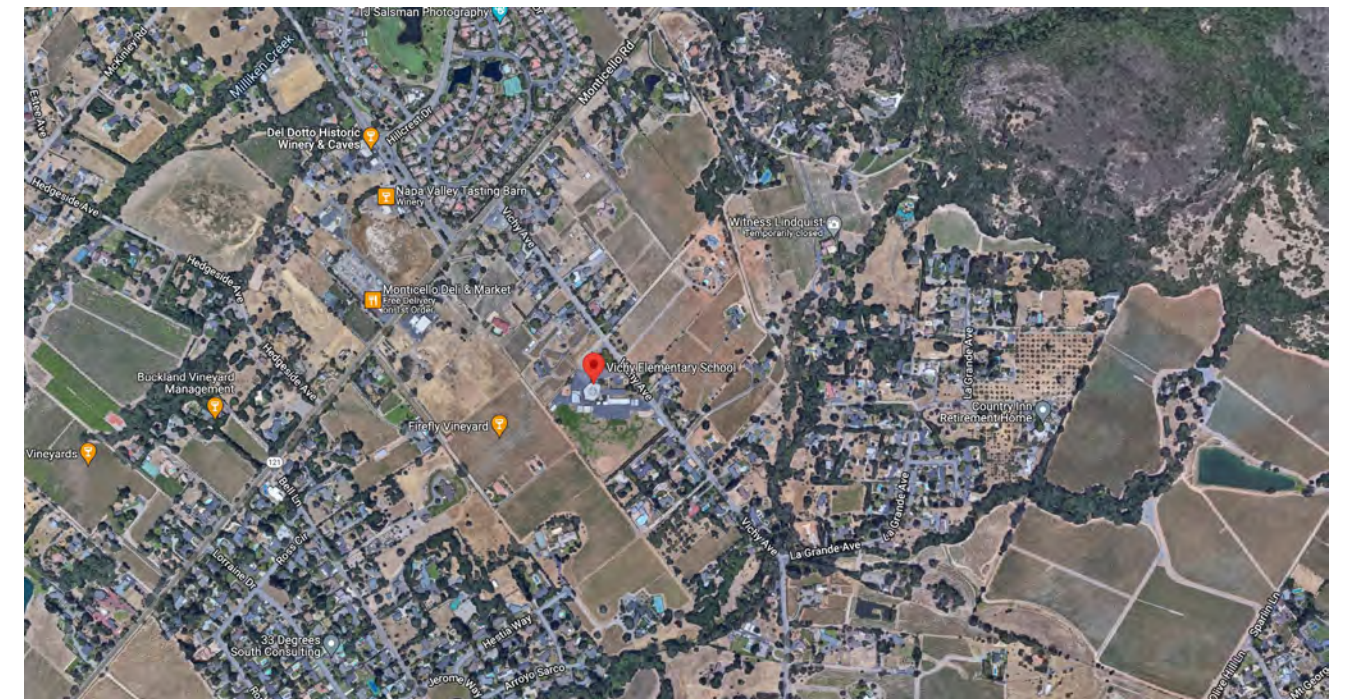
Figure 3: Enrollment Data by Grade

NEIGHBORHOOD CONTEXT

Vichy Elementary School is located on Vichy Avenue in rural unincorporated Napa County just northeast of the city of Napa. The school is only accessible via Vichy Avenue, which can be accessed to the north by Monticello Road, part of SR 121, or to the south by Hagen Road. The school is immediately surrounded by agricultural land and some scattered housing. Further from the school, there are larger patches of denser housing areas to the north, southwest, and east. There are several neighborhoods to the north, including Silverado Springs, the Grove, Oak Creek East and the Cottages. Most of the housing around the school was built in the 1950s to 1970s, though the Silverado Springs neighborhood was built in the 1990s. The streets around the school include some loops and several lollipops. Though these features can decrease vehicle volumes and speeds in neighborhoods, they also reduce walkability by limiting pedestrian access points.



Map 2: Vichy Elementary School (blue dot) is located northeast of the City of Napa (blue shading).



Vichy Elementary School is surrounded by a combination of agricultural land and residential areas.

EXISTING CONDITIONS

The Safe Routes to School Team conducted an initial evaluation of the school site and 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.

SITE CIRCULATION

Vichy Elementary School is only accessible from Vichy Avenue; as a result, all school traffic concentrates on this street during arrival and dismissal time.

The school's official loading zone is located in its main parking lot on Vichy Avenue. The loading zone consists of a yellow curb along the sidewalk in front of the school. Motorists enter through the north entrance of the parking lot, move in a one-way direction through the parking lot to the loading zone, and exit through the south exit back onto Vichy Avenue. The loading zone frequently fills up quickly, and cars queue up through the parking lot and out onto Vichy Avenue. Motorists also park in the dirt lot just north of the school's main parking lot and walk through the main parking lot to pick up or drop off their student. There are no sidewalks around the main parking lot; instead, painted crosswalks mark the pedestrian path through the parking lot to the sidewalk in front of campus. Despite signage and school policy prohibiting parking on either side of Vichy Avenue near the school, motorists also park along southbound Vichy Avenue in front of the school for pick-up/drop-off.

The school plans and manages parking and circulation. Teachers on duty help regulate traffic in the official parking lot during pick-up and drop-off and help manage student loading. Signage prohibits parking on Vichy Avenue. The school sends home a letter regarding parking lot behavior (see Figure 4). The school also provides driving safety precautions and additional parking lot safety reminders in their Parent Handbook.



School loading zone



The school parking lot and loading zone.

Limited bus service through NVUSD is available for Vichy Elementary students. Bus service makes several stops throughout the Lake Berryessa area, particularly in Steele Canyon, and some stops in the neighborhoods to the north of the school. Students who live beyond 1.25 miles walking distance from school and attend their school of residence may apply for transportation through NVUSD. Bus service through The Vine transit, operated by the Napa Valley Transportation Authority, does not serve the area within a half-mile of the school.



Motorists park along southbound Vichy Avenue during school hours despite signage prohibiting stopping.



VICHY

ELEMENTARY SCHOOL

3261 Vichy Ave, Napa, CA 94558

Ph: 707-253-3544 Fax: 707-259-8420

Julie Jones, Principal

Vichy Families,

The purpose of this letter is to remind everyone of the procedures and expectations in our parking lot. As we all know, our parking lot is a very busy place before and after school, and we need to work together to ensure the safety of our students, staff and parents.

Here are a few quick reminders of how you can keep the parking lot safe:

- PLAN on spending some time picking up your child.
- USE the crosswalks only. Do not walk through the cars. Doing so is unsafe.
- NEVER leave your car unattended unless you are in a designated parking space.
- MAKING a new lane in the middle of the 2 designated lanes is not safe and risks the safety of us all. Please stay in two lanes when exiting the parking lot.
- FOLLOW directions of teachers on duty. They are there for one reason only...safety. Inappropriate language or honking your horn is not nice and does not change the parking lot.
- REMEMBER we are in this together, and we all care about the safety of each other.

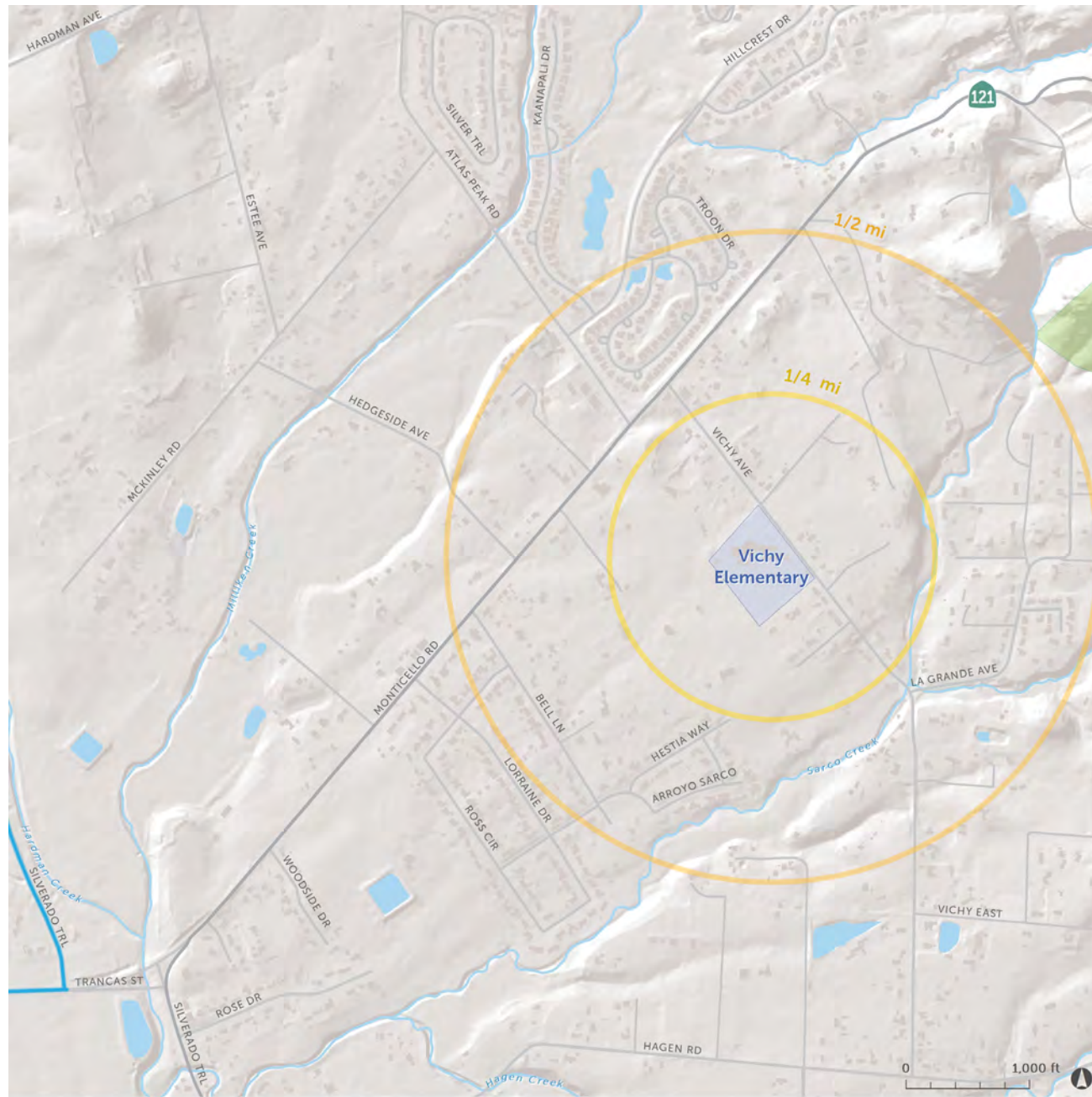
If you have any questions or concerns about these procedures, please let me know. Working together, we can ensure that our parking lot is a safe place for everyone.

Figure 4: School Parking Lot Letter

BICYCLE AND PEDESTRIAN INFRASTRUCTURE

Vichy Elementary does not provide bike parking; instead, students are instructed to lock their bike to the fence around the playground.

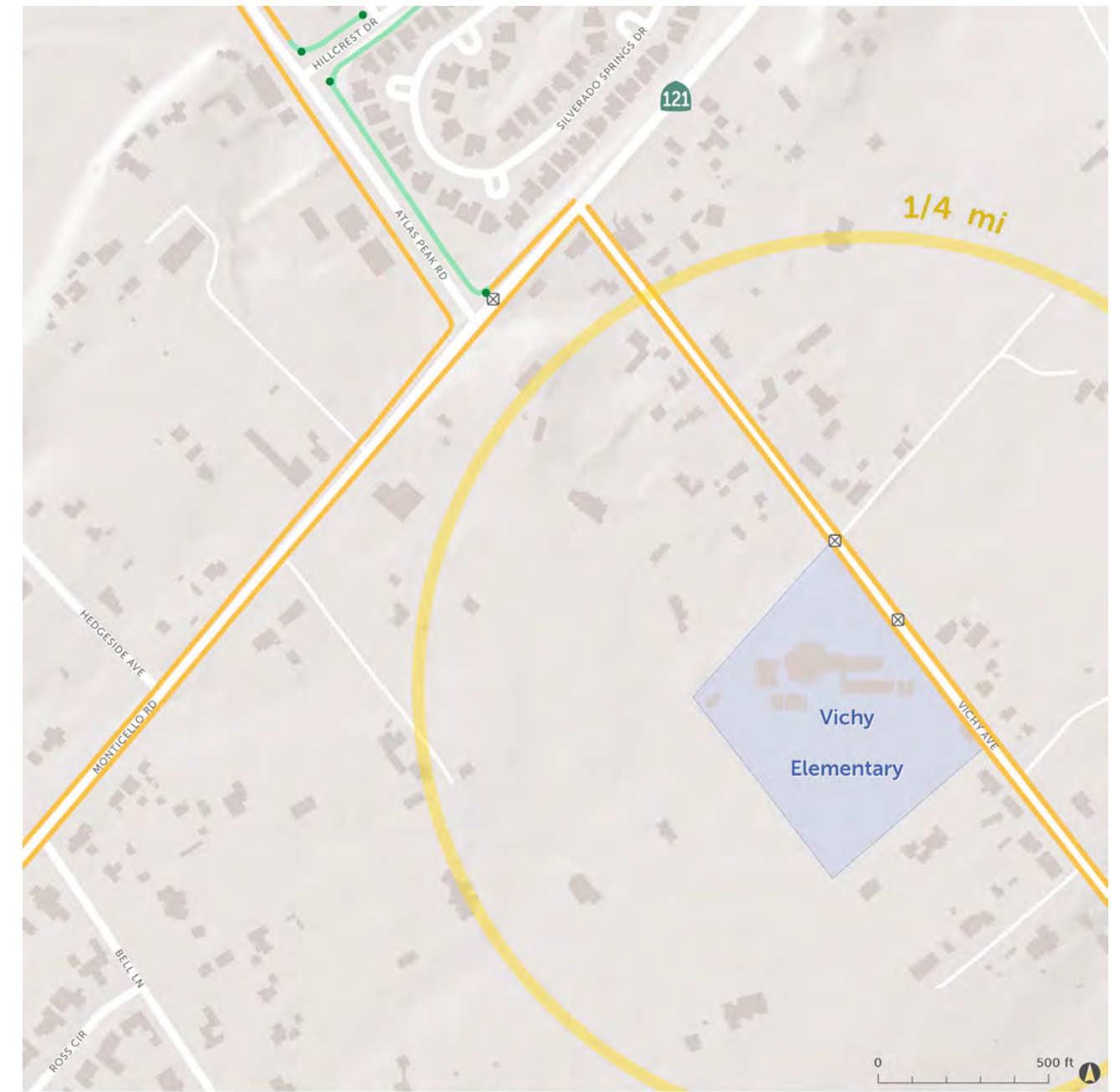
MAP OF EXISTING BICYCLE FACILITIES



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

Map 3: 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: Existing Pedestrian Facilities
(Map source: Napa Valley Transportation Authority Napa Countywide Pedestrian Plan (2016))

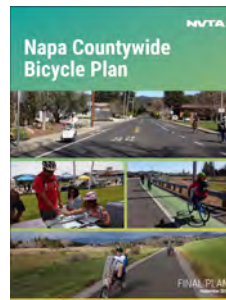
ENCOURAGEMENT AND EDUCATION PROGRAMS

Vichy Elementary School has not participated in annual countywide encouragement events such as Bike to School Day, nor has the school provided bicycle or pedestrian education to its students. However, it does provide bicycle safety instructions in its Parent Handbook:

BICYCLE SAFETY

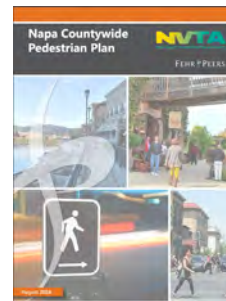
Students in the 3rd - 5th grades may ride bicycles to school. Students are responsible for the safety of their bicycles. To help prevent theft, all bicycles should be locked while school is in session. State law mandates that all children must wear a helmet when riding a bicycle. For the safety of all students, bicycles must be walked across all crosswalks and while on school grounds. Our School District Policy is that students may not ride skateboards, rollerblades, or scooters to and from school.

EXISTING PLANS



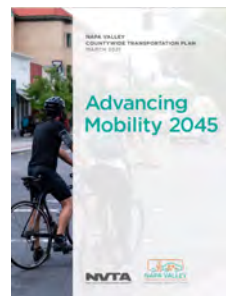
NVTA Napa Countywide Bicycle Plan (2019):

The Napa Countywide Bicycle Plan recommends some bicycle facility improvements around Vichy Elementary School. The Plan recommends Class II bicycle lanes on Monticello Road from Silverado Trail to Atlas Peak Road and a Class III bike route on Monticello Road from Atlas Peak Road to SR 128. The Plan also recommends a Class III bike route on Atlas Peak Road north of Monticello Road and Class II bicycle lanes on Vichy Avenue from Monticello Road to Hagen Road.



NVTA Napa Countywide Pedestrian Plan (2016):

The Napa Countywide Pedestrian Plan does not have any recommendations for pedestrian facility improvements around Vichy Elementary School.



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 2 projects by the County of Napa listed in the Plan; none listed impact the school area.

NVUSD Facilities Master Plan (2016):

NVUSD's Facilities Master Plan lists several projects for Vichy Elementary. These projects include installation of fencing around the school perimeter, repairing the parking lot, potentially creating a new parking lot in the dirt lot, and site ADA improvements. School perimeter fencing is planned to provide a single point of entry and wayfinding signage for each elementary school in NVUSD. These projects may impact future circulation around the school site.



Caltrans District 4 (2018):

The Caltrans District 4 Bike Plan includes corridor/shoulder improvements along SR 121 from Vichy Springs to SR 128.

WALK AUDIT

Date: 2/19/20

Day of the Week: Wednesday

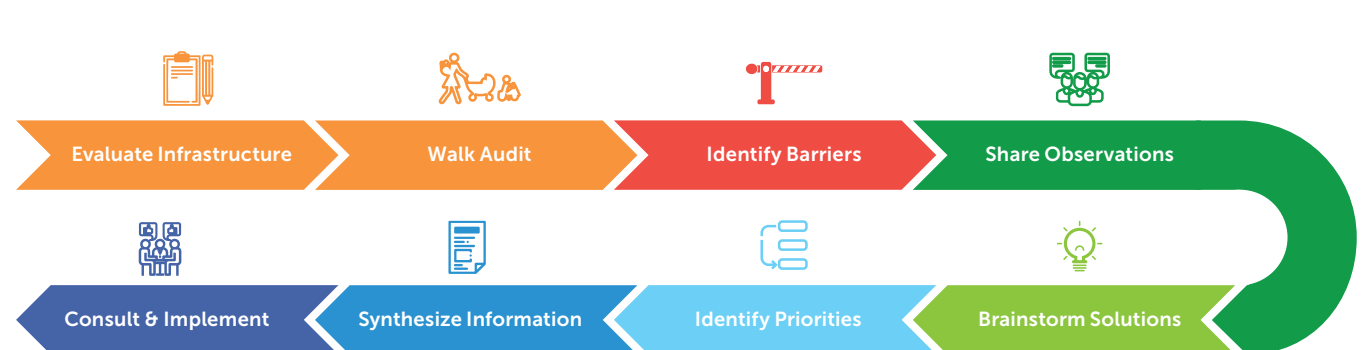
Meeting Time: 12:30 PM

Weather: Sunny and pleasant

METHODOLOGY

The Community Walk Audit brought school stakeholders together to observe existing conditions during drop-off time, identify barriers to safe walking or biking, and explore solutions. The Walk Audit team consisted of two Napa County Office of Education staff, one parent, the school's principal, and an NVUSD Board of Education trustee. The group met 30 minutes prior to the school bell for a brief presentation on the SRTS program and the process and purpose of Walk Audits. The team then walked out to the school's main parking lot, north on Vichy Avenue, and back to the front of the school. During this walk, participants observed and discussed the physical infrastructure around the school as well as the behavior of motorists, pedestrians, and bicyclists in the school site area. They also shared their own experiences traveling to and from school on foot and by car. Fifteen minutes after the bell, the team returned to the classroom to discuss their observations, map issue areas, and record and prioritize the major barriers identified during the exercise.

During the prioritization exercise, participants wrote down 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 identified by Walk Audit participants during the Walk Audit activity. The barriers listed in the following table 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 organized by Vote Score in the table 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:

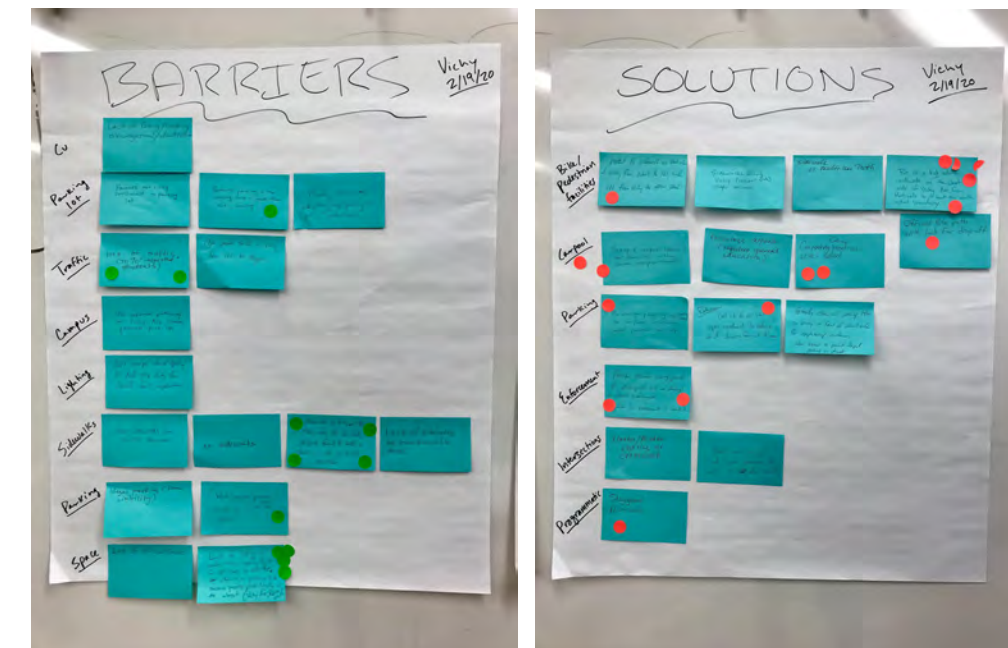
DESCRIPTION	LOCATION	VOTE SCORE
No sidewalks	Vichy Avenue	8
Lack of bike/pedestrian space/facilities	Vichy Avenue	6
No sidewalks, students forced to walk in the street or ride on narrow shoulder	121, Atlas Peak Road	5
Traffic volume	School site area	3
Parents parking in loading zone – no traffic flow	Main parking lot	2
Not enough parking; traffic backs up into the street	Main parking lot, Vichy Avenue	2
Lack of biking/walking encouragement	General	1
Parents not using crosswalk	Main parking lot	1
Difficult/unsafe pedestrian area	Main parking lot	1
Traffic speed	Vichy Ave (121 to Hagan)	1
No pedestrian pathway to Vichy Avenue	School campus	1
Inadequate lighting	Vichy Avenue to Silverado Resort neighborhoods (north)	1
Illegal parking	Vichy Avenue	1
Lack of off-road space	School site area	1

Figure 5: Walk Audit Stakeholder-Identified Barriers

Stakeholder-Identified Treatments:

DESCRIPTION	BARRIER ADDRESSED	LOCATION	PRIORITY
Install sidewalks (suggested 6' sidewalk, high-volume sidewalk, shared-use path)	No sidewalks	Vichy Avenue (west side) from the school to Monticello	5
Develop carpool system with education/incentives	Traffic volume; not enough parking, traffic backs up into the street	General	4
Install sidewalks	No sidewalks	121 from Vichy to Atlas Peak	4
Provide volunteer crossing guard for parking lot and "no parking on street" enforcement; law enforcement as needed	Parents not using crosswalk; difficult/unsafe pedestrian area in parking lot (no separated facilities); illegal parking	General	4
Off-road bike path with hub for drop-off	No bike facilities	School site area	3
Re-design parking lots/loading zone to improve circulation/prevent back-up	Not enough parking, traffic backs up into street	Parking lots	2
Staggered dismissal times for each grade	Traffic volume	General	2
Reduce or eliminate open enrollment to reduce drivers from out of area	Traffic volume	General	2
Formally remove all parking, use barriers to prevent illegal parking	Illegal parking	Vichy Avenue (In front of school and neighboring residences)	2
RRFB	Low pedestrian visibility	Crosswalk	2
Bulb-outs	Traffic speed	North and south boundaries of school	1

Figure 6: Walk Audit Stakeholder-Identified Treatments

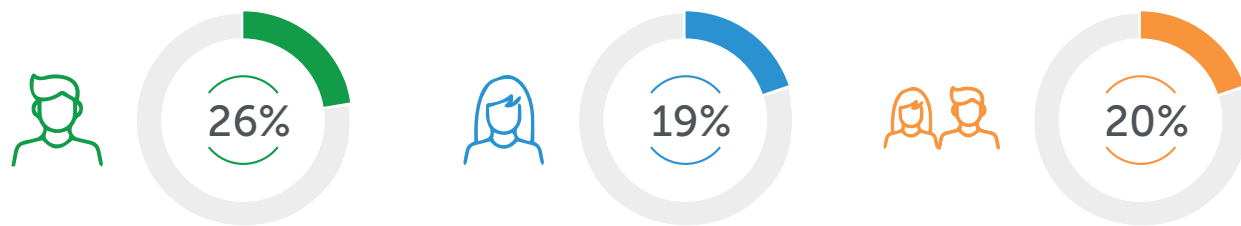


CONTEXT FOR RECOMMENDATIONS

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.



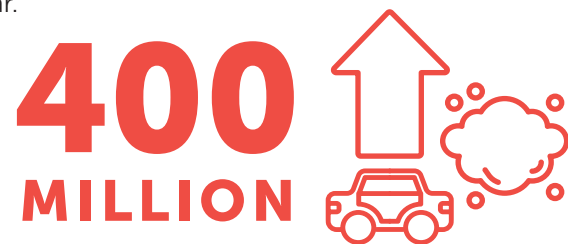
However, only about **26% of men**, **19% of women**, and **20% of adolescents** are meeting the aerobic and muscle-strengthening guidelines developed by the Department of Health. Increased walking and biking to school can help boost that percentage by incorporating physical activity into one's daily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



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

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



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

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 "NAI," and recommendations that suggest programmatic treatments are denoted by "NAP." Please note that implementing these recommendations will often require further evaluation and study, as well as design, right-of-way acquisition, compliance checks with existing laws, and coordination with utility, public safety, and other local government departments.



RECOMMENDATION #NAI-453: VICHY AVENUE SHARED-USE PATH

Narrative – As the only street providing access to Vichy Elementary School campus, Vichy Avenue is traveled by all school traffic of all modes, making it extremely busy during school arrival and dismissal times. This rural street has limited intersections with through roads, so most if not all school traffic is either travelling north to Monticello Road or south to Hagen Road; these limited exit points on Vichy Avenue keep school traffic concentrated on the Vichy Avenue corridor. During the Walk Audit, participants observed significant vehicle congestion in the school zone during pick-up time; motorists queued up for the main school parking lot were stopped along southbound Vichy Avenue, which resulted in some unsafe motorist behavior, such as driving south in the northbound lane to bypass traffic.

IDENTIFIED BARRIERS

- **No sidewalks** – There are no sidewalks on Vichy Avenue, preventing students from walking to school on a separated path.
- **No bicycle facilities** – There are no bicycle facilities on Vichy Avenue, failing to provide a designated and/or separated space for bicyclists to travel to campus.
- **Illegal parking** – Despite signage and school communications, motorists park on the southbound shoulder on Vichy Avenue in front of the school.



Vichy Avenue in front of the school.

RECOMMENDATIONS

- **Class I shared-use path** – Install a Class I shared-use path (8' minimum) on the west (southbound) side of Vichy Avenue from the school site to Monticello Road. This recommendation, in conjunction with other Class I and lighting recommendations, will provide a separated space for bicyclists and pedestrians to travel to school. Extending the Class I shared-use path to the south parking lot driveway may address illegal motorist parking on Vichy Avenue by removing the shoulder space. Roadwork for a Class I should accommodate plans for on-road Class II bike lanes as recommended by the Bicycle Plan for more confident riders.



RECOMMENDATION #NAI-458: VICHY ELEMENTARY CAMPUS BICYCLE/PEDESTRIAN ACCESS

Narrative – Vichy Elementary School campus entrances are separated from Vichy Avenue by the large school parking lot, which becomes extremely congested and chaotic during school arrival and dismissal times. There are no bicycle or pedestrian facilities around the parking lot, and the only pedestrian facilities through the lot are painted crosswalks, which don't provide the same degree of safety as physical separation.

IDENTIFIED BARRIERS

- **Parking lot** – The school parking lot is congested and hazardous for bicyclists and pedestrians to navigate given the lack of separated bicycle/pedestrian facilities and high volumes of vehicle congestion.

RECOMMENDATIONS

- **Class I shared-use path** – Continue the recommended Vichy Avenue Class I shared-use path to the main pedestrian entrance point on campus, upgrade existing crosswalks in the parking lot and at parking lot driveways to raised, high-visibility crosswalks if these crosswalks will be part of the route to campus.



The lack of bicycle/pedestrian facilities to campus requires pedestrians and bicyclists to navigate arrival/departure time congestion to reach campus.



RECOMMENDATION #NAI-459: MONTICELLO ROAD SHARED-USE PATH

Narrative – Monticello Road, which is also a part of SR 121, is one of the two main thoroughfares used to access Vichy Avenue. As Monticello Road connects to both the Silverado Trail and Trancas Street in north Napa, this road is highly-travelled and a key route to Vichy Elementary School. Additionally, many of the neighborhoods that are within reasonable walking and biking distance of Vichy Elementary School are located on streets off of Monticello Road, making this an important corridor to address when considering walking and biking to Vichy Elementary campus.

IDENTIFIED BARRIERS

- **No bicycle facilities** – There are no bicycle facilities on Vichy Avenue, failing to provide a designated and/or separated space for bicyclists to travel to campus.
- **Discontinuous sidewalk** – While there is a sidewalk on the eastbound side of Monticello Road at the Atlas Peak Road intersection, there is a significant sidewalk gap between Atlas Peak Road and Vichy Avenue. The sidewalk also does not extend south to the Bell Lane neighborhoods.



Monticello Road, facing towards Vichy Avenue.

RECOMMENDATIONS

- **Class I shared-use path** – Install a continuous Class I (minimum 8') on the eastbound side of Monticello Road from Bell Lane to Vichy Avenue to provide a separated bicycle/pedestrian facility for students in the Bell Lane neighborhoods and Atlas Peak Road neighborhoods. Roadwork should accommodate plans for on-road Class II bike lanes/Class III bike route as recommended by the Bicycle Plan from Silverado Trail to Vichy Avenue.



RECOMMENDATION #NAP-078: GROUP PROGRAMS

Narrative – Vehicle congestion in the school zone is a significant barrier to students walking and biking to school, especially when paired with bicycle and pedestrian infrastructure gaps. While infrastructure recommendations are underway, establishing group encouragement programs, such as walking school buses, bike trains, or carpool networks, can help reduce the number of vehicles in the school zone while improving road user comfort by establishing a greater bicyclist/pedestrian road presence through numbers and providing adult supervision that can be a shared responsibility amongst families.

IDENTIFIED BARRIERS

- **Congestion in school zone** – High volumes of vehicle traffic in the school zone during pick-up and drop-off can make the school zone feel chaotic and unwelcoming to bicyclists and pedestrians. This is particularly challenging at Vichy Elementary given the limited access points to campus and infrastructure barriers on and around the campus.

RECOMMENDATIONS

- **Carpool/walking bus/bike train program** – Develop a schoolwide carpool program to reduce the number of cars in the school zone that is accessible for students who live far from school or are separated by a significant infrastructure barrier. Consider options for also developing bike trains and/or walking school buses based on parent interest. The latter may be more feasible pending infrastructure recommendations.



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



RECOMMENDATION #NAP-079: BICYCLE/PEDESTRIAN SAFETY EDUCATION

Narrative – Bicycle and pedestrian safety education is a crucial component of increasing biking and walking mode share at a school site, as it teaches students rules of the road and safe biking and pedestrian behaviors, such as scanning and signaling before turns for bicyclists. This understanding not only improves bicyclist and pedestrian safety, but also increases confidence and comfort for young bicyclists and pedestrians. Common unsafe behaviors that are done unknowingly due to lack of education, such as riding against traffic or failing to stop at stop signs on a bike, are hazardous to students, as this behavior is unpredictable to motorists and can increase risk of collisions. While many of these behaviors can be addressed by improved infrastructure, such as clearly marked bicycle facilities, implementing annual education on bicyclist and pedestrian safety within the school system raises awareness of rules of the road and encourages safe behavior.

IDENTIFIED BARRIERS

- **No safety education** – Vichy Elementary School has not provided students with bicycle/pedestrian safety education. A lack of bicycle/pedestrian safety education can result in unintentional unsafe student bicyclist/pedestrian behavior and a sense of discomfort riding a bike.

RECOMMENDATIONS

- **Bicycle and pedestrian safety education** – Provide annual in-school bicycle and pedestrian safety education for all students to ensure that all students are familiar with rules of the road and best safety practices.



A bike rodeo, such as the one photographed above at Willow Elementary School in Napa, is one form of bicycle safety education.



RECOMMENDATION #NAI-454: VICHY AVENUE SPEED CUSHIONS AND SIGNAGE

IDENTIFIED BARRIERS

- **Motorist speeding** – Frequent motorist speeding on Vichy Avenue is facilitated by the road being long and straight in a relatively rural area with no traffic-calming or traffic control.

RECOMMENDATIONS

- **Speed cushions and signage** – Install speed cushions from Monticello Road to La Grande Avenue and increase school zone signage approaching campus to slow motorists entering the school zone.



The speed feedback sign on Vichy Avenue for traffic entering the school zone.



RECOMMENDATIONS #NAI-455, NAI-460, NAI-461: PEDESTRIAN-SCALE LIGHTING

IDENTIFIED BARRIERS

- **Low lighting** – As the school and surrounding neighborhoods are in relatively rural Napa County, lighting is too low for student bicyclist and pedestrian safety and comfort, particularly during the winter season.

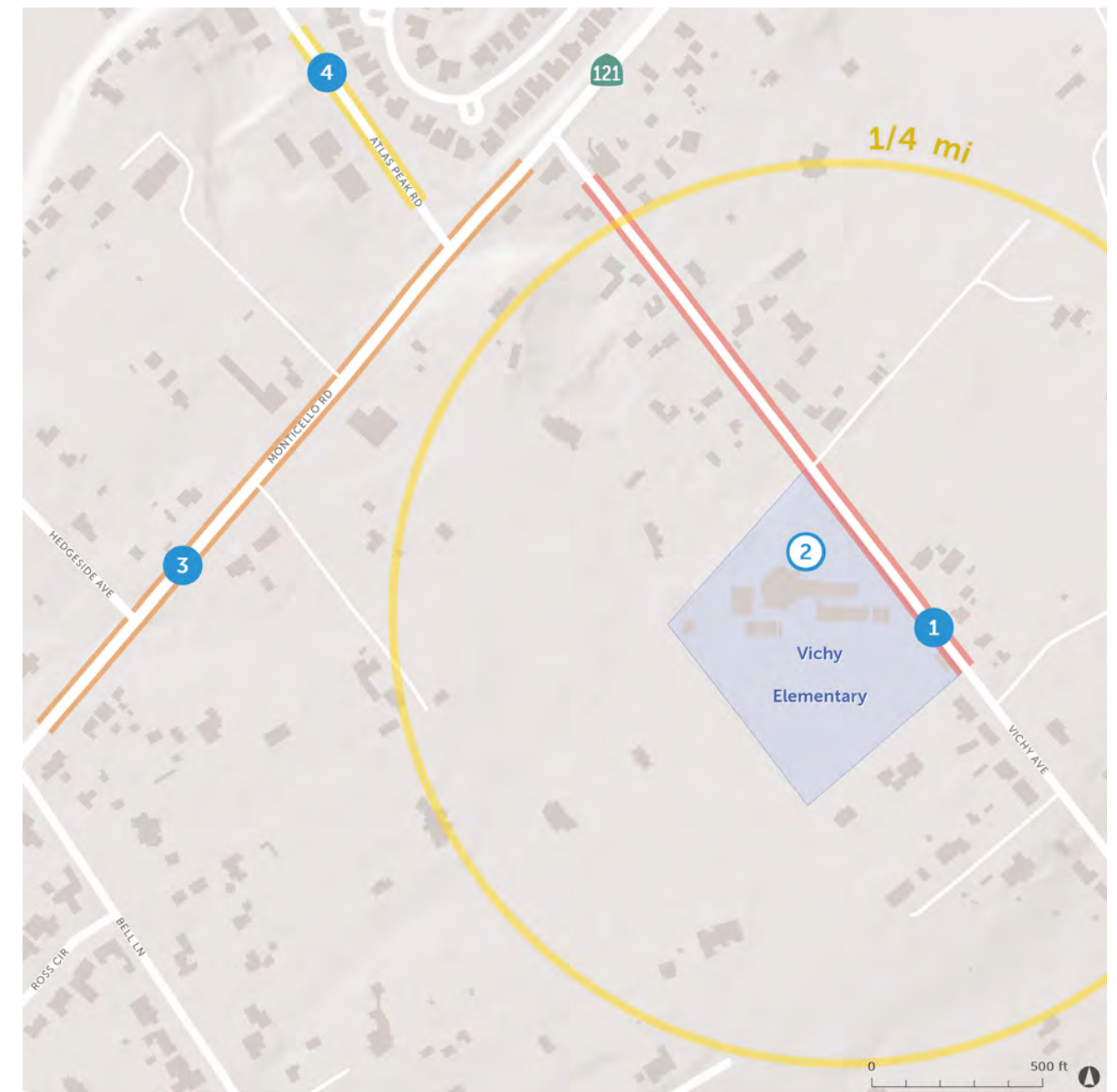
RECOMMENDATIONS

- **Pedestrian-scale lighting** – Install pedestrian-scale lighting on Vichy Avenue, Monticello Road, and Atlas Peak Road to follow the routes from the Silverado Springs neighborhoods and Bell Lane neighborhoods to the school. This recommendation will be most effective being installed along with the Class I recommendations.



An example of pedestrian-scale lighting along a path in Calistoga.

MAP OF RECOMMENDATIONS



● Street segment ○ Intersection

Map 5: Recommendations

TABLE OF RECOMMENDATIONS

Infrastructure:

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
1	Vichy Avenue from Monticello Road to south edge of school campus	NAI-453	No sidewalks, no bike facilities. Illegal parking in front of the school.	Install a Class I shared-use path (8' minimum) on west (southbound) side from school site to Monticello Road. Extending Class I shared-use path to south parking lot driveway may address illegal motorist parking on Vichy Avenue by removing shoulder. Roadwork should accommodate plans for on-road Class II bike lanes as recommended by the Bicycle Plan for more confident riders.	\$\$\$	High
		NAI-454	Motorist speeding facilitated by long straight road with no traffic-calming or traffic control.	Install speed cushions from Monticello Road to La Grande Avenue and increased school zone signage approaching campus.	\$-\$	Medium
		NAI-455	Low lighting from school to Silverado Springs neighborhoods.	Install pedestrian-scale lighting from Monticello Road to the campus to follow the path from the Silverado Springs neighborhoods to the school.	\$\$	Medium
		NAI-456	Illegal parking in front of the school.	Block off west (southbound) shoulder in front of campus if Class I does not extend to south parking lot driveway.	\$	Low
		NAI-457	Crosswalks across Vichy Avenue in front of school do not connect to pedestrian facilities, have no traffic control.	Remove crosswalks.	\$	Low
2	School parking lot	NAI-458	Unsafe pedestrian area in parking lot - no sidewalks, significant traffic congestion.	Continue Vichy Ave Class I shared-use path to main pedestrian entrance point on campus, upgrade existing crosswalks in parking lot and at parking lot driveways to raised, high-visibility crosswalks.	\$\$	High
3	SR 121 (Monticello Road) from Bell Lane to Vichy Avenue	NAI-459	No bicycle facilities, sidewalk is not continuous.	Install continuous Class I (minimum 8') on eastbound side from Bell Lane to Vichy Avenue. Roadwork should accommodate plans for on-road Class II bike lanes/Class III bike route as recommended by the Bicycle Plan from Silverado Trail to Vichy Avenue.	\$\$\$	High
		NAI-460	Low lighting.	Install pedestrian-scale lighting from Vichy Avenue to Bell Lane to follow the path from the school to the Silverado Springs neighborhoods and Bell Lane neighborhood (pending Class I recommendation).	\$\$	Medium
4	Atlas Peak Road from Monticello Road to Hillcrest Drive	NAI-461	Low lighting.	Install pedestrian-scale lighting from Monticello Road to Hillcrest Drive to follow the path from the Silverado Springs neighborhoods to the school.	\$\$	Medium

Programmatic Improvements:

	ISSUE	ID #	RECOMMENDATION	LOCATION	FREQUENCY	COST	PRIORITY
1	Congestion in school zone	NAP-078	Develop schoolwide carpool program with education/incentives. Consider options for bike trains and/or walking school buses based on parent interest.	School parking lot, Vichy Avenue	Weekly, with goal of increasing frequency	\$	High
2	No bicycle/pedestrian safety education program	NAP-079	Provide annual bicycle and pedestrian safety education to all students	School campus	Annual	\$	High

COLLISION MAP AND DATA



Map 6: Collision Map (2016-2020) (Source: UC Berkeley Transportation Injury Mapping System: SRTS Collision Map Viewer)

Summary Statistics

RADIUS	FATAL	SEVERE INJURY	VISIBLE INJURY	COMPLAINT OF PAIN	PEDESTRIAN	BICYCLE	TOTAL
< .25 mi.	0	0	0	0	0	0	0
.25-.5 mi.	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0

Figure 7: Collision Data (2016-2020) (Source: UC Berkeley Transportation Injury Mapping System: SRTS Collision Map Viewer)

APPENDICES

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[Appendix B: Universal Recommendations](#)

[Appendix C: Quick-Build Options for Infrastructure Improvements](#)

[Appendix D: Bike Parking Guide](#)

[Appendix E: Recommendation Cost Range Matrix](#)

[Appendix F: Next Steps](#)

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[Figure 4 – School Parking Lot Letter \(p. 11\)](#)

[Figure 5 – Walk Audit Stakeholder-Identified Barriers \(p. 16\)](#)

[Figure 6 – Walk Audit Stakeholder-Identified Treatments \(p. 17\)](#)

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[Map 2 – School Site Location in City \(p. 9\)](#)

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[Map 4 – Existing Pedestrian Facilities \(p. 13\)](#)

[Map 5 – Recommendations \(p. 23\)](#)

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FOOTNOTES

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

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

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

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

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

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

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

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

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

^j Overall Facility Rating determined from 2019-20 School Accountability Report Card

APPENDIX A

EMC Survey Toplines

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

Evaluation: Research & Methodology



- ▶ **Purpose: Gain insight into parent practices, perceptions, and attitudes around children walking and riding bicycles to and from school; explore barriers to behavior change**

- ▶ **Quantitative survey of 459 parents of K-8 students in Napa County**
 - Conducted online and by telephone, offered in English and Spanish
 - Conducted March 11 – April 12, 2021
 - Participants recruited via communications from school districts and targeted online and telephone contacts
 - *Survey methods were designed to include as many participants as possible; not a random sample*

- ▶ **Qualitative follow-up research**
 - One online focus group with 7 participants in English; 4 in-depth telephone interviews in Spanish
 - Conducted May 20 – 28, 2021
 - Targeted parents who lived within two miles of their school site and would like their children to walk or bike to school



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

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

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

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

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

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

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

Kindergarten	22
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.

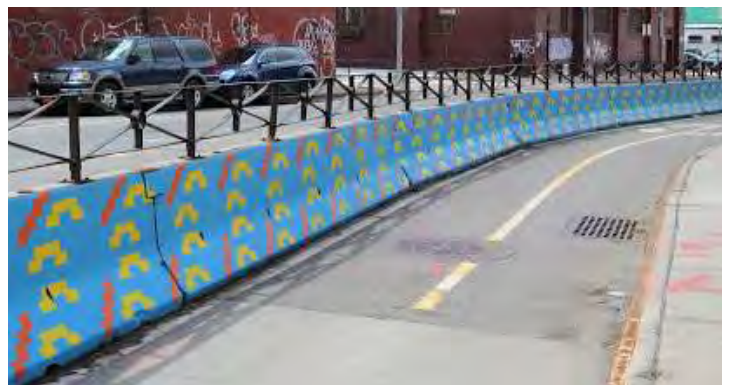


Photo credits, top to bottom: Alta Planning + Design; Real Hartford; Alta Planning + Design; Street Plans Collaborative



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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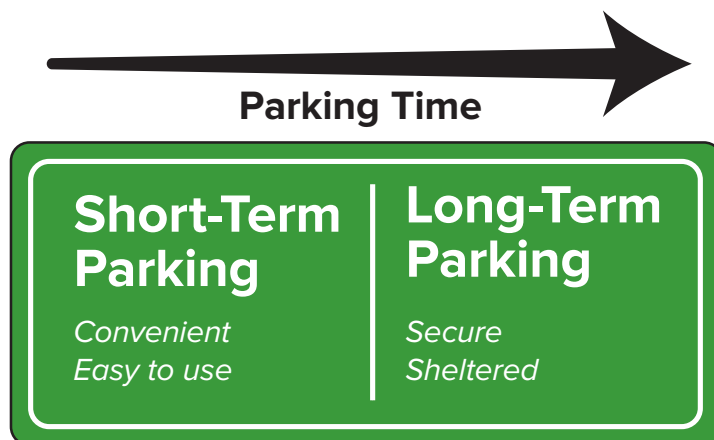
- 01 INTRODUCTION**
- 02 SHORT-TERM PARKING**
 - Site planning
 - Bike corrals
- 03 LONG-TERM PARKING**
 - Site planning
 - Special considerations for long-term parking
- 04 INSTALLATION**
 - Installation surface
 - Installation fasteners
 - Installation techniques
- 05 BICYCLE RACK SELECTION**
 - Performance 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.

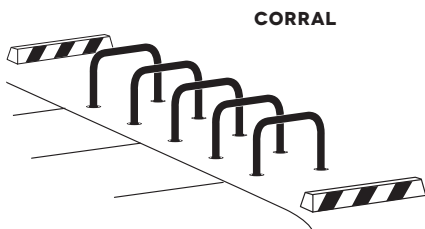
This guide divides bike parking into short-term and long-term installations. These two kinds of parking serve different needs, and the starting point for most bike parking projects is recognizing whether the installation should serve short-term users, long-term users, or both. If users will typically 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.



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.

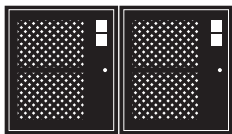
BIKE CORRALS

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://www.apbp.org)

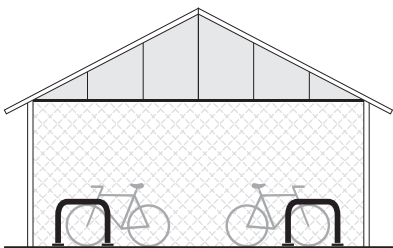
LONG-TERM PARKING

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://www.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.

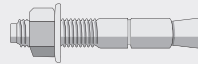
FASTENERS

CONCRETE SPIKE



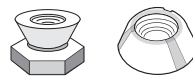
Installs quickly in concrete with a hammer. Tamper-resistant. Removal may damage concrete and/or rack.

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.

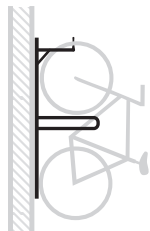
High-density rack systems can maximize the use of limited parking space, but they don't work for all users or bicycles. If installing these racks, reserve additional parking that accommodates bicycles with both wheels on the ground for users who are not able to lift a bicycle or operate a two-tier rack,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

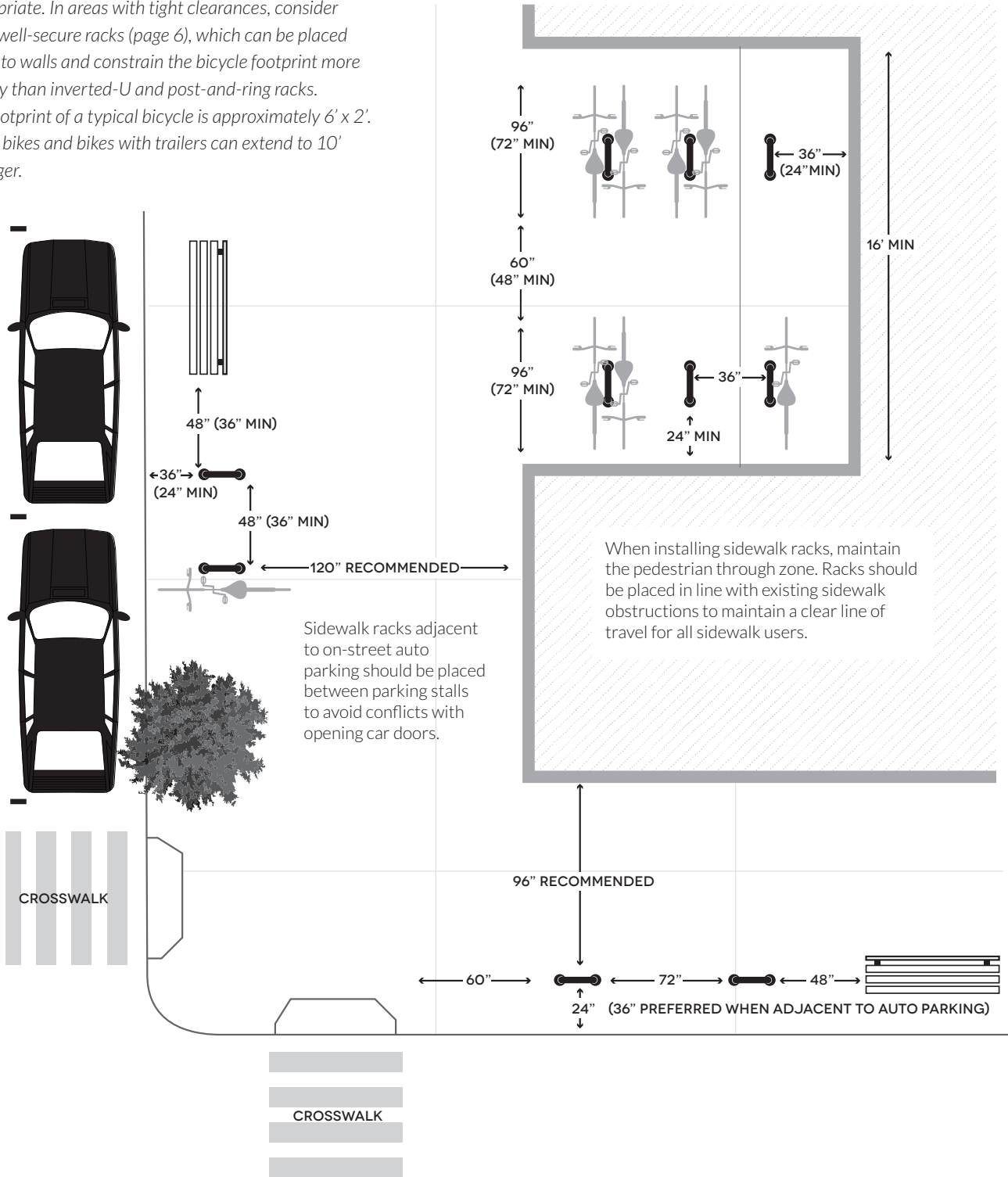
Most bicycle parking racks are made of carbon steel or stainless steel. Carbon steel requires a surface coating to resist rust while appropriate grades of stainless steel need no coating. Not all materials and coatings with the same name perform equally. Square tubing provides a security advantage as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