Walk Audit Report

NAPA HIGH SCHOOL
NAPA HIGH SCHOOL
2475 JEFFERSON STREET
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.

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 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.

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

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

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

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

NAPA HIGH SCHOOL

SCHOOL SUMMARY

Principal
Monica Ready (previous)
Ean Ainsworth (current)
Grades
9-12
First Bell
8:00 AM
Enrollment
1,901
Last Bell
3:00 PM (W 1:50)
Street
2475 Jefferson Street
District
Napa Valley Unified
City
Napa, CA 94558

Overall Facility Rating: Good

While NVUSD has an open enrollment policy, Napa High School’s default enrollment area covers most of the southern half of the city of Napa as well as unincorporated Napa County northwest and south of the school. According to the most recent data (2020-21 school year), 18.8% of students attending Napa High School reside outside of the school’s enrollment boundary.

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.

Map 1: The enrollment boundaries (shaded yellow) of Napa High School (blue dot)
DATA

No data is currently available regarding the number of students who walk and bike to the school at Napa High. Additional work is needed to establish a baseline of active transportation use for this school.

Data collected from the countywide EMC Research survey (Appendix A) conducted in Spring 2021 reflects parent perspectives on walking and biking to school for K-8 students only, and therefore cannot be directly applied to Napa High School.

Total Enrollment by Group (2019-20)

<table>
<thead>
<tr>
<th>ETHNICITY</th>
<th>NAHA HIGH SCHOOL</th>
<th>DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black or African American</td>
<td>0.3%</td>
<td>2.1%</td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>0.1%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Asian</td>
<td>0.8%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Filipino</td>
<td>0.8%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>69%</td>
<td>55.6%</td>
</tr>
<tr>
<td>White</td>
<td>27.2%</td>
<td>28.4%</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>0.1%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Two or More Races</td>
<td>1.8%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

EXPERIENCE

<table>
<thead>
<tr>
<th>EXPERIENCE</th>
<th>NAHA HIGH SCHOOL</th>
<th>DISTRICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socioeconomically Disadvantaged</td>
<td>57.9%</td>
<td>51.2%</td>
</tr>
<tr>
<td>English Learners</td>
<td>14.8%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Students with Disabilities</td>
<td>8.6%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Foster Youth</td>
<td>0.5%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Homeless</td>
<td>1.4%</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Student Enrollment by Grade Level (2019-2020)

<table>
<thead>
<tr>
<th></th>
<th>NUMBER OF STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 9</td>
<td>463</td>
</tr>
<tr>
<td>Grade 10</td>
<td>471</td>
</tr>
<tr>
<td>Grade 11</td>
<td>485</td>
</tr>
<tr>
<td>Grade 12</td>
<td>482</td>
</tr>
<tr>
<td>Total</td>
<td>1,901</td>
</tr>
</tbody>
</table>

NEIGHBORHOOD CONTEXT

Napa High School is located in the City of Napa’s Beard Planning Area in central Napa, characterized by its variety of land uses, including commercial strips, single- and multi-family housing, and a light industrial area. The school is located on the corner of Park Avenue and Jefferson Street, a significant north-south arterial. The block the campus is on is also bordered by Marin Street, a residential street, to the west and Lincoln Avenue, an east-west arterial, to the south, with Kennedy Way running north-south through the campus.

North of the school is a mix of single- and multi-family housing, commercial uses along Jefferson Street, Valley Oak High School, and a few childcare facilities. West of the school is primarily single-family residences. South of the school is the Napa Valley Unified School District office, a mix of single-family and multi-family residences, and commercial uses along Lincoln Avenue and Jefferson Street. East of the school are primarily commercial uses, followed by more mostly single-family residences. Most of the housing in this area was constructed between the 1950s and 70s, though some traditional subdivisions were built before 1940.

Popular destinations for Napa High students include Dutch Bros Coffee, Tacos La Playita, Joey’s Bakery, La Morenita Market, Starbucks, and Butter Cream Bakery, all commercial locations along Jefferson Street.
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

Napa High School is a large campus with several access points. Pedestrians and bicyclists can enter the campus through one of the many entrances on Park Avenue, Kennedy Way, or Jefferson Street. Most of these entrances are gated. The most popular entrances are located on Park Ave at Kennedy Way, Jefferson Street at George Street, and travelling along Kennedy Way from Lincoln Avenue. Kennedy Way provides less stressful entrances for pedestrians and bicyclists than Jefferson Street and Park Avenue, as there is far less vehicle traffic to navigate.

Napa High School has one large parking lot that stretches along the north side of the school’s campus on Park Avenue around the east length of the campus along Jefferson Street. The only entrances to this parking lot are on Park Avenue, though there is an exit on Park Avenue and on Kennedy Way. A crosswalk/sidewalk from the corner of Park Avenue and Jefferson Street cuts through the parking lot and connects to campus, dividing the lot into two sections: the Park Avenue lot and the Jefferson Street lot. Motorists are also permitted to park on the streets surrounding the school; many students park on Marin Street and cross the sports fields to access campus or park along southbound Jefferson Street in front of the school.

Vehicles can only access the campus from Park Avenue, where they enter the parking lot from one of two entrances. The official loading zone is located along the southwest curb of the parking lot on Park Avenue. One-way circulation through the loading zone is indicated by painted white arrows. However, many motorists drive through the Park Avenue lot to the Jefferson Street parking lot and drop students off in the middle of the lot, closer to the school’s main entrance. Cars can exit the Park Avenue parking lot either back on to Park Avenue, or by driving through the one-way Jefferson Street parking lot and exiting onto Jefferson Street.

The school’s parking policy is provided in the student handbook and is reviewed in all English classes in the Fall by the school’s assistant principals.

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BICYCLE AND PEDESTRIAN INFRASTRUCTURE

The school provides several 7-bike wave-style bike racks near the main entrance on Jefferson Street. However, the school does not provide bike parking near the back entrances of the school off of Kennedy Way; consequently, several students utilize the fencing along the back of the school as informal bike parking than use the bike racks.
MAP OF EXISTING BICYCLE FACILITIES

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

MAP OF EXISTING PEDESTRIAN FACILITIES

Map 4: Existing Pedestrian Facilities
(Map source: Napa Valley Transportation Authority Napa Countywide Pedestrian Plan (2016))
ENCOURAGEMENT AND EDUCATION PROGRAMS

Napa High School has participated in the two annual countywide encouragement events, Bike to School Day and Walk and Roll to School Day. Bike to School Day and Walk and Roll to School Day are annual encouragement events facilitated by Napa County Safe Routes to School in the spring and fall, respectively, that celebrate students making the healthy choice to walk or bike to school. The school has not expanded its encouragement program beyond these annual events. The school does not provide bicycle safety education to its students.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>EVENT</th>
<th>STUDENT PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016/17</td>
<td>Bike to School Day</td>
<td>33</td>
</tr>
<tr>
<td>2018/19</td>
<td>Walk and Roll to School Day</td>
<td>136</td>
</tr>
<tr>
<td>2019/20</td>
<td>Bike to School Day</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Walk and Roll to School Day</td>
<td>54</td>
</tr>
</tbody>
</table>

**Figure 4: Encouragement and Education Data**

The energizer station hosted by NVUSD on Bike to Work and School Day is located at the Vine Trail entrance on Jefferson Street, close to Napa High School.

EXISTING PLANS

NVTA Napa Countywide Bicycle Plan (2019):
The Napa Countywide Bicycle Plan recommends improving bicycle facilities around the school site. The Bicycle Plan designates Jefferson Street as a study corridor and recommends the installation of Class III bicycle boulevards along some nearby streets, such as Park Avenue, Central Avenue, Main Street between Pueblo Avenue and Lincoln Avenue, and Brown Street south of Lincoln Avenue. The Bike Plan also recommends Class II bike lanes for Pueblo Avenue north of the school.

NVUSD Facilities Master Plan (2016):
NVUSD’s Facilities Master Plan lists several projects for Napa High School. These projects include installation/upgrade of fencing around the school perimeter, and site ADA improvements. As the school currently has several entrances, changes in fencing could impact future circulation around the school site by altering entry points.

NVTA Napa Countywide Pedestrian Plan (2016):
The improvement nearest to the school listed in the Napa Countywide Pedestrian Plan is a Pueblo Avenue overpass from West Pueblo Avenue to Pueblo Avenue, just a little more than a half-mile away from the school. Another project that may impact student travel to the school is the SR 29 bike and pedestrian undercrossing at the North Bank of Napa Creek, southwest of the school, as many students travel from this part of town and currently use the informal path that will become the undercrossing.

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. Projects in the school area include the Lincoln Avenue/Jefferson Street Intersection Modifications project, which includes additional right-turn lanes, and the Lincoln Avenue and California Boulevard intersection, and recommends modifying that intersection and reconfiguring the northbound SR 29 off-ramp at Lincoln Avenue.

The current General Plan for the City of Napa was adopted in 1998; a General Plan update began in 2018 and at the time of this report, is still ongoing. The General Plan update strives to build a more livable, sustainable, and inclusive future for the City of Napa by outlining the City’s plan for land use, housing, transportation, climate change, and more. One of the draft guiding principles for the General Plan update is to “increase travel options through enhanced walking, bicycling, and public transportation systems, and promote mobility through increased connectivity and intelligent transportation management.”
**WALK AUDIT**

**Date:** 2/28/20  
**Day of the Week:** Friday  
**Meeting Time:** 7:15 AM  
**Weather:** Partly cloudy and cool

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**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 one parent, a community member, and one of the school’s assistant principals. 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 north on Kennedy Way, east on Park Avenue, south on Jefferson Street, west on Lincoln Avenue, and north on Kennedy Way to return to campus. 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.

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**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:**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>LOCATION</th>
<th>VOTE SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsafe bike facilities (narrow, close to fast vehicles, storm drains)</td>
<td>Lincoln Ave</td>
<td>8</td>
</tr>
<tr>
<td>No bike facilities</td>
<td>Jefferson St</td>
<td>7</td>
</tr>
<tr>
<td>No sidewalk/poor sidewalk on opposite side of Jefferson</td>
<td>Jefferson St at Central Ave</td>
<td>4</td>
</tr>
<tr>
<td>Unsafe crossing or lack of crosswalk to popular destinations on Jefferson</td>
<td>Jefferson St</td>
<td>3</td>
</tr>
<tr>
<td>Speeding</td>
<td>Park Ave</td>
<td>3</td>
</tr>
<tr>
<td>Not safe crosswalk for N/S travel, needs better visibility</td>
<td>Jefferson St at Central Ave</td>
<td>2</td>
</tr>
<tr>
<td>Inadequate/lack of sidewalks (narrow, disappears, not elevated)</td>
<td>Kennedy Way (Lincoln Ave to north end of Tech Center)</td>
<td>2</td>
</tr>
<tr>
<td>Not enough crosswalks</td>
<td>Park Ave near the school</td>
<td>1</td>
</tr>
<tr>
<td>No bike parking</td>
<td>West side of campus off of Kennedy Way</td>
<td>1</td>
</tr>
<tr>
<td>No lighting for informal bike parking</td>
<td>West side of campus off of Kennedy Way</td>
<td>1</td>
</tr>
<tr>
<td>Too many entrances/exit points</td>
<td>School site</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 5: Walk Audit Stakeholder-Identified Barriers

---

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.
**Stakeholder-Identified Treatments:**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>BARRIER ADDRESSED</th>
<th>LOCATION</th>
<th>PRIORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb extensions</td>
<td>Low pedestrian visibility, poor motorist yielding behavior, motorist speeding, long crossing distances</td>
<td>High-volume intersections (Park Ave and Santa Clara St, Park Ave and Jefferson, Central Ave, George St)</td>
<td>5</td>
</tr>
<tr>
<td>Road diet and buffered bike lanes; add/expand sidewalks</td>
<td>No bike facilities, sidewalk gaps, narrow sidewalks</td>
<td>Jefferson St from Lincoln Ave to Vine Trail</td>
<td>5</td>
</tr>
<tr>
<td>Install sidewalks (high-volume where possible)</td>
<td>Sidewalk gaps, narrow/unelevated sidewalks</td>
<td>Kennedy Way</td>
<td>4</td>
</tr>
<tr>
<td>Mid-block crosswalk with high-visibility striping and RRFB</td>
<td>Lack of crosswalks to popular destinations</td>
<td>Across Jefferson St to south side of Central Ave</td>
<td>2</td>
</tr>
<tr>
<td>Crosswalk with RRFB</td>
<td>Lack of crosswalks to popular destinations</td>
<td>Across Jefferson St to south side of Central Ave</td>
<td>2</td>
</tr>
<tr>
<td>Crosswalk improvements (RRFB, raised crosswalk, and/or curb extensions)</td>
<td>Speeding, poor motorist yielding behavior, low pedestrian visibility</td>
<td>Park Ave crosswalks</td>
<td>2</td>
</tr>
<tr>
<td>Protected bike lanes</td>
<td>High-stress bike facilities</td>
<td>Lincoln Ave</td>
<td>1</td>
</tr>
<tr>
<td>Add bike facilities</td>
<td>No bike facilities</td>
<td>Jefferson St</td>
<td>1</td>
</tr>
<tr>
<td>Improve bike facilities (buffered bike lanes, painted conflict markings)</td>
<td>High-stress bike facilities</td>
<td>Lincoln Ave</td>
<td>1</td>
</tr>
<tr>
<td>Complete, connected northbound sidewalks and southbound multi-use path</td>
<td>No bike facilities, sidewalk gaps</td>
<td>Jefferson St</td>
<td>1</td>
</tr>
<tr>
<td>High-volume sidewalks</td>
<td>Narrow sidewalks in high pedestrian volume area, sidewalk gaps</td>
<td>On and around school site (Lincoln Ave, Jefferson St)</td>
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<tr>
<td>Speed feedback signs or other means to increase awareness of school zone speed limits</td>
<td>Speeding</td>
<td>General area</td>
<td>1</td>
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</tbody>
</table>

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 transport\(^1\). Public policies and attitudes, such as traffic-calming measure enforcement and parking limitations, also contribute to the efficacy of pedestrian/bicycle networks. Thus, barriers to accessibility and connectivity must be addressed in order to encourage increased and safe walking and cycling.

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

However, only about 26% of men, 19% of women, and 20% of adolescents\(^3\) are meeting the aerobic and muscle-strengthening guidelines developed by the Department of Health. Increased walking and bicycling to school can help boost that percentage by incorporating physical activity into one’s daily routine and encouraging further active transportation choices.

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

\(^{3}\) 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 site-specific recommendations of all priority levels can be found in the "Table of Recommendations" section. Universal school; high-level potential cost/complexity of recommendation; and Walk Audit participant input.

RECOMMENDATIONS #NAI-259, NAI-260, AND NAP-043: LINCOLN AVENUE MULTIMODAL ACCESS

Narrative — Lincoln Avenue borders the school block on the south side, and is a key high-volume east-west arterial corridor through central Napa, providing access to several residential neighborhoods including multi-family and mobile home neighborhoods, SR 29 and SR 122, other key north-south routes such as Jefferson Street and Soscol Avenue, and many commercial destinations. This corridor is long, straight, and wide, with several lanes of vehicle traffic, no traffic-calming, and only some traffic control, consequently facilitating frequent motorist speeding over the posted 30-mph speed limit. Lincoln Avenue currently has on-street Class II bike lanes and crosses the Vine Trail shared-use path just east of Iroquois Street.

IDENTIFIED BARRIERS

• Auto-oriented corridor — Lincoln Avenue’s current design, featuring wide lanes on a relatively straight corridor with no traffic-calming and little traffic control, prioritizes vehicle speed, volumes, and convenience and facilitates frequent motorist speeding.

• High-speeds and volumes of traffic — Lincoln Avenue carries extremely high volumes of high-speed traffic, which many bicyclists and pedestrians do not feel comfortable or safe navigating.

• High-stress bicycle facilities — The existing Class II bicycle facilities are stressful for riders due to the lack of separation between high speeds and volumes of vehicle traffic and high conflict-risk intersections. This stress is exacerbated in areas where road quality in the bike lane is poor, the bike lane narrows to substandard widths, or storm drains obstruct the bike lane and pose a fall hazard.

• Bike lane obstructions — The existing bike lanes on Lincoln Avenue are frequently obstructed with debris, gravel, broken glass, and garbage, and are often blocked by signage during periods of construction.

RECOMMENDATIONS

• NAI-259 Road diet — Implement a road diet along Lincoln Avenue to create a street with one travel lane in each direction and a middle turn lane. Use realigned space for multimodal improvements, including widened bicycle facilities (recommended Class IV) and widened sidewalks. Due to high multimodal use potential and multiple stakeholders and land uses, this may require a Corridor Plan similar to Imola Avenue.

• NAI-260 Protected bike lane — Install a Class IV protected bike lane with conflict markings at major intersections and driveways. This protected bike lane may be parking-protected in some locations where parking-protected bike lanes do not obstruct visibility of bicyclists to turning vehicles, but parking removal will be necessary around intersections and driveways. Buffered Class II bike lanes can also be used in areas where Class IV is not feasible.

• NAP-043 Bike lane maintenance — Ensure that existing bike lanes are being fully swept with regular street sweeping and increase frequency of sweeping if maintenance issues continue.

RECOMMENDATIONS #NAI-262, NAI-263, NAI-265, AND NAI-266: JEFFERSON STREET MULTIMODAL FACILITIES

Narrative — Jefferson Street borders the school block on the east side and provides direct access to campus at George Street and Park Avenue, though the main front entrance to campus is located midblock between Park and George. Jefferson Street is an integral high-volume north-south arterial corridor that runs from Salvador Avenue to Afrium Parkway, spanning nearly the entire City limits on the east side of SR 29. Jefferson Street is a key part of direct routes to several residential neighborhoods, commercial destinations such as shopping centers, pharmacies, and health services, schools, and downtown throughout the east side of Napa; consequently, Jefferson plays a crucial role in the multimodal transportation network for the City of Napa.

IDENTIFIED BARRIERS

• Auto-oriented corridor — Jefferson Street’s current design, featuring wide lanes on a relatively straight corridor with no traffic-calming and little traffic control, prioritizes vehicle speed, volumes, and convenience and facilitates frequent motorist speeding.

• High speeds and volumes of traffic — Jefferson Street carries extremely high volumes of high-speed traffic, which many bicyclists and pedestrians do not feel comfortable or safe navigating.

• No bicycle facilities — The lack of bicycle facilities on the corridor fails to provide a dedicated space for bicyclists, making the corridor unwelcoming to bicyclists and increasing potential road user conflicts.

• High-speed crosswalks — Infrequent and high-stress/ conflict-risk crosswalks across Jefferson Street along the corridor, particularly south of Lincoln Avenue where most crosswalks across Jefferson Street are uncontrolled, makes travelling along the corridor challenging and inconvenient for pedestrians and creates a higher risk of road user conflict.

• Minimal shade — Minimal shade along the corridor, in addition to being adjacent to high volumes of vehicle traffic, creates an increased heat effect that deters walking along the corridor.

RECOMMENDATIONS

• NAI-262 and NAI-265 From Trancas St to Cedar Ave

• Road diet — Implement a road diet and redesign of corridor to improve and prioritize safe, accessible, and comfortable multi-modal transportation through a Complete Streets framework. Integrate specific recommendations from SRTS reports into road redesign.

• NAI-263 Bicycle facilities from Trancas St to Lincoln Ave

• Long-term: Class IV protected bike lanes preferred for this corridor with realigned space from road diet.

• Evaluate and implement if feasible short-term solution pending road diet. One design could include removing on-street parking and shifting lanes where necessary to make a two-way protected cycle track on the southbound (west) side. Any curb extension recommendations along Jefferson should not conflict with this.

• NAI-266 Bicycle facilities from Lincoln Ave to Cedar Ave

• Find a short-term solution pending the road diet/redesign that creates continuous bicycle facilities in both directions for this corridor — minimum separation level is Class II bike lanes. This may require reallocation of space from motor vehicles.
IDENTIFIED BARRIERS

• Large, busy intersection – This intersection of two arterials is a key intersection in the school zone, as it is highly travelled by all modes of transportation, both school-related and non-school related, which can increase road user conflict risk and can feel chaotic and challenging for students.

• Long crossing distances – Long crossing distances across several lanes of traffic on all legs of the intersection pushes bicyclists and pedestrians further out of the range of vision of motorists and requires them to be in the roadway for a longer time than necessary, increasing the risk of collisions.

• Low-visibility crosswalks – The crosswalks are faded and painted with a standard, parallel line pattern, despite being located in a highly-travelled school zone.

RECOMMENDATIONS

• Leading Pedestrian Interval – Install Leading Pedestrian Intervals for all crosswalks to provide pedestrians with a protected head-start through the intersection, improving driver awareness of pedestrians and reducing risk of turning conflicts.

• High-visibility crosswalks – Repaint all crosswalks with a high-visibility school-zone pattern to increase pedestrian visibility and motorist yielding behavior.

• Limit lines – Install advanced limit lines on all travel lanes to indicate to motorists to stop with some distance from the crosswalk, improving pedestrian visibility, particularly for motorists planning to turn right on a red light.

• Green conflict markings – Paint green conflict markings on the Lincoln Avenue bike lanes approaching the intersection to increase visibility of bicyclists.

• Curb extension – Install a curb extension on the northeast corner to tighten the curb radius, slow right turns, and square up the intersection.

• Redesign intersection with recommended road diets and Jefferson Street corridor study* to prioritize bicyclist and pedestrian separation and safety and slow motorist speeds. Consider protected intersection during redesign.

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RECOMMENDATION #NAI-276: NAPA HIGH CAMPUS BIKE PARKING

Narrative – The school provides several 7-bike wave-style bike racks near the main entrance on Jefferson Street. However, the school does not provide bike parking near the back entrances of the school off of Kennedy Way; consequently, several students utilize the fencing along the back of the school as informal bike parking than use the bike racks. On the morning of the Walk Audit, more bikes were seen informally locked to the Kennedy Way campus gates than the formal bike parking on Jefferson Street, indicating that bicyclists prefer to enter campus through Kennedy Way.

IDENTIFIED BARRIERS

• Insufficient bike parking – On-campus bike parking is provided at only one entrance near Jefferson Street, and there is no parking at entrances on the more bicycle-accessible Kennedy Way side of campus. A perceived lack of secure bike parking in visible, convenient locations near school entrances, and potential theft resulting from informal bike parking, can deter students from biking to school.

RECOMMENDATIONS

• Bike parking on west side – Install several secure bike racks near entry points on the west side of campus to accommodate bicyclists entering from Kennedy Way.
RECOMMENDATION #NAI-284: LINCOLN AVE AND KENNEDY WAY INTERSECTION IMPROVEMENTS

Identified Barriers

- **Wide curb radius** – The wide curb radius on the southwest corner facilitates fast motorist turning movements.
- **Vehicles obstructing visibility** – The lack of “no parking” red zones on Georgia Street allows motorists to park adjacent to the crosswalks and obstruct pedestrian visibility.
- **Low-visibility crosswalk** – The existing crosswalk across Georgia Street is painted with a standard, parallel line pattern, despite being located in a highly-travelled school zone.

Recommendations

- **Curb extension** – Install small curb extension on southwest side to reduce the curb radius and improve pedestrian visibility.
- **Red curbs** – Paint “no parking” red curbs on Georgia Street to prevent motorists from parking adjacent to crosswalks and obstructing pedestrian visibility.
- **High-visibility crosswalk** – Paint high-visibility school-zone crosswalk pattern across Georgia Street to increase pedestrian visibility and motorist yielding behavior.
- **Pedestrian refuge island** – Extend the existing painted median on Lincoln Avenue with paint/bollards through the crosswalk to create a pedestrian refuge island, allowing pedestrians to focus on one direction of traffic at a time.

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RECOMMENDATION #NAP-039: STUDENT-LED EDUCATION/ENCOURAGEMENT

Identified Barriers

- **Vehicle-oriented transportation culture** – Being surrounded by a vehicle-oriented transportation culture significantly contributes to students developing the habit of driving or being driven to school.
- **Congestion in school zone** – Congestion in the school zone during school arrival and dismissal times can increase conflict risk and make the school zone feel unpredictable and unsafe to bicyclists and pedestrians, especially in conjunction with infrastructure barriers.

Recommendations

- **Student-led Programs** – Empower student clubs, classes, and organizations like Student Council in developing and hosting regular active transportation encouragement events. Students should lead encouragement efforts, as peer-to-peer messaging is more effective and engaging.
- **Encouragement events** – Such as Walk and Roll Wednesdays, VMT reduction competitions, and Cycle for Cider, can introduce students to the joys of walking and biking to school and help bring about long-term mode shift. Marin County Safe Routes to School successfully runs similar programs through their Safe Routes to School Teen Program and may be a helpful resource.
- **Education outreach initiatives** can help increase awareness amongst students of the various benefits of active transportation. For example, an Environmental Club can emphasize how walking and biking reduces greenhouse gases, and a Leadership Club can highlight the positive physical and mental health effects of active transportation.
**Recommendations #NAI-264, NAI-105, and NAI-267: Jefferson Street Multimodal Facilities**

**Identified Barriers**

- **Sidewalk gap** – The sidewalk gap on northbound Jefferson between George Street and Central Avenue creates a barrier in the pedestrian network that forces pedestrians to walk in the road or unnecessarily cross the arterial corridor.
- **Long signal time and crossing distance** – The traffic signal at the Vine Trail crossing is currently coupled to the Jefferson and Pueblo signal, which creates an extremely long signal adaptation time for bicyclists and pedestrians. The long crossing distance requires pedestrians and bicyclists to be in the roadway for a longer time than necessary, increasing the risk of collisions.
- **Poor motorist yielding behavior** – Motorist yielding behavior is significantly decreased at uncontrolled crosswalks across Jefferson (from Lincoln to Cedar) due to long crossing distances, low-visibility pattern crosswalks, no traffic-control/calming, high speeds of traffic, and vehicles parked next to crosswalks reducing visibility.

**Recommendations**

- **NAI-264 Fill sidewalk gap** – Fill the sidewalk gap to provide a continuous pedestrian network and reduce unnecessary pedestrian road crossings.
- **NAI-105 Vine Trail crossing**
  - **Decouple traffic signal** – Decouple the Vine Trail traffic signal from the Jefferson Street and Pueblo Avenue signal to prioritize Vine Trail users and reduce waiting times.
  - **Shorten crossing distance** – Shorten the crossing distance across Jefferson Street with the corridor study* and potential road diet on the Jefferson corridor.
- **NAI-267 Traffic-calming and crosswalk improvements** – Install curb extensions and high-visibility crosswalks at uncontrolled crosswalks across Jefferson Street between Lincoln and Cedar. Consider Rectangular Rapid Flashing Beacons at G Street. Implement additional traffic-calming along the corridor to slow motorist speeding.

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**Recommendations #NAP-042: Bike Safety and Maintenance Education**

**Narrative** – Bicycle safety education is a crucial component of increasing biking mode share and safety at a school site, as it teaches students rules of the road and safe biking behaviors, reminding students that bicyclists have the same rights and responsibilities as motorists. This understanding not only improves bicyclist safety, but also increases confidence and comfort for students. 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 safety within the school system raises awareness of rules of the road and encourages safe behavior.

**Identified Barriers**

- **No existing bike education** – The lack of a bicycle safety education program can result in unintentional unsafe student bicyclist behavior and a sense of discomfort riding a bike.
- **Annual bicycle education** – Provide annual bike safety and maintenance education to all students to ensure that all students are familiar with rules of the road and taking care of their bikes.

**Recommendations**

- Bicycle maintenance is an important part of bicycle safety education for middle and high school levels.
RECOMMENDATION #NAI-269: PARK AVENUE BIKE BOULEVARD

IDENTIFIED BARRIERS

• No bicycle facilities – The lack of bicycle facilities on the corridor fails to provide a dedicated space for bicyclists and indicate to motorists where to expect bicyclists, making the corridor appear unwelcoming to bicyclists.

• Motorist speeding – Motorist speeding, which can be facilitated by wide, straight roads with little traffic-calming or traffic control, reduces motorists’ range of vision and increases both risk of collisions and potential severity of collisions.

RECOMMENDATIONS

• Class III bike boulevard – Install Class III bike boulevard with sharrows, signage, and traffic-calming measures.

There are no bicycle facilities on Park Avenue.

RECOMMENDATION #NAI-273 AND NAI-275: KENNEDY WAY BIKE/PED ACCESS

IDENTIFIED BARRIERS

• No bicycle facilities – The lack of bicycle facilities on the corridor, which is a lower stress alternative to Jefferson Street, fails to provide a dedicated space for bicyclists and indicate to motorists where to expect bicyclists, making the corridor appear unwelcoming to bicyclists.

• Student drop-off – Motorists misuse Kennedy Way for student drop-off despite this being prohibited by the school, increasing risk of road user conflicts.

RECOMMENDATIONS

• NAI-273 Class III bike boulevard – Install Class III bike boulevard with sharrows and signage (speed cushions and limited vehicle access already exist to accomplish traffic-calming).

• NAI-275 Signage – Install “No drop-off” signage around the entrance to Kennedy Way off of Lincoln Avenue to deter motorists from entering.

There are no bicycle facilities on Kennedy Way.

RECOMMENDATION #NAI-271: JEFFERSON ST AND CENTRAL AVE INTERSECTION

IDENTIFIED BARRIERS

• Low pedestrian visibility – Visibility of pedestrians crossing Central Avenue is reduced by the lack of a crosswalk, parked cars on the north side of Central obstructing visibility, and the building on south corner blocking pedestrians from view of motorists turning off of Jefferson.

• No Jefferson crosswalk – There is no crosswalk across Jefferson Street at Central Avenue for students to use to access popular destinations near the school and as a more direct route to and from campus.

RECOMMENDATIONS

• High-visibility crosswalks – Paint high-visibility school-zone crosswalks across Central Avenue and Jefferson Street to increase pedestrian visibility and create a marked pedestrian crossing to popular student destinations on Jefferson.

• Jefferson visibility – Install Rectangular Rapid Flashing Beacons and curb extensions for the crosswalk across Jefferson to improve pedestrian visibility and motorist yielding behavior.

• Pedestrian crossing signage – Install pedestrian crossing signage for motorists turning right off of Jefferson Street onto Central Avenue to increase driver awareness of pedestrians they may not be able to see.

• Further study – Address visibility issues created from the building on the south corner.

The building on the south corner of the Jefferson/Central intersection is located much closer to the street than other buildings, reducing pedestrian visibility on Central Avenue.
RECOMMENDATION #NAI-278: PARK AVE AND SANTA CLARA ST CURB EXTENSIONS

IDENTIFIED BARRIERS

• Low-visibility crosswalk – The existing crosswalk across Pueblo Avenue is painted with a standard, parallel line pattern, despite being located in a highly-travelled school zone.

• Vehicles obstructing visibility – Minimal “no parking” red zones around the north side of the Park Ave crosswalk allows motorists to park close to the crosswalk and obstruct pedestrian visibility.

• Motorist speeding – Motorist speeding, which can be facilitated by wide, straight roads with little traffic-calming or traffic control, reduces motorists’ range of vision and increases both risk of collisions and potential severity of collisions.

RECOMMENDATIONS

• Curb extensions – Install curb extensions on both sides of the Park Avenue crosswalk to slow motorists through the intersection and improve pedestrian visibility.

• High-visibility crosswalk – Upgrade the existing crosswalk to be a high-visibility school-zone pattern to increase pedestrian visibility and motorist yielding behavior.

RECOMMENDATION #NAI-279: JEFFERSON ST AND PARK AVE INTERSECTION

IDENTIFIED BARRIERS

• Low-visibility crosswalks in school zone – The crosswalks are faded and painted with a standard, parallel line pattern, despite being located in a highly-travelled school zone.

• Long crossing distance – Long crossing distance across Jefferson requires pedestrians to be in the roadway for a longer time than necessary, increasing the risk of collisions, and pushes pedestrians further out of the range of vision of motorists.

• Wide curb radii – Wide curb radii on the west side of the intersection facilitate fast motorist turning movements.

• Missing stop lines – Missing stop lines for northbound Jefferson Street allow motorists to stop close to the crosswalk, which exacerbates visibility issues created by the diagonal positioning of the crosswalk.

RECOMMENDATIONS

• High-visibility crosswalks – Upgrade crosswalks to be high-visibility school-zone patterns to increase pedestrian visibility and motorist yielding behavior.

• Curb extensions – Install curb extensions on all crosswalk curbs, with significant extensions on the Jefferson sides of the south crosswalk, to reduce crossing distance, reduce curb radii, and improve pedestrian visibility.

• Stop lines – Paint stop lines on northbound Jefferson to stop vehicles further from the crosswalk and improve pedestrian visibility.

• Further study – Consider redesign of intersection with Jefferson Street corridor study/road diet recommendation.
IDENTIFIED BARRIERS

• Poor pavement condition – Pavement in this intersection, particularly around the railroad tracks, is in poor condition.

• Low-visibility/missing striping – The crosswalk on the north side of the intersection is a low-visibility pattern and there is no crosswalk on the east side of the intersection, which are the two crosswalks that would be used for the Vine Trail crossing.

• Low pedestrian visibility – The geometry of the intersection due to the railroad crossing, the missing/low-visibility crosswalks, and parked vehicles close to the intersection reduce pedestrian and bicyclist visibility in this intersection.

RECOMMENDATIONS

• High-visibility crosswalks – Paint high-visibility crosswalks across north and east legs of the intersection to improve visibility of Vine Trail users.

• Curb extension – Install curb extensions for both crosswalks to improve pedestrian/bicyclist visibility, prevent vehicles from parking close to crosswalks, and improve motorist yielding behavior.

• Increase pedestrian/bike signage – Increase signage indicating pedestrian and bicyclist crossing ahead, particularly on Central Avenue, to improve motorist awareness of active transportation users.

IDENTIFIED BARRIERS

• No bicycle facilities – The lack of bicycle facilities on the corridor fails to provide a dedicated space for bicyclists and indicate to motorists where to expect bicyclists, making the corridor appear unwelcoming to bicyclists.

• Motorist speeding – Motorist speeding, which can be facilitated by wide, straight roads with little traffic-calming or traffic control, reduces motorists’ range of vision and increases both risk of collisions and potential severity of collisions.

RECOMMENDATIONS

• Class III bike boulevard – Install Class III bike boulevard with sharrows, signage, and traffic-calming measures.

IDENTIFIED BARRIERS

• High volume intersection – This intersection of an arterial and a collector is a key intersection in the school area, as it is highly travelled by all modes of transportation, both school-related and non-school related, and can feel chaotic and challenging during school arrival and dismissal times.

• Low-visibility crosswalks – Faded, low-visibility pattern crosswalks do not provide pedestrian visibility and motorist yielding behavior benefits that high-visibility patterns provide.

• Long crossing distance – Long crossing distances in the intersection require pedestrians to be in the roadway for a longer time than necessary, increasing the risk of collisions, and push pedestrians further out of the range of vision of motorists.

RECOMMENDATIONS

• High-visibility crosswalks – Upgrade the existing crosswalks to be a high-visibility pattern to increase pedestrian visibility and motorist yielding behavior.

• Leading Pedestrian Intervals – Install Leading Pedestrian Intervals for all crosswalks to provide pedestrians with a protected head-start through the intersection, improving driver awareness of pedestrians and reducing risk of turning conflicts.

• Curb extensions – Based on results of corridor study and potential for a road diet on Jefferson Street, consider installation of curb extensions at all four corners of intersection to reduce pedestrian crossing distance and improve motorist yielding behavior.

IDENTIFIED BARRIERS

• Informal bike path – An informal dirt path from Crosswalk Community Church to D St Alley that is frequently used by bicyclists as an undercrossing to SR 29 has a rough surface that poses a fall risk, is not weather-resistant, and is not comfortable or safe-feeling to use for many users, especially due to the lack of lighting.

RECOMMENDATIONS

• Formalize undercrossing – Formalize the SR 29 undercrossing with a Class I shared-use path and lighting.
RECOMMENDATION #NAP-040: CARPOOL PROGRAM

IDENTIFIED BARRIERS

• Congestion in school zone – Congestion in the school zone during school arrival and dismissal times can increase conflict risk and make the school zone feel unpredictable and unsafe to bicyclists and pedestrians, especially in conjunction with infrastructure barriers.

RECOMMENDATIONS

• Carpool program – Develop a carpool system to reduce the number of cars in the school zone. The carpool system should include incentives for carpooling, such as reserved parking spaces in school parking lots or incentives otherwise identified by the school.

RECOMMENDATION #NAP-041: ANNUAL COUNTYWIDE ENCOURAGEMENT EVENTS

IDENTIFIED BARRIERS

• Low participation in encouragement events – Infrequent participation or low student engagement in annual countywide encouragement events reduces the impact of these events on potential mode shift to active transportation.

RECOMMENDATIONS

• Annual countywide events – Participate regularly in annual countywide encouragement events. Bike to School Day and Walk and Roll to School Day, with the goal of increasing participation. These annual events provide students who may be considering walking or biking with an opportunity to try it out in a positive schoolwide setting.

ADDITIONAL CONSIDERATIONS

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

RECOMMENDATION #NAI-103: PUEBLO AVE VINE TRAIL ACCESS

IDENTIFIED BARRIERS

• Faded low-visibility crosswalk
• Uncontrolled crosswalk
• Long crossing distance

RECOMMENDATIONS

• High-visibility school-zone crosswalk
• Curb extensions
• Rectangular Rapid Flashing Beacons
• Vine Trail alignment

RECOMMENDATION #NAI-098: LINCOLN AVE AND CALIFORNIA BLVD INTERSECTION

IDENTIFIED BARRIERS

• Busy intersection
• Long crossing distances
• Right-hook conflicts

RECOMMENDATIONS

• Leading Pedestrian Intervals
• Limit lines
• Bicycle facilities
• High-visibility crosswalks
• Additional study

RECOMMENDATION #NAI-292 – NAI-295: LINCOLN AVE AND YAJOME ST INTERSECTION

IDENTIFIED BARRIERS

• Long crossing distances
• Wide curb radii
• High traffic speeds/volumes
• Fast motorist turning movements
• Bike facilities disappear
• Missing crosswalk
• Parked vehicles obstruct visibility

RECOMMENDATIONS

• Curb extensions
• Crosswalk across Yajome
• Continue bicycle facility with conflict markings
• High-visibility crosswalk and Rectangular Rapid Flashing Beacons across Lincoln Avenue
• Sharks’ teeth

RECOMMENDATION #NAI-299: YAJOME STREET VINE TRAIL CROSSING

IDENTIFIED BARRIERS

• No crosswalk

RECOMMENDATIONS

• High-visibility crosswalk
• Curb extensions

RECOMMENDATION #NAI-027, NAI-088, NAI-089: PUEBLO AVENUE

IDENTIFIED BARRIERS

• High speed/volume traffic
• Motorist speeding
• Vehicles obstructing visibility
• No bicycle facilities
• Narrow sidewalks/sidewalk gap

RECOMMENDATIONS

• Traffic-calming and daylighting
• Class II bike lanes
• Widen sidewalks
• Fill sidewalk gap

RECOMMENDATION #NAI-091 AND NAI-092: CALIFORNIA BOULEVARD BIKE FACILITIES

IDENTIFIED BARRIERS

• High-stress bike facilities
• Bike lane narrows
• Divot

RECOMMENDATIONS

• Class IV protected bike lanes
• Widen northbound bike lane
• Repair southbound bike lane divot

RELEVANT REPORTS

VALLEY OAK HIGH SCHOOL WALK AUDIT REPORT

Leadership students at American Canyon High School host a welcome table during Walk and Roll to School Day 2021.

Image credit: Marin County Safe Routes to School.

McPherson Elementary School Walk Audit Report

Sharks’ teeth

New Tech High School Walk Audit Report

Image credit: Marin County Safe Routes to School's Cocoa for Carpools.
**Map 5: Recommendations**

**MAP OF RECOMMENDATIONS**

**TABLE OF RECOMMENDATIONS**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ID #</th>
<th>BARRIER</th>
<th>RECOMMENDATION</th>
<th>COST</th>
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<td>Lincoln Avenue from California Boulevard to Soscol Avenue</td>
<td>NAI-259</td>
<td>High-stress bicycle facilities – poor road quality, dips/fall hazards from storm drains, narrow and unprotected next to high speed and high-volume traffic.</td>
<td>Implement a road diet along Lincoln Avenue to create a street with one travel lane in each direction and a middle turn lane. Use reclaimed space for multimodal improvements (widen sidewalks, install low-stress bike facilities). Due to high multimodal use, may require a Corridor Plan similar to Imola Ave.</td>
<td>$</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>NAI-260</td>
<td>Install a Class IV bike lane – can be parking protected to preserve some parking in some locations but should remove parking around intersections and driveways. Install conflict markings at (major) intersections and driveways. Buffered Class II bike lanes can also be used in areas where Class IV is not feasible.</td>
<td>Upgrade crosswalks to high-visibility pattern; install pedestrian crossing signage.</td>
<td>$</td>
<td>Low</td>
</tr>
<tr>
<td>Jefferson Street from Trancas Street to Lincoln Avenue*</td>
<td>NAI-262</td>
<td>Significant high-volume central north/south-arterial – wide, straight, auto-oriented corridor designed to prioritize vehicle speed and convenience over safety/access of other modes. Road design facilitates frequent motorist speeding. Infrequent and high-stress/conflict-risk crosswalks across the corridor, minimal shade, no bike facilities.</td>
<td>Long term: Road diet and redesign of corridor to improve and prioritize safe, accessible, and comfortable multi-modal transportation through a Complete Streets framework. Integrate specific recommendations from SRTS reports into road redesign.</td>
<td>$$$-$</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>NAI-263</td>
<td>No bicycle facilities.*</td>
<td>Class IV protected bike lanes preferred for this corridor with reclaimed space from road diet</td>
<td>$-$</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>NAI-264</td>
<td>Sidewalk gap on northbound (east) side between George Street and Central Avenue.</td>
<td>Fill sidewalk gap.*</td>
<td>$-$</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>NAI-105</td>
<td>Long signal adaptation time at Vine Trail crossing, long crossing distance.</td>
<td>Decouple traffic signal from Jefferson Street and Pueblo Avenue signal to prioritize Vine Trail crossing; shorten crossing distance with corridor study* and potential road diet on Jefferson corridor.</td>
<td>$-$</td>
<td>Medium</td>
</tr>
<tr>
<td>LOCATION ID</td>
<td>BARRIER</td>
<td>RECOMMENDATION</td>
<td>COST</td>
<td>PRIORITY</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
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<td></td>
</tr>
<tr>
<td>NAI-265</td>
<td>Significant north/south collector/arterial – wide, auto-oriented corridor designed to prioritize vehicle speed and convenience over safety/access of other modes. Road design facilitates frequent motorist speeding. Infragrant and inadequate crosswalks across the corridor, minimal shade, high-stress, no bike facilities.</td>
<td>Long term: Road diet and redesign of corridor to improve and prioritize safe, accessible, and comfortable multi-modal transportation through a Complete Streets framework. Integrate specific recommendations from SRTS reports into road redesign.</td>
<td>$$$-$$$$</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>NAI-266</td>
<td>No bicycle facilities.*</td>
<td>Find a short-term solution pending the road diet/redesign that creates continuous bicycle facilities in both directions for this corridor – minimum separation level is Class II bike lanes. May require reallocating space from motor vehicles.</td>
<td>$$-$$$$</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>NAI-267</td>
<td>Uncontrolled crosswalks across Jefferson are extremely difficult to cross – low driver yielding behavior, low-visibility pattern crosswalks, no traffic-control/calming, high volumes and speeds of traffic, parked vehicles close to crosswalks, long crossing distance, low field of vision for motorists.</td>
<td>Install curb extensions (may require removing parking) and high-visibility crosswalks at uncontrolled crosswalks across Jefferson Street.</td>
<td>$$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Lincoln Avenue and Jefferson Street intersection NAI-268</td>
<td>Large, busy intersection: long crossing distances across several lanes of traffic, high volumes of vehicles, faded low-visibility pattern crosswalks in a school zone and at an intersection of two arterials/collectors.</td>
<td>Install Leading Pedestrian Intervals for all crosswalks. Repaint crosswalks with a high-visibility pattern. Install stop lines for all vehicle travel lanes. Paint green conflict markings on Lincoln Ave bike lanes approaching the intersection. Curb extension on northeast corner to tighten curb radius and slow right turns and square up intersection. Redesign intersection with recommended road diets and Jefferson Street corridor study* to prioritize bicyclist and pedestrian separation and safety and slow motorist speeds. Consider protected intersection during redesign.</td>
<td>$$</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Park Avenue from California Boulevard to Jefferson Street NAI-269</td>
<td>No bicycle facilities, motorists speeding.</td>
<td>Install Class III bike boulevard with sharrows, signage, and traffic-calming.*</td>
<td>$$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>NAI-270</td>
<td>Gap in eastbound sidewalk between El Dorado Street and Marin Street.</td>
<td>Fill sidewalk gap.*</td>
<td>$</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Jefferson Street and Central Avenue intersection NAI-271</td>
<td>Low pedestrian visibility crossing Central – no crosswalk, building on south corner obstructs visibility for motorists turning on/off Jefferson. Parked cars on north side of Central can obstruct pedestrians. No crosswalk across Jefferson to popular destinations near the school.</td>
<td>Paint high-visibility crosswalks across Central Ave and Jefferson St, install Rectangular Rapid Flashing Beacons and curb extensions for crosswalk across Jefferson. Install pedestrian crossing signage for motorists turning off of Jefferson. Address visibility issues created from building on south corner.</td>
<td>$$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Kennedy Way from Lincoln Avenue to Park Avenue NAI-272</td>
<td>Narrow sidewalks/sidewalk gaps.</td>
<td>Fill sidewalk gaps* and widen sidewalks.</td>
<td>$$</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>NAI-273</td>
<td>No bicycle facilities on north/south alternative to Jefferson St.</td>
<td>Install Class III bike boulevard stencils and signage (speed cushions and limited vehicle access already exist to accomplish traffic-calming).</td>
<td>$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>NAI-274</td>
<td>Low lighting (especially north of the bend).</td>
<td>Install pedestrian-scale lighting.</td>
<td>$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>NAI-275</td>
<td>Motorists misuse for student drop-off (prohibited).</td>
<td>Install “No drop-off” signage around entrance to Kennedy Way off of Lincoln Avenue.</td>
<td>$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Napa High School Campus NAI-276</td>
<td>No bike parking on the west side of campus along Kennedy Way.</td>
<td>Install several bike racks near entry points on west side of campus to accommodate bicyclists entering from Kennedy Way.</td>
<td>$</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>NAI-277</td>
<td>No lighting for informal bike parking on the west side of campus.</td>
<td>Install light structures on west side of campus near entry points.</td>
<td>$</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Park Avenue and Santa Clara Street intersection NAI-278</td>
<td>Low pedestrian visibility due to low-visibility crosswalk pattern in school zone, cars parking close to crosswalk on north side of Park, speeding on Park.</td>
<td>Install curb extensions on both sides of Park Avenue crosswalk, upgrade crosswalk to high visibility school-zone pattern.</td>
<td>$$-$$$$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>Jefferson Street and Park Avenue intersection NAI-279</td>
<td>Faded low-visibility crosswalk patterns, long crossing distance across Jefferson, speeding, wide curb radii on west side facilitates fast right turn motions, no stop lines for northbound Jefferson.</td>
<td>Upgrade crosswalks to high-visibility pattern, install curb extensions on all crosswalk curbs, with significant extensions on Jefferson sides of south crosswalk. Install stop lines on northbound Jefferson to improve pedestrian visibility.</td>
<td>$</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td>ID #</td>
<td>BARRIER</td>
<td>RECOMMENDATION</td>
<td>COST</td>
<td>PRIORITY</td>
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</tr>
<tr>
<td>Jefferson Street and George Street intersection</td>
<td>NAI-280</td>
<td>Faded low-visibility crosswalk pattern, long crossing distance across Jefferson, high traffic volumes and speeds along Jefferson.</td>
<td>Upgrade crosswalks to high-visibility crosswalks, install curb extensions on Jefferson adjacent to crosswalks, install Leading Pedestrian Interval for Jefferson crosswalk.</td>
<td>$5</td>
<td>Low</td>
</tr>
<tr>
<td>Pueblo Avenue and Vine Trail entrance intersection</td>
<td>NAI-103</td>
<td>Faded low-visibility pattern crosswalk in school zone, high-speed/high-volume Pueblo traffic is uncontrolled reducing motorist yielding behavior at high pedestrians/bicyclist volume crosswalk, diagonal crosswalk increases crossing distance.</td>
<td>Realign north side of Vine Trail to curve so crosswalk is perpendicular across Pueblo. Paint high-visibility crosswalk pattern. Install curb extensions and Rectangular Rapid Flashing Beacons.</td>
<td>$5 - $$$</td>
<td>High</td>
</tr>
<tr>
<td>Central Avenue and Main Street intersection</td>
<td>NAI-281</td>
<td>Poor sight lines and pavement condition, lack of striping for Vine Trail crossing. Poor pavement condition, low-visibility crosswalk on north side and missing crosswalk on east side for Vine Trail users, low pedestrian visibility due to the railroad crossing/the geometry of the intersection and parked vehicles close to the intersection.</td>
<td>Paint high-visibility crosswalks across north and east leg for Vine Trail path and install curb extensions for both crosswalks, increase pedestrian/bike crossing signage.</td>
<td>$5</td>
<td>Medium</td>
</tr>
<tr>
<td>Lincoln Avenue and Marin Street intersection</td>
<td>NAI-283</td>
<td>Missing crosswalk across Marin Street on north side, low visibility crosswalk patterns, long crossing distance across Lincoln Ave, high volumes and speeds of traffic on Lincoln Ave.</td>
<td>Paint high-visibility school zone crosswalk across Marin Street, install curb extension on southeast corner, paint sharks’ teeth on Lincoln Ave to improve pedestrian visibility and motorist yielding behavior. Paint red curbs on Marin St adjacent to crosswalk.</td>
<td>$-$ $$</td>
<td>Low</td>
</tr>
<tr>
<td>Lincoln Avenue and Kennedy Way/Georgia Street intersection</td>
<td>NAI-284</td>
<td>Wide curb radius on southwest side, cars park close to crosswalk on Georgia Street, low-visibility crosswalk pattern across Georgia Street.</td>
<td>Install small curb extension on southwest side to reduce curb radius, paint red curbs on Georgia Street, paint high-visibility crosswalk pattern across Georgia Street, extend painted median with paint/bollards on Lincoln Ave through crosswalk to create pedestrian refuge island.</td>
<td>$-$ $$</td>
<td>High</td>
</tr>
<tr>
<td>Lincoln Avenue and Brown Street intersection</td>
<td>NAI-285</td>
<td>Difficult intersection, motorists fail to yield to pedestrians, long crossing distance, faded low-visibility crosswalks, high volumes and speeds of Lincoln Ave traffic.</td>
<td>Install Rectangular Rapid Flashing Beacons across Lincoln Ave, repaint crosswalks, upgrade crosswalks across Lincoln Ave to be high-visibility pattern, install small curb extension on northwest corner, paint red curbs on Brown Street adjacent to crosswalks.</td>
<td>$5</td>
<td>Low</td>
</tr>
<tr>
<td>Central Avenue from Jefferson Street to Soscol Avenue</td>
<td>NAI-286</td>
<td>No eastbound sidewalk from Jefferson Street to Main Street.</td>
<td>Install eastbound sidewalk where missing.*</td>
<td>$5</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>NAI-287</td>
<td>No bicycle facilities, speeding.</td>
<td>Install Rectangular Rapid Flashing Beacons across Lincoln Ave, repaint crosswalks, upgrade crosswalks across Lincoln Ave to be high-visibility pattern, install small curb extension on northwest corner, paint red curbs on Brown Street adjacent to crosswalks.</td>
<td>$5</td>
<td>Medium</td>
</tr>
<tr>
<td>Park Avenue and El Dorado Street intersection</td>
<td>NAI-288</td>
<td>Low-visibility crosswalk pattern across Park Ave, cars park close to crosswalk across Park Ave.</td>
<td>Upgrade school zone crosswalk across Park Ave to high-visibility crosswalk pattern, paint/extend red curbs on Park Ave.</td>
<td>$</td>
<td>Low</td>
</tr>
<tr>
<td>Pueblo Avenue and Jefferson Street intersection</td>
<td>NAI-104</td>
<td>High volume intersection of collector and arterial roads, faded low-visibility pattern crosswalks, long crossing distances. See collision history.</td>
<td>Repaint crosswalks with high-visibility pattern; install Leading Pedestrian Intervals for all crosswalks to reduce turning conflicts. Based on results of corridor study* and potential for road diet (Jefferson), consider installation of curb extensions at all four corners of intersection.</td>
<td>$-$ $$</td>
<td>Medium</td>
</tr>
<tr>
<td>George Street from Jefferson Street to Brown Street</td>
<td>NAI-289</td>
<td>No continuous sidewalks.</td>
<td>Install continuous sidewalk on at least one side of the street.*</td>
<td>$</td>
<td>Low</td>
</tr>
<tr>
<td>Jefferson Street and Menlo Avenue intersection</td>
<td>NAI-106</td>
<td>No crosswalk across Menlo Avenue.</td>
<td>Paint crosswalk across Menlo Avenue.</td>
<td>$</td>
<td>Low</td>
</tr>
</tbody>
</table>
## Walk Audit Report
### 2.28.20

**Location:** Napa High School  |  Napa, CA

### Location: Lincoln Avenue and California Boulevard intersection

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-098</td>
<td>High traffic volume/speed intersection right next to highway entrance; long crossing distances require crossing several lanes of traffic.</td>
<td>Leading Pedestrian Interval; install advanced limit lines on east and west legs of intersection to improve pedestrian visibility; continue bike facilities to the intersection instead of ending them in advance and install green conflict markings in bike facilities approaching intersection on all sides. Update crosswalks to high-visibility pattern.</td>
<td>$</td>
<td>Medium</td>
</tr>
</tbody>
</table>

### Location: Lincoln Avenue and Main Street intersection

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-290</td>
<td>Faded crosswalks, wide corner radii, large intersection with high speeds/volumes of vehicle traffic on Lincoln Ave.</td>
<td>Repaint crosswalks with high-visibility pattern, install curb extension on southeast side.</td>
<td>$-$-$</td>
<td>Low</td>
</tr>
</tbody>
</table>

### Location: Lincoln Avenue and Adrian Street intersection

<table>
<thead>
<tr>
<th>ID #</th>
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<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-291</td>
<td>Misaligned intersection, no crosswalks, cars park close to intersection on Adrian St and block pedestrian visibility.</td>
<td>Paint crosswalks across Adrian Street, install curb extensions on north corners and paint red curbs on Adrian St on south curbs.</td>
<td>$</td>
<td>Low</td>
</tr>
</tbody>
</table>

### Location: Lincoln Avenue and Yajome Street intersection

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-292</td>
<td>Yajome St (south side) – widens at intersection, increasing pedestrian crossing distance and facilitating fast right turns onto Lincoln Ave. No stop control for high speed/volume Lincoln Ave traffic may cause drivers on Yajome to make fast turns/crossing without looking for bicyclists/peds. Bike facilities disappear through intersection.</td>
<td>Install significant curb extension on southeast corner and curb extension on southeast corner (Yajome sides only) to square up intersection, reduce crossing distance, and calm traffic.</td>
<td>$</td>
<td>Medium</td>
</tr>
</tbody>
</table>

### Location: Yajome Street and Vine Trail crossing (intersection)

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-299</td>
<td>No crosswalk across Yajome at Vine Trail crossing.</td>
<td>Install curb extensions at Vine Trail curbs and paint high-visibility crosswalk across Yajome to mark Vine Trail crossing path.</td>
<td>$</td>
<td>High</td>
</tr>
</tbody>
</table>

### Location: Pueblo Avenue from California Boulevard to Jefferson Street

<table>
<thead>
<tr>
<th>ID #</th>
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<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-207</td>
<td>High speeds and volumes of traffic, speeding, vehicles park close to intersections and obstruct visibility of pedestrians and oncoming traffic. See collision history.</td>
<td>Implement traffic-calming strategies along corridor.</td>
<td>$</td>
<td>High</td>
</tr>
</tbody>
</table>

### Location: Marin Street from Lincoln Avenue to Park Avenue

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-101</td>
<td>Sidewalk gaps. (Southbound: Lincoln Avenue to 2801 Marin Street Northbound: Baseball field north side of parking lot to Park Avenue).</td>
<td>Fill sidewalk gaps.*</td>
<td>$</td>
<td>Medium</td>
</tr>
</tbody>
</table>

### Location: Central Avenue and Adrian Street intersection

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-297</td>
<td>No crosswalks.</td>
<td>Install crosswalks on all legs of intersection.</td>
<td>$</td>
<td>Low</td>
</tr>
</tbody>
</table>

### Location: Yajome Street and Vine Trail crossing path.

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-298</td>
<td>No crosswalk across Yajome at Vine Trail crossing.</td>
<td>Install curb extensions at Vine Trail curbs and paint high-visibility crosswalk across Yajome to mark Vine Trail crossing path.</td>
<td>$</td>
<td>High</td>
</tr>
</tbody>
</table>

### Location: NAI-088 Narrow sidewalks from California Boulevard to Jefferson Street

<table>
<thead>
<tr>
<th>ID #</th>
<th>Barrier Description</th>
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<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-100</td>
<td>High speeds and volumes of traffic, speeding, vehicles park close to intersections and obstruct visibility of pedestrians and oncoming traffic. See collision history.</td>
<td>Implement traffic-calming strategies along corridor.</td>
<td>$</td>
<td>High</td>
</tr>
</tbody>
</table>

### Location: NAI-089 No bike facilities.

<table>
<thead>
<tr>
<th>ID #</th>
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<th>Recommendation</th>
<th>Cost</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA1-101</td>
<td>Sidewalk gaps. (Southbound: Lincoln Avenue to 2801 Marin Street Northbound: Baseball field north side of parking lot to Park Avenue).</td>
<td>Fill sidewalk gaps.*</td>
<td>$</td>
<td>Medium</td>
</tr>
</tbody>
</table>

### Location: NAI-087 No crosswalk across Yajome at Vine Trail crossing. | Install curb extensions at Vine Trail curbs and paint high-visibility crosswalk across Yajome to mark Vine Trail crossing path. | $ | High |

### Location: NAI-088 Narrow sidewalks from California Boulevard to Jefferson Street

<table>
<thead>
<tr>
<th>ID #</th>
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<th>Recommendation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>NA1-100</td>
<td>High speeds and volumes of traffic, speeding, vehicles park close to intersections and obstruct visibility of pedestrians and oncoming traffic. See collision history.</td>
<td>Implement traffic-calming strategies along corridor.</td>
<td>$</td>
<td>High</td>
</tr>
</tbody>
</table>

### Location: NAI-089 No bike facilities.

<table>
<thead>
<tr>
<th>ID #</th>
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<tbody>
<tr>
<td>NA1-101</td>
<td>Sidewalk gaps. (Southbound: Lincoln Avenue to 2801 Marin Street Northbound: Baseball field north side of parking lot to Park Avenue).</td>
<td>Fill sidewalk gaps.*</td>
<td>$</td>
<td>Medium</td>
</tr>
</tbody>
</table>

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* Indicates additional cost for materials.
## Programmatic Improvements:

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>ID #</th>
<th>RECOMMENDATION</th>
<th>LOCATION</th>
<th>FREQUENCY</th>
<th>COST</th>
<th>PRIORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NAP-039</td>
<td>Peer/Student-led encouragement programs and education campaigns highlighting health, environmental, social, and academic benefits of walking/biking to school.</td>
<td>School site</td>
<td>Annually</td>
<td>$</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>NAP-041</td>
<td>Continue participating regularly in annual countywide encouragement events with goal of growing student participation.</td>
<td>School site</td>
<td>Annually</td>
<td>$</td>
<td>Medium</td>
</tr>
<tr>
<td>3</td>
<td>NAP-042</td>
<td>On-campus bike maintenance and safety workshop for students.</td>
<td>School site</td>
<td>Annually</td>
<td>$</td>
<td>High</td>
</tr>
<tr>
<td>4</td>
<td>NAP-043</td>
<td>Improve existing maintenance – ensure that bike lanes are swept regularly, street-sweeping and increase frequency of maintenance if maintenance issues continue.</td>
<td>Lincoln Avenue from California Boulevard to Soscol Avenue</td>
<td>Regular street-sweeping schedule, increase if needed</td>
<td>$</td>
<td>High</td>
</tr>
</tbody>
</table>

### Programmatic Improvements:

<table>
<thead>
<tr>
<th>LOCATION</th>
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<th>BARRIER</th>
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</tr>
</thead>
<tbody>
<tr>
<td>California Boulevard from Trancas Street to Clay Street</td>
<td>NAI-091</td>
<td>High-stress bicycle facilities – unprotected facilities adjacent to high volumes of traffic on roadway that facilitates speeding.</td>
<td>From Lincoln Avenue to Trancas Street: Upgrade existing Class II bike lanes to Class IV protected bike lanes, with parking-protected lanes between Pueblo Avenue and Industrial Way.</td>
<td>$ $</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>NAI-300</td>
<td>Install Class IV protected bike lanes from Lincoln Avenue to Clay Street with green conflict markings at major driveways and side streets. Will require redesign of transit stop on southbound California Blvd in front of Lucky Supermarket.</td>
<td>$ $$-$$$</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NAI-092</td>
<td>Northbound bike lane narrows and dips near Lincoln Ave; long divot in southbound bike lane approaching Lincoln Ave poses tire-catching hazard next to high speeds and volumes of traffic.</td>
<td>Widen the northbound bike lane where widths are substandard and repave or otherwise address the dip in the pavement. Repair southbound bike lane approaching Lincoln Avenue where divot in roadway poses tire-catching hazard.</td>
<td>$</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>NAI-093</td>
<td>Narrow sidewalks between Pueblo Avenue and Lincoln Avenue.</td>
<td>Widen sidewalks on both sides between Pueblo Avenue and Lincoln Avenue.</td>
<td>$</td>
<td>Low</td>
</tr>
<tr>
<td>California Boulevard and D Street Alley intersection</td>
<td>NAI-302</td>
<td>No way to comfortably cross California at D St Alley from informal bike path, may result in bicyclists on sidewalk or going against traffic.</td>
<td>Create high-visibility crosswalk with Rectangular Rapid Flashing Beacons across California Blvd on south side of D St Alley.</td>
<td>$</td>
<td>Low</td>
</tr>
<tr>
<td>SR 29 Informal Bike/Ped Undercrossing Path</td>
<td>NAI-303</td>
<td>Informal dirt path from Crosswalk Community Church to D St Alley not weather-resistant or comfortable/safe feeling to use (poor under highway with no lighting).</td>
<td>Formalize path and undercrossing with lighting.*</td>
<td>$$ $$ $$ $$</td>
<td>Medium</td>
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<tr>
<td>Marin Street and Park Avenue intersection</td>
<td>NAI-300</td>
<td>Faded crosswalks across Park Avenue and Marin Street on north side, missing crosswalk across Marin Street on south side; no ADA-compliant curb ramps.</td>
<td>Repaint faded crosswalks, paint missing crosswalk across Marin Street, install ADA-compliant curb ramps.</td>
<td>$</td>
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* = projects included in Napa Countywide Pedestrian Plan (2016) or Napa Countywide Bicycle Plan (2019)
Collision List

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</table>
APPENDICES

Appendix A: EMC Survey Toplines
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 – Encouragement and Education Data (p. 14)
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FOOTNOTES


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

EMC Survey Toplines

Safe Routes to School Walk Audit Report and Active Transportation Action Plan
Evaluation: Research & Methodology

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

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

- **Qualitative follow-up research**
  - One online focus group with 7 participants in English; 4 in-depth telephone interviews in Spanish
  - Conducted May 20 – 28, 2021
  - Targeted parents who lived within two miles of their school site and would like their children to walk or bike to school
Survey of Parents/Guardians of at least one child in K-8th Grade  
Napa County, California  
Hybrid Email-to-Web/Text-to-Web/Live Telephone Survey  
Conducted March 11-April 12, 2021  
n=459  
EMC Research #21-6420

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

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

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

1. Are you the parent or guardian of any children currently attending kindergarten through eighth grade in one or more of the school districts located in Napa County below? Please select the District(s) that your K-8th grade student(s) is/are currently enrolled in, check all that apply. (MULTIPLE RESPONSES ACCEPTED)
   - Calistoga Joint Unified School District 0
   - Howell Mountain Elementary School District -
   - Napa Valley Unified School District 97
   - Pope Valley Union Elementary School District 0
   - Saint Helena Unified School District 2
   - Another District or school in Napa County (please specify) 1
   - None of the above → TERMINATE
   - (No response) → TERMINATE

2. Please indicate below what grade(s) your child/children are in. Please select all that apply. (MULTIPLE RESPONSES ACCEPTED)
   - Kindergarten 22
   - 1st grade 17
   - 2nd grade 15
   - 3rd grade 20
   - 4th grade 15
   - 5th grade 15
   - 6th grade 14
   - 7th grade 12
   - 8th grade 9
   - 9th through 12th grade → TERMINATE IF ONLY RESPONSE SELECTED 14
   - (No response) → TERMINATE
(IF MORE THAN ONE K-8 STUDENT: “Although you have multiple children in K-8, we ask that you please think about your oldest K-8 child when answering the next questions.”)

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

3. On most days, what was the primary way your (K-8 child/oldest K-8 child) travelled to school?
   - Family vehicle (only children in your family) 73
   - Carpool (children from other families) 3
   - School bus 3
   - Other public transportation 0
   - Bike 4
   - Walk 16
   - Other (scooter, skateboard, inline skates, etc.) 0
   - (No response) 0

4. And on most days, what was the primary way your (K-8 child/oldest K-8 child) travelled from school?
   - Family vehicle (only children in your family) 73
   - Carpool (children from other families) 3
   - School bus 3
   - Other public transportation 1
   - Bike 4
   - Walk 15
   - Other (scooter, skateboard, inline skates, etc.) 0
   - (No response) 0

5. How long did it normally take your (K-8 child/oldest K-8 child) to get to/from school?
   - Less than 5 minutes 18
   - 5-10 minutes 42
   - 11-15 minutes 22
   - 16-20 minutes 8
   - More than 20 minutes 9
   - (No response) 0

6. Has your (K-8 child/oldest K-8 child) ever walked or biked to/from school?
   - Yes 43
   - No 56
   - (No response) 0
7. (ONLY ASKED IF Q6=1, ‘Yes, has walked/biked to/from school’) In what grade did your child begin to walk or bike to/from school? (n=199)

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8. Thinking generally, what grade would you feel comfortable with a child walking or biking to/from school?

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<td>9th through 12th grade</td>
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<td>I would not feel comfortable at any grade</td>
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<td>(No response)</td>
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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.

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<th>Not too Comfortable</th>
<th>Not at all Comfortable</th>
<th>(No Response)</th>
<th>Total Comfort.</th>
<th>Total Not Comfort.</th>
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(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.

<table>
<thead>
<tr>
<th>SCALE:</th>
<th>Strongly Agree</th>
<th>Somewhat Agree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
<th>(No Response)</th>
<th>Total Agree</th>
<th>Total Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>43</td>
<td>32</td>
<td>12</td>
<td>12</td>
<td>0</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>17.</td>
<td>57</td>
<td>31</td>
<td>8</td>
<td>4</td>
<td>0</td>
<td>88</td>
<td>12</td>
</tr>
<tr>
<td>18.</td>
<td>20</td>
<td>24</td>
<td>27</td>
<td>28</td>
<td>0</td>
<td>44</td>
<td>55</td>
</tr>
<tr>
<td>19.</td>
<td>13</td>
<td>45</td>
<td>22</td>
<td>20</td>
<td>-</td>
<td>58</td>
<td>42</td>
</tr>
<tr>
<td>20.</td>
<td>13</td>
<td>27</td>
<td>20</td>
<td>39</td>
<td>1</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>21.</td>
<td>81</td>
<td>15</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>22.</td>
<td>37</td>
<td>19</td>
<td>15</td>
<td>29</td>
<td>0</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>23.</td>
<td>13</td>
<td>26</td>
<td>25</td>
<td>35</td>
<td>1</td>
<td>39</td>
<td>60</td>
</tr>
<tr>
<td>24.</td>
<td>69</td>
<td>25</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>93</td>
<td>6</td>
</tr>
<tr>
<td>25.</td>
<td>55</td>
<td>30</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>85</td>
<td>14</td>
</tr>
<tr>
<td>26.</td>
<td>54</td>
<td>25</td>
<td>12</td>
<td>8</td>
<td>0</td>
<td>79</td>
<td>21</td>
</tr>
</tbody>
</table>
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.

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

(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
   40-49 (1972-1981)  45
   50-64 (1957-1971)  12
   65 or older (1956 or earlier)  1
   Prefer not to respond  1

49. Do you consider yourself to be...
   Hispanic or Latino  38
   White or Caucasian  41
   African American or Black  1
   Asian or Pacific Islander  7
   Something else  3
   Prefer not to respond  10

50. Do you...
   Own or are buying the home or apartment where you live  55
   Rent or lease  35
   Prefer not to respond  10

THANK YOU!
APPENDIX B

Universal Recommendations

Safe Routes to School Walk Audit Report and Active Transportation Action Plan
Appendix B
Napa County SRTS Walk Audit Report
Universal Recommendations

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

Universal Recommendation 1: High-Visibility School Zone Crosswalks

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

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

This recommendation applies to existing and future crosswalks. It does not provide guidance for new crosswalk warrants; it is primarily focused on the improvement of crosswalks within the roughly \(\frac{1}{4}\) 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.

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

• Recommendation: Daylighting strategies should be implemented at the following intersections:
  o Those that are in the school zone as defined by CVC §21368;
  o 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.
Delivering Safer Streets in Weeks or Months, Instead of Years

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

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.

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.

“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.

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.
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 in 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.

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

COLORS: LEGEND & SYMBOL — GREEN (RETROREFLECTIVE)
BACKGROUND — WHITE (RETROREFLECTIVE)
Acknowledgments

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

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


Bicycle parking manufacturers and distributors shall not use APBP’s logo or imply product endorsement by APBP without express written permission from APBP.

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

Association of Pedestrian and Bicycle Professionals

bikeparking@apbp.org
www.apbp.org
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.
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

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.
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.

SITE PLANNING

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

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

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

SPECIAL CONSIDERATIONS FOR LONG-TERM PARKING

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

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

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

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

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

INSTALLATION SURFACE

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

INSTALLATION FASTENERS

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

FASTENERS

| CONCRETE SPIKE | Installs quickly in concrete with a hammer. Tamper-resistant. Removal may damage concrete and/or rack. |
| CONCRETE WEDGE ANCHOR | Allows for rack removal as needed. Not tamper-resistant, but can accommodate security nuts (below). |

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.
## PERFORMANCE CRITERIA FOR BIKE PARKING RACKS

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports bike upright without putting stress on wheels</td>
<td>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”.</td>
</tr>
<tr>
<td>Accommodates a variety of bicycles and attachments</td>
<td>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.</td>
</tr>
<tr>
<td>Allows locking of frame and at least one wheel with a U-lock</td>
<td>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.</td>
</tr>
<tr>
<td>Provides security and longevity features appropriate for the intended location</td>
<td>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).</td>
</tr>
<tr>
<td>Rack use is intuitive</td>
<td>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.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>RACKS FOR ALL APPLICATIONS</th>
<th>When properly designed and installed, these rack styles typically meet all performance criteria and are appropriate for use in nearly any application.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INVERTED U</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>POST &amp; RING</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>WHEELWELL-SECURE</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
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.
BOLLARD
This style typically does not appropriately support a bike’s frame at two separate locations.

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

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.

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.

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.

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

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

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

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

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

RACKS TO AVOID

WAVE
also called undulating or serpentine

SCHOOLYARD
also called comb, grid

COATHANGER

WHEELWELL

BOLLARD

SPIRAL

SWING ARM SECURED

Schoolyard also called comb, grid

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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.

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

*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.
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.

When installing sidewalk racks, maintain the pedestrian through zone. Racks should be placed in line with existing sidewalk obstructions to maintain a clear line of travel for all sidewalk users.
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:

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>$</td>
<td>&lt; $25,000</td>
</tr>
<tr>
<td>$$</td>
<td>Between $25,000 and $250,000</td>
</tr>
<tr>
<td>$$$</td>
<td>$250,000 to $1 million</td>
</tr>
<tr>
<td>$$$$</td>
<td>&gt; $1 million</td>
</tr>
</tbody>
</table>
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