Walk Audit Report

SafeRoutes
Napa County

DONALDSON WAY
ELEMENTARY SCHOOL

DONALDSON WAY ELEMENTARY SCHOOL

430 DONALDSON WAY AMERICAN CANYON, CA

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EXECUTIVE **SUMMARY**

THE NAPA COUNTY SAFE ROUTES TO SCHOOL PROGRAM

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

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

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

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

WHY SAFE ROUTES TO SCHOOL?

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

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

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

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

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

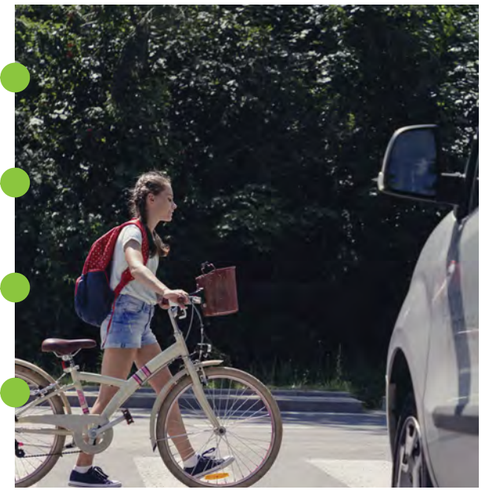
Schools and the community benefit immensely when students choose to walk or bike.

Student health has been linked to improved academic performance.

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

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

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



THE SIX E'S

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

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

Engagement
Listen to community members and work with existing community organizations.

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

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

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

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

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

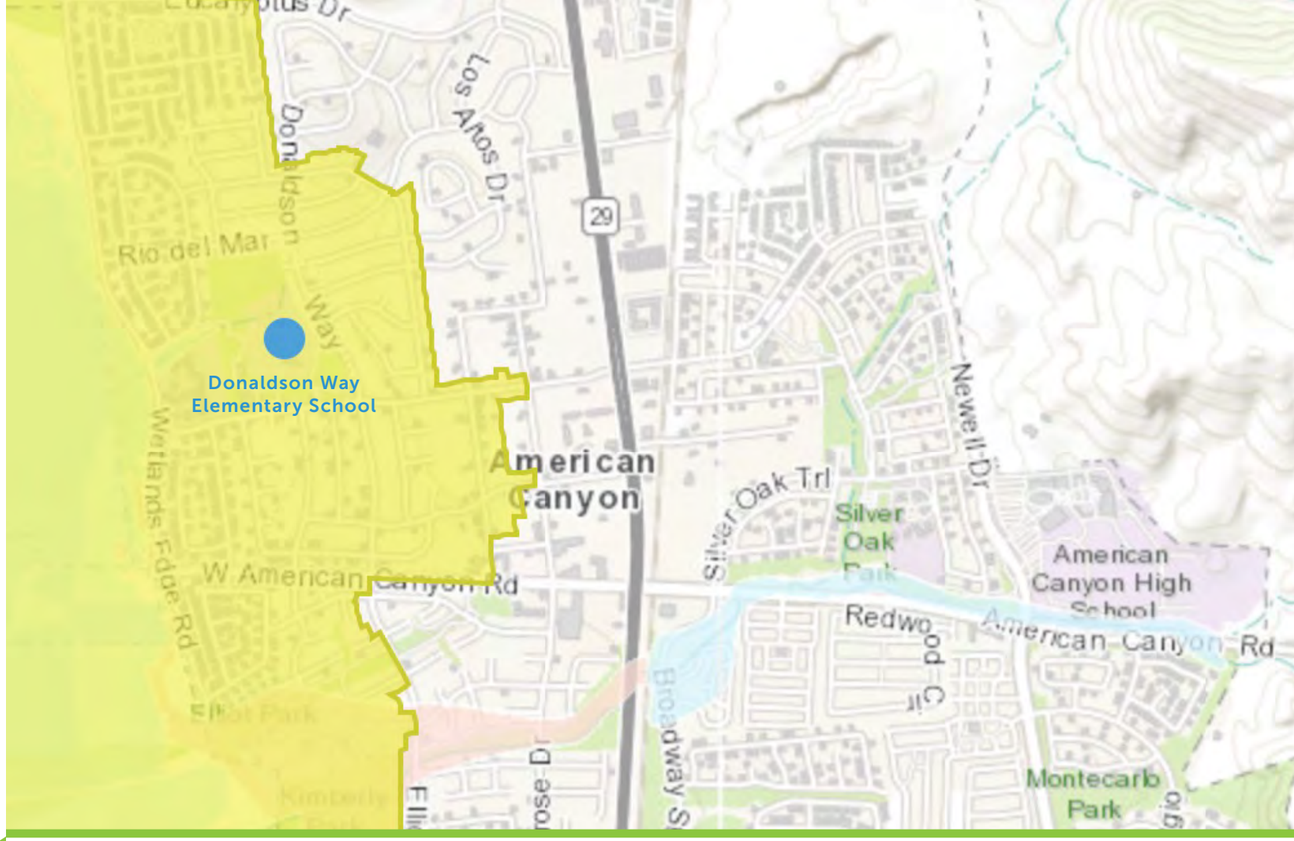
Enforcement (no longer an "E'):
Enforce traffic safety laws and school policies and target risky behaviors. No longer recommended as foundational to the start, maintenance, or growth of Safe Routes to School programs.

REPORT PROCESS

The SRTS team conducted a comprehensive evaluation of the barriers to students walking and biking to and from Donaldson Way Elementary School over the course of 2 years, starting in the summer of 2018. Information on physical and behavioral challenges was collected in two phases. In 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 October 2019, a Community Walk Audit brought parents and community members together to discuss school conditions and behaviors during pick-up and drop-off times, identify safety and convenience barriers for students walking and biking to school, prioritize issues, and brainstorm solutions. These two tasks resulted in an inventory of infrastructural barriers at and around the school site as well as a list of stakeholder-identified challenges.

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



Map 1: Enrollment boundary of Donaldson Way Elementary School (school location marked by blue circle)

While NVUSD has an open enrollment policy, Donaldson Way Elementary's default enrollment area covers about half of the area of American Canyon west of SR 29, with Eucalyptus Drive as its northmost border and Severus Drive as its southmost border.

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

According to the most recent data (2020-21 school year), 20.8% of students attending Donaldson Way Elementary reside outside of the school's enrollment boundary.

DONALDSON WAY ELEMENTARY SCHOOL
SCHOOL SUMMARY

Principal	Marilyn Abelon
First Bell	7:50 AM
Last Bell	2:15 PM
District	Napa Valley Unified

Grades	K-5
Enrollment	574
Street	430 Donaldson Way
City	American Canyon, CA 94503

Overall Facility Rating[j]: Good

DATA

No school-specific data is currently available regarding the number of students who walk and bike to school regularly. The school's Administration Clerk estimates that less than 100 students walk or bike to school regularly. Additional work is needed to establish a baseline of active transportation use for this school.

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

Total Enrollment by Group (2019-20)

ETHNICITY	DONALDSON WAY ELEMENTARY SCHOOL	DISTRICT
Black or African American	3.3%	1.9%
American Indian or Alaska Native	0.0%	0.2%
Asian	6.1%	2.2%
Filipino	18.1%	6.1%
Hispanic or Latino	43.2%	56.7%
White	18.5%	28.7%
Native Hawaiian or Pacific Islander	1.0%	0.2%
Two or More Races	9.8%	3.6%
Not Reported	0.0%	0.3%
EXPERIENCE		
Socioeconomically Disadvantaged	43.7%	50.5%
English Learners	22.6%	21%
Students with Disabilities	7.0%	12.3%
Foster Youth	0.3%	0.4%

Figure 1: Enrollment Data by Group

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

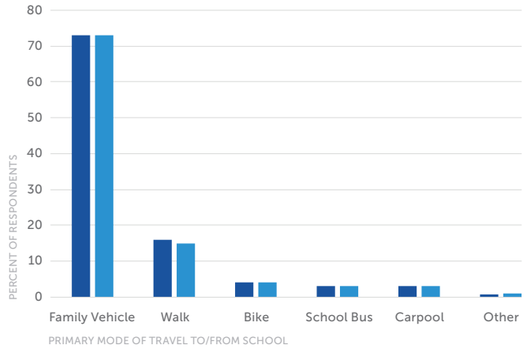


Figure 1: EMC Research Polling Results

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

Student Enrollment by Grade Level (2019-2020)

	NUMBER OF STUDENTS
Kindergarten	122
Grade 1	70
Grade 2	89
Grade 3	91
Grade 4	93
Grade 5	109
Total	**574**

Figure 2: Enrollment Data by Grade

NEIGHBORHOOD CONTEXT

Donaldson Way Elementary School shares a block with American Canyon Middle School, Community Parks 1 and 2, the American Canyon Boys and Girls Club, and the American Canyon Community Services Center, which includes a community gym and the Phillip West Aquatic Center. The block is located on the west edge of American Canyon, and is bordered by Wetlands Edge Road, Spikerush Circle, Rio Del Mar, Donaldson Way, and Benton Way. The block is surrounded by suburban residential neighborhoods on the north, east, and south sides, and wetlands on the west side. The elementary school itself is directly bordered by residences to the east, Community Park 1 to the north, Community Park 2 and the American Canyon Community Services Center to the south, and American Canyon Middle School to the west.

Map 2: Satellite Site Context

All of the neighborhoods around the school are low-density residential areas consisting of single-family homes. The neighborhoods to the north and south of the school have mixes of fragmented and warped parallel streets patterns, with northern neighborhoods featuring several lollipops and southern neighborhoods possessing some lollipops and cul-de-sacs. The northeast neighborhoods were built in the early 2000s, the northwest in the late 1950s, and the southern neighborhoods in the early 1990s, with some areas as recent as the early 2000s. Neighborhoods to the east of the school, built in the mid-1950s, contain warped parallel street patterns with loops, lollipops, and cul-de-sacs. While the lollipops and cul-de-sacs reduce vehicle speeds and volumes in the area, they also reduce pedestrian route choice and interconnectivity. Fragmented and warped parallel street patterns also reduce interconnectivity and can concentrate traffic onto main collector and arterial roads.

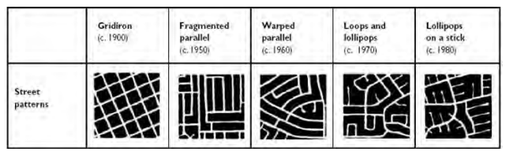


Figure 4: Examples of Street Patterns (Source: Southworth, 1997)

Benton Way (top left), Donaldson Way (top right), Wetlands Edge Road (bottom left), Rio Del Mar (bottom right)

The main roads surrounding the school, Benton Way, Wetlands Edge Road, Rio Del Mar, and Donaldson Way, are all significant collectors that connect the west American Canyon neighborhoods to important destinations, such as Highway 29 and the commercial downtown area. Wetlands Edge Road and Donaldson Way, which connects to Elliott Drive, provide significant north-south connections in American Canyon. They are often used to avoid traffic on SR 29, especially Donaldson Way/Elliott Drive, which provides the most continuous north-south connection on the west half of American Canyon. Both Donaldson Way/Elliott Drive and Wetlands Edge Road intersect with American Canyon Road, an arterial that provides the main east-west connection in American Canyon. In addition to American Canyon Road, Benton Way, which turns into Donaldson Way West, is one of the only two roads that provide continuous east-west connection in the city. Amarillo Drive, a residential road, intersects with Donaldson Way and provides the throughway to the school's parking lot.

EXISTING **CONDITIONS**

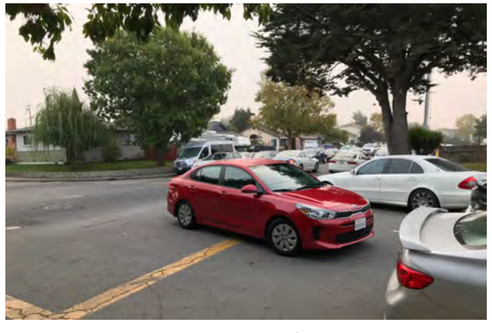
The Safe Routes to School Team conducted an initial evaluation of the school site and the surrounding area prior to conducting the Community Walk Audit. The Fulcrum App software was used to map and record significant point and segment issues within a half-mile range of the school. The team also collected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

SITE CIRCULATION

Donaldson Way Elementary School has two areas for parents to drop off and pick up students. The first is the official school parking lot, which can only be entered and exited through Amarillo Drive west of Donaldson Way. Motorists drive along the east side of the school to the loading zone in front of the main office in the parking lot, where students are dropped off, and then circle through the parking lot to exit the way they came. Fencing separates the east border of campus from the throughway. There is also a sidewalk along westbound Amarillo Drive that leads to an east entrance to the school's campus, which is commonly used by student bicyclists and pedestrians. Volunteer safety patrol, often parents, are stationed at the Amarillo Drive parking lot entrance and in front of the school's main entrance before and after school to regulate circulation.

This poses some circulation issues, as the small circulation space in the school parking lot causes cars to back up onto Amarillo Drive and Donaldson Way, creating congestion around the Donaldson Way and Amarillo Drive intersection. Additionally, traffic congestion on Donaldson Way increases during morning commute hours as Donaldson Way provides the surrounding residences with access to other important collector roads, such as Benton Way/ Donaldson Way West and Rio Del Mar. The Donaldson Way and Amarillo Drive intersection is also used by high volumes of students walking and biking to school, resulting in increased potential for conflict in this intersection.

The second circulation area is the city parking lot off of Benton Way that is just south of the school parking lot. The city lot is separated from school property by fencing and gates. Parents often park in the city lot, walk their children to the front of the school using the sidewalk on the west side of the parking lot, and then exit the lot back onto Benton Way.



Traffic backs up in the Amarillo Drive/Donaldson Way intersection.

The school sends safe driving information to parents at the beginning of the school year and sends reminders on an as-needed basis.

Two other paths provide pedestrian and bicyclist access to the school. An informal path connects the blacktop at the northwest corner of the school to the baseball field in Community Park 1, from which students can access Rio Del Mar and Donaldson Way. The other path is a sidewalk that runs between Community Park 2 and the east edge of the school. This sidewalk can be accessed from Donaldson Way and Benton Way, and connects to the school at its parking lot. A memorial grove and a small culvert sit between the sidewalk and the school property from the northern Donaldson Way entrance to the parking lot connection; however, students sometimes take a shortcut through the grove and across the culvert.

Bus service through NVUSD is not available for Donaldson Way Elementary students. However, students who live beyond 1.25 miles walking distance from school and attend their school of residence may apply for transportation through NVUSD. According to the school's Administration Clerk, only 3 or 4 students travel via NVUSD buses per year.

American Canyon is served by four routes of The Vine transit, operated by the Napa Valley Transportation Authority. Three of the routes, the 11: Napa-Vallejo Connector, 11X Napa-Vallejo Express, and 29: Napa-BART Express, are fixed-route only. The fourth route, American Canyon Transit, is an on-demand, door-to-door transit service within specific areas of the city and also operates a limited fixed-route service on weekdays. Both American Canyon Transit and the 11 line have stops at the corner of Benton Way and Donaldson Way, though American Canyon Transit does not stop at that intersection during its fixed afternoon route. The nearest 11X and 29 stops to ACMS are both at the American Canyon Post Office, about 0.7 miles walking distance.

The Vine transit bus stop at Benton Way and Donaldson Way.

SCHOOL PARKING LOT AND GROUNDS

SCHOOL PARKING LOT

Donaldson Way Elementary School has one official parking lot on the south end of the school property, which is also used as its student loading zone. Cars enter and exit this lot through Amarillo Drive and circle through the parking lot in a counter-clockwise direction. There is staff parking on the east side of the throughway from Amarillo Drive to the parking lot, and roughly 45 parking spaces in the lot. Circulation through the school parking lot is controlled through signage, painted arrows, and parent volunteer safety patrol, who help guide cars through the lot at the Amarillo Drive entrance and in front of the school's office. The school parking lot has a sidewalk along its west edge that provides a path from the city parking lot to the front of the school. There is also a narrow sidewalk in front of the school entrance on the north side of the school parking lot. The sidewalk leading to the school parking lot from Community Park 2 ends at a curb at the southeast corner of the parking lot, with no sidewalk or marked path connecting it to the campus.

CITY PARKING LOT

Many parents also use the city-owned parking lot adjacent to the school parking lot off of Benton Way. The city parking lot is much larger than the school parking lot, with over 100 parking spaces, and separate entrance and exit driveways, both of which are on Benton Way. Painted arrows direct motorists in a one-way direction through the city parking lot. This lot also serves the American Canyon Community Services Center and hosts the American Canyon Farmers Market on Sundays.

The city parking lot has a sidewalk along the west side of the lot connecting it to the sidewalk at the school parking lot. This sidewalk extends along the south end of the city lot. However, the parking lot sidewalk does not connect directly to the Benton Way sidewalk; this connection only exists in front of the American Canyon Community Services Center.

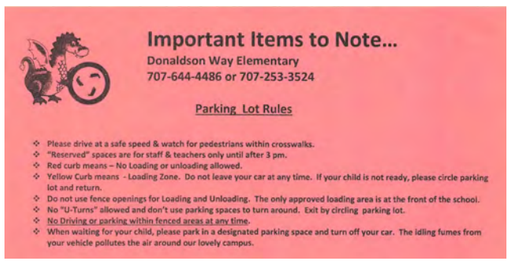
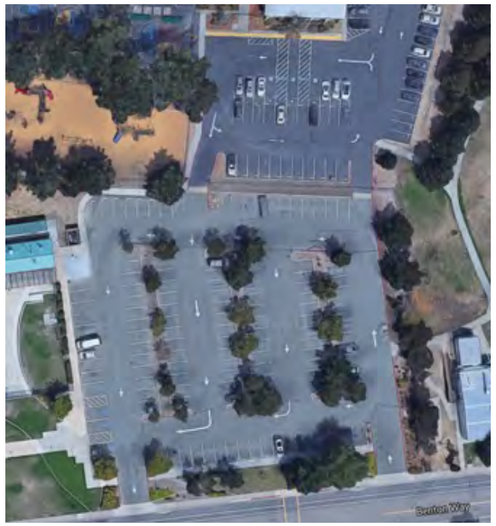


Figure 5: Parking Lot Rules



The school's parking policy is outlined in a document provided to parents at the beginning of the school year in both English and Spanish. Safe driving reminders are also sent out to parents via ParentSquare:

> Please remember to drive slowly and carefully in the DWES parking lot and the surrounding community. My office staff has been receiving many reports of elementary and middle school being nearly hit by cars in the parking lot. Please remember that the parking lot exit to Benton way near the swimming pool is not two lanes. Please do not pass the cars waiting, to turn right on to Benton Way. Many drivers are waiting for students to walk past on the sidewalk. A middle school student was nearly hit while walking last week. Please slow down and take a few extra minutes to be safe for all our students.

Figure 6: ParentSquare Driving Reminder

BICYCLE AND PEDESTRIAN INFRASTRUCTURE

Donaldson Way Elementary School is about a quarter-mile away from the San Francisco Bay Trail Class I shared-use path. This facility currently runs along Wetlands Edge Road from Eucalyptus Drive to Kensington Way. There is also a Class I path connecting Spikerush Circle and Rio Del Mar to Benton Way, spanning the east edge of American Canyon Middle School's campus. Class II bike lanes exist on Benton Way from Wetlands Edge Road, through the intersection where Benton Way turns into Donaldson Way West, and along Donaldson Way West until east of Carolyn Drive, where sharrows replace the bike lanes. Elliott Drive also has Class II bike facilities. All other roads around Donaldson Way Elementary do not have bicycle facilities.

The main roads within a half-mile radius of Donaldson Way Elementary School have a complete and connected network of sidewalks, with the exception of West Donaldson Way, which has a few sidewalk gaps. However, many of the existing sidewalks feel narrow, accommodating only two pedestrians at a time. This causes conflicts between pedestrians travelling in opposite directions, especially when groups of students are walking together, as well as between pedestrians and bicyclists, as many students bike on sidewalks.

There are four pedestrian/bicyclist access points to the school: the westbound Amarillo Drive sidewalk, the Community Park 2 path, the sidewalk along the city parking lot, and the Community Park 1 baseball field path. The Amarillo Drive sidewalk is narrow, and the concrete is in poor condition. The Community Park 2 path is wide; however, it leads to the school's parking lot without providing a marked or separated path across the lot to the campus. The sidewalk from Benton Way along the city and school parking lots also narrows significantly as it approaches the school's campus. The Community Park 1 baseball field path is an informal path through the school's field to the baseball park.

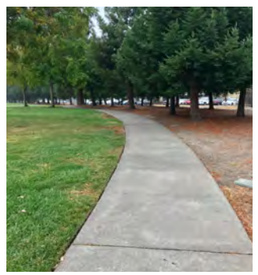
At the time of the Walk Audit, Donaldson Way Elementary School provided three bike racks on the east side of the campus along the fencing between the campus and the Amarillo Drive throughway. Since then, new fencing installation along the perimeter of the school resulted in a new bike parking configuration. There is now only one bike rack, located in roughly the same spot that the bike parking was located previously, which is now outside of the school fencing on the east side of the school. The rack does not appear to be secured to the ground, which, combined with being located outside of the school's fencing, leaves the racks and bikes vulnerable to potential theft or vandalism. The rack is designed for bicycles to be parked from both sides but is positioned against the curb so that only half of the parking capacity is available for use. Bicyclists arriving from Amarillo Drive must navigate the narrow, uneven sidewalk on Amarillo Drive with other bicyclists and pedestrians or bike in Amarillo Drive traffic to reach the bike rack. Bicyclists arriving from any access point other than Amarillo Drive must walk through the school's campus to reach the bike rack.

Benton Way (left) has Class II bike lanes on both sides of the road. Donaldson Way (right) has no bike facilities.

Bike lanes end and turn into sharrows on West Donaldson Way (left). The Bay Trail shared-use path on Wetlands Edge Road (right) provides a separated bike path for students.

Amarillo Drive (left) and Donaldson Way (right) have narrow sidewalks that cannot accommodate high volumes of pedestrians during peak school hours.

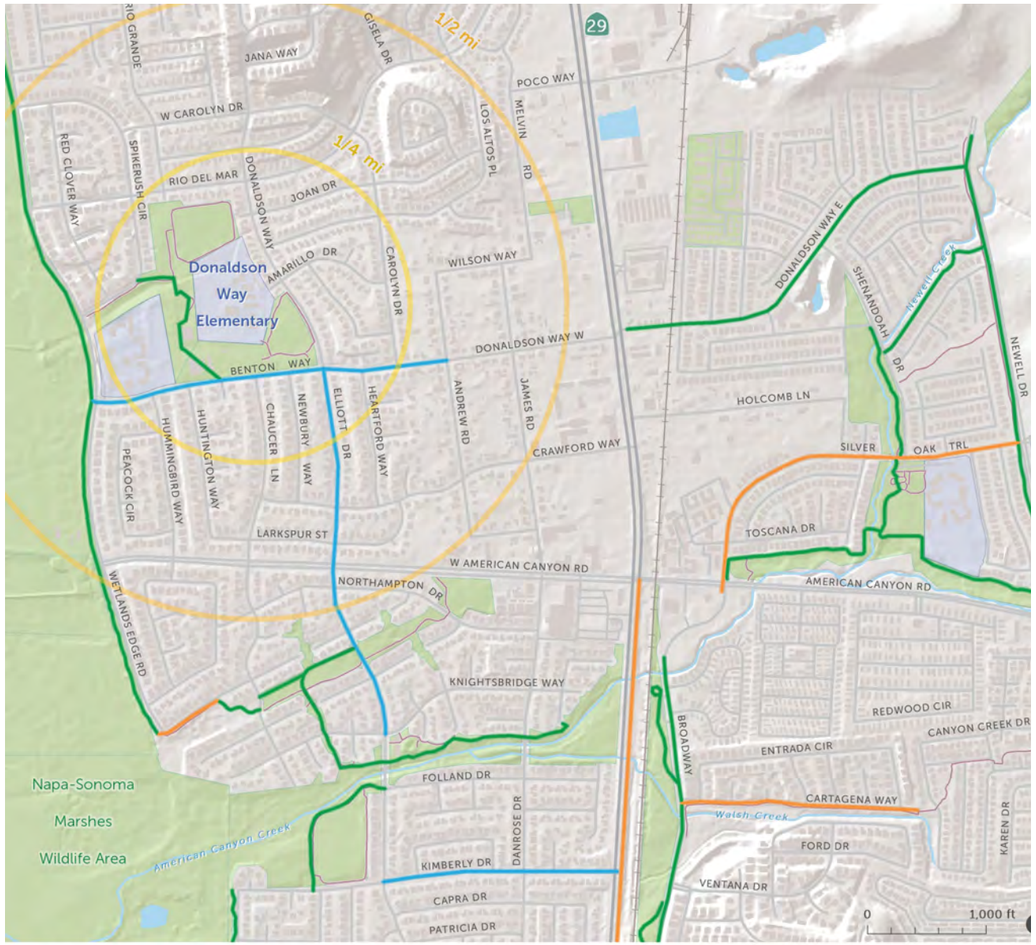
The informal foot path demonstrates a desire line to reach Community Park 1 from Donaldson Way Elementary.



The Community Park 2 path.

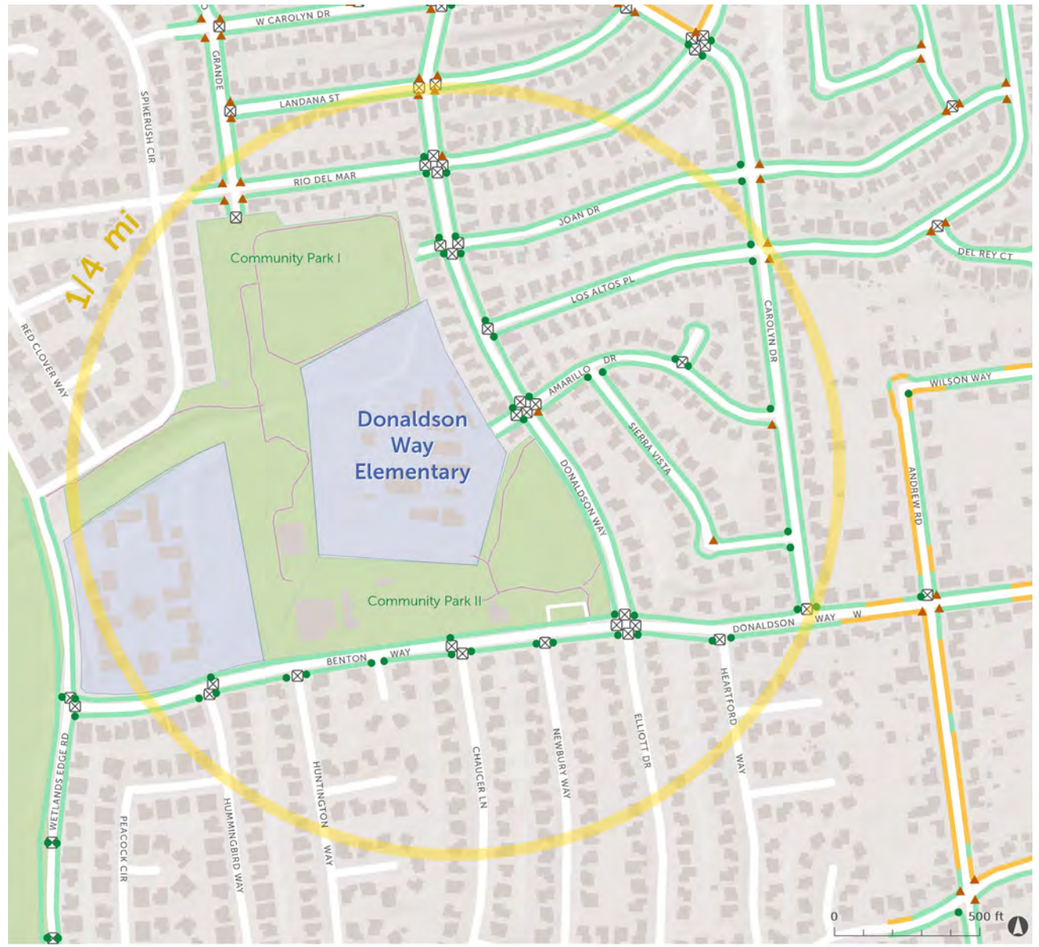
Donaldson Way Elementary School bike parking during the Walk Audit (left) and after the new fencing installation (right).

MAP OF EXISTING BICYCLE FACILITIES



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

MAP OF EXISTING PEDESTRIAN FACILITIES



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

POLICIES AND PROGRAMS

Encouragement and Education:

In recent years, Donaldson Way Elementary School has participated in annual countywide events such as 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 that celebrate students making the healthy choice to walk, bike, or roll to school. However, the school's encouragement program is limited to these annual events.

The school has hosted a bicycle safety education class, provided by the Napa County Office of Education, to its students in the past. Bicycle safety education focuses on 4th and 5th grade levels and includes between 5-10 hours of bicycle specific curriculum, spent both in the classroom and on-bike. The school has not continued this bike safety education in recent years, nor introduced pedestrian safety curricula.

Bike to School Day 2019 at Donaldson Way Elementary School.

YEAR	EVENT	STUDENT PARTICIPANTS
2015/16	Bike to School Day	12
2016/17	Bike Safety Education	115
2016/17	Bike to School Day	48
2018/19	Walk and Roll to School Day	46
2018/19	Bike to School Day	10
2019/20	Walk and Roll to School Day	89
2019/20	Bike Rodeo	N/A – cancelled due to Covid-19

Figure 7: Encouragement and Education Data

Enforcement:

American Canyon Police Department provided enforcement data for 2014 to 2019 in areas around the school zone on violations for passing a school bus, speeding, failing to stop at stop signs, and failing to yield to pedestrians. Data on traffic stops where citations were not issued were not used, as the Police Department does not collect this data. For Donaldson Way Elementary School, this included Benton Way, Donaldson Way, Donaldson Way West, and Elliott Drive. Citations for passing a school bus represented 46% of all tickets issued, and were distributed fairly consistently throughout the years, with a notable peak in 2018. Stop sign violations and failure to yield to pedestrians represented just 3% of citations.

Of the roads around Donaldson Way Elementary School, only Benton Way and Elliott Drive had any history of stop sign violation citations in the last five years: both roads had three citations each over the last five years. For failure to yield to pedestrians between 2014 and 2019, Benton Way had two citations, Donaldson Way and Donaldson Way West had one citation each, and Elliott Drive had four citations.

CITATIONS IN SCHOOL AREA BY TYPE

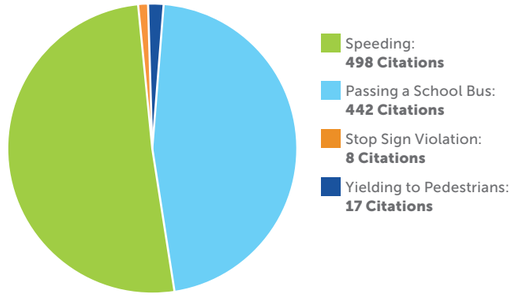


Figure 8: Citations by Type

Speeding data stood out significantly from the provided enforcement data. Benton Way had no citations for speeding and Donaldson Way had only one in 2015. Both Donaldson Way West and Elliott Drive had relatively high numbers of speeding citations in 2014 and 2015, which dropped in subsequent years to low or no citations. Staff from the Police Department mentioned that decreases in speeding could be due to changes in driver behavior when law enforcement is present, though this is difficult to substantiate without traffic survey data. It is notable that Donaldson Way had only one citation for speeding, as speeding was identified as a safety hazard along this corridor by Walk Audit participants.

SPEEDING CITATIONS

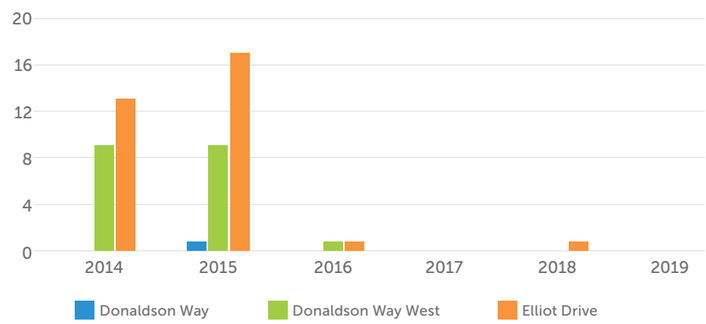
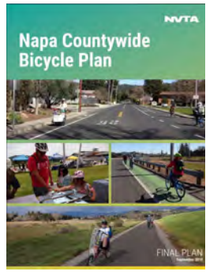


Figure 9: Speeding Citations

EXISTING PLANS



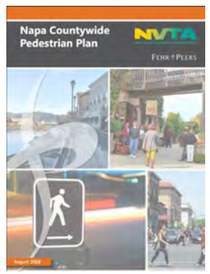
NVTA Napa Countywide Bicycle Plan (2019):

The Napa Countywide Bicycle Plan recommends improving bicycle facilities around the school site. The Bicycle Plan suggests installing a Class I shared-use path along Eucalyptus Drive from Wetlands Edge Road to SR 29, Class II bike lanes on Rio Del Mar from Wetlands Edge Road to SR 29, and Class II bike lanes on Donaldson Way, from Benton Way to Eucalyptus Drive. It also recommends expanding the Bay Trail Class I path north to Hess Drive and south to Maria Drive, as well as completing the Class II bike lanes along Donaldson Way West to SR 29.

NVUSD Facilities Master Plan (2016):

NVUSD's Facilities Master Plan includes several plans for Donaldson Way Elementary School, including installing/upgrading fencing around the school perimeter, making site ADA (Americans with Disabilities Act) improvements, repaving the fire lane in a new location, and replacing portable classrooms with new classrooms. School perimeter fencing is planned to provide a single point of entry during school hours, though there may be more than one entry point during pick-up and drop-off, and wayfinding signage for each elementary school in NVUSD. These projects may impact future circulation around the school.

MEASURE H
BUILDING ON OUR VISION
NVUSD



NVTA Napa Countywide Pedestrian Plan (2016):

The Napa Countywide Pedestrian Plan lists several improvements around Donaldson Way Elementary School. Along Benton Way, the plan recommends crosswalk enhancements at Benton Way and Chaucer Lane, and crossing treatments and traffic-calming at Benton Way and Elliott Drive through the installation of a roundabout. Along Elliott Drive, a variety of traffic-calming, crossing treatments, and signing and striping projects are planned, including a traffic circle and raised median. Donaldson Way West improvements include completing sidewalks, installing marked crosswalks, and tree trimming. Along West American Canyon Road, the plan suggests crosswalk enhancements at Elliot Drive and a feasibility study for a linear park along the corridor west of Elliot Drive.

Caltrans District 4 (2018):

The Caltrans District 4 Bike Plan lists two projects for American Canyon. The first is to provide Class I paths along both sides of SR 29 through American Canyon, from American Canyon Road to Jameson Canyon Road. The second is to implement Class II bike lanes on SR 29 near Rio Del Mar and implement signal/intersection improvements to support bicyclist left turns.

Caltrans

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

The NVTA Countywide Transportation Plan is a long-range plan of countywide transportation priorities that provides a direction for the four- to five-year plan while considering a 25-year planning horizon. This plan is part of the regional planning process for the Regional Transportation Plan by the Metropolitan Transportation Commission. There are 12 projects by the City of American Canyon listed in the Plan – most focus on extending or widening roads, though there are also plans to construct three pedestrian crossings over SR 29. NVTA projects that impact the City of American Canyon include widening SR 29 to six lanes and installing multimodal improvements, such as Class I shared-use paths on both sides. None of the projects directly impact the area within a half-mile of the school.

NVTA SR 29 Corridor Improvement Plan (2014):

The NVTA SR 29 Corridor Improvement Plan aims to improve corridor safety, aesthetics, and mobility, along SR 29 between the cities of Vallejo and Napa, including through the City of American Canyon. This plan will take into account all modes of transportation, including bicycling and walking, to improve the corridor. In American Canyon, this plan seeks to provide greater multi-modal access through this corridor for residents and visitors, as SR 29 is the city's main thoroughfare.

Between the south county line and American Canyon Road, the plan recommends four travel lanes with medians and a Class I shared-use path, though it also provides a second option for four lanes, a northbound-only frontage road with a Class II bicycle lane, and a southbound-only Class I shared-use path. Between American Canyon Road and Napa Junction Road, the plan recommends six lanes with a median and a Class I shared-use path and provides a second option for four lanes with a median plus frontage roads with Class II bicycle lanes. At the SR 29 and American Canyon Road intersection, the only improvements proposed are lane widening and potential signal synchronization.

American Canyon General Plan (2040):

The City of American Canyon began updating their 1992 General Plan in early 2020; however, the COVID-19 pandemic halted Committee work and in-person community outreach, delaying the update. According to the City's General Plan update web page, the update will "ensure that the City's General Plan reflects current community needs and priorities" and will address new issues (e.g., community health and climate change), changes in State law (e.g., greenhouse gas emission reductions) and new trends (e.g., shared mobility).

CITY OF AMERICAN CANYON

WALK **AUDIT**

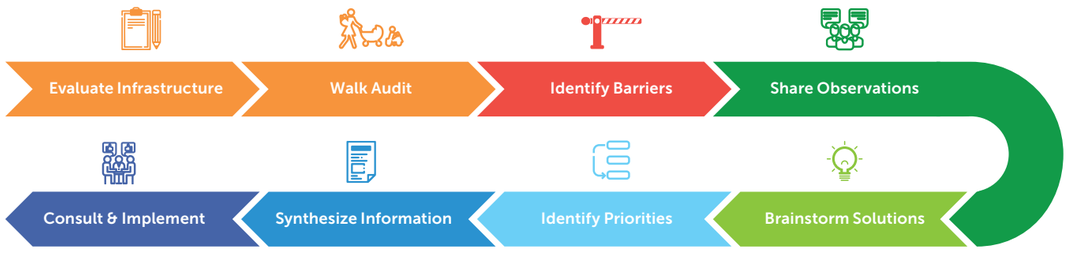
Date: 10/15/19
Day of the Week: Tuesday

Meeting Time: 7:30 AM
Weather: Foggy

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 brainstorm solutions. The Walk Audit team consisted of two members of the American Canyon Community & Parks Foundation, one of whom was also a Donaldson Way parent. 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 outside to the parking lot entrance, along Amarillo Drive, south on Donaldson Way, and across Community Park 2 to the parking lot in front of the school. During this walk, participants observed and discussed the physical infrastructure around the school as well as the behavior of motorists, pedestrians, and bicyclists in the area. They also shared their own experiences traveling to and from school on foot, bike, 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.

Participants wrote their ideas of major barriers to safe and increased walking and biking to school on sticky notes and placed them on a poster, grouping together similar barriers. The group then discussed the identified issues. Then, participants placed five round stickers 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 brainstormed potential solutions to each issue. Participants repeated the prioritization process with potential solutions to the barriers identified.



WALK AUDIT FINDINGS

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

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

Stakeholder-Identified Barriers:

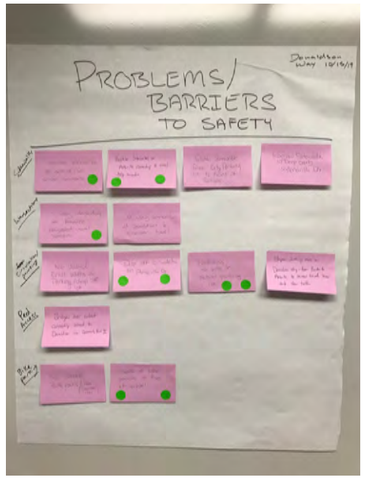
DESCRIPTION	LOCATION	VOTE SCORE
Unsafe drop-off circulation	Amarillo Dr throughway	3
Poor sidewalk quality – trip hazard	Amarillo Dr	3
Confusing striping	Parking lot	3
Lack of bike parking	Front of school	3
Unsafe intersection	Benton Way and Chaucer Ln	3
Narrow sidewalks	School site and surrounding area	2
Congestion and visual barriers	Amarillo Dr and Donaldson Way	2
Narrow sidewalk	City parking lot sidewalk	1
Narrow sidewalk with deep curb	Amarillo Dr	1
No visible crosswalks	Parking/drop-off lot	1
Lack of pedestrian access	Culvert between school and Community Park 2	1
No visible bike racks	School site near Amarillo Dr entrance	1
Unsafe crosswalk	Amarillo Dr throughway to east school entrance	1

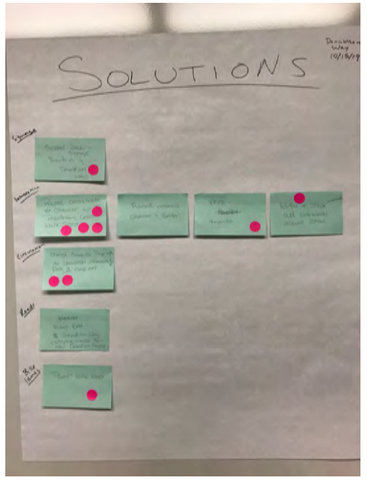
Figure 10: Walk Audit Ratings - Dot Exercise (Barriers)

Stakeholder-Identified Treatments:

DESCRIPTION	BARRIER ADDRESSED	LOCATION	PRIORITY
Raised crosswalk with pedestrian crossing signage	Poor motorist yielding behavior	Chaucer Ln and Benton Way	6
Replace sidewalks	Narrow, broken/displaced sidewalks	Amarillo Dr	3
Relocate drop-off area to Donaldson Way/Community Park 2	Chaotic/congested drop-off circulation near school entrances	Amarillo Dr	3
School zone signage	Speeding, unsafe driving behavior	Benton Way and Donaldson Way	2
Rectangular Rapid Flashing Beacon	Poor motorist yielding behavior, low pedestrian visibility	Amarillo Dr	2
Widen sidewalks	Narrow sidewalks	School region	2
Paint bike lanes	No bike facilities	School region	2
Stripe crosswalks	Not enough crosswalks, low pedestrian visibility	School region	2
Road diet and new striping	Speeding	Donaldson Way	1
Stripe parking lane	Speeding	Donaldson Way (from Benton Way to Amarillo Dr)	1
Pedestrian bridge over culvert	Lack of pedestrian access	Culvert between school and Community Park 2	1

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



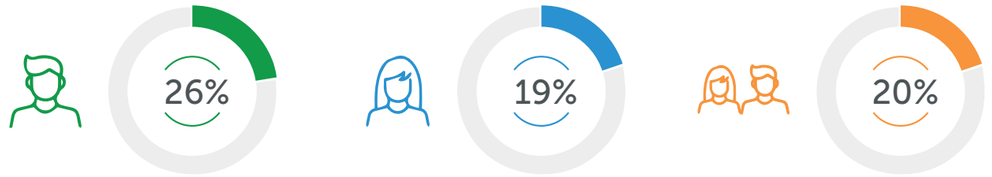


CONTEXT FOR **RECOMMENDATIONS**

IMPACT OF BARRIERS/HAZARDS ON COMMUNITY

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

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



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

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

50%

29%

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

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

400 MILLION

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

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

RECOMMENDATIONS

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

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

RECOMMENDATIONS #AC-050, AC-051, AC-055, AND ACP-011: ALTERNATE DROP-OFF AREA

Narrative – One of the highest-ranking barriers identified by Walk Audit participants was the congested drop-off circulation in the Amarillo Drive throughway. The throughway and school parking lot are too small for the current volume of vehicles during drop-off and pick-up, resulting in congestion backing up out of the throughway, down Amarillo Drive, and along both sides of Donaldson. This congestion at Amarillo Drive and Donaldson Way was identified as a safety barrier by Walk Audit participants, as this contributes to unsafe driving behavior in the school area, such as failure of motorists to yield to pedestrians. High vehicle volumes in this area, which acts as one of the school's main entrances, increases the potential for conflicts and makes the area feel unsafe and unwelcoming for pedestrians and bicyclists, especially when combined with other barriers in pedestrian and bicycle infrastructure (see #AC-042 and #AC-054). While there is an alternate path through Community Park 2 for students arriving on the east side of the school, there is only one location where the path crosses the culvert to reach the school at the parking lot, and as was noted by Walk Audit participants, there are no visible crosswalks across the congested parking lot.

The recommended improvements for an alternate drop-off area prioritize reducing interactions between motorists and student pedestrians and bicyclists. The yellow represents the new drop-off zone, the blue star marks the location of a culvert bridge, the white line represents the extension of the Community Park 2 path, the green line represents the raised crosswalk, and the red hexagon marks the location of a new crossing guard.

IDENTIFIED BARRIERS

- ***Congestion –*** High levels of congestion during pick-up and drop-off hours contribute to poor driver behavior and make the east entrance challenging and unwelcoming for student pedestrians and bicyclists to navigate.
- ***No path across parking lot –*** The lack of a separated or marked path through the school parking lot for pedestrians and bicyclists to get from the Community Park 2 path to the campus prevents students from using the Community Park 2 path.
- ***Culvert –*** The culvert between the Community Park 2 path and school grounds prevents students from using the Community Park 2 path to access campus at locations other than the parking lot, such as at the existing crosswalk across the throughway. Walk Audit participants mentioned that students sometimes cross the culvert anyway, demonstrating a desire for a more direct path to campus.

RECOMMENDATIONS

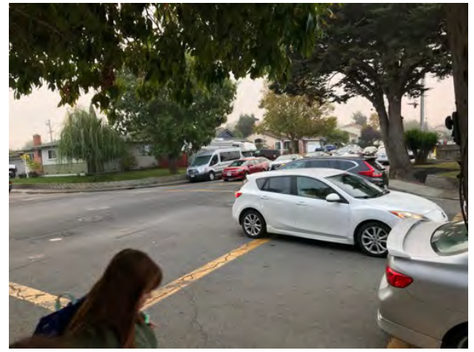
- ***AC-050 Donaldson Way loading zone –*** We recommend that the school create an off-site loading zone on southbound Donaldson Way at the north edge of Community Park 2. Students can use the Community Park 2 pedestrian path with improvements (see #AC-051 and #AC-055) or the Amarillo Drive entrance to reach campus. This loading zone, along with programmatic improvements, (see #ACP-014) will reduce congestion in the school parking lot, Amarillo Drive throughway, and Amarillo Drive and Donaldson Way intersection, making the east entrance more accessible for student bicyclists and pedestrians. This recommendation was tied as the Walk Audit participants' second-highest priority solution.
- ***AC-055 Community Park 2 path extensions –*** We recommend that a pedestrian bridge be installed connecting the Community Park 2 path to the existing crosswalk across the Amarillo Drive throughway near the east entrance. A pedestrian bridge over the culvert was recommended by Walk Audit participants. We also recommend extending the path where it connects to the school parking lot to run along the east side of the parking lot and connect to the proposed raised crosswalk (see #AC-51).
- ***AC-051 Raised crosswalk –*** We recommend that a raised crosswalk be installed from the southeast corner of the main office building directly east, through the parking lot, to connect with the proposed Community Park 2 path extension (see #AC-055). While this will require some removal of parking, this will provide a clear pedestrian path from the Community Park 2 path to campus.
- ***ACP-011 Crossing guard –*** We recommend that a crossing guard be stationed at the proposed raised crosswalk across the parking lot (#AC-051) to maximize student pedestrian safety.

RECOMMENDATION #AC-042: AMARILLO DRIVE AND DONALDSON WAY INTERSECTION IMPROVEMENTS

Narrative – The Amarillo Drive and Donaldson Way intersection is one of, if not the most significant intersections for Donaldson Way Elementary School. This intersection provides key access to the school's commonly used east entrance, loading zone, and parking lot. As a result, this intersection is highly travelled by pedestrians, bicyclists, and motorists during pick-up and drop-off time. Walk Audit participants noted congestion and visual barriers at this intersection as safety barriers. Vehicle congestion, particularly during drop-off time, backs up out of the school's parking lot, through this intersection, and along the streets. At the same time, many pedestrians and bicyclists cross through this intersection to reach the east entrance to the school. Motorists grow impatient with the traffic and drive unsafely, blocking crosswalks and failing to yield to pedestrians already in the crosswalk. Backed up traffic and cars parked close to the crosswalks also obstruct visibility of pedestrians to motorists.

IDENTIFIED BARRIERS

- ***Poor pedestrian visibility –*** The lack of red curbs at the intersection's corners results in vehicles parked right next to the crosswalks, greatly reducing pedestrian visibility, especially for children. Vehicles blocking the crosswalks and intersection due to congestion also impact pedestrian visibility.
- ***Congestion –*** High levels of congestion during pick-up and drop-off hours contribute towards poor driver behavior and increase the risk of collisions, making the intersection feel unsafe for student pedestrians and bicyclists.
- ***Impatient driving behavior –*** During the Walk Audit, motorists were observed driving hazardously, largely by failing to yield to pedestrians and blocking the intersection. This driving behavior increases the risk of collisions and makes the intersection feel unsafe and unwelcoming to bicyclists and pedestrians.



Impatient driving behavior and congestion, along with poor pedestrian visibility, make the Amarillo Drive and Donaldson Way intersection feel unsafe for students to navigate.

RECOMMENDATIONS

- ***Curb extensions –*** We recommend the installation of curb extensions on all four corners of the intersection. Curb extensions will help improve driver yielding behavior and pedestrian visibility by preventing cars from parking right next to the crosswalk and placing the curb further out into the street.
- ***High-visibility crosswalks –*** Upgrading the existing crosswalks at this intersection to high-visibility crosswalks can supplement other proposed solutions in increasing driver yielding behavior.

Note: While these infrastructure recommendations will help improve pedestrian and bicyclist safety and comfort at this intersection, this solution alone will not be sufficient to address barriers at this location. We highly advise that this recommendation be implemented in coordination with other infrastructure improvements (#AC-050, #AC-051, and #AC-055) and programmatic recommendations (#ACP-014).

RECOMMENDATION #AC-054: AMARILLO DRIVE SIDEWALK IMPROVEMENTS

Narrative – Despite being the primary access route to the school's east entrance for bicyclists and pedestrians, the condition of the existing sidewalks on Amarillo Drive from Donaldson Way to the school campus was one of the top barriers discussed by Walk Audit participants. Both the westbound and eastbound sidewalks are extremely narrow, only accommodating one or two pedestrians at a time. Furthermore, the eastbound sidewalk ends suddenly before reaching the school, requiring students to either cross the congested throughway without a crosswalk, or, more commonly, forcing all pedestrians going to and from the school to share the westbound sidewalk. Already too narrow for pedestrians to pass each other, the westbound sidewalk becomes even more difficult to navigate when pedestrians are walking with strollers or students are walking with bikes and scooters because the roadway feels inaccessible due to the traffic congestion and unsafe driving behavior. Additionally, the westbound sidewalk has areas where it is displaced near the school, posing a trip hazard to pedestrians.

IDENTIFIED BARRIERS

- ***Narrow sidewalks –*** The existing eastbound sidewalk does not provide access to the school, forcing all pedestrians and most, if not all, student bicyclists to share the narrow westbound sidewalk, where there are areas of significant displacement. This is hazardous, as it can cause pedestrians to cross the congested throughway without a crosswalk or step out into the road when the sidewalk is too crowded and discourages students from shifting to active transportation.

RECOMMENDATIONS

- ***Replace and widen westbound sidewalk –*** We recommend that the westbound sidewalk be replaced to address areas of displacement and widened to better support not only the existing users, but future growth of active transportation to and from Donaldson Way Elementary School.

- ***Extend eastbound sidewalk –*** We recommend that the eastbound sidewalk be extended to the existing crosswalk across the throughway to provide a continuous path to the campus.

The Amarillo Drive westbound sidewalk is too narrow for the high volumes of pedestrians and bicyclists that use it to reach the school. (Note: the fencing along the sidewalk has been removed since the time of the Walk Audit).

RECOMMENDATION #AC-038: DONALDSON WAY BIKE LANES

Narrative – Donaldson Way, a collector, is a key corridor along direct routes between Donaldson Way Elementary School and housing, American Canyon Middle School, and the American Canyon Boys and Girls Club. This road is also often used by residents on the west side of American Canyon to bypass SR 29, particularly during morning and afternoon peak traffic hours. Consequently, this road experiences considerable use, especially in the morning when children are travelling to school and adults are going to work. However, despite the wide nature of this corridor, there are no bicycle facilities along Donaldson Way. This gap in the city's bicycle network makes biking along this high-volume collector feel uncomfortable and unwelcome, especially for vulnerable users such as children As Donaldson Way is a key corridor along routes to the school, filling this network gap and providing a continuous, connected bike network is crucial to ensuring student bicyclist safety and comfort.

IDENTIFIED BARRIERS

- ***No bicycle facilities –*** The lack of bicycle facilities on Donaldson Way creates a gap in the existing bicycle network of the area and makes biking along the corridor feel uncomfortable and unwelcome.

RECOMMENDATIONS

- ***Class II bike lanes –*** We recommend the installation of Class II bike lanes on both sides of Donaldson Way from Eucalyptus Drive to Benton Way as per the 2019 Bike Plan, with prioritization of the segment between West Carolyn Drive and Benton Way due to its school-related traffic.

- ***Traffic-calming –*** We recommend that the City explore and consider traffic-calming measures for southbound Donaldson Way between Amarillo Drive and Benton Way, as the often-empty parking along this portion of the road increases the appearance of lane width, facilitating speeding. This recommendation should be considered in coordination with Donaldson Way Elementary School's circulation recommendations, namely #AC-050.

Donaldson Way, facing south. Adding Class II bike lanes and traffic-calming features would help reduce speeding by narrowing the roadway.

RECOMMENDATION #AC-036: BENTON WAY AND ELLIOTT DRIVE CURB EXTENSIONS

Narrative – The Benton Way and Elliott Drive intersection is a key nexus along common routes to both Donaldson Way Elementary School and American Canyon Middle School, as it is an intersection between two important collectors. Specifically, this intersection is part of routes to Donaldson Way Elementary School from residences on West Donaldson Way or south of Benton Way/West Donaldson Way. The Donaldson Way/Benton Way corridor provides one of the only two direct east-west connections through American Canyon, and the Elliott Drive/ Donaldson Way corridor provides a significant north-south connection for the west side of American Canyon. As there are no red curbs in this intersection, vehicles can park close to the crosswalks, greatly reducing student pedestrian visibility. The intersection poses further challenges for student pedestrians due to long crossing distances, high traffic volume, and poor driver yielding behavior.

IDENTIFIED BARRIERS

- ***No red zones –*** The lack of red curbs around this intersection allows vehicles to park close to the crosswalks, reducing pedestrian visibility, especially children.
- ***Long crossing distances –*** The long crossing distances of this intersection increases exposure time of vulnerable road users to vehicles in the roadway.
- ***High traffic volume –*** High traffic volumes make this intersection challenging for students to navigate.
- ***Poor driver yielding –*** Failure of motorists to yield to pedestrians at this intersection increases risk of collisions with pedestrians and makes pedestrians feel unsafe.

The Benton Way and Elliott Drive intersection facing north.

RECOMMENDATIONS

- ***Curb extensions –*** We recommend the installation of curb extensions at all corners of the intersection, which will reduce crossing distance, improve pedestrian visibility, prevent vehicles from parking close to the crosswalks, and improve driver yielding behavior.
- ***High-visibility school zone crosswalks –*** Upgrading the existing crosswalks at this intersection to yellow high-visibility school zone crosswalks can supplement other proposed solutions in increasing driver yielding behavior.
- ***Bike lanes –*** Existing and future bike lanes approaching the intersection should be extended all the way to the intersection.

RECOMMENDATION #AC-056: RIO DEL MAR BIKE LANES

Narrative – Walk Audit participants identified the installation of more bike facilities around the school area as a solution to bicycling safety barriers. One key corridor along routes to Donaldson Way Elementary School that would benefit from bike lane installation is Rio Del Mar, an east-west collector just north of the school that runs from Wetlands Edge Road to SR 29. Many routes to the school from neighborhoods north of the school require navigating Rio Del Mar. However, despite being a significant east-west connection for all road users on the west side of American Canyon, this road has no bicycle facilities. Furthermore, there is no striping on the road for the entire corridor, which can make the roadway feel wider (particularly in areas where cars are not parked along the curb) and facilitate motorist speeding.

IDENTIFIED BARRIERS

- ***No bicycle facilities –*** The lack of bicycle facilities on Rio Del Mar creates a gap in the existing bicycle network of the area and makes biking along the corridor feel uncomfortable and unwelcome.

RECOMMENDATIONS

- ***Class II bike lanes –*** We recommend the installation of Class II bike lanes on both sides of Rio Del Mar from Wetlands Edge Road to SR 29 as per the 2019 Bike Plan, with prioritization of the segment between Donaldson Way and Los Altos Place due to its potential for school-related traffic.

Rio Del Mar facing west.

RECOMMENDATION #ACP-014: ACTIVE TRANSPORTATION ENCOURAGEMENT PROGRAMMING

Narrative – Donaldson Way Elementary School has participated in annual encouragement events, such as Bike to School Day, fairly regularly. However, significant congestion around the school observed during the Walk Audit suggests that a high percentage of students travel to school by car, despite the relatively small enrollment boundary size and the active transportation-favorable terrain of American Canyon. While annual programming can remind and excite students about the option of utilizing active transportation to get to school, the infrequency of these events makes them less effective at encouraging students to adopt active transportation as an everyday form of transportation. Increasing the frequency of encouragement events, combined with infrastructure improvements, can help increase mode shift towards active transportation.

IDENTIFIED BARRIERS

- ***Vehicle-oriented transportation culture –*** Despite Donaldson Way Elementary School's participation in annual countywide encouragement events, a large portion of students still travel to and from school via family vehicle on an average school day.

RECOMMENDATIONS

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

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

RECOMMENDATIONS #AC-052 AND AC-053: CITY AND SCHOOL PARKING LOTS SIDEWALK WIDENING

Narrative – For many student pedestrians and bicyclists living south of Benton Way, one of the most direct routes to campus involves travelling along the sidewalks on the west sides of the city and school parking lots from Benton Way. This route leads directly to the front (south) entrance of the school and, in addition to being more direct, allows students coming from south neighborhoods to avoid the challenging Amarillo Drive and Donaldson Way intersection. However, both of these sidewalks are narrow, and the city parking lot sidewalk does not provide a direct path to the Benton Way sidewalk. Pedestrians and bicyclists can access the Benton Way sidewalk from the city lot sidewalk by crossing the grass, which may be infeasible or undesirable during the rainy season, walking west to the front of the American Canyon Community Services Center, or cutting through the exit lane of the parking lot, which is hazardous during pick-up and drop-off times when large volumes of vehicles are circulating the city lot.

IDENTIFIED BARRIERS

- ***Narrow sidewalk –*** Both the school parking lot and the city parking lot sidewalks are too narrow to support high volumes of students walking or biking to school and may result in pedestrians walking in the busy parking lots.
- ***Sidewalk gap –*** The city parking lot sidewalk does not connect directly to the Benton Way sidewalk, which can lead to student bicyclists and pedestrians travelling through the parking lot exit lane, increasing risk of conflicts with vehicles.

RECOMMENDATIONS

- ***AC-052 and AC-053 Widen sidewalks –*** We recommend that the sidewalks along the west sides of the city and school parking lots be widened to accommodate existing volumes of bicyclists and pedestrians and encourage increased active transportation to the school.
- ***AC-053 Fill sidewalk gap –*** We recommend that the sidewalk along the west side of the city parking lot be extended south to connect directly with the Benton Way sidewalk to complete a direct and convenient pedestrian route.

The narrow sidewalk leading to the school's south entrance along its parking lot is narrow and bordered by a fence, forcing pedestrians to step into the parking lot when the sidewalk is too crowded.

RECOMMENDATION #AC-037: DONALDSON WAY SIDEWALK WIDENING

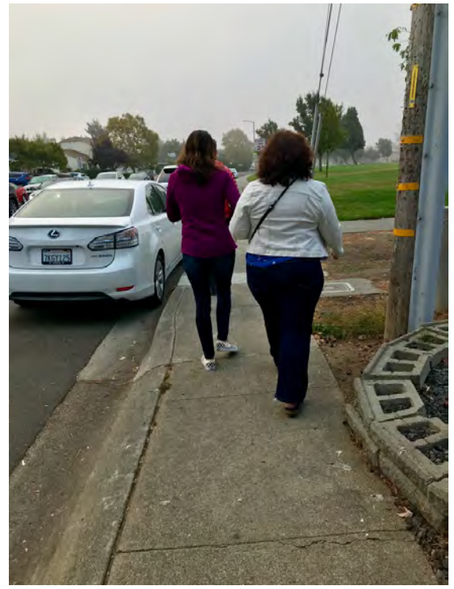
Narrative – Donaldson Way, a collector, is a key corridor along routes from Donaldson Way Elementary School to both housing east of Donaldson Way and the American Canyon Boys and Girls Club. As Donaldson Way is also a part of routes to Community Parks 1 and 2, and between American Canyon Middle School and housing, this corridor has high potential for pedestrian use. However, the southbound sidewalk, the side more likely to be used by students, is narrow and does not accommodate increased pedestrian use. The sidewalk can only hold two pedestrians walking side by side, causing conflicts between groups of pedestrians passing each other, or pedestrians with strollers or in wheelchairs.

IDENTIFIED BARRIERS

- ***Narrow sidewalk –*** The Donaldson Way southbound sidewalk is too narrow to support pedestrian use between the two nearby schools, which may result in pedestrians stepping into the roadway to pass other pedestrians.

RECOMMENDATIONS

- ***Midblock crosswalk –*** We recommend that the existing southbound sidewalk be widened to at least 6' from Amarillo Drive to Benton Way, the segment where there is most likely to be high volumes of school-related pedestrian traffic. Costly curb and gutter work can be avoided by widening sidewalk on the park side. We advise that this recommendation be implemented along with the alternate drop-off location recommendation (see #AC-050).



The narrow southbound sidewalk on Donaldson Way discourages increased pedestrian use of the corridor.

RECOMMENDATION #AC-040: DONALDSON WAY WEST FROM ELLIOTT DRIVE TO BROADWAY (SR 29)

Narrative – The Donaldson Way corridor is one of just two direct east-west connections through downtown American Canyon that both crosses SR 29, the other being American Canyon Road to the south. Consequently, this corridor experiences high volumes of traffic. Donaldson Way West, the segment of the corridor between Elliott Drive and SR 29, is a key part of direct routes to Donaldson Way Elementary School from housing along and south of Donaldson Way West. However, Donaldson Way West can be difficult for pedestrians and bicyclists to navigate, due to high traffic volumes and challenging bicycle and pedestrian facilities. There are sidewalk gaps on both sides of the road and the eastbound Class II bike lane suddenly transitions to a Class III bike boulevard mid-block between Carolyn Drive and Andrew Road without advance warning to motorists or bicyclists.

IDENTIFIED BARRIERS

- ***High-volume road –*** High traffic volumes along Donaldson Way West can make the corridor feel unsafe and uncomfortable for bicyclists and pedestrians, especially because sidewalk gaps and Class III bicycle boulevards require them to interact with motor traffic.

- ***Sidewalk gaps –*** There are three significant sidewalk gaps (two on the eastbound side, one on the westbound side) between Elliott Drive and SR 29, with only one of these gaps having a crosswalk to an existing sidewalk. This forces pedestrians to walk in the road when the sidewalk ends or cross high volumes of Donaldson Way West traffic unnecessarily.

- ***Sudden bike facility transition –*** The change from an eastbound Class II bike lane to a Class III bike boulevard without an advance warning may result in bicyclists and motorists not being prepared to suddenly share the road in a narrowing roadway.

The eastbound Class II bike lane on Donaldson Way West suddenly turns into a Class III bike boulevard when the roadway narrows with no prior warning to motorists or bicyclists.

RECOMMENDATIONS

- ***Curb extensions –*** We recommend the installation of curb extensions at Andrew Road and on the north side of Carolyn Drive to calm vehicle traffic that is sharing the road with bicyclists.

- ***Sidewalks –*** We recommend that all sidewalk gaps be filled to provide a direct, separated route for pedestrians along the corridor.

- ***Bike facility transition –*** We recommend that the transition from an eastbound Class II bike lane to Class III bike boulevard be improved with stencils and pavement markings to provide more time and space for bicyclists and motorists to safely merge.

RECOMMENDATION #AC-049: BENTON WAY AND CHAUCER LANE CURB EXTENSIONS

Narrative – The Benton Way and Chaucer Lane intersection was one of the top safety barriers identified by Walk Audit participants. Both Benton Way and Chaucer Lane are important collectors in the school's enrollment boundaries, with Benton Way providing an access point to the school's south entrance and Chaucer Lane providing a direct route to Benton Way for many neighborhoods to the south. Students may elect to cross Benton Way at this location due to its vicinity to a school access point and the Boys and Girls Club. However, this intersection can feel challenging for pedestrians to cross, due to low pedestrian visibility and failure of motorists to stop at stop signs, as was reported by Walk Audit participants.

IDENTIFIED BARRIERS

- ***Low pedestrian visibility –*** The crosswalks at this intersection are standard parallel lines, which may not provide enough pedestrian visibility given the high volumes of traffic on Benton Way, the set-back westbound stop line, and the tendency of motorists to speed.

- ***Motorist failure to stop at stop signs –*** Motorists failing to stop at stop signs has been reported as an issue along Benton Way. This is particularly of concern for westbound traffic, as the stop sign is located right before the city parking lot entrance where many motorists drop off students. Motorists may roll through the stop sign in their rush to be on time or get out of school traffic.

Low pedestrian visibility and vehicles failing to stop at stop signs are the major barriers at the Benton Way and Chaucer Lane intersection.

RECOMMENDATIONS

- ***High-visibility crosswalks –*** Upgrading the existing crosswalks at this intersection to high-visibility crosswalks can supplement other proposed solutions in increasing driver yielding behavior.

- ***Curb extensions –*** We recommend the installation of floating curb extensions on the northwest, southwest, and northeast (east of the parking lot entrance) corners of the intersection to improve pedestrian visibility and motorist yielding while also accommodating recommended Class IV bike facilities (see #AC-026). We also recommend that the westbound stop sign be moved to the northeast curb extension to improve visibility of the sign.

Walk Audit participants suggested implementing a raised crosswalk with pedestrian crossing signage at this location. We are not making these recommendations because raised crosswalks are not appropriate for emergency response routes, such as Benton Way, and our recommended solutions will provide the benefits that participants would like to see at this intersection (improved pedestrian visibility and driver yielding behavior).

RECOMMENDATIONS #AC-026, AC-029, AND AC-030: BENTON WAY BICYCLE AND PEDESTRIAN INFRASTRUCTURE IMPROVEMENTS

Narrative – Though there are bicycle and pedestrian facilities on Benton Way, infrastructure improvements would help support existing users and promote increased active transportation in the school zone, particularly between school sites, the Boys and Girls Club, and housing. Benton Way has Class II bike lanes on both sides of the road; however, students likely feel uncomfortable using them due to high traffic volumes, particularly during pick-up and drop-off times, and tendency of motorists to speed. Additionally, due to the many destinations along Benton Way, cars frequently cut across the bike lanes to park or pick up or drop off passengers, increasing potential for conflicts between vehicles and bicyclists and decreasing bicyclist sense of safety and comfort. While there are continuous sidewalks on both sides of Benton Way, the sidewalk on the north side (the side a path to campus and the Boys and Girls Club is on) is narrow, only accommodating two pedestrians side-by-side, which does not support the high volumes of pedestrians in the school area during pick-up and drop-off times. This can be especially challenging for pedestrians with strollers or in wheelchairs.

IDENTIFIED BARRIERS

- ***Unprotected bicycle facilities –*** The existing Class II bike lanes on Benton Way are either not recognized by students as designated bicycle facilities or feel unsafe to use due to high vehicle speeds and volumes and cars frequently cutting across the bike lane to load/unload students.

- ***Narrow sidewalk –*** The sidewalk on the eastbound (north) side is narrow, failing to accommodate student pedestrians during morning and afternoon hours and discouraging students from walking to and from school.

The Class II bike lanes on Benton Way are adjacent to high vehicle speeds and volumes and are frequently crossed by cars pulling up to the curb in the school area.

RECOMMENDATIONS

- ***AC-026 Class IV protected bike lanes –*** We recommend that the existing Class II bike lanes be upgraded to parking-protected Class IV bike lanes with K-71 bollards and red zones around driveways and intersections to improve sight lines for exiting vehicles. This may include lane narrowing, which would help decrease speeding along the corridor.

- ***AC-029 Green conflict markings –*** We recommend that green conflict markings be painted in areas that cross parking lot/loading zone driveways, key intersections, and beginning and ends of corridor segments to improve visibility of bicyclists and reduce risk of collisions.

- ***AC-030 Widen sidewalk –*** We recommend that the sidewalk on the eastbound (north) side be widened to a minimum of 6' to accommodate higher volumes of student pedestrians.

RECOMMENDATION #AC-044: JOAN DRIVE AND DONALDSON WAY INTERSECTION IMPROVEMENTS

Narrative – The Joan Drive and Donaldson Way intersection is an important part of students' routes to neighborhoods north of the school. As Donaldson Way, a collector, is the primary north-south road for school traffic and provides access to one of the school's main entrances, this corridor experiences high volumes of school-related multi-modal traffic. Additionally, students who utilize the informal path from the school campus to Community Park 1 can access the Joan Drive intersection from Community Park 1, leading additional student pedestrian and bicyclist traffic to this intersection. However, this intersection has low pedestrian visibility and uncontrolled Donaldson Way traffic, which can make crossing feel challenging for young students. Although the intersection is within the school zone, the crosswalk striping consists of standard, white parallel lines. Additionally, the Donaldson Way traffic is uncontrolled at this intersection, which can make crossing Donaldson Way difficult given the road's high traffic volumes, particularly during pick-up and drop-off times.

IDENTIFIED BARRIERS

- ***White crosswalks in school zone –*** The crosswalks are painted with a standard white parallel line pattern, despite being located in a highly-travelled school zone.

- ***No signage or traffic control –*** The lack of pedestrian signage or traffic control at the intersection on Donaldson Way can make crossing the street difficult for pedestrians and bicyclists, especially children, as motorists are less likely to see them.

RECOMMENDATIONS

- ***High-visibility yellow school zone crosswalks –*** We recommend that the existing crosswalks be upgraded to yellow crosswalks with high-visibility patterns to increase pedestrian visibility.

- ***Pedestrian crossing signage –*** We recommend that pedestrian crossing signage be installed for the crosswalk across Donaldson Way to improve driver awareness of pedestrians.

Joan Drive and Donaldson Way intersection facing north.

RECOMMENDATION #AC-045: WEST AMERICAN CANYON ROAD AND HUMMINGBIRD WAY INTERSECTION IMPROVEMENTS

Narrative – West American Canyon Road, one of the city's two 4-lane arterials, is one of just two direct east-west connections through downtown American Canyon that crosses and provides access to SR 29. Consequently, this corridor experiences high volumes of traffic. Hummingbird Way connects West American Canyon Road to Benton Way and provides an important route to Donaldson Way Elementary School from neighborhoods south of American Canyon Road. However, this intersection can be challenging for pedestrians and bicyclists to navigate, mainly due to long crossing distances across West American Canyon Road, where traffic is uncontrolled.

IDENTIFIED BARRIERS

- ***Long crossing distances –*** Pedestrians must cross five lanes of traffic at this intersection. Long crossing distances increase the amount of time vulnerable road users spend in the roadway exposed to vehicle traffic. This is especially challenging at Hummingbird Way, where West American Canyon Road traffic is uncontrolled.

The Hummingbird Way and West American Canyon Road intersection has a long crossing distance across uncontrolled American Canyon Road traffic.

RECOMMENDATIONS

- ***Curb extension –*** We recommend that a curb extension be installed at the northeast corner to square up the intersection, improve pedestrian visibility at the northeast corner, and decrease crossing distance across the east leg of the intersection.
- ***Pedestrian refuge islands –*** We recommend that the medians be widened to pedestrian refuge islands to decrease the crossing distance, calm traffic, and allow pedestrians to focus on one direction of traffic at a time.

Note: As Class IV bike lanes are proposed along West American Canyon Road in the Napa Countywide Bicycle Plan, these future facilities should be considered in the construction of any curb extensions along West American Canyon Road.

RECOMMENDATION #AC-046: WEST AMERICAN CANYON ROAD AND CHAUCER LANE INTERSECTION IMPROVEMENTS

Narrative – West American Canyon Road, one of the city's two 4-lane arterials, is one of just two direct east-west connections through downtown American Canyon that crosses SR 29. Consequently, this corridor experiences high volumes of traffic. Chaucer Lane connects West American Canyon Road to Benton Way and provides an important route to Donaldson Way Elementary School from neighborhoods south of American Canyon Road. However, this intersection can be challenging for pedestrians and bicyclists to navigate, mainly due to long crossing distances across West American Canyon Road.

IDENTIFIED BARRIERS

- ***Long crossing distances –*** Pedestrians must cross five lanes of traffic at this intersection. Long crossing distances increase the amount of time vulnerable road users spend in the roadway exposed to vehicle traffic.
- ***Low-visibility crosswalks –*** The crosswalks at Chaucer Lane are standard parallel lines, which, in conjunction with long crossing distances, may make pedestrians feel less likely to be seen than other high-visibility treatments.
- ***Incomplete bike facilities -*** The westbound bike lane becomes dashed far from the intersection, suggesting that cars can cross and drive in the bike lane, increasing the risk of conflicts.

The Chaucer Lane and West American Canyon Road intersection has long crossing distances across American Canyon Road and low pedestrian visibility.

RECOMMENDATIONS

- ***High-visibility crosswalks –*** Upgrading the existing crosswalks at this intersection to high-visibility crosswalks can supplement other proposed solutions in increasing driver yielding behavior.
- ***Pedestrian refuge islands –*** We recommend that the medians be widened to pedestrian refuge islands to decrease the crossing distance, calm traffic, and allow pedestrians to focus on one direction of traffic at a time.
- ***Solid bike lane –*** We recommend that the westbound bike lane be continued with solid lines to the intersection to reinforce separation of bicyclists from vehicles.

RECOMMENDATION #AC-028: WEST AMERICAN CANYON ROAD AND ELLIOTT DRIVE INTERSECTION IMPROVEMENTS

Narrative – West American Canyon Road, one of the city's two 4-lane arterials, is one of just two direct east-west connections through downtown American Canyon that crosses and provides access to SR 29. Consequently, this corridor experiences high volumes of traffic. Elliott Drive connects West American Canyon Road to Benton Way and provides an important route to Donaldson Way Elementary School from neighborhoods south of American Canyon Road. However, this intersection can be challenging for pedestrians and bicyclists to navigate, mainly due to long crossing distances across West American Canyon Road.

IDENTIFIED BARRIERS

- ***Long crossing distances –*** Pedestrians must cross five lanes of traffic at this intersection. Long crossing distances increase the amount of time vulnerable road users spend in the roadway exposed to vehicle traffic.
- ***Low-visibility crosswalks –*** The crosswalks at Elliott Drive are standard parallel lines, which, in conjunction with long crossing distances, may make pedestrians feel less likely to be seen than other high-visibility treatments.
- ***Incomplete bike facilities –*** The westbound and eastbound bike lanes become dashed far from the intersection, suggesting that cars can cross and drive in the bike lanes, increasing the risk of conflicts.

The Elliott Drive and West American Canyon Road intersection has long crossing distances across American Canyon Road and low pedestrian visibility.

RECOMMENDATIONS

- ***High-visibility crosswalks –*** Upgrading the existing crosswalks at this intersection to high-visibility crosswalks can supplement other proposed solutions in increasing driver yielding behavior.
- ***Pedestrian refuge islands –*** We recommend that the medians be widened to pedestrian refuge islands to decrease the crossing distance, calm traffic, and allow pedestrians to focus on one direction of traffic at a time.
- ***Solid bike lane –*** We recommend that the westbound and eastbound bike lanes be continued with solid lines to the intersection to reinforce separation of bicyclists from vehicles.
- ***Curb extensions –*** We recommend the installation of curb extensions on all four corners of the intersection to reduce crossing distances, improve pedestrian visibility, and calm traffic.

Note: As Class IV bike lanes are proposed along West American Canyon Road in the Napa Countywide Bicycle Plan, these future facilities should be considered in the construction of any curb extensions along West American Canyon Road.

RECOMMENDATIONS #AC-033, AC-035, AND AC-043: RESIDENTIAL STREET CHICANES

Narrative – The residential through streets off of Benton Way - Hummingbird Way, Chaucer Lane, and Elliott Drive - provide crucial routes to Donaldson Way Elementary School for students residing south of Benton Way. These three roads connect to West American Canyon Road, an east-west arterial, which can be a source of additional traffic along the residential roads heading towards Benton Way destinations. These residential roads are long, straight, and wide, which are all qualities that facilitate speeding, especially amongst motorists who are in a rush to drop off students on time, potentially at multiple schools, and travel to other morning commitments.

IDENTIFIED BARRIERS

- ***Speeding –*** Motorists speeding on residential streets off of Benton Way (Hummingbird Way, Chaucer Lane, and Elliott Drive) during pick-up and drop-off times increase risk and potential severity of collisions with vulnerable road users, making these streets feel unwelcoming for student pedestrians and bicyclists, especially as only one of them (Elliott Drive) has bicycle facilities (Class II bike lanes).

Chicanes can help reduce speeding on long, wide, straight roads such as Hummingbird Way (photographed above).

RECOMMENDATIONS

- ***Chicane –*** We recommend the installation of chicanes on Hummingbird Way (AC-033), Chaucer Lane (AC-043), and Elliott Drive (AC-035) to deter speeding on these residential routes. Chicane installation should include a median island element, which provides an opportunity for tree planting.

RECOMMENDATION #AC-057: SCHOOL BIKE PARKING IMPROVEMENTS

Narrative – One of the highest-ranking barriers to students biking to school identified by Walk Audit participants was the lack of bike parking at the school's front (south) entrance. Walk Audit participants also noted that the only existing bike racks near the east entrance of the school were not visually apparent enough to students. Due to the installation of new fencing, the school has changed their bike parking configuration since the date of the Walk Audit (see „Bicycle and Pedestrian Infrastructure" section). The school currently provides one bike rack outside of the school gates near the east entrance. This bike rack is designed to hold bikes on both sides but is positioned against the curb so that only half of its parking capacity is available. The bike rack is not bolted or otherwise secured to the ground, leaving the bikes potentially vulnerable to theft.

IDENTIFIED BARRIERS

- ***Insufficient bike parking –*** Only one bike rack is available at the school and half of its parking spaces are inaccessible, limiting the number of students able to bike to school and discouraging students who use the school's front entrance from biking. Additionally, the bike rack being neither secured nor within the school's gates can make parking a bike feel susceptible to theft, further discouraging students from biking to school.

The school's bike parking rack is located outside of the school gates (photo taken after Walk Audit).

RECOMMENDATIONS

- ***Increase bike parking capacity and security –*** We recommend that the existing bike rack be repositioned to maximize parking capacity and bolted down in a safe, well-lit, accessible area. We also recommend that additional bike racks be installed near the front (south) entrance of the school to provide more convenient and accessible bike parking for students using that entrance. If feasible, we advise that all bike racks be installed within school gates to optimize bike parking security.

RECOMMENDATION #ACP-012: AMARILLO DRIVE AND DONALDSON WAY INTERSECTION CROSSING GUARD

Narrative – The Amarillo Drive and Donaldson Way intersection is one of, if not the, most significant intersections for Donaldson Way Elementary School. This intersection provides key access to the school's commonly used east entrance, loading zone, and parking lot. As a result, this intersection is highly travelled by pedestrians, bicyclists, and motorists during pick-up and drop-off time. Walk Audit participants noted congestion and visual barriers at this intersection as safety barriers. Vehicle congestion, particularly during drop-off time, backs up out of the school's parking lot, through this intersection, and along the streets. At the same time, many pedestrians and bicyclists cross through this intersection to reach the east entrance to the school. Motorists grow impatient with the traffic and drive unsafely, blocking crosswalks and failing to yield to pedestrians already in the crosswalk. Backed up traffic and cars parked close to the crosswalks also impede visibility of pedestrians to motorists.

IDENTIFIED BARRIERS

- ***Poor pedestrian visibility –*** The lack of red curbs at the intersection's corners results in vehicles parked right next to the crosswalks, greatly reducing pedestrian visibility, especially for children. Vehicles blocking the crosswalks and intersection due to congestion also impact pedestrian visibility.

- ***Congestion –*** High levels of congestion during pick-up and drop-off hours contribute towards poor driver behavior and increase the risk of collisions, making the intersection feel unsafe for student pedestrians and bicyclists.

- ***Impatient driving behavior –*** During the Walk Audit, motorists were observed driving hazardously, largely by failing to yield to pedestrians and blocking the intersection. This driving behavior increases the risk of collisions and makes the intersection feel unsafe and unwelcoming to bicyclists and pedestrians.

A crossing guard at the Amarillo Drive and Donaldson Way intersection would help reduce pedestrian/motorist conflicts at this intersection while the school waits for long-term infrastructure improvements.

RECOMMENDATIONS

- ***Crossing guard –*** While we more highly recommend infrastructure improvements at this intersection (see #AC-042), we advise that a crossing guard be stationed at the intersection in the interim. A crossing guard will help regulate traffic, reducing poor driver behavior, and improve pedestrian visibility and comfort. After infrastructure improvements have been installed, the school should determine whether a crossing guard is still needed.

RECOMMENDATION #ACP-013: STUDENT BICYCLE AND PEDESTRIAN SAFETY EDUCATION

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

IDENTIFIED BARRIERS

- ***Infrequent bicycle and pedestrian safety education –*** Donaldson Way Elementary has provided some bicycle safety education to students; however, the infrequency of education events and the lack of pedestrian safety education may result in students not receiving safety education.

Bicycle and pedestrian safety education teaches students the rules of the road and tools they need to be a safe bicyclist and pedestrian. (Photo: Napa County Office of Education).

RECOMMENDATIONS

- ***Bicycle and pedestrian safety education –*** We recommend that annual bicycle and pedestrian safety education be provided to all students, such as those provided through the Napa County Safe Routes to School program.

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 #AC-025: SR 29 AND DONALDSON WAY INTERSECTION IMPROVEMENTS

IDENTIFIED BARRIERS

- ***Long crossing distances***
- ***Large curb radii***
- ***High traffic volumes/speeds***

RECOMMENDATIONS

- ***Protected intersection***
- ***Refuge island on south leg***
- ***Reduce curb radii***
- ***Crosswalk across north leg***
- ***Leading pedestrian interval***

Relevant Reports:

- *American Canyon High School Walk Audit Report*
- *American Canyon Middle School Walk Audit Report*

RECOMMENDATION #AC-011: SR 29 AND AMERICAN CANYON ROAD INTERSECTION IMPROVEMENTS

IDENTIFIED BARRIERS

- ***Long crossing distances***
- ***Large curb radii***
- ***High traffic volumes/speeds***
- ***Missing crosswalks***

RECOMMENDATIONS

- ***Protected intersection***
- ***Refuge island on north/south legs (east/west if feasible)***
- ***Reduce curb radii***
- ***Crosswalk across north and east legs***
- ***Leading pedestrian interval***

Relevant Reports:

- *American Canyon High School Walk Audit Report*
- *American Canyon Middle School Walk Audit Report*

RECOMMENDATION #AC-034: BENTON WAY AND HUMMINGBIRD WAY CURB EXTENSIONS

IDENTIFIED BARRIERS

- ***Motorists failing to stop at stop signs***
- ***Congestion***

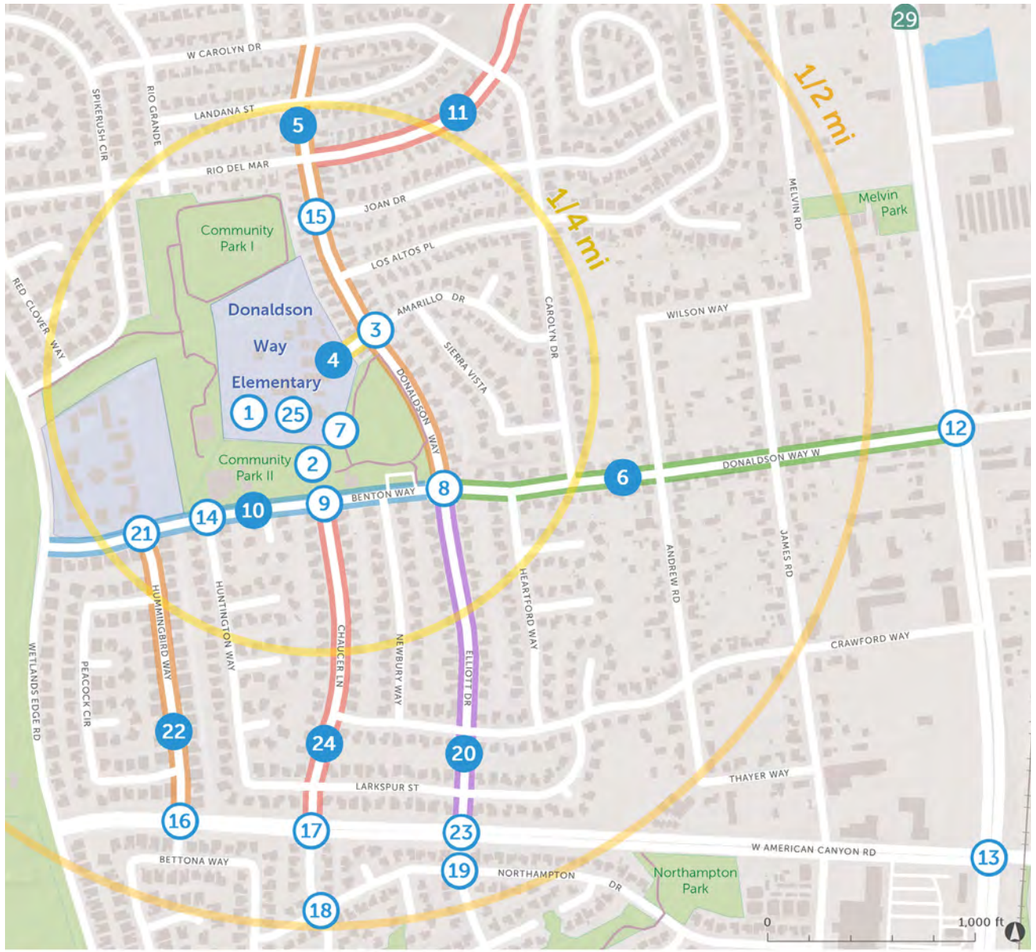
RECOMMENDATIONS

- ***Curb extensions on north side and south corners***

Relevant Reports:

- *American Canyon Middle School Walk Audit Report*

MAP OF RECOMMENDATIONS



Map 5: Recommendations

TABLE OF RECOMMENDATIONS

Infrastructure:

	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
1	School parking lot/ loading zone	AC-050	Congestion	Create off-site loading zone on southbound Donaldson Way at north edge of Community Park 2	$	**High**
		AC-051	Lack of pedestrian path across parking lot to connect campus with Community Park 2 path	Install raised crosswalk from southeast corner of main building directly east to end of parking lot to connect with future path (see AC-055)	$	**High**
		AC-052	Narrow sidewalk on west side	Widen sidewalk on west side	$	**Medium**
2	City parking lot on Benton Way	AC-053	Narrow sidewalk on west side, west side sidewalk does not connect directly to Benton Way sidewalk	Widen west sidewalk, extend west sidewalk south to connect directly with Benton Way sidewalk	$	**Medium**
3	Amarillo Drive and Donaldson Way intersection	AC-042	Poor pedestrian visibility (cars parking close to intersection), traffic congestion, impatient driving behavior	Install curb extensions on all corners. Upgrade crosswalks to high-visibility pattern	$$	**High**
4	Amarillo Drive from Donaldson Way to school campus	AC-054	Narrow sidewalks, some sidewalk displacement	Replace and widen westbound (north side) sidewalk and extend eastbound (south) sidewalk to parking lot crosswalk	$	**High**
5	Donaldson Way from West Carolyn Drive to Benton Way	AC-038	No bicycle facilities from West Carolyn Drive to Benton Way	Install Class II bike lanes on both sides of road (consider for entire corridor from Eucalyptus Drive to Benton Way per Bike Plan)*. Consider traffic-calming measures for southbound between Amarillo Drive and Benton Way.	$-$$	**High**
		AC-037	Narrow sidewalks	Widen existing southbound sidewalk to at least 6' from Amarillo Drive to Benton Way	$$	**Medium**
		AC-039	Poor road quality from Amarillo Drive to Rio Del Mar, sidewalk too narrow for shared use	Repave road	$$$	**Low**
6	Donaldson Way West from Elliott Drive to Broadway	AC-040	High-volume road, sidewalk gaps, challenging sudden bicycle facility transition	Install curb extensions at Andrew Road and on the north side of Carolyn Drive to act as traffic-calming. Fill sidewalk gaps on both sides of the road. Improve transition from eastbound Class II bike lane to Class III bike boulevard.	$$	**Medium**
7	Community Park 2 Pedestrian Path	AC-055	Lack of access between path and school	Install pedestrian bridge to the existing school crosswalk near Amarillo Drive to connect pedestrian path to school campus and extend existing path connecting to south side of parking lot north (along lot) to parking lot raised crosswalk (see AC-51)	$-$$	**High**
8	Benton Way and Elliott Drive intersection*	AC-036	Vehicles parking close to crosswalks, long crossing distances, high traffic volumes, poor driver yielding	Install curb extensions at all corners and yellow high visibility school zone crosswalks at all crosswalks. Extend existing and future bike lanes all the way to the intersection.	$$	**High**
9	Benton Way and Chaucer Lane intersection*	AC-049	Low pedestrian visibility, motorists failing to stop at stop sign	Upgrade crosswalks to high-visibility pattern. Install floating curb extensions on northwest, southwest, and northeast (east of parking lot entrance) corners to accommodate Class IV. Move westbound stop sign to curb extension to improve visibility.	$$	**Medium**
10	Benton Way from Elliott Drive to Wetlands Edge Road	AC-027	Unsafe driving behavior (speeding, not stopping at stop signs)	Install additional school zone signage	$	**Low**
		AC-026	Unprotected bicycle facilities; students not using existing bicycle facilities	Upgrade existing Class II bike lanes on both sides of the street to parking-protected Class IV bike lanes with K-71 bollards and red zones around driveways and intersections to improve sight lines for exiting vehicles	$$	**Medium**
		AC-029		Paint green conflict markings, at least in areas that cross parking lot/loading zone driveways, key intersections, and beginning and ends of corridor segments	$	**Medium**
		AC-030	Narrow sidewalk on north side	Widen sidewalk on north side to 6' minimum	$$	**Medium**
		AC-031	Missing curb ramps across city parking lot exit lane (lot at Chaucer Lane intersection)	Install curb ramps or raised crosswalk to sidewalks across city parking lot exit lane	$	**Low**
11	Rio Del Mar from Donaldson Way to Los Altos Place	AC-056	No bicycle facilities	Install Class II bike lanes* - consider for entire corridor (Wetlands Edge Road to SR 29) per Bike Plan	$-$$	**High**
12	SR 29 and Donaldson Way intersection	AC-025	Long crossing distances, large curb radii, high traffic volumes and speeds	Upgrade intersection to protected intersection. Add refuge island to the south leg, reduce curb radii for free right turns. Add crosswalk across north leg. Upgrade signal to provide leading pedestrian interval across SR29.	$$$	**High**
13	SR 29 and American Canyon Road intersection	AC-011	Long crossing distances, large curb radii, high traffic volumes and speeds, missing crosswalks	Upgrade intersection to protected intersection. Add refuge islands to north/south legs (east/west if feasible), reduction of curb radii, and addition of north and east crosswalks. Upgrade signal to provide leading pedestrian interval.	$$$	**High**

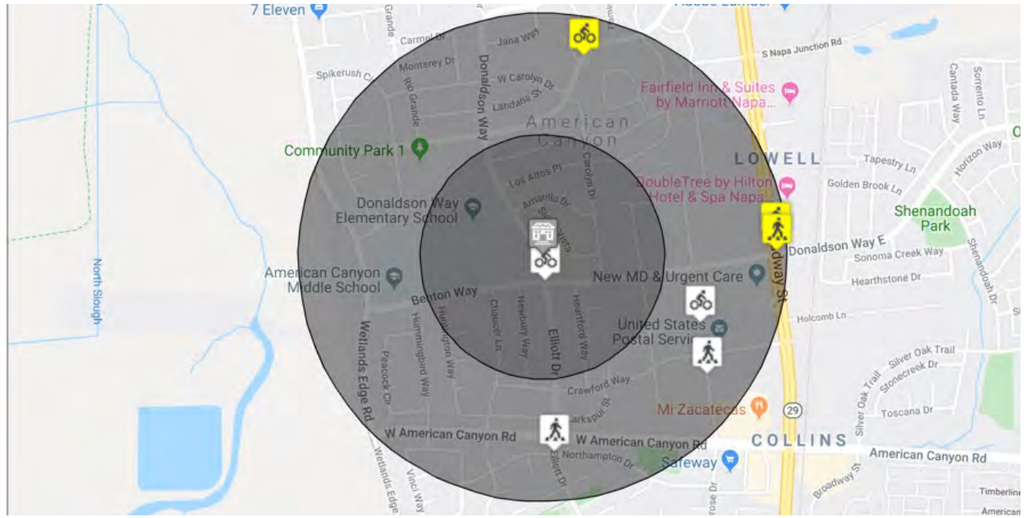
	LOCATION	ID #	BARRIER	RECOMMENDATION	COST	PRIORITY
14	Benton Way and Huntington Way intersection	AC-041	Faded crosswalk across Huntington Way	Repaint crosswalk	$	**Low**
15	Joan Drive and Donaldson Way intersection	AC-044	White crosswalk in school zone, no signs or traffic controls	Repaint crosswalks to be yellow high-visibility crosswalks and install pedestrian crossing signage	$	**Medium**
16	Hummingbird Way and West American Canyon Road intersection	AC-045	Long crossing distances	Install curb extension on northeast corner to square up intersection and widen medians to be pedestrian refuge islands	$$	**Medium**
17	Chaucer Lane and West American Canyon Road intersection	AC-046	Low-visibility, faded crosswalk across several lanes of traffic. Westbound bike lane becomes dashed far before the intersection.	Repaint crosswalks with high-visibility pattern and widen medians to be pedestrian refuge islands. Continue westbound bike lane to intersection.	$-$$	**Medium**
18	Northampton Drive and Chaucer Lane intersection	AC-047	No crosswalks	Install crosswalks across east, west, and south legs of intersection	$	**Low**
19	Northampton Drive and Elliott Drive intersection	AC-048	No crosswalks	Install crosswalks across Northampton Drive	$	**Low**
20	Elliott Drive from American Canyon Road to Benton Way	AC-035	Speeding*	Install a chicane	$$	**Medium**
21	Benton Way and Hummingbird Way intersection	AC-034	Congestion at intersection, drivers not stopping at stop signs	Install curb extensions on north side and south corners	$$	**High**
22	Hummingbird Way from American Canyon Road to Benton Way	AC-033	Speeding	Install a chicane	$$	**Medium**
23	Elliott Drive and West American Canyon Road intersection	AC-028	Long crossing distances; low-visibility; bike lanes do not reach crosswalks	Upgrade medians to be pedestrian refuge islands. Continue bike lanes to crosswalks. Install curb extensions on all four corners. Upgrade crosswalks to high-visibility pattern.	$$	**Medium**
24	Chaucer Lane from American Canyon Road to Benton Way	AC-043	Speeding	Install a chicane	$$	**Medium**
25	School grounds	AC-057	Bike racks positioned to provide only half-capacity of parking, only located on one side of the school, and unsecured	Reposition bike racks to maximize parking capacity and bolt down in a safe, well-lit, accessible area. Install additional bike racks near the front (south) entrance of the school. If feasible, install all bike racks within school gates.	$	**Medium**

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

Programmatic Improvements:

	ISSUE	ID #	RECOMMENDATION	LOCATION	FREQUENCY	COST	PRIORITY
1	Lack of pedestrian path between campus and Community Park 2 path	ACP-011	If school installs a raised crosswalk across parking lot, assign a crossing guard	School parking lot/loading zone	Daily	$	**High**
2	Poor pedestrian visibility (cars parking close to intersection), traffic congestion, impatient driving behavior	ACP-012	Crossing guard	Amarillo Drive and Donaldson Way	Daily	$	**Medium**
3	Infrequent bicycle and pedestrian safety education	ACP-013	Provide annual bicycle and pedestrian safety education	School site	Annually	$	**Medium**
4	Congestion in school zone. Vehicle-oriented transportation culture	ACP-014	Implement new active transportation encouragement programs (ex. Walk and Roll Wednesdays, bike trains, walking school buses)	School site	Monthly, with goal of increasing frequency	$	**High**

COLLISION MAP AND DATA



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

Summary Statistics

RADIUS	FATAL	SEVERE INJURY	VISIBLE INJURY	COMPLAINT OF PAIN	PEDESTRIAN	BICYCLE	TOTAL
< .25 mi.	0	0	0	1	0	1	1
.25-.5 mi.	0	0	3	3	3	3	6
Total	0	0	3	4	3	4	7

Collision List

DATE	TIME	PRIMARY	SECONDARY	BIKE/PED
2013-10-11	07:25	Broadway	Donaldson Wy	Yes/No
2013-10-04	08:26	Elliott Dr	Northampton Dr	No/Yes
2013-07-21	13:55	Rio Del Mar	Gisela Dr	Yes/No
2013-04-08	16:36	James Rd	Donaldson Wy	Yes/No
2013-03-22	07:58	Donaldson Wy	Benton Wy	Yes/No
2013-02-12	18:03	James Rd	Crawford Wy	No/Yes
2015-04-15	15:38	RT 29	Donaldson Wy	No/Yes
2016-09-26	07:54	W American Canyon Rd	Hummingbird Wy	No/Yes
2017-02-23	07:25	Broadway	Donaldson Wy	No/Yes
2017-03-17	05:44	American Canyon Rd	Chaucer Ln	No/Yes
2017-07-29	13:33	Chaucer Ln	Northampton Dr	Yes/No

Figure 12: Collision Data (2012-2017) (Source: UC Berkeley Transportation Injury Mapping System: SRTS Collision Map Viewer)

APPENDICES

FIGURES & MAPS

FOOTNOTES

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

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

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

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

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

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

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

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

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

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

APPENDIX A

EMC Survey Toplines

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

Evaluation: Research & Methodology

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

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

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

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

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

---

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

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

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

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

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

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

3. On most days, what was the primary way your **(**K-8 child**/**oldest K-8 child**)** travelled **to** school?

Family vehicle (only children in your family)	73
Carpool (children from other families)	3
School bus	3
Other public transportation	0
Bike	4
Walk	16
Other (scooter, skateboard, inline skates, etc.)	0
(No response)	0

4. And on most days, what was the primary way your **(**K-8 child**/**oldest K-8 child**)** travelled **from** school?

Family vehicle (only children in your family)	73
Carpool (children from other families)	3
School bus	3
Other public transportation	1
Bike	4
Walk	15
Other (scooter, skateboard, inline skates, etc.)	0
(No response)	0

5. How long did it normally take your **(**K-8 child**/**oldest K-8 child**)** to get to/from school?

Less than 5 minutes	18
5-10 minutes	42
11-15 minutes	22
16-20 minutes	8
More than 20 minutes	9
(No response)	0

6. Has your **(**K-8 child**/**oldest K-8 child**)** ever walked or biked to/from school?

Yes	43
No	56
(No response)	0

7. **(ONLY ASKED IF Q6=1, 'Yes, has walked/biked to/from school')** In what grade did your child begin to walk or bike to/from school? **(n=199)**

Pre-school	7
Kindergarten	30
1st grade	9
2nd grade	6
3rd grade	10
4th grade	8
5th grade	9
6th grade	13
7th grade	6
8th grade	1
9th through 12th grade	1
(No response)	2

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

Pre-school	1
Kindergarten	5
1st grade	2
2nd grade	2
3rd grade	5
4th grade	14
5th grade	12
6th grade	16
7th grade	10
8th grade	7
9th through 12th grade	13
I would not feel comfortable at any grade	14
(No response)	1

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

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

14. **(ONLY ASKED IF Q10=3 OR 4, 'not comfortable')** What would you say is the **main** reason you were not comfortable with your **(**K-8 child**/**oldest K-8 child**)** **walking** to school without an adult?
(VERBATIM RESPONSES CODED INTO BELOW CATEGORIES) (n=335)

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

15. **(ONLY ASKED IF Q11=3 OR 4, 'not comfortable')** What would you say is the **main** reason you were not comfortable with your **(**K-8 child**/**oldest K-8 child**)** **riding a bike** to school without an adult?
(VERBATIM RESPONSES CODED INTO BELOW CATEGORIES) (n=324)

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

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

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

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

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

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

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

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

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

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

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

Yes	79
No	21
(No response)	-

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

Yes	78
No	21
(No response)	0

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

47. Do you identify as…

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

48. What year were you born? **(YEARS CODED INTO CATEGORIES)**

18-29 (2003-1992)	5
30-39 (1982-1991)	36
40-49 (1972-1981)	45
50-64 (1957-1971)	12
65 or older (1956 or earlier)	1
Prefer not to respond	1

49. Do you consider yourself to be…

Hispanic or Latino	38
White or Caucasian	41
African American or Black	1
Asian or Pacific Islander	7
Something else	3
Prefer not to respond	10

50. Do you…

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

THANK YOU!

APPENDIX B

Universal Recommendations

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

Appendix B
Napa County SRTS Walk Audit Report
Universal Recommendations

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

Universal Recommendation 1: High-Visibility School Zone Crosswalks

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

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

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

Universal Recommendation 2: Intersection Daylighting

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

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

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

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

Universal Recommendation 3: Sidewalk Width Adjacent to School Campus

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

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

Universal Recommendation 4: Class III Bike Boulevard Traffic-Calming

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

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

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

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

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

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

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

APPENDIX C

Quick Build Brochure

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

QUICK-BUILD BIKEWAY NETWORKS FOR SAFER STREETS

Delivering Safer Streets in Weeks or Months, Instead of Years

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

Photo credit: Alta Planning + Design

CASE STUDY

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

WHY QUICK-BUILD? WHY NOW?

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

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

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

> *"We as transportation experts need to be thinking strategically about whether or not we need to spend three years talking about doing something important, or three weeks to just try something."*
>
> — Warren Logan
>
> *Transportation Policy Director of Mobility and Interagency Relations at Oakland Mayor's Office*

WHAT IS QUICK-BUILD?

The Basics

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

Materials

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

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

CASE STUDY

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

Photo credit: Bike SLO County

WHO?

Your Quick-Build Project Team

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

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

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

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

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

Community Engagement

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

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

CASE STUDY

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

Photo credit: Holly Raines

WHERE?

Which Projects are Best for Quick-Build?

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

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

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

Photo credit: Alta Planning + Design

Funding for Quick-Build

POTENTIAL FUNDING SOURCES IN CALIFORNIA

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

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

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

CALIFORNIA BICYCLE COALITION

APPENDIX D

Bike Parking Guidance

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

ESSENTIALS OF

BIKE PARKING

Selecting and installing bicycle parking that works

apbp

Association of Pedestrian and Bicycle Professionals

Expertise for Active Transportation

Essentials of Bike Parking
Revision 1.0, September 2015

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

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

Association of Pedestrian and Bicycle Professionals

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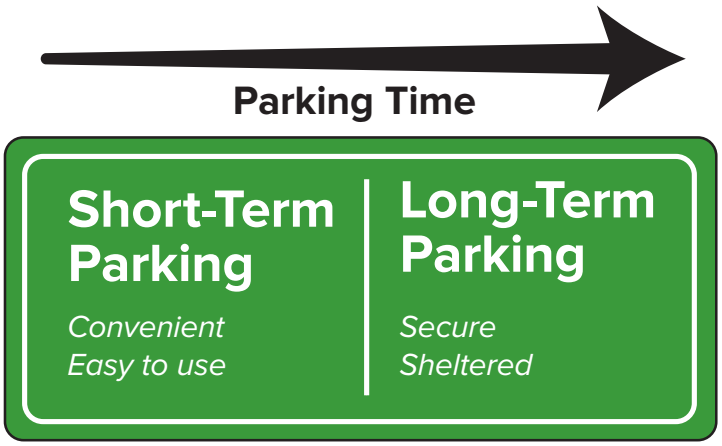
TABLE OF CONTENTS

INTRODUCTION

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

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

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



SHORT-TERM PARKING

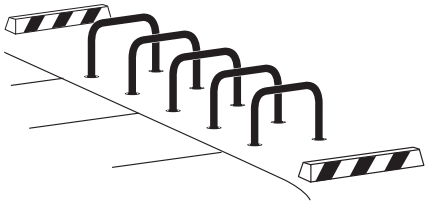
Effective bike parking for short-term users depends on two main factors: 1) proximity to the destination and 2) ease of use.

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

INVERTED U

POST & RING

CORRAL



SITE PLANNING

Location

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

Security

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

Quantity

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

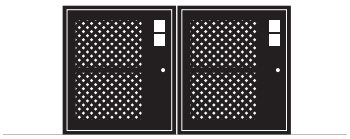
BIKE CORRALS

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

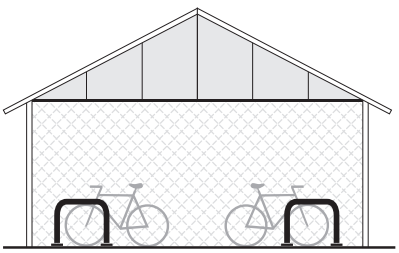
LONG-TERM PARKING

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

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



BIKE LOCKERS



SHELTERED SECURE ENCLOSURE

SITE PLANNING

Location

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

Security

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

Quantity

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

SPECIAL CONSIDERATIONS FOR LONG-TERM PARKING

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

Density

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

Bicycle design variety

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

Performance criteria

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

INSTALLATION

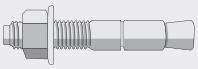
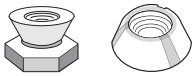
Selecting an appropriate installation surface and technique is key to creating bicycle parking that remains secure and attractive over time.

INSTALLATION SURFACE

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

INSTALLATION FASTENERS

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

FASTENERS		
CONCRETE SPIKE		Installs quickly in concrete with a hammer. Tamper-resistant. Removal may damage concrete and/or rack.
CONCRETE WEDGE ANCHOR		Allows for rack removal as needed. Not tamper-resistant, but can accommodate security nuts (below).
SECURITY NUTS		Use with concrete wedge anchors. Security nuts prevent removal with common hand tools.

INSTALLATION TECHNIQUES

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

BICYCLE RACK SELECTION

PERFORMANCE CRITERIA FOR BIKE PARKING RACKS

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

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

RACK STYLES

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

RACKS FOR ALL APPLICATIONS

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

INVERTED U
also called staple, loop

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

POST & RING

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

WHEELWELL-SECURE

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

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

HIGH-DENSITY RACKS

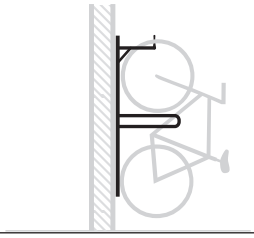
These rack styles do not meet all performance criteria but may be appropriate in certain constrained situations.

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

STAGGERED WHEELWELL-SECURE

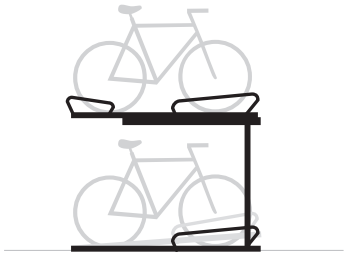
Variation of the wheelwell-secure rack designed to stagger handlebars vertically or horizontally to increase parking density. Reduces usability and limits kinds of bikes accommodated, but contains bikes well and aids in fitting more parking in constrained spaces.

VERTICAL



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

TWO-TIER



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

RACKS TO AVOID

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

WAVE
also called undulating or serpentine

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

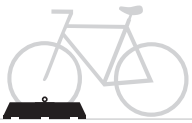
SCHOOLYARD
also called comb, grid

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

COATHANGER

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

WHEELWELL



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

BOLLARD

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

SPIRAL

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

SWING ARM SECURED

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

RACK MATERIALS & COATINGS

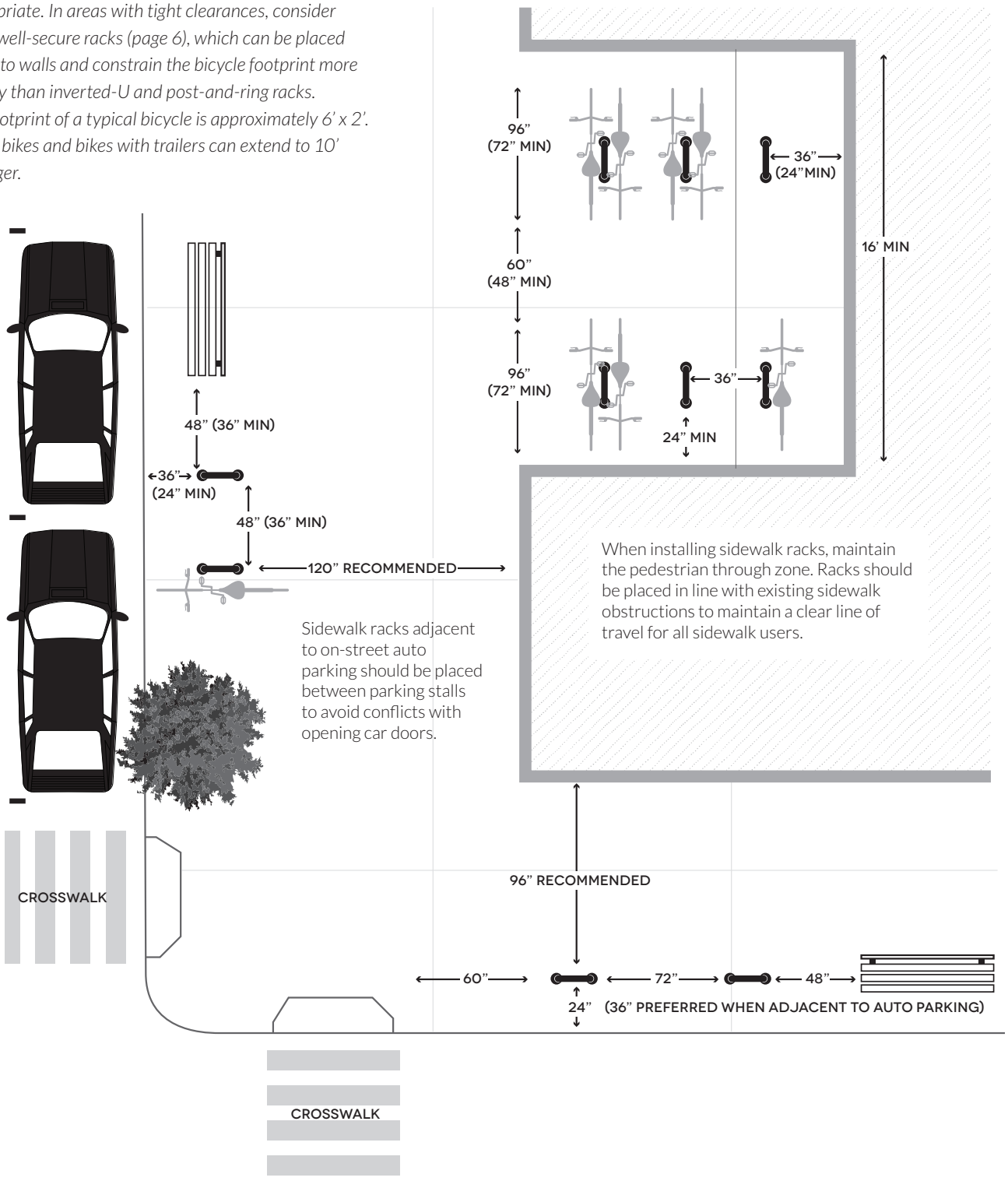
Most bicycle parking racks are made of carbon steel or stainless steel. Carbon steel requires a surface coating to resist rust while appropriate grades of stainless steel need no coating. Not all materials and coatings with the same name perform equally. Square tubing provides a security advantage as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

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

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

PLACEMENT

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



APPENDIX E

Recommendation
Cost Range Estimates

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

Appendix E: Recommendation Cost Range Estimates

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

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

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

APPENDIX F

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