

SAN MATEO COUNTY SAFE ROUTES TO SCHOOLS SAN MATEO FOSTER CITY SCHOOL DISTRICT



ABBOTT MIDDLE SCHOOL WALK AND BIKE AUDIT FINAL REPORT 06.24.13



San Mateo County
SAFE ROUTES TO SCHOOL
Healthy Kids • Green Communities • Safe Journeys

Prepared by



Kimley-Horn
and Associates, Inc.

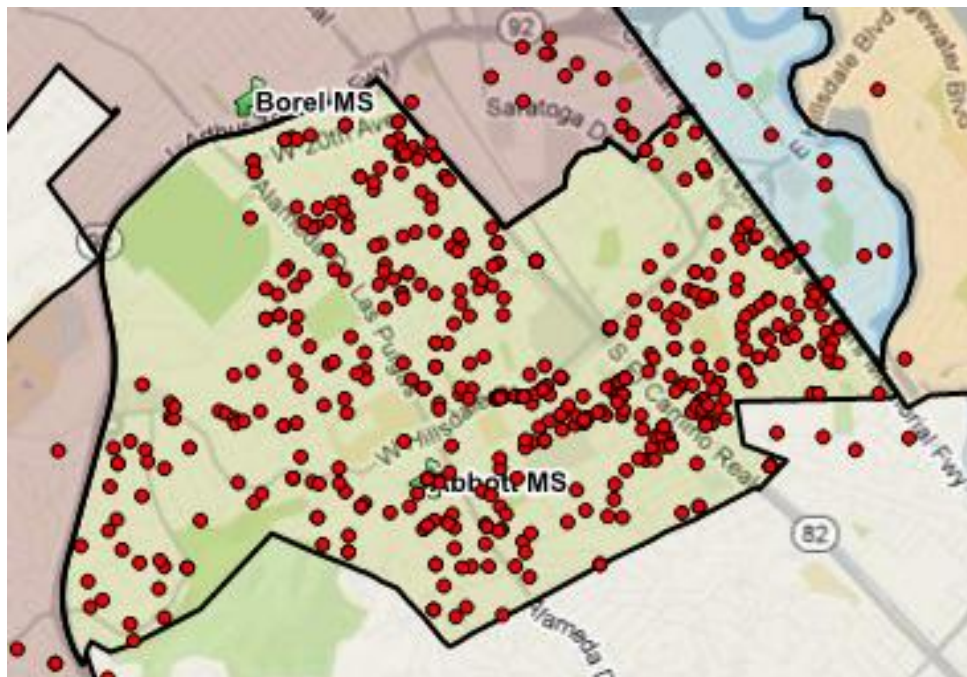
Introduction

In partnership with the San Mateo County Office of Education, the San Mateo Foster City School District planned to complete Walking and Bicycling Audits at each of its Elementary and Middle School campus during the 2012/2013 or 2013/2014 school years. Walking and bicycling audits are field visits to identify barriers or challenges to students using these modes to travel between home and school. Also known as assessments, audits generally include a tour of the school area, where participants identify issues related to walking and biking, followed by a debriefing and brainstorming session to rank high-priority concerns and identify potential solutions. Walking and bicycling audits provide community stakeholders with the information they need to analyze the design and condition of the transportation network.

A Walking and Bicycling Audit was completed for Abbott Middle School on January 23, 2013. Staff and parents from Abbott Middle School, as well as staff from the City of San Mateo and School District partnered with the selected engineering safety firm of Kimley-Horn and Associates to complete the field audit and brainstorming session of concerns and solutions. Subsequent to the field audit and debrief, the issues discussed have been incorporated into this report and recommendations for improvements suggested herein.

School Boundaries

Below is a map showing the Abbott Middle School enrollment boundary (represented by the area shaded in green) and the current student enrollment (represented by red dots). This map helps to provide general origin/destination information for the routes students may utilize walking or biking to school.



Abbott Middle School Boundary

Survey Results

In Fall 2012, a student parent survey was conducted for Abbott Middle School. A total of 335 responses were collected for 456 students. The number of responses varied per survey question.

Gender Percentages

	Count	Percent
Male	213	48%
Female	232	52%
Total	445	100%

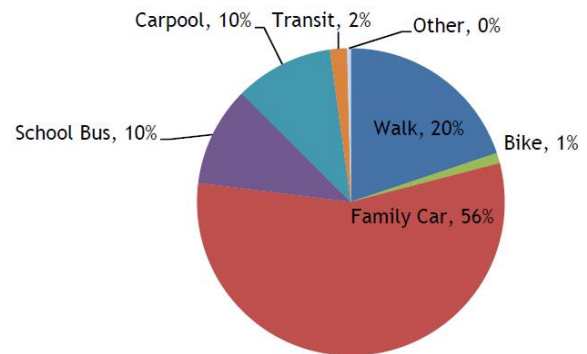
Approximate Distance between Home and School

	Number	Percent
1/4 mile or less	75	18%
1/4 - 1/2 mile	49	12%
1/2 - 1 mile	98	23%
1 - 2 miles	112	27%
More than 2 miles	87	21%
Total	421	100%

❖ Eighteen percent of students live within a quarter of a mile from school, while 30 percent live within a half mile from school. Forty-eight percent of students live more than a mile from school.

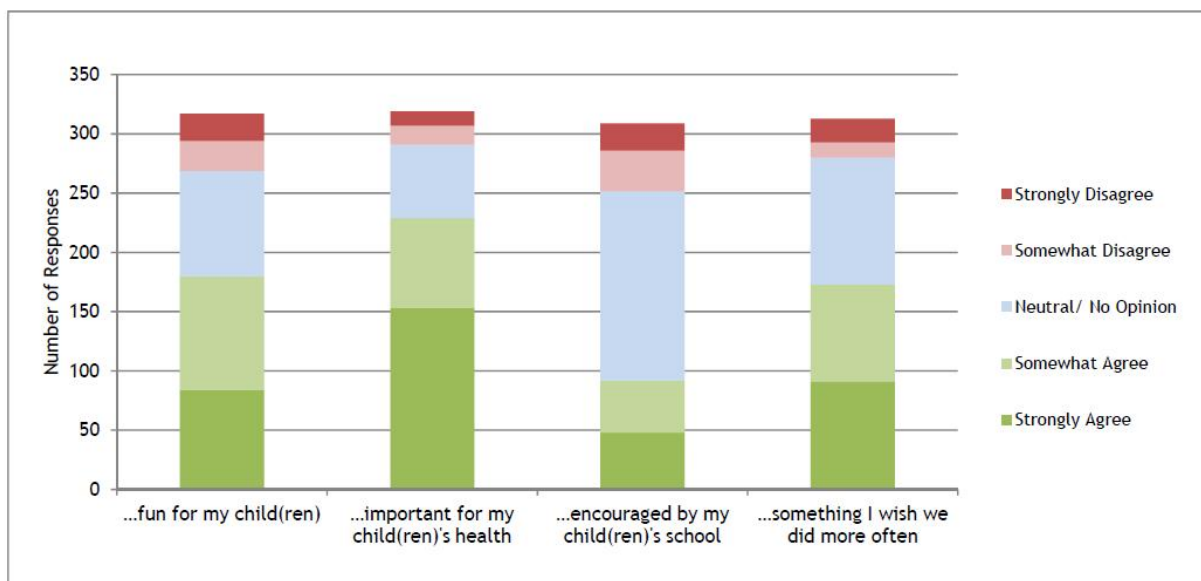
❖ The main mode of transportation for all trips to and from school is by family car with 56 percent. The second most common means of getting to school is by walking at 20 percent.

Mode Split for All School Trips (n=4385)



❖ A majority of parents stated that walking or biking was important for their children's health. Other common statements include that walking or biking is fun for their children and is something parents wished they did more often.

Walking or biking to school is...



Field Walking Audit

The field audit at Abbott Middle School focused on the following main areas of concern by the group:

- Alameda de Las Pulgas (between Hillsdale Avenue and 36th Avenue): This section of “The Alameda” is heavily traveled by residents in the area as well as parents dropping off or picking up students during school start and dismissal periods. The posted speed limit on this section of The Alameda is 30 mph and vehicles were observed to travel at approximately that speed or higher, especially in the downhill northbound direction. There is an access gate along the east side of the school located in close proximity to the intersection with Voelker Drive that many students use that walk along The Alameda or use after being dropped off or picked up by their parents along this frontage.
- Alameda de Las Pulgas/36th Avenue Intersection: This intersection is one of two main congested locations for pedestrians as well as vehicular traffic. The majority of students walking to school originate from or are destined for areas east of the campus and utilize 36th Avenue near the campus to walk. Although this intersection is stop controlled, many vehicles come to a rolling stop and there are occurrences of pedestrian and vehicle conflicts as vehicles often make three lanes in the southbound direction of The Alameda squeezing against the curb to make a right turn.
- 36th Avenue (between Alameda de Las Pulgas and Fernwood Street): The section of 36th Avenue includes the main access to the Abbott Middle School campus via the Kenwood Avenue intersection. Vehicle congestion is moderate to heavy during drop-off and pickup activities and sometimes vehicles queue back to the adjacent intersections of 36th Avenue to the east at The Alameda and to the west at Fernwood Street. In addition to the vehicular traffic, there are school buses that serve Abbott Middle School and drop-off and pickup on the north side of 36th Avenue, just east of the Kenwood Avenue intersection.
- The “school loop” and parking lot: The school includes some onsite parking and a curbside drop-off and pickup area via a wide one-way roadway loop that begins at the 36th Avenue/Kenwood Street intersection and terminates at the Fernwood Street/Laurelwood Drive intersection. Many parents use this driveway to drop-off students along the curb or park and drop-off their students. The loop is closed in the afternoon and parents are forced to use alternative locations to pickup their students.
- Fernwood Street (between 36th Avenue and Hillsdale Boulevard): Fernwood Street is a local street with no sidewalks in the immediate school area. Many parents use Fernwood Street as an alternative to the “school loop” drop-off and pickup, because it is convenient and close to many of the classrooms on the west side of the campus. In addition, the “school loop” driveway exits at the Laurelwood Drive intersection and turning movements are heavy at this all-way stop intersection. Parents utilizing this area also use Laurelwood Drive to park and drop-off or pickup their students. In general, this section of Fernwood Street is very heavily congested with vehicles and pedestrians with limited on-street parking and no sidewalks to adequately and safely serve the parents and students.

Additional observations about walking and biking activities near the school campus:














- Walking to campus: Observations as well as experience from the site council noted that many students walk to/from campus daily and this is the most highly used alternative transportation mode besides parents using personal vehicles.
- Biking to campus: A much smaller percentage of students biking to/from school. Bike racks are located on the west side of the school, interior to campus in a safe location. On a daily basis, bike racks are moderately utilized but no additional bike racks are required. No alternate location for the bike racks was determined that may increase the incentive for biking or safe storage of bicycles.

The **Existing SR2S Elements** figure illustrates the existing pedestrian and bicycle safety devices already in place in the study area.

Abbott Middle Safe Route to School Walk and Bike Audit



Legend:

-  School Crossing
-  Bus Stop
-  Speed Limit
-  No Stopping, Standing, Parking Any Time
-  Existing Curb Ramp
-  No Curb Ramp
-  School Crosswalk
-  Ladder School Crosswalk
-  White Crosswalk
-  No Sidewalk
-  SLOW SCHOOL XING Pavement Marking
-  Bike Lane
-  Red Curb Marking

Proposed Safe Route to School Elements

The **Proposed SR2S Elements and Proposed SR2S Elements (Near School)** figures illustrate the SR2S Plan on a conceptual basis. A brief discussion is provided below for each of the improvements proposed:

36th Avenue (East to West):



1. **Install Pedestrian Ramps:** Sidewalks exist on both sides of 36th Avenue. Currently, there are currently pedestrian ramps at Michael Drive, Alameda de Las Pulgas, Wilshire Avenue, and the north side at Kenwood Avenue. It is suggested that pedestrian ramps be installed at south side of Kenwood Avenue, at Southwood Avenue, and Fernwood Street as pedestrian gap closures.



2. **Install Red Curb:** It is recommended that a 100 feet red curb be installed on the north side of 36th Avenue east of Kenwood Avenue. This will extend the current area for bus parking.

Alameda de Las Pulgas (North to South):



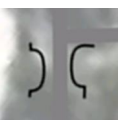
3. **Install School Speed Limit Sign:** The speed limit along Alameda de Las Pulgas is 30 mph. The SR2S plan suggests that two school speed limit signs be installed. For southbound traffic, the sign would be installed north of 31st Avenue and south of 36th Avenue for northbound traffic. The overlap of school zones between Abbott Middle School and Highlands High School allows a larger area to be signed as 25 mph when children are present and for greater potential enforcement by the Police Department.



4. **Install Pedestrian Ramps:** Sidewalks exist on both sides of Alameda de Las Pulgas. There are pedestrian ramps along this corridor except at the intersection of Alder Lane. It is recommended that pedestrian ramps be installed at Alder Lane as a pedestrian gap closure.



5. **Install School Pedestrian Crossings:** It is suggested that a school pedestrian crosswalk be installed on the east side of Alameda de Las Pulgas at Alder Lane and Heather Lane.



6. **Install Curb Extension:** Curb extensions can improve safety for pedestrian at an intersection by reducing the crossing distance and exposure for pedestrian and the speed of turning vehicles. The SR2S Plan proposes that curb extensions should be installed on the north leg of the intersection of Alameda de Las Pulgas and 36th Avenue. The curb extension will extend the curb 8 feet.



7. **Install Walk-through Median:** Currently there is a median on Alameda de Las Pulgas. It is proposed that a “walk-through” median be installed north of the intersection of Alameda de Las Pulgas and 36th Avenue. The walk-through median will provide refuge for pedestrians trying to cross Alameda de Las Pulgas.



8. **Install Enhanced Crossing:** It is recommended that an enhanced crossing be installed on the north leg of Alameda de Las Pulgas and 36th Avenue. The enhanced Crossing would include Rectangular Rapid Flashing Beacon (RRFB) lighting and protection median point for safe pedestrian walk-through.

Fernwood Street (North to South):



9. **Install New Pedestrian Walkway:** It is suggested that new sidewalk be installed on the east side of Fernwood Street from Hillsdale Boulevard to 36th Avenue. A short section of sidewalk currently exists on both sides of Fernwood Street, immediately south of the Hillsdale intersection.



10. **Install Red Curb:** The SR2S plan recommends that red curb be installed on the west side of Fernwood Street from Hillsdale Boulevard to 36th Avenue to establish a no parking zone.



11. **Install new Street Lights:** It is recommended that two new street lights be installed at the school driveway at Laurelwood Drive. During drop-off periods in the winter months, this areas is dark due to the time of year and a relatively heavy tree canopy.



12. **Move Stop Bar:** It is suggested that the stop bar at the school driveway at Laurelwood Drive be moved closer to the intersection. Moving the stop bar will help improve visibility for drivers exiting Abbott Middle School.

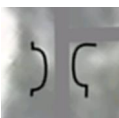


13. **Trim Vegetation:** The SR2S plan recommends trimming the vegetation on the west side of Fernwood, just south of Laurelwood. Trimming the vegetation will help improve visibility for drivers and pedestrians.

Hillsdale Boulevard (East to West):



14. **Install Pedestrian Ramps:** Sidewalks exist on both sides of Hillsdale Boulevard. It is recommended that a pedestrian ramp be installed on the northwest corner of Hillsdale and Fernwood Street.



15. **Install Curb Extension:** The SR2S plan proposes that curb extensions be installed on the west leg of Hillsdale Boulevard and Fernwood. The curb extension will extend 8 feet. These curb

extensions will shorten the crossing for pedestrians crossing Hillsdale Boulevard.



- 16. Install Pedestrian School Crossing:** It is proposed that a school pedestrian crossing be added on the west and south leg of Hillsdale Boulevard and Fernwood.

Overall School Zone Study Area:

17. Some of the current school-related roadway signage is not current based on the most recent version of the 2012 California Manual on Uniform Traffic Control Devices (MUTCD). This most recent version includes some updates to sign text and/or images, as well as standard for sign retro-reflectivity. It is recommended that future efforts for funding the elements of this plan also inventory the status of the current school signage and update all signs to the current standard.

Vehicular Drop-off and Pickup Procedure:

18. Although the primary goal of the Walk and Bike Audit is the encouragement of additional walking and biking through safety improvements of physical roadway features, the general safety of school areas is also observed. Abbott Middle School would greatly benefit from the establishment and publication of a set vehicular drop-off and pickup policy. A plan developed in concert between school staff and parent representatives, and distributed to parents each semester, would greatly improve the vehicular-related safety around the school campus. Specifically, it is recommended that the closure of the school loop during afternoon pickup be reevaluated since it moves this school traffic onto other adjacent roadways. A pickup plan may locate specific grades to certain locations around the school to reduce congestion in one specific area, while being customized for sibling student pickups and other factors.

Speed Limit in School Zone:

19. It is recommended that the City of San Mateo review the potential implementation of reduced Speed Limits in School Zones throughout the City. The California Vehicle Code (CVC) and the California Manual of Uniform Traffic Control Devices (MUTCD) allow the reduction of speeds limits in school zones to 20 or 15 miles per hour for up to 500 feet from school grounds. The City, as the local authority, may by ordinance or resolution adopt the lower prima facie limit upon the basis of an engineering and traffic survey. CVC Section 22358.4 and MUTCD Section 7B.15 are the applicable standards setting forth the requirements for the potential decrease of local speed limits near schools.

Abbott Middle Safe Route to School Walk and Bike Audit



Legend:

Existing

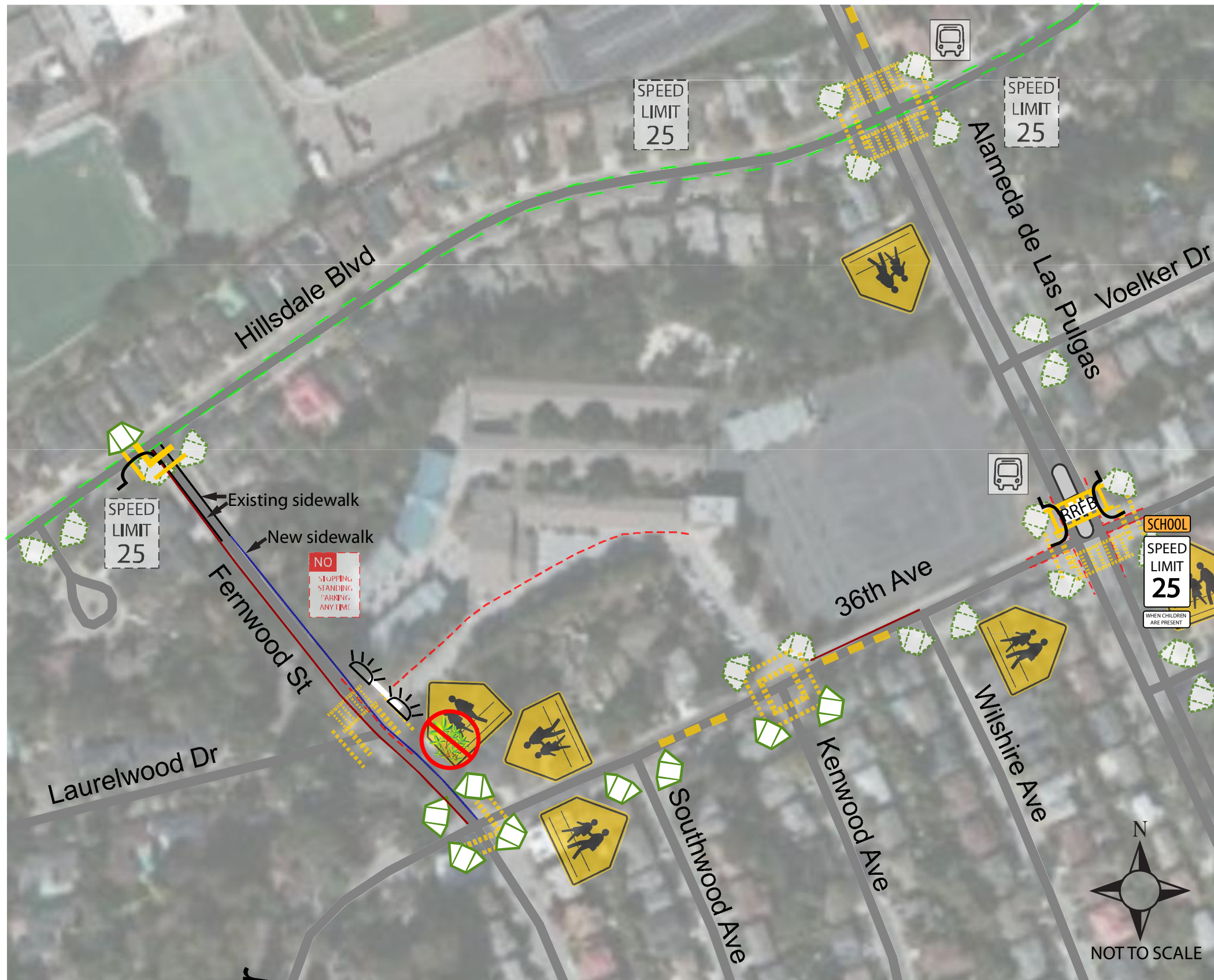
- School Crossing
- Bus Stop
- Speed Limit 25
- No Stopping, Standing, Parking Any Time
- Curb Ramp
- No Curb Ramp
- School Crosswalk
- Ladder School Crosswalk
- White Crosswalk
- SLOW SCHOOL XING Pavement Marking
- Bike Lane
- Red Curb Marking

Proposed Improvements

- School Zone Speed Limit Sign
- Trim Vegetation
- Curb Ramp
- Curb Extension
- Street Lights
- School Crosswalk
- School Ladder Crosswalk
- Enhanced School Crosswalk (Recommending Rectangular Rapid Flashing Beacon)
- Walk-Through Median
- Sidewalk or Walkway
- Red Curb Marking
- Move Stop Bar



Abbott Middle Safe Route to School Walk and Bike Audit



Legend:

Existing


















- School Crossing
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Typical SR2S Element Summary

More details of the recommended elements included herein, as well as other typical SR2S elements are summarized in the table below.

SR2S Element	Application in accordance with:	Image	Dimensions (W x H)	Typical purpose	Typical Cost Range
SIGNS					
SCHOOL SPEED LIMIT	California MUTCD, Part 7, Section 7B.11 (School Speed Limit Assembly C (CA))		(24" x 8") + (18" x 24") + (24" x 10")	To indicated the speed limit where a reduce speed zone for a school area has been established	\$300 - \$500
SPEED LIMIT FEEDBACK	California MUTCD, Part 2, Sections 2B.13 (Vehicle Speed Feedback Sign)		(30" x 30")	To display to approaching drivers the speed at which they are traveling. Enhances driver awareness of their speed, especially when used in condition with speed limit sign (R2-1)	\$12, 500 - \$17, 500
NO PARKING ANYTIME	California MUTCD, Part 7, Section 7B.14 (R26(CA))		(12" x 18")	To prevent parked or waiting vehicles from blocking pedestrians' views, and drivers' view of pedestrians	\$300 - \$500
NO STOPPING ANYTIME	California MUTCD Part 2, Section 2B.39 (R26(S)(CA))		(12" x 18")	To inform motorist of a no stopping zone at a specific location where red curb marking is not used.	\$300 - \$500
SCHOOL PASSENGER LOADING ONLY	California MUTCD, Part 2, Section 2B.39 (R25D(CA))		(12" x 18")	To inform motorist of curb restriction at location for loading or unloading passengers for the time as specified by local ordinance.	\$300 - \$500
PEDESTRIAN ELEMENTS					
SCHOOL CROSSING WARNING SIGN	California MUTCD, Part 7, Section 7B.08 (School Warning Assembly A (CA))		(30" x 30") + (24" x 8")	Installed at marked crosswalk, or as close to it as possible to show the location of the school crossing.	\$300 - \$500
PEDESTRIAN COUNTDOWN SIGNAL	California MUTCD, Part 4, Section 4E.07			To inform pedestrians of the number of seconds remaining in the pedestrian change interval.	\$1,500
RECTANGULAR RAPID FLASHING BEACON (RRFB)	Federal High Administration approval per California MUTCD, Section 1A.10, Approval No. IA-11-83-RRFB-California Statewide		Beacon (4" x 29") + Warning Signs	For use at uncontrolled pedestrian and school crosswalk locations.	\$50,000
IN-ROADWAY LIGHTS	California MUTCD Part 4, Chapter 4L		~10" deep x ~7.5" Diameter	To warn road users that they are approaching a condition on or adjacent to the roadway that might not be readily apparent and might require the road user to slow down and/or come to a stop.	\$50,000
CURB RAMP	Caltrans 2010 Standard Plan A88A and A88B		Varies	To make sidewalks accessible for those who need mobility or visual assistance.	\$500 - \$800
BICYCLE ELEMENTS					
BICYCLE LANE	California MUTCD, Part 9, Section 9C.04		Varies	Pavement marking designated that portion of the roadway for preferential use by bicyclists.	\$100-\$150 per bike and arrow
BICYCLE LANE SIGN	California MUTCD, Part 9, Section 9B.04 (R81(CA))		(12" x 8")	Installed at the beginning of each designated Bike Lane and along each Bike Lane at all major changes to regulated bicycle and motor vehicle traffic.	\$300 - \$500
NO PARKING BIKE LANE SIGN	California MUTCD, Part 9, Section 9B.10 (R7-9)		(12" x 18")	To restrict parking, standing, or stopping in a bicycle lane.	\$300 - \$500
BICYCLE + SHARE THE ROAD	California MUTCD, Part 9, Section 9B.18 (W11-1 + W16-1)		(30" x30") + (18" x 24")	To warn motorist to watch for bicyclists traveling along the highway.	\$300 - \$500
ROADWAY IMPROVEMENTS					
CURB EXTENSIONS	City Jurisdiction		Varies	Improves safety for pedestrians and motorist at intersection. Increases visibility and reduces speed of turning vehicles.	Varies
RAISED PEDESTRIAN CROSSINGS	City Jurisdiction		Varies	Improves safety for pedestrians by increases visibility for drivers and reduces speed of vehicles.	Varies
SLOW SCHOOL XING PAVEMENT MARKINGS	California MUTCD, Part 7, Section 7C. 06 (7C-101 (CA))		N/A	Warning drivers in advance of all yellow school crosswalks.	\$400

School Staff, Faculty, Parents, and Students Participating

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