

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



MEADOW HEIGHTS ELEMENTARY 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.

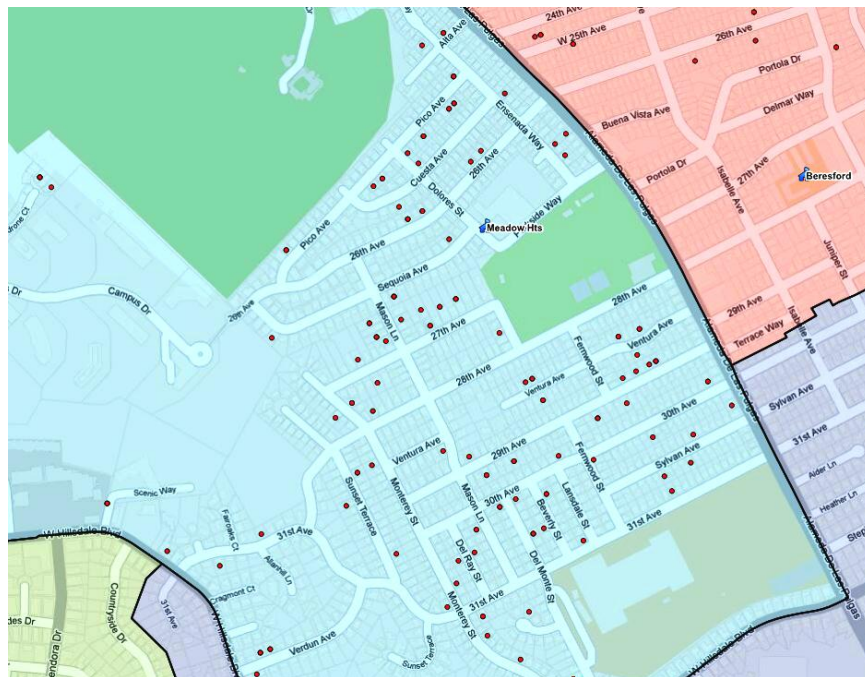
Introduction

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 Meadow Heights Elementary School on March 25, 2013. Staff and parents from Meadow Heights Elementary 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 Meadow Heights Elementary School enrollment boundary (represented by the area shaded in blue) 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.



Meadow Heights Elementary School Boundary

Survey Results

In Fall 2012, a student parent survey was conducted for Meadow Heights Elementary School. A total of 50 responses were collected for 92 students. The number of responses varied per survey question.

Gender Percentages

	Count	Percent
Male	47	54%
Female	40	46%
Total	87	100%

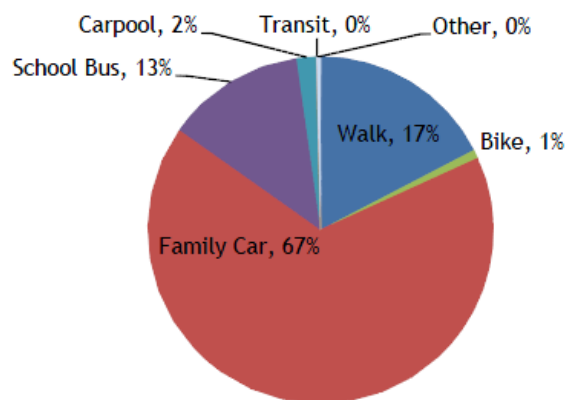
Approximate Distance between Home and School

	Number	Percent
¼ mile or less	23	29%
¼ - ½ mile	16	21%
½ - 1 mile	12	15%
1 – 2 miles	16	21%
More than 2 miles	11	14%
Total	78	100%

❖ Most students at Meadow Heights live within walking distance. Twenty-nine percent of students live less than a quarter mile from the school, while 21 percent of students live within a half mile from the school. Thirty-five percent of students live more than a mile away.

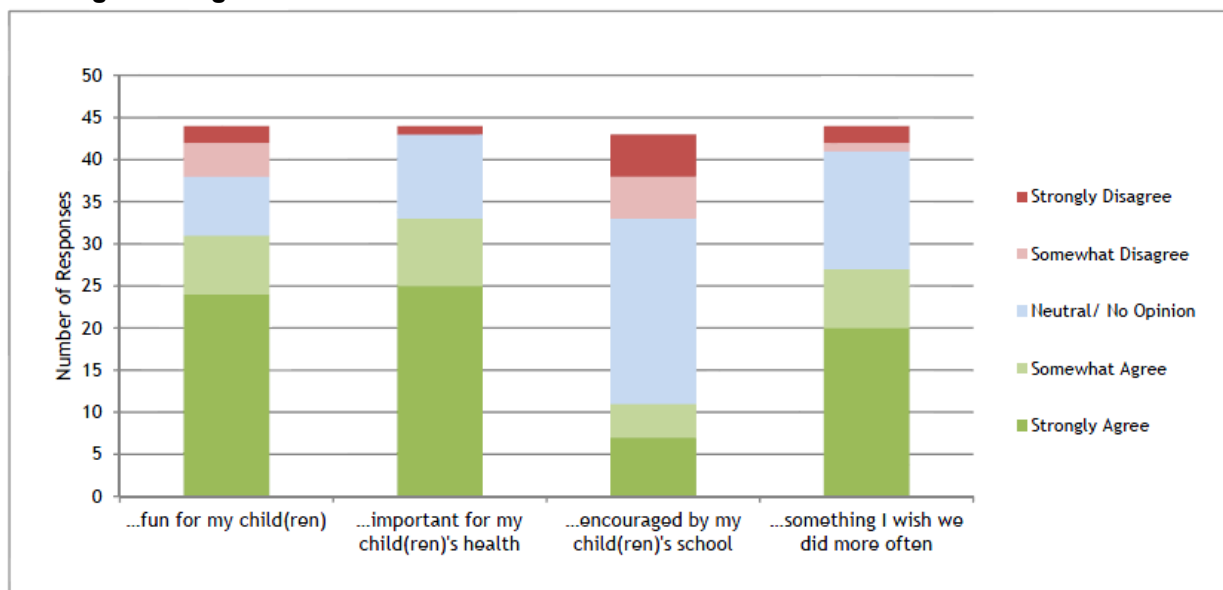
❖ The main mode of transportation for all trips to school is by family car at 67 percent. Walking and taking the school bus are the next common form of transportation at 17 and 13 percent respectively.

Mode Split for All School Trips (n=862)



❖ A majority of parents felt that walking or biking is fun for their children and is important for their children's health. Parents also indicated that walking and biking was something that parents wished they did more often.

Walking or biking to school is...



Field Walking Audit

The field audit at Meadow Heights Elementary School focused on the following main areas of concern by the group:

- Dolores Street (between 26th Avenue and Parkside Way): The north frontage of the school is along Dolores Street. Although this area is considered “the front of the school” most of the school vehicle, pedestrian, and bicycle activity happens on the side of the school along Parkside Way. The main area of concern was the intersection of Dolores Street with Sequoia Avenue. This is a busy intersection that students walk through or parents drive through taking their child to campus or exiting the campus area once they have dropped off or picked up their students on Parkside Way. The intersection is very wide on the south leg and many vehicles entering the school area perceive the intersection to potentially be all-way stop controlled. Also, the intersection of Dolores and 26th Avenue is an area of concern since most vehicles traveling to the campus to drop-off or pickup students travel through this intersection. The intersection is relatively narrow and parked vehicles often park in close proximity to the intersection, blocking potential sight lines for pedestrians. The majority of parents dropping students off in the morning follow a circuitous route east on 26th Avenue, south on Ensenada Way, west on Parkside Way to drop their student along the side of the school, and then either west on Sequoia Avenue or back east on 26th Avenue to Alameda de Las Pulgas.
- Parkside Way (between Dolores Street and Alameda de Las Pulgas): Parkside Way is the main access location for vehicles, pedestrians, and bicycles to the school. The crosswalk between the school frontage and the park is heavily used by both parents using the park parking lot to drop-off and pickup their students as well as by parents and students who walk through the park to/from residences south of the school. During drop-off and pickup activities the north curb of Parkside is filled with vehicles utilizing the white curb drop-off area. Staff members organize this activity and it functions relatively smoothly although some parents fail to move the line forward thus causing the vehicle queue to extend back to Ensenada Way. In general, vehicle traffic is observant of the pedestrians using the mid-block crossing between the school and the park but some double-parking activities obscure safe sight distance during school drop-off and pickup periods.
- 28th Avenue: Although removed from the immediate school frontage, 28th Avenue was raised as a concern by the site council due to the number of students residing south of campus and having to cross 28th Avenue. Speeding along 28th Avenue was raised as the major concern as well as crossing safety at the Mason Lane and 28th Avenue intersection.

Additional observations about walking and biking activities near the school 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/from school was used by a much smaller percentage of students. Bike racks are located in the south part of the school, interior to campus in a safe and secure location. On a daily basis, bike racks are relatively highly utilized and additional bike racks were discussed with the site council. An additional bike rack location was discussed and is recommended in the northwest part of campus, near the office entrance.

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

Meadow Heights Elementary Safe Route to School Walk and Bike Audit



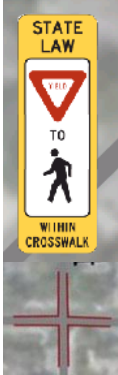
Legend

-  School Crossing Sign
-  Bus Stop
-  Speed Limit Sign
-  School Zone Speed Limit Sign
-  Existing Curb Ramp
-  No Curb Ramp
-  White Crosswalk
-  White Ladder Crosswalk
-  School Crosswalk
-  Ladder School Crosswalk
-  SLOW SCHOOL XING Pavement Marking
-  Red Curb Marking - No Parking
-  Green Curb Marking - 20 Minute Parking
-  White Curb Marking - Loading Zone
-  No Sidewalk

Proposed Safe Route to School Elements

The **Propose 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:

26th Avenue (East to West):

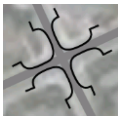


1. **Install Yield to Pedestrian Signs:** The SR2S plan recommends that *Yield to Pedestrian* signs be placed east and west of Dolores Street for westbound and eastbound drivers respectively. These signs will help inform drivers to yield to pedestrians crossing the intersection.
2. **Install Red Curb:** To keep the intersection clear, red curb markings should be added along the corners of 26th Avenue and Dolores Street.

28th Avenue (East to West):



3. **Install Pedestrian Ramps:** Sidewalks exist on both sides of 28th Avenue. Along the corridor there are pedestrian ramps except the northeast corner of 28th Avenue and Parkview Way. It is recommended that a pedestrian ramp be installed as a pedestrian gap closure.

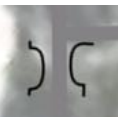


4. **Install Curb Extensions:** Curb extensions can improve safety for pedestrian at an intersection by reducing the crossing distance and exposure for pedestrian and by reducing the speed of turning vehicles. The SR2S plan proposes that curb extensions be installed at the intersection of 28th Avenue and Mason Lane. The curb extension will extend 8 feet.

Dolores Street (North to South):



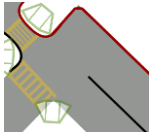
5. **Install Bicycle Racks:** The plan suggests that bicycle racks to be added in the fenced area in the northwest corner of the school, in the current fenced area immediately north of the office. The bicycles racks provide a safe and secure storage area for students' bicycles.



6. **Install Curb Extension:** It is recommended that curb extensions should be installed on the north leg of Dolores Street and Sequoia Avenue. The curb extension will extend 8 feet.

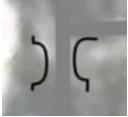


7. **Install Red Curb:** Red curb markings should be added along on the northwest and southwest corners of Dolores Street and Sequoia Avenue.



8. **Install Median:** To delineate a bus lane on Dolores Street, it is proposed that a median be installed. Currently this location provides a wide roadway width for bus parking and travel lanes that causes some confusion especially when buses are not present. The installation of a median will better delineate a drop-off and pick-up lane for the school as well as better delineate a northbound travel lane for drivers and pedestrians.

Parkside Way (East to West):



9. **Install Curb Extension:** The SR2S plan proposes that curb extensions be installed at the south entrance of the school. The curb extension will extend 8 feet.



10. **Install Enhanced Crossing:** It is recommended that an enhanced crossing be installed in place of the current crosswalk located south of the school. The enhanced crossing would be lighted to help improve visibility of crossing pedestrians. This installation is recommended as a Rectangular Rapid Flashing Beacon for improved visibility of motorists. In addition, curb extensions are recommended to shorten the crossing distance and the curbs adjacent to the intersection will be red curbed to disallow parking for better visualization of pedestrians crossing. Many students residing south of the school walk through the park to access the school and this was the most used crossing in the area, therefore is recommended to include the most enhancements.

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. Meadow Heights Elementary School would greatly benefit from the establishment and publication of a set vehicular drop-off and pickup policy. Vehicle drop-off and pickup operations at the school are currently organized by school staff based on a limited plan in place. A revised 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, relocation of specific grade levels to others pickup locations or enforcement of no parking in the pickup area may reduce the overall congestion along Parkside Way, although the current operations are working at a relatively safe and efficient level.

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.

Meadow Heights Elementary Safe Route to School Walk and Bike Audit










Legend

Existing

-  School Crossing Sign
-  School Zone Sign
-  Bus Stop
-  Speed Limit Sign
-  School Zone Speed Limit Sign
-  Curb Ramp
-  No Curb Ramp
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-  SLOW SCHOOL XING Pavement Marking
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-  Green Curb Marking - 20 Minute Parking
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-  No Sidewalk

Proposed Improvements

-  Yield to Pedestrian Sign
-  Install New Bicycle Racks
-  Curb Ramp
-  Curb Extension
-  Enhanced School Crosswalk
(Recommending Rectangular Rapid Flashing Beacon)
-  Median
-  Red Curb Marking



Meadow Heights Elementary Safe Route to School Walk and Bike Audit



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- School Crossing Sign
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Proposed Improvements

- Yield to Pedestrian Sign
- Install New Bicycle Racks
- Curb Ramp
- Curb Extension
- Enhanced School Crosswalk (Recommending Rectangular Rapid Flashing Beacon)
- Median
- Red Curb Marking



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 (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 2, Section 2B.46 (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.46 (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.46 (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.19 (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. 03 (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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