

Safe Routes to Spruce Elementary: Community-Driven Change through Citizen Science

September 2021



SAN MATEO COUNTY HEALTH
**PUBLIC HEALTH,
POLICY & PLANNING**



SAN MATEO
COUNTY
OFFICE OF
EDUCATION



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Safe Routes to Spruce Elementary: Community-Driven Change through Citizen Science

Background

In September 2021, community members affiliated with Spruce Elementary School took to the streets to survey the surrounding environment. As a part of Spruce Elementary's mission statement, the school states that "We are a collaborative partnership of teachers, parents and community working together to empower lifelong learners who are ready to contribute in our global society." An important element of *empowering lifelong learners* is being able to address the physical, social, and emotional barriers that could possibly hinder the students' ability to perform at their optimum. To investigate how to increase safe routes for walking and biking to school, principal Israel Castillo helped implement an innovative remote-facilitation pilot within the San Mateo County Office of Education's Safe Routes to School (SMCOE-SRTS) Program. Led by engineer and walk audit expert Mark Fenton, the project incorporated use of Stanford University's multilingual Discovery Tool mobile app for use in the walk audit process.

The Discovery Tool allows users to record geotagged photos, comments, and ratings about community level factors that support or hinder healthy living. Developed by the [Stanford Our Voice Initiative](#), the app is a gateway to a process of collective solution-building in which community members become "citizen scientists," analyzing their own collective data and using it to drive positive change that builds on strengths and addresses challenges. The Discovery Tool and the *Our Voice* process has been used in dozens of locally-generated projects around the world. For Mark Fenton, who has decades of experience conducting walk audits to inform community redesign, *Our Voice* provided a way to democratize community engagement, even with the restrictions on community gathering during the COVID era.

The 1-week project elicited a rich array of community insights as well as a wide range of actionable steps to promote and facilitate increased walking and biking to school.

Community Setting

- **Safe Routes to School - San Mateo County**

San Mateo's Safe Routes to School (SRTS) program is modeled after the National Safe Routes to School Program and encourages school children to walk and bike to school. By creating safe routes for children, SRTS aims to lower the number of traffic deaths, improve air quality, and reduce childhood obesity.

- **Spruce Elementary School**

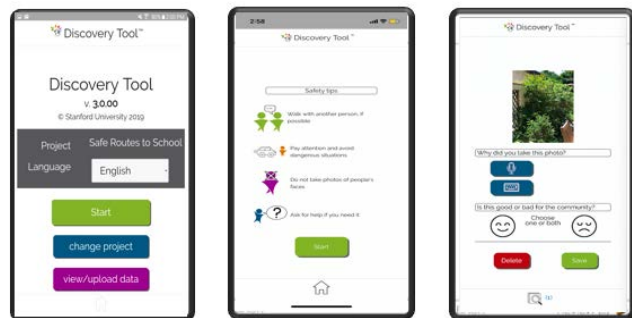
Spruce Elementary School, led by Principal Israel Castillo, is part of the South San Francisco Unified School District. It serves 109 students from Kindergarten to 5th grade.

Our Voice Implementation Steps

- **Planning:** Via direct communication with Principal Castillo, SMCOE-SRTS identified Spruce Elementary as a priority implementation site for an innovative remotely facilitated SRTS Walk Audit. They then engaged Mr. Fenton and the Stanford *Our Voice* team, together with other community members, to plan an accelerated implementation in September 2021.
- **Recruitment:** Using bilingual (English/Spanish) materials and scripts developed by the OV team, Principal Castillo took the lead in reaching out to his community. He emailed, texted, and robocalled parents, teachers, administrators, and local decision-makers to register and join in the audit process. San Mateo County Office of Education Safe Routes to School Program and San Mateo County Health Policy and Planning assisted with the outreach by inviting City Manager, City Council and Staff, neighboring churches, childcare centers, medical centers, to participate and provide valuable insights. The team worked to make the process as equitable and inclusive as possible with extensive outreach, and offering: 1) bilingual communication materials 2) virtual sessions with live Spanish interpretation, 3) virtual sessions after school/work hours 4) tablets for use, and 5) on-call assistance where needed.
- **Registration:** Interested community members registered and consented to participate using Stanford’s IRB-approved bilingual RedCap interface. At the end of the registration and consent process, they took a brief pre-project survey about their feelings around community safety, social cohesion, and self- and collective efficacy around community change.

A total of 23 people registered to participate in the project in some form

- **Orientation and Training:** Orientation and Training: All those who completed the registration and consent process received an invitation to attend a project orientation and training via webinar, either in English or in Spanish. The webinars provided background and context for the Walk Audits, and



The Stanford Discovery Tool mobile app is available in 13 languages and has been used successfully by Citizen Scientists aged 9-90

trained participants on use of the Discovery Tool mobile app and the process for uploading data to a secure server

- **Data Gathering:** Following the online training, consented participants received a project-specific code and password to use the Discovery Tool app. Using their own devices, or borrowed project devices, they were asked to conduct walking assessments over the following 4 days, using the app to identify “*what makes it easy or hard to walk or bike to school.*” Participants who agreed to be contacted by program staff received 2 walk reminders and tips for successful data upload.

Between September 23 and September 26, participants completed a total of **15 Discovery Tool Walks**, comprising **94 photos** and **75 narratives** (13 audio, 62 text)

- **Data Tagging and Filtered Reports:** Project facilitators used anonymous participant photos and comments to tag and sort the data according to theme. Any potentially identifiable images were deleted or blurred to maintain anonymity. Many photos were tagged with multiple themes, and photos without comments were placed in an “Uncategorized” group. Data were then processed and filtered according to 10 categories, arranged according to frequency. Project facilitators then prepared filtered reports and “Hot Spot” maps for each theme. These reports were shared with all registered participants via email prior to the Community Meeting, and also made available during the meeting itself.

Citizen Scientist data were tagged and sorted according to the following themes below. Some photos tagged with multiple themes.

- Condition of Sidewalks and Pathways - 23 photos
- Crossings and Crosswalks - 14 photos
- Vehicle Speed - 5 photos
- Traffic Signs, Lights and Controls - 8 photos
- Bike Accommodations and Facilities - 2 photos
- General Safety and Security - 24 photos
- Connectivity of Sidewalks and Pathways - 6 photos
- Vehicle Behavior - 17 photos
- Other - 0 photos
- Uncategorized; no comments - 16 photos



Sample Data from Bilingual Reports to All Participants
**Note: all data are anonymous*

Project : SPRUCE September 27, 2021 4:27 pm - 49/99

Why did you take this picture?

[t] :! Just took another picture of this corner Walnut and Park which is very dangerous. I think you could use another stop here because the cars come at very high speed going towards the school

Acabo de tomar otra foto de esta esquina de Walnut y Park, que es muy peligrosa. Creo que le vendría bien otra parada aquí porque los coches vienen a muy alta velocidad yendo hacia la escuela.

Tags:

Vehicle Behavior Vehicle Speed Traffic Signs, Lights & Controls

Why did you take this picture?

[text] :!Love the crosswalk on Spruce and Lux. Possibly another crosswalk further East for families coming from the other side can be installed.

Me encanta el paso de peatones en Spruce y Lux. Posiblemente se pueda instalar otro paso de peatones más al este para las familias que vienen del otro lado.

Tags:

Crossings & Crosswalks CONNECTIVITY of Sidewalks & Pathways

- **Community Meeting:** On September 30, 2021, 23 community members joined a Zoom meeting to review and discuss collective findings. After a brief presentation on general improvement strategies, the participants moved into facilitated small groups, where they used their own findings to generate strategies and solutions for environmental change to support biking and walking to school. Each group focused on 2 themes, generating shorter-term and longer-term strategies for projects, programs and policies that could build on assets and address identified challenges

Meeting participants generated a total of **31 specific strategies and solutions** for increasing walking and biking to school, comprising both shorter-term and longer-term recommendations and Programs, Physical Projects, and Policy approaches.

Community-Generated, Data-Driven Strategies and Solutions for Increasing Walking and Biking to Spruce Elementary School (detailed list in Appendix)

**Action items voted as top priorities in the post-meeting survey are shown in red.*

	Shorter term, lower cost	Longer term, more costly
Programs	<ul style="list-style-type: none"> ○ Host walk and bike-to-school days to build knowledge and interest. ○ Continue and promote safe bike skills and distribute properly fitted helmets. ○ Launch a helmet promotional and educational campaign. ○ Develop suggested safer walking and biking routes to school. ○ Take group walk audits to observe traffic calming and pedestrian/bicycle improvements. ○ Launch a student-driven educational campaign on safer drop-off/pick-up procedures and proper vehicle, pedestrian, and bicycle behavior. 	<ul style="list-style-type: none"> ○ Launch walking school buses - groups of students walked to school by an adult on a designated route and schedule, picking up kids along the way. This could also entail similar bicycle trains - groups of students bicycling to school with adult supervision. ○ Daily place and remove plastic delineators, cones, and pedestrian crossing signs in front of school to direct proper vehicle behaviors. ○ Create an improved, structured drop-off and pick-up process or circuit.

	Shorter term, lower cost	Longer term, more costly
Programs	<ul style="list-style-type: none"> ○ Bring walk/bike encouragement activities and drop-off/pick-up procedures to existing parent gatherings. ○ Launch much stronger education and direction against double parking, or dropping-off/picking-up students on the opposite side of the street. 	<ul style="list-style-type: none"> ○ Bring walk/bike encouragement activities and drop-off/pick-up procedures to existing parent gatherings. ○ Launch much stronger education and direction against double parking, or dropping-off/picking-up students on the opposite side of the street.
Physical Projects	<ul style="list-style-type: none"> ○ Develop a list of specific infrastructure improvements, beginning with the most urgent and dangerous issues, to share with Public Works. ○ Place planters, student-designed art, posters, and signs in the red curb areas, to make very clear cars are not supposed to park there. ○ Get neon yellow high visibility pedestrian signs installed at pedestrian crosswalks. ○ Install a temporary curb ramp (wood ramp, with protective pylons, planters, sandwich boards) at the intersection of Spruce and Tamarack, for wheelchairs, bikes, and strollers. ○ Paint a pedestrian lane on the section of Tamarack with no sidewalk (west of the school, from Elm to Magnolia) 	<ul style="list-style-type: none"> ○ Repaint red curb areas, to discourage illegal parking and standing by vehicles. ○ Make priority concrete repairs on sidewalks and curbs near the school. ○ Construct a permanent ADA curb ramp at the intersection of Spruce and Tamarack. Place curb ramps at other intersections at which they are missing. ○ Place traffic calming (e.g. speed bumps, curb extensions?) on Tamarack near the gym, to discourage high vehicle speeds. ○ Walnut St. & Park Way intersection improvements ○ Standardize overall crosswalk treatments near schools and add crosswalks to intersections where they are missing. ○ Place a rectangular rapid flashing beacon (RRFB, yellow light) at the primary crosswalk of Spruce in front of the school.

	Shorter term, lower cost	Longer term, more costly
Physical Projects		<ul style="list-style-type: none"> o Seek a grant or donations to support students repairing (with adult volunteer assistance) the retaining wall and creating a community garden in front of the school.
Policies	<ul style="list-style-type: none"> o Create designated parking or standing areas for drop-off/pick-up to spread out traffic. o Identify a location for satellite drop-off and pick-up (such as a parking lot at a church, park, or shopping mall) several blocks or more from school, and lead a walking school bus between this location and the school. o Place cones along the drop-off curb on Tamarack so that cars have to move through in sequence, and stay along the curb, to keep the center lane clear for passing traffic. o Launch "Walking Fridays" as a weekly initiative; not just during walk to school weeks. o Preclude left turns into the parking lot at the school during pick-up (e.g. 8:15-8:30 am) and drop-off times. Possibly make it only a right-turn in and right-turn out (right-in/right-out) entrance during peak traffic times. 	<ul style="list-style-type: none"> o Create permanent flexible delineators, paint, and curbing to define the drop-off and pick-up lane along Tamarack so that cars have to move through in sequence, and stay along the curb, to keep the center lane clear for passing traffic. o Launch a neighborhood campaign to update trees planted in sidewalk spaces to species that don't lift the sidewalk; perhaps students could lead this campaign, be involved in learning about and planting new, "street-friendly" trees.

- **Post-Meeting Survey:** Within two weeks of the community meeting, all participants were encouraged (via bilingual email communication) to complete a follow-up survey about their experiences using the Discovery Tool app and participating in the community meeting. They were also provided with a complete list of the solutions and strategies generated by the small-group breakout sessions, and asked to help prioritize action steps. Finally, they were invited to sign up, based on interest and availability, for Action Teams to help advance the proposed strategies and solutions.

The post-meeting survey elicited 20 responses from diverse participants.

- Among those who used the Discovery Tool, 100% were either extremely or somewhat satisfied with the experience of using the app to record information about their community. Many found it easy and intuitive to use, and appreciated the geotagging feature. Some reported challenges with data upload.
- Among those who had attended the September 30th community meeting (50% of respondents), 100% expressed satisfaction with the experience. Several attendees enjoyed hearing so many different ideas and perspectives. The school district's superintendent attended the meeting and participants expressed their gratitude for her joining.
- Survey respondents voted on their top three priority strategies/solutions for both shorter-term and longer-term action.
- Ten individuals signed up to participate in Action Teams to further the strategies and solutions identified throughout the Our Voice – SRTS process.
- The survey gave participants the opportunities to share additional SRTS solutions and strategies. These are listed in Appendix 2 on Page 11.

Post-Survey Additional comments

- Get Healthy San Mateo has grants that can help with creating the retaining wall and garden.
- Have the SSF police department occasionally patrol the area and enforce city laws regarding street signs.
- Create permanent flexible delineators, paint, and curbing to define the drop-off and pick-up lane along Tamarack so that cars have to move through in sequence, and stay along the curb, to keep center lane clear for passing traffic.

Highlights

This innovative virtual approach offers an equitable, inclusive, and scalable method for SRTS policy, system, and environmental changes. Some of the key highlights of this effort include:

- 1) Beauty and strengths of the partnerships and collective effort - Walk audit team members, schools and community members
- 2) Great platform to engage community and city staff
- 3) Addressing health equity through an inclusive process and prioritizing high-need schools
- 4) Offering multiple solutions from short-term to long-term solutions generated collectively by the group.

Conclusions and Recommendations

For SRTS projects or initiatives to have the greatest chance of success, it's recommended that an "Action Team" of interested stakeholders be identified for each goal. This can be a mixed group of parents, students, and residents, school and city officials, and other partners.

Recommended Next Steps:

- o Identify leadership, e.g. an individual or group to coordinate and keep this moving
- o Identify additional allies, stakeholders, and partners
- o Create a timeline with specific benchmark outcomes and target dates
- o Identify and engage needed resources including human, financial, and technical support

Acknowledgments

Many people contributed to this project. Special thanks to Spruce Principal Israel Castillo, Spruce Elementary staff members, and all the community members who participated in this effort.

Spruce Elementary School: Safe Routes to School Workshop Summary

Prepared for: The Spruce Elementary School Community

Prepared by: Mark Fenton, public health, planning, and transportation consultant; Dec. 2021



Recommendations Supporting Safe Routes to School & Healthy Community Design

During September of 2021 members of the Spruce Elementary School community of South San Francisco, along with the San Mateo County Departments of Education and Health, hosted a virtual walk audit and healthy design workshop, facilitated by Ann Banchoff and partners from Stanford University's *Our Voice* initiative and Mark Fenton, a public health, planning, and transportation consultant. The intent was to develop programmatic, infrastructure project, and policy recommendations to increase the safety of walking and bicycling to the school and reducing traffic hazards, with the goal of increasing the number of students actually walking and cycling while reducing the amount of vehicle traffic at school arrival and dismissal times.

School faculty and staff, parents, advocates, other area residents, and city staff were invited to take part in a three step process. First were two introductory webinars presented Sep. 22 by the facilitation team outlining simple elements of street and community design that enhance walking and bicycling safety and desirability. They are summarized here:

A. Mixed land use patterns: Compact development with different land uses and activities close together provides varied types of destinations within walking, cycling, and transit distance. Neighborhood schools are an essential piece of such “walkable” development.

B. Active transportation facilities: A comprehensive and connected network of pedestrian, bicycle, and transit facilities, such as sufficiently wide sidewalks, bicycle lanes, and non-motorized pathways, as well as frequent, affordable transit service are key to encouraging non-automotive travel.

C. Functional site designs: Destinations and routes are designed to reward those who travel on foot, by bike and transit, such as buildings at the sidewalk, with parking on-street or behind, and elements such as street trees, landscaping, planters, benches, bicycle parking, shade structures, awnings, lighting, way-finding signs, safe and appealing transit stops, and similar “street furnishings.”

D. Safety and access for people of all ages, backgrounds, incomes, physical abilities and disabilities, including ADA-compliant design, high visibility crosswalks and signs; and features to help slow traffic such as curb extensions, median islands, small roundabouts, chicanes, and lane reductions and narrowing.

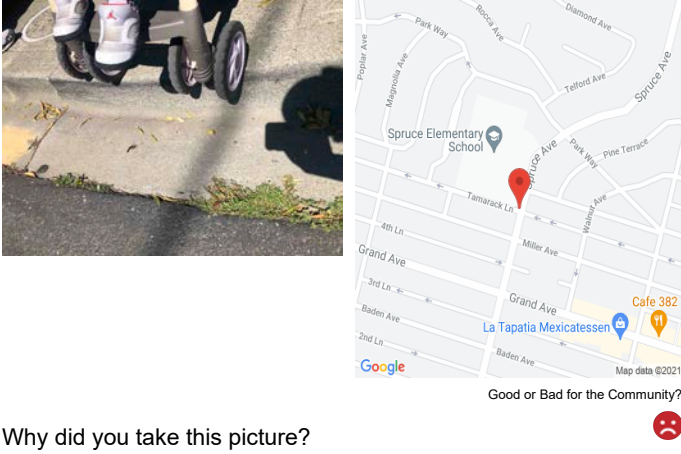
This webinar also introduced the *Our Voice Discovery Tool*. The tool is a cell phone or tablet based application that allows users to take photographs of their environment, and add a comment on whether or how it encourages or discourages walking and bicycling, while automatically recording the location. Over the next

week participants were invited to use the application to capture and upload images of locations that they or children they know traverse on their trips to school and nearby in the community. The image at the right is one page of the report generated by the *Our Voice* team, and illustrates the information that is captured: the photo that is taken; the map indicating where it was taken; any comment that was recorded; and whether the photographer felt it was good or bad for the community.

The map below shows the area around the Spruce Elementary school, and the locations of all of the photos that were taken. The color of the mark indicates whether the person taking the picture said it illustrated something that *encouraged* walking and bicycling (green); *discouraged* it (red); showed some of both (orange); or did not indicate either positive or negative (gray).

It is worth noting the clusters of photos taken on Spruce Avenue, Tamarack Lane; and the areas near the Elm Avenue and Miller Avenue intersection, and the Park Way and Walnut Avenue intersection.,.

9/29/21, 12:26 PM https://ourvoice-projects.med.stanford.edu/print_filtered_view.php?pcode=SPRUCE&pid=467&filters=%5B%27Crossings%26...
 Project : SPRUCE September 22, 2021 12:59 pm · pg 5/14

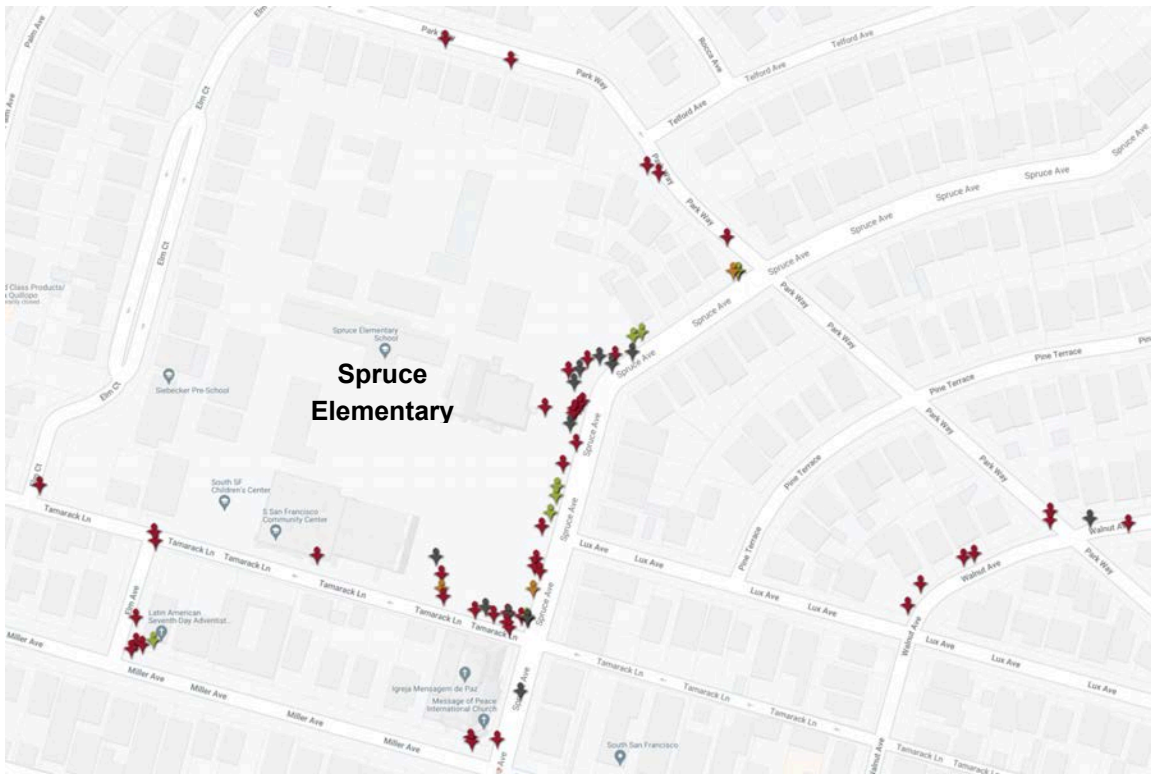


Why did you take this picture? ☹️

[text] : 'On Tamarack Avenue the isn't any handicap Accessibility.
 En Tamarack Avenue no hay accesibilidad para discapacitados.'

Tags:

Crossings & Crosswalks



The images were grouped by eight thematic topics (below) and organized into a PowerPoint presentation for the second step in the process.

1. Sidewalk & pathway conditions.	4. Bicycle accommodation & facilities.	7. Vehicle behaviors
2. Sidewalk & pathway connectivity.	5. Traffic signs, lights, & controls.	8. General security & safety.
3. Crossings & crosswalks.	6. Vehicle speeds.	

The second step was a virtual workshop session in which representative images were shared and discussed, possible improvements to address challenges were offered, and smalls group discussed what types of solutions they felt would be most effective in improving pedestrian, bicycle, and vehicle safety. This session generated a list of recommendations, with participants encouraged to consider all three of the Ps:

Programs. Events, outreach, education, and promotional activities.

Projects. Physical changes to infrastructure and the built environment.

Policies. Rules, ordinances, guidelines, practices, and procedures.

The groups considered both short-term ideas that could be executed on the order of weeks to months, and longer-term initiatives that might cost more and take months to even years. This was to assure that we identified some low cost, near term actions that can be pursued quickly to build momentum and begin making it safer for students immediately. These ideas are summarized in a table at the end of this memo.



The third step in the process was a survey sent out to all of the participants in the workshop listing the program, project, and policy recommendations that had been generated. Survey respondents were asked to identify what they felt were priority actions in each category, and specifically those they would be interested in working on to see them actually implemented. These ‘high scoring’ recommendations as listed first in the table and are **bold**. Some of the key themes and recommendations for action are summarized below.

Recommendations and priorities

At the end of this report is a table with the programmatic, project, and policy recommendations. Following is a list of specific actions that were identified as high priorities, as they could lead to some fairly quick positive outcomes for walking safely to school.

1. Launch a community education and information campaign to encourage safer behaviors.

Workshop participants agreed that among the greatest concerns are safety challenges created by motor vehicles in general, and by adults who are dropping off and picking up students by car specifically. Double parking on both sides of Spruce Avenue is a specific issue. Another is vehicles stopping to drop off or pick up students in the middle of Tamarack Lane, which is not only dangerous for students who must then cross through the curbside lane next to the school where drop-off/pick-up is supposed to occur, but it also stops traffic in the middle through lane (left and center pictures, below) of Tamarack. Other misdeeds include parking on or across sidewalks in the surrounding neighborhood (below, right), and excessive speeds on some of the neighborhood streets. So a high priority is a program of outreach and education to parents and caregivers to encourage safer driving and proper drop-off and pick up behaviors.



The goal of this program should make very clear to all the expected behavior to maximize the safety of everyone at the school, whether walking, cycling, or driving. This includes adhering to all traffic laws (e.g. no U-turns across the centerline), and following specific drop-off and pick-up locations and procedures, such as pulling up in sequence to the white curb areas, staying in the vehicle, and only allowing children in or out of the car only at the curb, never in the street.

This program should also provide neighborhood outreach (e.g. through a school newsletter, flyers in mailboxes or on vehicle windshields, or even hosting an open house and picnic for neighbors) to explain traffic patterns, procedures, and parking rules around the school. For example, the “no parking” white-curbed loading and unloading zones on Tamarack Lane and Spruce Avenue must be kept clear (and no parking enforced) if they are to remain functional at arrival and dismissal times. The advantage to neighbors is that if school related traffic is moving through curbside lanes as designed, street traffic should be much less disrupted.

2. Affirmatively and consistently encourage more walking to school.

Many workshop participants felt that it currently should be reasonable for many students from the neighborhood to walk to school, if enough supports are put in place. It was also recognized that the only way to significantly reduce the motor vehicle traffic at the school is to encourage those students for whom it is reasonable to walk and not be driven to school. Therefore a series of supports for walking (and for older students, bicycling) to school are strongly recommended.

- Encourage as many students as possible to be allowed to walk (and for older children to bicycle) to school. Make clear to parents and caregivers the myriad benefits, particularly evidence that more physically active students have been shown to perform better academically and have fewer disciplinary problems.
- Do not treat this as a one-time promotion. At every opportunity continually reiterate the goal of having the maximum number of students possible walking to school, emphasizing the health, academic performance, and behavioral benefits to students; the safety benefits to absolutely everyone; and the potential congestion reduction and air quality benefits to the entire community.
- Institutionalize school support and provide administrators and teachers with ways to recognize students who are frequent walkers – a classroom tally board, modest prizes, recognition at assemblies, etc.
- Generate maps indicating recommended walking routes with the fewest traffic conflicts. Also identify where there are clusters of students in surrounding neighborhoods, and suggest to parents that they create informal walking school buses (one or two adults leading a group of students walking together) with shared responsibilities, so that each adult doesn't have to walk with every student every day.



A "Golden Shoe" can be awarded to the class that accumulates the most days walked to school.



- Identify and very visibly mark typical walking routes to school. In some communities adults and students have put up signs, have used stencils to paint walking routes with footprints or images of the school's mascot, have placed signs and flags at intersections, and in partnership with public works departments have painted curb extensions and even crosswalks to make student walking routes very obvious to all. (Paw prints mark the way in photos: simple chalk drawings at left; or an elaborately adorned crosswalk created with the support of the Department of Public Works, at right.)



3. Formalize drop-off and pick-up procedures, and redesign Tamarack Lane to create a safer drop-off and pick-up environment.

Along Tamarack Lane and Spruce Avenue the white-curbed areas are designated active loading and unloading zones, which means there should be no parking there during school arrival and dismissal times. However, it is not uncommon for cars to park in these areas, and some drivers leave their cars to retrieve their students. This area would be much safer, and ultimately more efficient, if the following procedures were implemented:

- Initially, the curbside lane can be coned off before and during arrival and dismissal times, so that cars can not park there. Vehicles must move through in single file, stay in sequence (not just pull in and out anywhere), pull all the way forward before stopping, and drivers must stay with their vehicle. Students should then only exit and enter vehicles along the curb, which is much safer.
- Some schools require parents using such a pick-up lane at afternoon dismissal to have a large card (e.g. sheet of a manilla folder) in the window with the student's name, so that an adult or student (e.g. safety patrol) on the curb can call out names to the waiting students so they quickly get to their cars.
- In many schools a safety patrol is formed of older students (e.g. in fifth grade) to take on tasks such as placing cones to define the drop-off/pick-up lane, opening car doors so parents do not have to get out to let younger students in or out of the car, and calling out students names at the pick-up lane.
- For even greater clarity at dismissal, it was recommended that the school designate particular areas for pick-up for specific ages or classes. E.g. the very youngest students could be picked up in the circle in front of the school, other grades on Spruce, and a third age group on Tamarack Lane.



- The curbside lane on Tamarack should eventually be defined not by temporary cones but by flexible vertical delineators attached to the ground. These cause no damage if struck by a car, but they do define the drop-off/pick-up lane and discourage cars from cutting in and out, which will also help to keep the center travel lane on Tamarack flowing. (Photo at left: cones aren't always enough to encourage proper driver behavior!)

Although these steps may appear to slow the motor vehicle access, it will actually make it quite smooth and predictable, and take roughly the same amount of time. But drivers will have to be patient and wait their turn to move through designated lane in an ordered way, which may be a disincentive to some drivers. The positive result may be an incentive to consider letting their children walk, which should be easier to do with the proposed safety enhancements and the opportunity to join neighborhood walking groups.

4. Install missing curb ramps and add curb extensions at critical intersections near the school.

A handful of photos showed specific intersections that were missing painted crosswalks and ADA accessible curb ramps, for example on the northwest corner of the Tamarack Lane and Spruce Avenue intersection. (Photo at right.) Some photos showed cars parked right next to the crossings at intersections, which is quite dangerous for pedestrians stepping out into the road from behind these cars (left photo, below). Curb extensions, or bump outs, extend the sidewalk at crosswalks to make crossing pedestrians more visible and able to see traffic, preclude cars from parking illegally close to the crosswalk, shorten the crossing distance, and generally slow vehicle speeds.



- First install pop-up curb extensions, using low cost and removable materials such as paint, cones, planters, rubber curbing material, and vertical delineators (flexible posts) to test their effectiveness in slowing traffic and improving pedestrian safety. (Two examples are pictured below).

- A short term solution for an intersections lacking a curb ramp for ADA access could be a temporary wooden ramp as shown below. However this can only be installed at intersections if they have pop-up curb extensions to protect the ramps from vehicles (photo below).



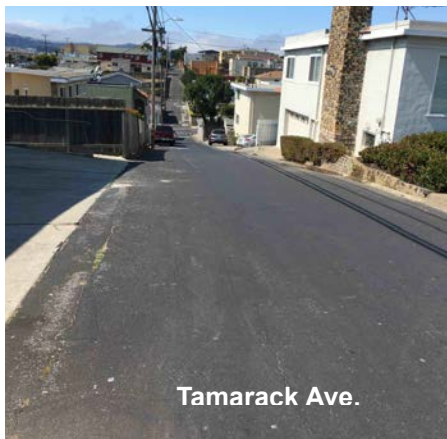
- The northwest corner of the Tamarack and Spruce intersection would be an ideal location to try this out, as there is a great deal of pedestrian activity there, it is in need of a curb ramp, and the curb extension would help to define the curbside lane as a drop-off/pick-up lane only (not a through travel lane). But temporary curb extensions are recommended for the red-curbed areas at many of the intersections throughout the area given the great amount of pedestrian activity and concerns about vehicle speeds.

5. Make needed improvements during routine painting, paving, and maintenance activities.

The city will be doing a certain amount of routine infrastructure maintenance in this area of South San Francisco. This is an opportunity to make substantial improvements at fairly low cost.



Many photographers positively identified the high visibility crosswalks in front of the school, with ladder style striping, as greatly beneficial to pedestrian safety (photo at left). During routine painting additional crosswalks in the area can be upgraded to this style of striping. This includes the intersections of Tamarack and Spruce, but also Park Way and Walnut Avenue, and Elm and Miller Avenues (pictured at right) which have none.



Tamarack Avenue was also identified as a challenge and safety issue because a portion is lacking any pedestrian facility at all (photo left). Given the width, from building to building, it is unlikely an actual sidewalk will be added. However, a painted pedestrian lane could be added to create a marked space for pedestrians (example at right). Note that painted markings (pedestrian symbol, “pedestrian walkway) and occasional flexible delineators have been installed to make clear this is not a travel lane.



Repaving is an even more substantial opportunity to improve conditions around the school. Whenever roadways are repaved around the school, measures such as temporary curb extensions and ramps can be made permanent. These can include “green” infrastructure, such as natural plantings that capture and allow some storm water to infiltrate the ground. In cases where there is a stop sign at the intersection, it is often advantageous to move the sign out into the curb extension to make it much more visible to traffic, and to get it out of the sidewalk where it may be impeding pedestrian access.



Stop sign in a painted curb extension.

Program, project, & policy recommendations from workshop. (Priorities are BOLD.)

	Short Term	Long Term
<p>Programs (e.g. events, outreach, education, promotions)</p>	<ul style="list-style-type: none"> • Launch much stronger education and direction against double parking, or dropping-off/picking-up students on the opposite side of the street and allowing them to run across. • Develop suggested safer walking and biking routes to school. Create a map on the school website, print maps, and perhaps mark routes with stenciled footprints, mascot paws, bike decals, and signs made by students. • Host walk to school day and bike to school day events to build knowledge and interest. • Continue and heavily promote bike rodeo program to teach safe bike skills, and to distribute properly fitted helmets. • Launch a helmet promotional and educational campaign for all users of bikes, scooters, and skateboards. (Adults must model the behavior!) • Launch a student-driven educational campaign on safer drop-off and pick-up procedures and proper vehicle, pedestrian, and bicycle behavior. Enable students to press adults for better behavior. Include student developed education and outreach, signs, videos, and possible social media activities. • Bring walk and bike encouragement activities, and education on proper drop-off and pick-up procedures, to existing parent gatherings such as winter concert, parent-teacher conferences, and any other well attended get-togethers. • Take a group walk audit to Grand Avenue and Linden Avenue to observe traffic calming and pedestrian and bicycle improvements, and get a feel for whether any are relevant for Spruce. 	<ul style="list-style-type: none"> • Create an improved, structured drop-off and pick-up process or circuit. This could include the following (or other) approaches: <ul style="list-style-type: none"> • Opening the gate by the gym, to pass vehicles through there. • Use the loop in front of the main entrance of the school, or as part of a circuit. • Stage students in a waiting area, require name placards in car windows, and call students by name as their vehicle comes through the line to the pick-up location. • Launch walking school buses – groups of students walked to school by an adult on a designated route and schedule, picking up kids along the way. Also similar bicycle trains – groups of students bicycling to school with adult supervision. • Daily place and remove plastic delineators, cones, and pedestrian crossing signs in front of school to direct proper vehicle behaviors. <ul style="list-style-type: none"> • These can include sturdy sandwich boards (weather resistant) to give safe arrival & dismissal instructions, route vehicles, etc. • Launch a 5th grade safety patrol; can be responsible for daily cone & sign placement, and can also direct younger students in safer behaviors.

	Short Term	Long Term
<p>Projects (e.g. changes to physical infrastructure & the built environment)</p>	<ul style="list-style-type: none"> • Develop a prioritized list of specific infrastructure improvements, beginning with the most urgent and dangerous issues, to share with Public Works as they are developing their capital improvement plan. • Ideally meet with Public Works staff to share and refine the list, and get insight on solutions. • Take advantage of the city sign shop for needed signs. • Paint a pedestrian lane on the section of Tamarack with no sidewalk (west of the school, from Elm to Magnolia). • Place planters, student designed art, posters, and signs in the red curb areas, to make very clear cars are not supposed to park there. • Get neon yellow high visibility pedestrian signs installed at pedestrian crosswalks. • Install a temporary curb ramp (wood ramp, with protective pylons, planters, sandwich boards) at the intersection of Spruce and Tamarack, for wheelchairs, bikes, and strollers. 	<ul style="list-style-type: none"> • Place traffic calming (e.g. speed bump, curb extensions?) on Tamarack near the gym, to discourage high vehicle speeds. • Place a rectangular rapid flashing beacon (RRFB, yellow light) at the primary crosswalk of Spruce in front of the school. • Repaint red curb areas, to discourage illegal parking and standing by vehicles. • Make priority concrete repairs on sidewalks and curb on routes near the school. • Construct a permanent ADA curb ramp (with yellow detectable warning pad) at the intersection of Spruce and Tamarack. Place curb ramps at other intersections at which they are missing. <ul style="list-style-type: none"> • While constructing curb ramps at intersections near the school and on primary walk to school routes add curb extensions in the red curb zone (to keep cars from parking there and impeding visibility), as it is least expensive to add curb extension while other concrete work is being done. • Walnut St. & Park Way intersection improvements: <ul style="list-style-type: none"> • Easier: Paint crosswalks, add stop and pedestrian crossing signs. • More advanced: Create small roundabout (mini-circle) as neighborhood traffic calming. • Standardize overall crosswalk treatments near schools and add crosswalks to intersections where they are missing. With this effort, consider adding paw prints or other student-conceived artistic enhancements to crosswalks near the school, but not at the expense of recognizable standard treatments (e.g. yellow ladder-style crosswalks). • Seek a grant or donations to support students repairing (with adult volunteers) the retaining wall and creating a community garden in front of the school. Explore healthy nutrition grant and technical assistance programs to support this work.

	Short Term	Long Term
Policies (e.g. rules, ordinances, guidelines, practices, & procedures)	<ul style="list-style-type: none"> • Create designated parking or standing areas for drop-off/pick-up, such as by grade level (grades K,1 on this curb; grades 2,3 on this one, etc.) to spread out traffic. • Place cones along the drop-off curb on Tamarack so that cars have to move through in sequence, and stay along the curb, to keep center lane clear for passing traffic. This should help discourage double parking, and children being let off in the middle lane. • Preclude left turns into the parking lot at the school during pick-up (e.g. 8:15-8:30 am) and drop-off times. Possibly make it only a right-turn in and right-turn out (right-in/right-out) entrance during peak traffic times. • Launch Walking Fridays as a weekly initiative; not just during walk to school weeks. • Identify a location for satellite drop-off and pick-up (such as parking lot at a church, park, or shopping mall) several blocks or more from school, and lead a walking school bus between this location and the school. 	<ul style="list-style-type: none"> • Create permanent flexible delineators, paint, and curbing to define the drop-off and pick-up lane along Tamarack so that cars have to move through in sequence, and stay along the curb, to keep center lane clear for passing traffic. • Launch a neighborhood campaign to update trees planted in sidewalk spaces to species that don't lift the sidewalk; perhaps students could lead this campaign, be involved in learning about and planting new, "street-friendly" trees.

References and Resources

The National Center for Safe Routes to School; extensive practical traffic safety and programmatic information downloadable resources: www.saferoutesinfo.org

The Safe Routes to School National Partnership; coalition of organizations and experts providing great implementation support to schools & communities: www.saferoutespartnership.org

Complete Streets: National coalition working for streets that work for pedestrians, bicyclists, transits riders, and drivers of all ages, incomes, and abilities: <http://www.completestreets.org>

Slow Your Street: A How-to Guide for Pop-Up Traffic Calming. Available from Trailnet. <https://trailnet.org>

The Tactical Urbanist's Guide to Materials & Design, by the Streets Plan Collaborative. Downloadable for free. <http://tacticalurbanismguide.com>

Small Town and Rural Multi-Modal Networks. Outstanding resource for low cost neighborhood-scale traffic calming and safety measures, with lots of relevant images and information. (Federal Highway Administration 2017.) Downloadable for free. <https://www.ruraldesignguide.com>

Urban Street Design Guide and the *Urban Bikeway Design Guide* of the National Association of City Transportation Officials (NACTO; ~\$50 each). <https://nacto.org/publication/urban-street-design-guide/>

Guidebook for Developing Bicycle and Pedestrian Performance Measures (Federal Highway Administration 2017). Downloadable for free. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/performance_measures_guidebook/pm_guidebook.pdf

Costs for Pedestrian & Bicycle Infrastructure Improvements, Quick resource for rough estimates of infrastructure costs. Pedestrian & Bicycle Information Center (PBIC), 2013. http://www.pedbikeinfo.org/cms/downloads/Countermeasure_Costs_Summary_Oct2013.pdf

Better Block initiative. Resources to educate, equip, and empower communities and their leaders to reshape and reactivate streetscapes to promote the growth of healthy and vibrant neighborhoods. www.betterblock.org