



SAN MATEO  
COUNTY  
OFFICE OF  
EDUCATION



San Mateo County  
**SAFE ROUTES TO SCHOOL**

Healthy Kids • Green Communities • Safe Journeys

**alta**



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# Introduction

## Need for the Guidebook

The San Mateo County Safe Routes to School (SRTS) Program focuses on encouraging and enabling students to walk and bicycle to school by implementing projects and activities that improve their health, well-being, and safety, and which result in reduced traffic congestion and emissions caused by school-related travel. Under the initiative, the County SRTS Program partners developed the [San Mateo County Safe Routes to School Strategy](#) in June 2022, which set forth a five-year action plan and related performance measures for delivering the San Mateo County SRTS program through the 2026–2027 school year.

The strategy found that motor vehicle speeds are the primary determining factor in the safety of all roadway users, especially for students walking and bicycling in San Mateo County, and it identified the establishment of Slow Speed School Zones as a high-priority recommendation to improve safety near schools.

This Slow Speed School Zones Guidebook is designed to help the San Mateo County SRTS program and local jurisdictions meet their SRTS goal to enable and encourage students to walk or bicycle to school by implementing slower speeds in school areas. This guidebook serves as an actionable resource for local jurisdictions to plan, implement, and fund Slow Speed School Zones.

## What Are School Zones?

The California Manual on Uniform Traffic Control Devices (CA MUTCD) states that a School Zone is defined as a “designated roadway segment approaching, adjacent to, and beyond school buildings or grounds, or along which school related activities occur”.<sup>1</sup> School Zones can be designated under a local or state statute and must include School Zone signage to identify the beginning of the School Zone as noted in **Figure 1**. School Zones can include roadways up to 1,000 feet from school grounds.<sup>2</sup> School Zones include streets with speed limits of 25 mph when children are present as defined by California law.<sup>3</sup> A local jurisdiction, by ordinance or resolution, may reduce the speed limit within a School Zone to 20 or 15 mph up to 500 feet from the school.<sup>4</sup> In 2021, for example, the City of San Mateo passed a resolution to reduce speed limits in school zones to 15 mph.<sup>5</sup> Guidance on signage and pavement markings within designated School Zones is provided later in this guidebook.

**Figure 1.** School Zone Signage (CA MUTCD)



1 California Manual on Uniform Traffic Control Devices (CA MUTCD) Section 1A.13

2 CA MUTCD Section 7B.15.

3 California Vehicle Code (CVC) Section 22352

4 CA MUTCD 2.4.2

5 City of San Mateo. City Council Regular Meeting. Agenda Item 8: School Zones – Speed Reduction. December 6, 2021.



## What Are Slow Speed School Zones?

Slow Speed School Zones are areas in front of and surrounding a school with posted speed limits as low as 15 mph and where speed management strategies such as signage and design treatments (e.g., curb extensions, speed bumps, and lane narrowing) are used to reduce speeds. While Slow Speed School Zones may share design treatments or characteristics with concepts such as Slow Streets and School Streets, they are fundamentally different. For example, Slow Speed School Zones do not close off or actively discourage motor vehicle traffic, but instead emphasize the slow movement of vehicles. Whereas, both Slow Streets and School Streets do limit the movement of motor vehicle traffic.

Figure 2. Slow Streets in San Francisco



**Slow Streets** are local roadways that discourage through traffic for motor vehicles and prioritize nonmotorized transportation such as walking, biking, and rolling. While the design of Slow Streets varies by local jurisdiction, they often are indicated through half closures at the end of blocks using signage and barriers and have traffic calming such as speed humps. Some communities, such as San Francisco, intentionally avoid establishing Slow Streets near schools, focusing instead on streets with lower vehicle volumes.



Figure 3. School Streets in San Jose

**School Streets** are temporary vehicle-free zones adjacent to or leading up to a school that are strategically closed to vehicle traffic and opened to children and families walking, biking, and rolling. School Streets help manage traffic and improve safety during school arrival and dismissal by eliminating vehicle congestion in front of schools and creating an environment where students can walk, bike, roll, play, and learn more safely before, during, and after school. Some communities, such as San Jose, have robust **School Streets** programs (typically a one-day event) that include an in-street resource fair with information about transportation options, as well as other community and public health information.





## Guidebook Organization

This guidebook has been designed to educate planners, engineers, transportation professionals and elected officials about the general process for implementing Slow Speed School Zones in local jurisdictions. The document includes the following sections:

### Section 1

Provides an overview of literature and best practices for implementing Slow Speed School Zones.

### Section 2

Provides an overview of the general planning process for implementing Slow Speed School Zones, including an existing conditions assessment and community engagement.

### Section 3

Provides a list of general considerations for implementing Slow Speed School Zones, including the development of recommendations, various design treatments, and project prioritization.

### Section 4

Provides information about potential design considerations and details on potential funding to implement Slow Speed School Zone recommendations.





## Section 1

# Best Practices and Literature Review



# Best Practices and Literature Review

**The development of this guidebook included a review of best practices and existing literature, which revealed the following themes jurisdictions should consider when implementing Slow Speed School Zones:**

- ▶ Reducing motor vehicle speeds, especially near schools, often includes a combination of setting speed limits and physical design treatments at intersections and along a roadway.
- ▶ Studies have shown “the slower the speed of the motor vehicle, the greater the chances are for survival for the pedestrian. If struck by a motor vehicle traveling at a speed of 20 miles per hour or less, a pedestrian is typically not permanently injured.”<sup>1</sup>
- ▶ The appropriate countermeasures should respond to the local context of the roadway and meet federal, state, and local design standards.
- ▶ The fundamental components of a designated School Zone in California include a reduced speed limit as low as 15 mph and proper signage and pavement markings entering and exiting the School Zone.
- ▶ Since the start of the global COVID-19 pandemic, Slow Streets and School Streets have become a popular way to encourage walking and biking along local roadways. Both of these treatments often use a combination of education, signage, volume management, and speed management. Slow Streets and School Streets can be used in conjunction Slow Speed School Zones.

**Appendix 1** includes additional details on each document reviewed and provides a description with useful information for better understanding concepts and practices related to Slow Speed School Zones.



<sup>1</sup> FHWA. Traffic Calming ePrimer. Module 2.3. <https://highways.dot.gov/safety/speed-management/traffic-calming-eprimer/module-2-traffic-calming-basics#2.2>





## Section 2

# Planning for Slow Speed School Zones



# Planning for Slow Speed School Zones

**Figure 4.** Slow Speed School Zone Planning Process



## Planning Process

Community engagement is central to every transportation improvement project. The values, concerns, and needs of the school community—parents, caregivers, teachers, school and school district staff, students, neighbors, and local jurisdiction—should be reflected in each phase of the planning and implementation of Slow Speed School Zones. The planning process for developing Slow Speed School Zones first requires an understanding of existing conditions within the School Zone. This analysis will inform the infrastructure-focused recommendations. Finally, the planning process should create a strategy for implementation, which can include prioritizing projects, providing cost estimates, and identifying potential funding sources. This process is depicted in **Figure 4**.

## Understanding School Safety Needs

When planning for Slow Speed School Zones, it is important to first establish a focus area surrounding the school. While the Slow Speed School Zone improvements may focus on one or two streets immediately adjacent to the school (the School Zone), the existing conditions assessment should include a larger area where the school community lives, such as the school enrollment boundary or the designated walk zone.

The school enrollment boundary includes the area where the majority of students are eligible to attend the school. Some schools may have designated walk zones or areas where students are not eligible for busing and are encouraged to walk or bike to school. If a school does not have a designated walk zone, it is still important to evaluate the distance and area near the school where most students may walk or bike. At a minimum, this should include a half-mile to one-mile radius around the school for elementary schools, and potentially farther for middle and



high school students. Understanding the larger area surrounding the school can better inform recommendations for the smaller area that includes the Slow Speed School Zone.

## Mapping

An existing conditions map serves as the base for mapping collisions, existing arrival and dismissal patterns, and existing walking and biking routes to school. The following components should be considered when developing an existing conditions map:

- ▶ Enrollment boundary
- ▶ Walk zone (or equivalent buffer showing quarter-mile or half-mile radius from the school)
- ▶ The flow of arrival and dismissal traffic
- ▶ Existing bike parking
- ▶ Existing bicycle facilities (e.g., bike lanes and shared-use trails)
- ▶ Transit stops
- ▶ Existing intersection treatments (e.g., high-visibility crosswalks, traffic signals, and all-way stop signs)

## Collision Analysis

A collision analysis identifies the locations and roadways near the school where the highest concentration of collisions and most severe injury collisions have occurred. Data for San Mateo County should be drawn from the [Transportation Injury Mapping System](#) (TIMS), which pulls data from the Statewide Integrated Traffic Records System (SWITRS), a California State database that contains information on collision attributes and locations. Data from TIMS should be downloaded for the most recent five-year period to better inform collision patterns over time. While it is important to

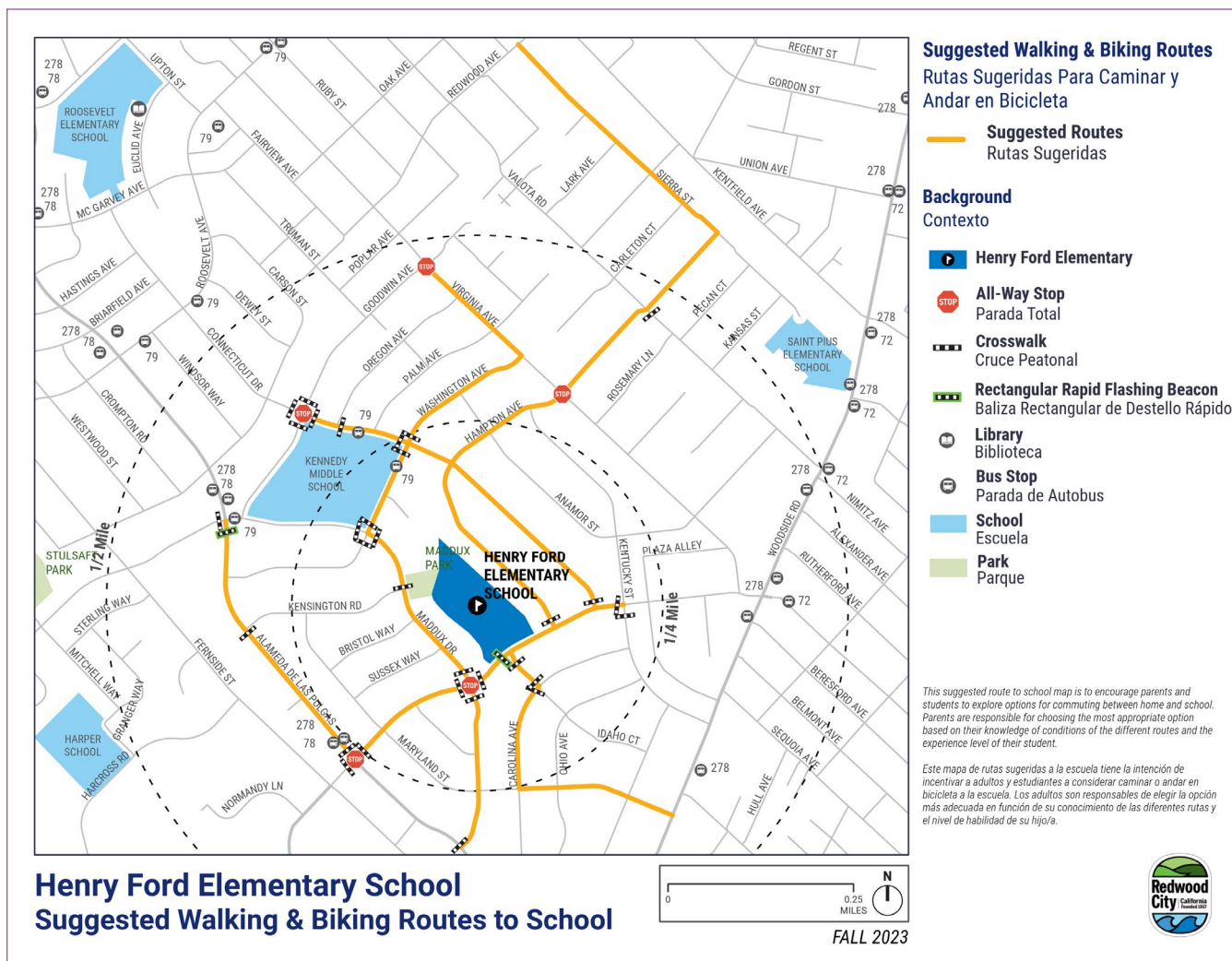
analyze all collisions, it is particularly useful to analyze bicycle- and pedestrian-involved collisions and collisions that resulted in fatalities or severe injuries, also known as KSI collisions. Those results will inform Slow Speed School Zone recommendations as well as project prioritization.

The [San Mateo County Safe Routes to School High Injury Network Report](#)—which identifies the roadways near schools with the highest frequency and severity of collisions involving youth and people walking and biking—can also serve as a point of reference for developing a Slow Speed School Zones plan. Streets near the school that are part of the youth-based high injury network may overlap with Slow Speed School Zone recommendations. It is important to identify and prioritize these locations for improvements because they may have the most impact on safety.

## Existing Roadway Characteristics

Evaluating the existing roadway characteristics near the school how the Slow Speed School Zone recommendations fit into the larger roadway network and create context-sensitive recommendations for the Slow Speed School Zone. The following roadway characteristics should be considered for analysis: posted speed limits, bicycle and pedestrian infrastructure, existing transit routes, traffic volumes, number of lanes, and street parking. Characteristics such as posted speed limits, traffic volumes, and number of lanes can be accounted for in a table. Existing bicycle and pedestrian infrastructure and transit routes can be included on the existing conditions map.





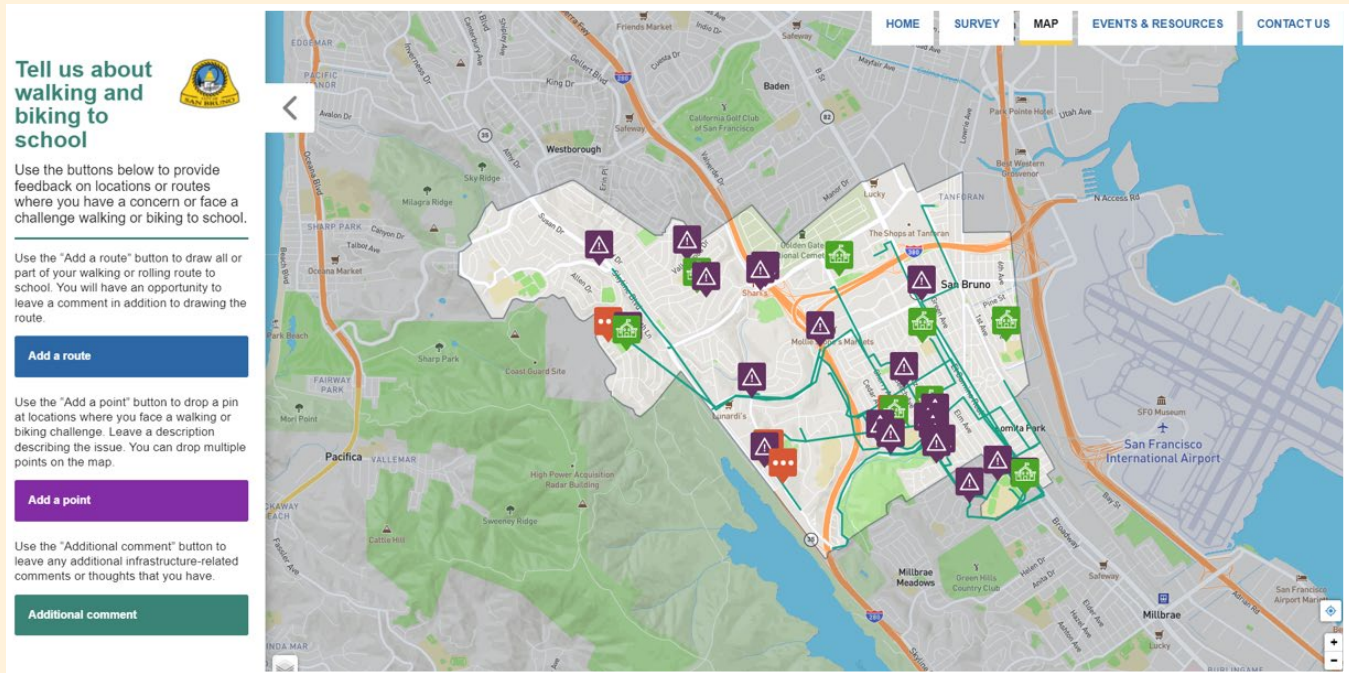
## Existing Suggested Walking and Biking Routes to School

Existing suggested walking and biking routes to school should also be considered when developing a plan for Slow Speed School Zones implementation plan. Suggested route maps include routes that can best support walking and biking to school. The maps inform families about what to expect as they navigate to school and are key tools for encouraging more students

and families to walk and bike to school. Streets that are identified as suggested routes to school are typically low speed residential streets that are well-suited for walking and biking.

Slow Speed School Zone streets should be included as suggested routes to school and connected to other existing suggested routes.





**Figure 5.**  
Example of a Webmap Engagement Tool

## Community and Stakeholder Engagement

Community engagement should occur at all stages of the planning process and include a variety of in-person or virtual engagement methods to effectively reach the school community. During the existing conditions phase, community engagement should focus on informing the community about the project and listening to and learning about the community's values and experiences traveling to and from school. The second phase of engagement should seek the community's feedback on the draft Slow Speed School Zone recommendations. The final phase of engagement should gather the community's feedback to inform project prioritization and implementation and approve the final plan.

During the existing conditions phase, a walk audit is an effective way to gather the school community (including parents, caregivers, teachers, students, community members, and local law enforcement) and make observations of existing infrastructure and travel behavior, especially during the arrival and dismissal period. Walk audits allow the community to provide feedback based on their previous experiences and what they see firsthand during the audit. Other potential engagement methods to consider during all phases of the planning process include hosting a pop-up event or community meeting, attending a parent-teacher association (PTA) meeting, and developing and sharing a survey and an online webmap.





## Section 3

# Implementing Slow Speed School Zones



## Implementing Slow Speed School Zones

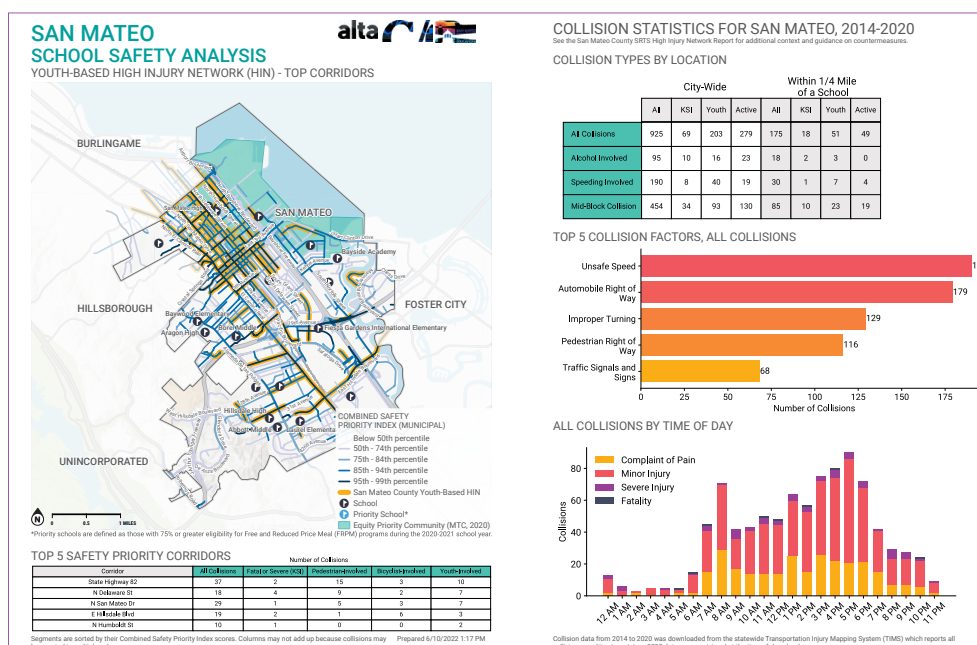
**This section provides details on how Slow Speed School Zones can be implemented. It describes the steps for developing recommendations, as well as design guidelines and treatments to consider in the implementation of Slow Speed School Zones.**

## Developing Recommendations

The Slow Speed School Zone recommendations should be a result of the existing conditions analysis, feedback from the school community, and best practices in street design. When developing recommendations, first identify the street or streets on which to focus improvements. These streets should be within the designated School Zone and provide direct connections to the school.

Depending on the school's location and traffic patterns, the Slow Speed School Zone may include minor local roadways or collector streets. Slow Speed School Zones should avoid arterial roadways where a direct parallel alternative route is possible. The [San Mateo County Safe Routes to School High Injury Network Report](#), however,

shows that most high injury roadways are along arterial roadways. It is important, therefore, to address safety concerns where arterial roadways intersect with the Slow Speed School Zone. The report also references specific countermeasures that focus on speed management, pedestrian safety improvements, intersection improvements, and programmatic strategies that have proven safety benefits as provided by the Federal Highway Administration's Proven Safety Countermeasures. Design treatments, explained in further detail in the next section, will vary based on a variety of factors such as roadway type, collision history, roadway characteristics, and design standards.



**Figure 6.**  
San Mateo City HIN



## Design Treatments

This section provides guidance and an overview of best practices for design treatments for Slow Speed School Zones.

### Signage

School Zones can be designated under a local or state statute and must include School Zone signage to identify the beginning of the School Zone as shown in **Figure 9**. Optionally, School Zone signage can be supplemented with a School plaque, or can include an arrow indicating that the driver will enter a School Zone upon making a turn.<sup>1</sup> Signage is also necessary to indicate the speed limit within a School Zone (**Figure 10**).<sup>2</sup> When the speed limit has been reduced to 15 or 20 mph, the speed limit signage should be placed up to 500 feet away from the school, and when the speed limit is 25 mph, the signage should be placed between 500 feet and 1,000 feet away from the school. When the speed limit has been reduced by 10 mph or greater in the School Zone, a “Reduced Speed Limit Ahead” sign is also needed ahead of the “School Speed Limit” sign.<sup>3</sup>

### Markings

All crosswalks within School Zones must be yellow. Yellow “SLOW SCHOOL XING” markings should be installed in advance of yellow school crosswalks where there is not a stop sign, traffic signal, or yield sign (**Figure 11**).<sup>4</sup>

- 1 CA MUTCD Section 7B.09
- 2 CA MUTCD Section 7B.15
- 3 CA MUTCD Section 7B.16
- 4 CA MUTCD Section 7C/02



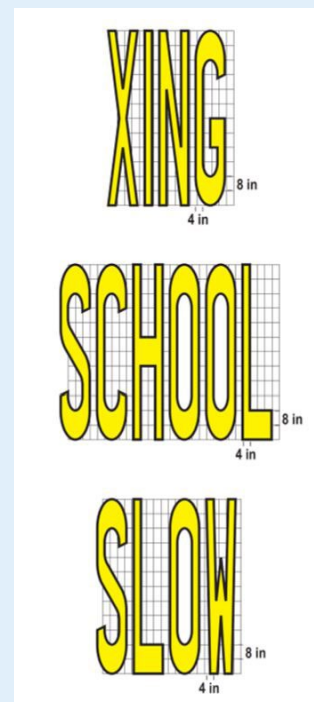
S1-1

**Figure 7.** School Zone Signage



SR4-1(CA)

**Figure 8.** School Zone Speed Limit Signage



**Figure 9.** Slow School Xing Markings





## Setting Speed Limits

Speed limits within School Zones, like residential areas, are 25 mph when children are present unless otherwise posted.<sup>5</sup> “When children are present” is defined as when children are traveling to and from school and during school hours. California Law allows a local jurisdiction, by ordinance or resolution, to reduce the speed limit within a School Zone to 20 or 15 mph within 500 feet of the school.<sup>6</sup> A roadway is eligible for a reduced speed limit of 20 or 15 mph when the roadway is in a residential district, is no more than two lanes, and the speed limit outside of the School Zone does not exceed 30 mph. A local jurisdiction may also extend the 25 mph speed limit in School Zones from 500 feet to 1,000 feet from a school.

Prior to the passage of an ordinance or resolution, city staff—typically a traffic engineer—need to

complete an engineering and traffic survey in accordance with CVC Section 627j to determine the existing speed limit is more than what is reasonable or safe. Once the ordinance or resolution has been passed, appropriate signage should be installed per CVC requirements indicating the new speed limits.

Each local jurisdiction shall determine the best department and/or process for installing new speed limit signage. The City of Oakland, for example, installed new 15 mph signage through direct work orders and by incorporating this new signage into signage and striping plans for projects near schools.<sup>7</sup> Local jurisdictions should work with local law enforcement to first educate the community about the new School Zone speed limits and then enforce them after an initial warning period.

<sup>5</sup> CVC Section 22352

<sup>6</sup> CVC Section 22358.4

<sup>7</sup> City of Oakland. Year-One Safe Oakland Streets (SOS) Report to City Council. Attachment B: 15 MPH School Zone Implementation. June 15, 2022.



# Speed Management

This section provides an explanation of traffic calming measures that aim to slow motor vehicle speeds along a roadway and at intersections in a Slow Speed School Zone. Treatments to include lane narrowing, traffic circles, speed feedback signs, chokers, chicanes, speed humps, and speed tables.

## Lane Narrowing/Removing

Narrowing or removing a vehicular travel lane on streets designed for an excess roadway capacity can lower travel speeds for motorists and create a safer environment for pedestrians and cyclists. Additionally, by decreasing space in the roadway for vehicles, more space is created for bicycle facilities, sidewalk widening, and pedestrian amenities.

## Speed Humps and Tables

Speed humps and tables provide traffic calming by reducing vehicle speeds. They are typically placed in a series and cross the entire width of the roadway. These cannot be used on high-volume or high-speed streets. Speed humps typically slow traffic to 15 to 20 mph.<sup>8</sup>

## Chicanes and Chokers

Chicanes and chokers are artificially created curves in an otherwise straight road, used to reduce the speed of traffic as motorists maneuver the curves.

## Traffic Circles

Neighborhood traffic circles are intersection treatments. Traffic circles can regulate the flow of traffic while adding a traffic calming element. This can potentially reduce cut-through traffic. Crosswalks and other pedestrian and bicycle facilities can be incorporated into traffic circles as well.



Speed Humps and Tables



Chicanes and Chokers



Traffic Circles

<sup>8</sup> Vertical Speed Control Elements. Urban Street Design Guide. National Association of City Transportation Officials (2013) <https://nacto.org/publication/urban-street-design-guide/street-design-elements/vertical-speed-control-elements/>



## Speed Feedback Signs

Speed feedback signs attempt to slow speeding drivers by alerting them of their speed and the speed posted limit. These can be combined with signs reminding drivers they are entering a School Zone.



Speed Feedback Signs

## Volume Management

This section provides a list and explanation of roadway design treatments, such as diverters, for reducing the volume of motor vehicle traffic along a roadway entering or within a Slow Speed School Zone.

### Half Closures

Half closures block vehicle travel for motor vehicles in one direction while preserving two-way bicycle access. This treatment may reduce motor vehicle volumes where they exceed target volumes. Half closures are a key design feature of Slow Streets, as shown in the photos on the right.

### Diagonal Diverters

Diagonal diverters may be placed at a local four-way intersection and require all motor vehicle traffic to turn, while allowing bicyclist and pedestrian through movements. This treatment creates two smaller unconnected intersections.



Diagonal Diverters



Half Closures



## Prohibited Turn Movements

Prohibiting turning movements has many benefits for both vehicular circulation and pedestrian and bicycle safety.<sup>9</sup> Preventing certain turn movements, including U-turns, can reduce conflict points and improve overall vehicle flow. In some cases, turning prohibitions can be limited to certain times of day and can exempt certain vehicles (like school buses).

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<sup>9</sup> Brich, S.C., and Cottrell Jr., B.H. Guidelines for the Use of No U-Turn and No-Left Turn Signs (1994). VTRC 95-R5. Virginia Department of Transportation.



Prohibited Turn Movements

## Pedestrian and Intersection Crossing Treatments

This section provides an explanation of roadway treatments to increase the safety and comfort of people crossing streets in a Slow Speed School Zone.

### Rectangular Rapid Flashing Beacons (RRFBs)

RRFBs are user-activated flashing lights used at unsignalized intersections or mid-block crossings. These beacons alert motorists to the presence of people in the crosswalk. RRFBs have been shown to increase driver yielding behavior between 72% and 96%.<sup>10</sup>



Rectangular Rapid Flashing Beacons (RRFBs)

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<sup>10</sup> Rectangular Rapid Flash Beacon (RRFB). US Department of Transportation: Federal Highway Administration – Safety (2009).



## Crosswalks (including advance yield/stop lines)

Marked crosswalks indicate preferred locations for pedestrians to cross and can designate right-of-way for motorists to yield to people walking. Enhancements to crosswalks including advance yield lines (e.g., stop bars and shark teeth), high-visibility continental crosswalk designs, and signage, have demonstrated safety benefits at a relatively low cost.<sup>11</sup> In School Zones, these crossings are yellow, as opposed to the standard white color.



Crosswalks

## Signal Timing/Phasing (includes leading pedestrian intervals)

A leading pedestrian interval gives pedestrians the opportunity to enter the crosswalk at an intersection three to seven seconds before vehicles are given a green light. This increases their visibility and reduces conflicts between pedestrians and vehicles.<sup>12</sup>



Signal Timing

## Curb Extensions

Curb extensions, or bulb-outs, extend the curb into the street. Curb extensions can provide several important traffic calming and safety benefits. They shorten the crossing distance for people walking, provide improved visibility at intersections, make pedestrians more visible to motorists, and provide additional pedestrian queueing space. They can be installed at intersections or mid-block. Curb extensions can be made using a variety of low-cost, quick-to-install materials, such as planters, flexible delineators, and paint.



Curb Extensions

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- 11 Zegeer, C., Nabors, D., Lagerway, P. (2013). Pedestrian Safety Guide and Countermeasure Selection System. PEDSAFE. Retrieved from <http://pedbikesafe.org/PEDSAFE/countermeasures.cfm>.
  - 12 Albee, M., Bobitz, P. (2021). Making Our Roads Safer One Countermeasure at a Time: 28 Proven Safety Countermeasures That Offer Significant and Measurable Impacts to Improving Safety. FHWA. Report No: FHWA-SA21-071. Retrieved from [https://safety.fhwa.dot.gov/provencountermeasures/pdf/FHWA-SA-21071\\_PSC%20Booklet\\_508.pdf](https://safety.fhwa.dot.gov/provencountermeasures/pdf/FHWA-SA-21071_PSC%20Booklet_508.pdf).



## Curb Ramps

Curb ramps allow for smooth transitions between the sidewalk and street level. Curb ramps are important for those with special mobility needs, strollers, and many other users. Ramps must be built to current Americans with Disabilities Act standards.<sup>13</sup>



Curb Ramps

## Raised Crossings

Raised crossings give priority to people walking and biking, allowing them to cross at sidewalk level, and requiring people driving to slow down. They can be implemented at mid-block crossings, intersections, or side streets.



Raised Crossings

## Median Refuges

A median refuge, or pedestrian refuge island, is part of the road's median and is designed to be a waiting spot for pedestrians who cannot or choose not to cross the entire roadway at once, completing the crossing in segments. They are particularly useful for seniors, students, and those with mobility impairments. They are more frequently installed on larger, multi-lane roadways.<sup>14</sup>



Median Refuges

## Hardened Centerlines

Hardened centerlines use vertical barriers to deter vehicles from crossing the centerline when making left turns. Similar to curb extensions, this treatment can reduce the radius and speed of vehicle turning movements, but maintains turning movements for large vehicles, when needed. Hardened centerlines are used at intersections to guide left-turning vehicles, reduce turning speeds, and deter turning movements that cut across the centerline.



Hardened Centerlines  
Source: Portland Bureau of Transportation

<sup>13</sup> U.S. Access Board. "Where Ramps and Curb Ramps Are Required." <https://www.access-board.gov/ada/guides/chapter-4-ramps-and-curb-ramps/>.

<sup>14</sup> Zhang, L., S. Ghader, A. Asadabadi, M. Franz, C. Xiong, and J. Litchford. Analyzing the Impact of Median Treatments on Pedestrian/Bicyclist Safety (2017). Report No. MD-17-SHA/UM/4-28. Maryland State Highway Administration.



## In-Street Pedestrian Crossing Signs (school)

In-street pedestrian crossing signs (MUTCD R1-6 or R1-6a) are placed in the middle of the roadway at existing crosswalks to remind road users they are required to yield to people walking in the crosswalk at unsignalized pedestrian crossings. These signs can be placed in School Zones and incorporate school signage.

## Raised Intersections

Raised intersections provide vertical deflection at an entire intersection requiring vehicles to slow down. The road level is raised to the sidewalk level, and the surface can be built with a variety of materials such as asphalt, concrete, or pavers. The crosswalks are also elevated. The pedestrian space is often differentiated with bollards, materials, and detectable warnings.

## All-Way Stop Conversions

A stop sign is a traffic control device used to regulate traffic through an intersection. One or multiple intersection approaches can be stop-controlled. In general, the implementation of stop control is regulated by the CA MUTCD and requires that a technical analysis be conducted.

## Slow Turn Wedges

Similar to a curb extension, slow turn wedges extend the curb and widen the turning radii of left-turning vehicles.



In-Street Pedestrian Crossing Signs



Raised Intersections



All-Way Stop Conversions



Slow Turn Wedges  
Source: New York City Department of Transportation



## No Right on Red

In areas with high pedestrian volumes or poor driver yield rates, restricting right turns on red can reduce pedestrian-vehicle conflicts, discourage drivers from creeping into intersections and blocking crosswalks, and give drivers additional opportunities to look for pedestrians and cross-traffic. These can be permanent or time-based restrictions.

## Intersection Daylighting

Intersection daylighting prohibits parking along the curb approaching an intersection to increase visibility for all road users and improve crossings. This can be indicated by red paint and no-parking signs, and it could include a curb extension, as pictured.

In October 2023, the Daylighting Saves Lives Bill (AB 413) was signed into law. This law prohibits stopping, standing, or parking a vehicle within 20 feet of any unmarked or marked crosswalk to increase visibility and reduce potentially lethal collisions. Adding red paint can help implement this new law.



No Right on Red



Intersection Daylighting



School Streets Signage

## School Streets

School Streets are temporary vehicle-free zones adjacent to or leading up to a school that are strategically closed to vehicle traffic and opened to children and families walking, biking, and rolling. School Streets help manage traffic and improve safety during school arrival and dismissal by eliminating vehicle congestion in front of schools and creating an environment where children can safely walk, bike, roll, play, and learn before, during, and after school.

*School Streets, because they are temporary, can be integrated as part of the Slow Speed School Zone directly adjacent to the school.*





## Project Prioritization

While the Slow Street School Zone recommendations may provide a holistic set of recommendations near a school, limited resources require an action plan that identifies which projects may have the greatest impact. Project prioritization can include a variety of factors such as project feasibility, cost, safety, community support, and equity. Prioritization factors should reflect the values and goals of the school community.

Please note that if your community has adopted a Vision Zero policy, Slow Speed School Zone projects can be incorporated as a Vision Zero strategy. By incorporating Slow Speed School Zone projects as part of Vision Zero, projects may be more highly prioritized.

## Quick Build Implementation

Quick build refers to projects that are implemented using relatively low-cost materials compared to long-term capital projects. Quick build projects not only are faster and less costly to implement, they also create an opportunity to pilot a project design or treatment for community feedback and observation.

Where feasible, the implementing jurisdiction should identify specific Slow Speed School Zone improvements or packaged improvements that can advance on an accelerated timeline through quick build implementation. Quick build tactics can advance the basic design elements of Slow Speed School Zone recommendations to provide immediate relief from a safety, comfort, or access issue. The quick build approach addresses the urgency around needed improvements while also providing a mechanism to gather feedback from the community impacted by the improvement.

There are many resources available online that describe quick build projects in more detail. The California Bicycle Coalition has a [guide with details](#) on how to move forward with these low-cost, high-impact project types.



## Implementation Strategies

Local jurisdictions in San Mateo County have numerous avenues to implement the proposed Slow Speed School Zone improvements. Based on the size, scope, and priority of the recommended improvement, some may be implemented as part of regularly scheduled maintenance programs or dedicated annual funding streams, while others will require additional regional, state, and federal funding.

While the Slow Speed School Zone can identify and prioritize proposed improvements, the local jurisdiction is responsible for programming projects into existing programs or obtaining grant funding for larger-scale improvements. The descriptions that follow highlight options for implementation based on the scale, scope, and priority of the recommended improvement.

### Pavement Preservation and Rehabilitation Programs

Cities and counties regularly repave and maintain roadway pavement. This presents a major opportunity to implement improvements at a lower overall cost due to project efficiencies. Improvements such as striping crosswalks, installing signs, painting red curbs, and quick build curb extensions may be able to be combined with roadway resurfacing projects.

### Programmed Projects

High-priority improvements may be programmed directly as standalone projects into the local jurisdiction's budget. This strategy relies on existing funding streams and may be augmented by regional, state, or federal grant funding. Collaboration with regional and local partners will be most focused on these projects.

### Development-Funded Improvements

Private developers help to construct the transportation network based on the existing standard roadway typologies. Adjusting the facilities that developers are required to construct in connection with a specific development can address system gaps across the local jurisdiction as development occurs. This strategy may be applied to high- or medium-priority projects if there is a nexus between the nearby development and improvements in and around the school site.

### Partners

The local jurisdiction is the primary, but not the only, entity responsible for planning, designing, and constructing walking, bicycling, and rolling improvements around schools. Some of the recommended improvements may be located within the rights-of-way of other agencies, jurisdictions, or private owners, such as Caltrans or the local school district. The local jurisdiction will therefore need to coordinate with the appropriate stakeholders for planning, designing, and securing funding before the implementation of these improvements begins. These partner agencies may require final approval on these projects, even if they are located within San Mateo County. It will also be important to consider how to continue engagement with the school PTA and volunteers as they will be essential partners for the successful implementation of the proposed improvements.



The background of the slide is a solid dark blue. Overlaid on this are several large, light blue and orange triangles pointing towards the center, creating a star-like or sunburst effect. A large white circle is centered on the slide, containing the text.

## Section 4

# Resources and Costs



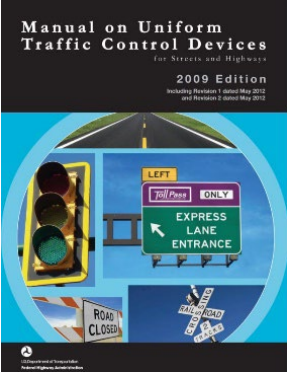

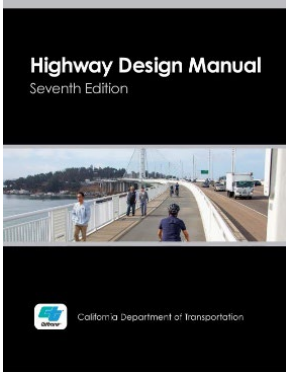
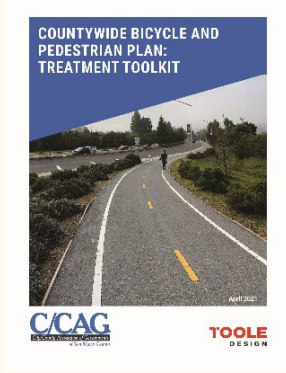




# Resources and Costs

The following section provides a summary of potential resources, design standards, and cost estimates that should be considered when implementing Slow Speed School Zones.

## Roadway Design and Standards

The guidelines listed in Table 2 should be consulted when implementing Slow Speed School Zones. The documents provide details on signage, design treatment, safety countermeasures, and accessibility standards that should be followed.

**Table 1.** Roadway Design Guidelines

SIGNAGE AND STRIPING			
 <p><u><a href="#">Manual on Uniform Traffic Control Devices</a></u></p>	 <p><u><a href="#">California Manual on Uniform Traffic Control Devices (CA MUTCD)</a></u></p>	 <p><u><a href="#">CA Highway Design Manual</a></u></p>	 <p><u><a href="#">C/CAG Countywide Bicycle and Pedestrian Plan: Treatment Toolkit</a></u></p>
 <p><u><a href="#">FHWA Proven Safety Countermeasures</a></u></p>	 <p><u><a href="#">Public Rights-of-Way Accessibility Guidelines (PROWAG) DRAFT (NATIONAL)</a></u></p>	 <p><u><a href="#">Pedestrian Accessibility Guidelines for Highway Projects Design Information Bulletin (DIB) 82-06 (CALIFORNIA)</a></u></p>	 <p><u><a href="#">NACTO Urban Street Design Guide</a></u></p>



## Funding

The implementation of Slow Speed School Zones will require funding for design (i.e., detailed engineering work) and construction. Funding for bicycle and pedestrian improvement projects is available at all levels of government (local, regional, state, and federal) and from private sources. Project funding can take the form of competitive grants, formula-based allocations, tax measure-based funding, funds from private development, and others. The following sections provide a summary of potential funding sources that Slow Speed School Zones may qualify for. The SMCOE SRTS team will send funding and grant information to partners as other opportunities arise.

### Federal

#### **Safe Streets And Roads For All (SS4A)**

Funded by the Bipartisan Infrastructure Law, the Safe Streets and Roads for All program provides discretionary funding over the next five years to local, regional, and Tribal initiatives to prevent roadway deaths and serious injuries. Funding can be used to develop or update a Comprehensive Safety Action Plan (e.g., Vision Zero Plan); conduct planning, design, and development activities in support of the action plan; and carry out projects to implement the action plan.

*Funds are programmed by the U.S. Department of Transportation.*

#### **Community Mobility Design Challenge Grant**

The National Center for Mobility Management provides up to \$25,000 to communities to generate ideas to improve mobility for those who face transportation-related barriers. This program is the first in a series of three grants. The second grant opportunity, Learning Launch grants, provides \$20,000 to refine and test

solutions generated from the first grant. The third grant opportunity, Ready to Launch grants, provides \$75,000 to implement the solutions as a pilot. Active transportation projects, including SRTS-related projects, could be awarded funds through this series of grants.

*Funds are administered by the National Center for Mobility Management.*

### **RAISE Grants**

The Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program supports projects that improve transportation system safety, accessibility, and sustainability. Eligible projects must have quantifiable environmental benefits, serve disadvantaged communities, and address equity concerns in the project's design. Eligible projects range from \$5 million to \$25 million. RAISE grants can fund both planning and capital projects. A 20% local match is required except in rural areas.

*Funds are programmed by the United States Department of Transportation.*

### State

#### **California Active Transportation Program**

California's Active Transportation Program funds infrastructure and programmatic projects that support the program goals of shifting trips to walking and bicycling, reducing greenhouse gas emissions, and improving public health. Competitive application cycles occur every one to two years, typically in the spring or early summer. Eligible projects include construction of bicycling and walking facilities, new or expanded programmatic activities, or projects that include a combination of infrastructure and non-infrastructure components. Typically, no local



match is required, though extra points are awarded to applicants who do identify matching funds.

*Funds are programmed by the California Transportation Commission.*

### **Sustainable Transportation Planning Grants**

Caltrans Sustainable Transportation Planning Grants are available to communities for planning, study, and design work to identify and evaluate projects, including conducting outreach or implementing pilot projects. Communities are typically required to provide an 11.47% local match, but staff time or in-kind donations are eligible to be used for the match provided the required documentation is submitted.

*Funds are programmed by Caltrans.*

### **Highway Safety Improvement Program**

Caltrans offers Highway Safety Improvement Program (HSIP) grants every one to two years. Projects on any publicly owned road or active transportation facility are eligible, including bicycle and pedestrian improvements. HSIP focuses on projects that explicitly address documented safety challenges through proven countermeasures, are implementation-ready, and demonstrate cost-effectiveness.

*Funds are programmed by Caltrans.*

### **Solutions for Congested Corridors Program**

Funded by Senate Bill 1, the Congested Corridors Program strives to reduce congestion in highly traveled and congested roads through performance improvements that balance transportation improvements, community impacts, and environmental benefits. This program can fund a wide array of improvements including bicycle facilities and pedestrian facilities. Eligible projects must be detailed in an

approved corridor-focused planning document. These projects must include aspects that benefit all modes of transportation using an array of strategies that can change travel behavior, dedicate right-of-way for bikes and transit, and reduce vehicle miles traveled.

*Funds are programmed by the California Transportation Commission.*

### **Office of Traffic Safety**

Under the Fixing America's Surface Transportation Act, 5% of Section 405 funds are dedicated to addressing nonmotorized safety. These funds may be used for law enforcement training related to pedestrian and bicycle safety, enforcement campaigns, and public education and awareness campaigns.

*Funds are programmed by the California Office of Traffic Safety.*

### **Affordable Housing and Sustainable Communities Program**

The Affordable Housing and Sustainable Communities Program funds land-use, housing, transportation, and land preservation projects that support infill and compact development that reduces greenhouse gas emissions. Projects must fall within one of three project area types: transit-oriented development, integrated connectivity project, or rural innovation project areas. Fundable activities include affordable housing developments, sustainable transportation infrastructure, transportation-related amenities, and program costs.

*Funds are programmed by the Strategic Growth Council and implemented by the Department of Housing and Community Development.*



## Urban Greening Grants

Urban Greening Grants support the development of green infrastructure projects that reduce greenhouse gas emissions and provide multiple benefits. Projects must include one of three criteria, most relevantly: reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes, or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools. Eligible projects include green streets and alleyways and nonmotorized urban trails that provide safe routes for travel between residences, workplaces, commercial centers, and schools.

*Funds are programmed by the California Natural Resources Agency.*

## Sustainable Transportation Equity Project

The Sustainable Transportation Equity Project is a grant program that will provide safe, environmentally sustainable, accessible, and affordable transportation options to low-income communities and communities of color. Project applicants can apply for either a Planning and Capacity Building grant or an Implementation grant. The Implementation grant program will help fund the construction of new pedestrian, bicycle, and complete streets facilities.

*Funds are programmed by the California Air Resources Board.*

## Transformative Climate Communities Program

The Transformative Climate Communities Program empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to reduce greenhouse gas emissions and local air pollution. The program prioritizes neighborhoods that score in the top 25% by CalEnviroScreen—a tool created by the California Office of Environmental Health

Hazard Assessment to identify communities in California that are disproportionately burdened from pollution.

*Funds are programmed by the California Strategic Growth Council/California Department of Conservation.*

## Senate Bill 1: Local Partnership Program

The Local Partnership Program provides funding for local and regional agencies that have passed sales tax measures, developer fees, or other transportation-imposed fees to support road maintenance and rehabilitation, sound walls, and other transportation improvement projects. Jurisdictions with these taxes or fees are eligible for a formulaic annual distribution of no less than \$100,000. These jurisdictions are also eligible for a competitive grant program. Local Partnership Program funds can be used for a wide variety of transportation purposes, including roadway rehabilitation and construction, transit capital and infrastructure, bicycle and pedestrian improvements, and green infrastructure.

*Funds are programmed by the California Transportation Commission.*

## Senate Bill 1: Road Maintenance and Rehabilitation Program

Senate Bill 1 created the Road Maintenance and Rehabilitation Program to address deferred maintenance on state highways and local road systems. Program funds can be spent on both design and construction efforts. On-street active transportation-related maintenance projects are eligible if program maintenance and other thresholds are met. Funds are allocated to eligible jurisdictions.

*Funds are programmed by the State Controller's Office.*



## Local and Regional

### One Bay Area Grant Cycle 3

Metropolitan Transportation Commission's One Bay Area Grant Cycle 3, which is federally funded by the Federal Congestion Mitigation and Air Quality Improvement Program, funds projects and programs to help the Bay Area meet climate change and air quality improvement goals. Projects are focused in the Priority Development Areas and can invest in bicycle, pedestrian, SRTS, and transportation planning projects. The 2023–2026 cycle includes funding from the Federal 2021 Bipartisan Infrastructure Law. The City/County Association of Governments of San Mateo County (C/CAG) has set-aside funding for the SRTS Program under this grant program, which will be administered through the San Mateo County Office of Education.

*SRTS funds are administered by the San Mateo County Office of Education.*

### Transportation Fund for Clean Air

The Transportation Fund for Clean Air funds bicycle and pedestrian facilities. The Bay Area Air Quality Management District administers funds to the San Mateo County Transportation Authority for projects that reduce vehicle emissions including bicycle projects. These funds come from a \$4 vehicle registration surcharge in Bay Area counties and can be used as a match for competitive state or federal programs.

*Funds are programmed by the San Mateo County Transportation Authority.*

### Transportation Development Act Article 3

C/CAG administers the Transportation Development Act, Article 3 program (delegated by Metropolitan Transportation Commission for San Mateo County). This program funds planning and infrastructure within the county;

each jurisdiction is eligible to apply for one planning project (up to \$100,000, requiring 50% cash match) and one capital project (up to \$400,000). The planning project must be a comprehensive bicycle or pedestrian plan.

*Funds are administered by C/CAG.*

### Measure M

Through Measure M, C/CAG collects and administers an annual fee of \$10 on motor vehicles registered in San Mateo County. Half of the net proceeds are allocated for local streets and roads, while the remaining 50% funds countywide transportation programs, including SRTS (6% of the countywide program funds).

*Funds are administered by C/CAG.*

### Measure A and Measure W

Measure A is a half-cent sales tax first passed in 1988 to fund and leverage additional funding for transportation projects and programs in San Mateo County. It was reauthorized in 2004 to run through December 2033. Measure W is a half-cent sales tax passed in 2018 for the same purpose. It will run through June 2038. Measure A is fully administered by the San Mateo County Transportation Authority, while Measure W is administered by both the San Mateo County Transportation Authority and the San Mateo County Transit District (each administers 50% of the funds).

*Funds are programmed by the San Mateo County Transportation Authority, with SRTS funds administered by the San Mateo County Office of Education.*



## Cost Estimates

**Planning-level cost estimates provide a useful starting point to guide project implementation and prioritization.**

The following table provides planning-level cost estimates by project type for various pedestrian safety improvements. As projects advance toward implementation, more detailed cost estimates should be completed based on an engineering review and further analysis of the site context.

The estimates are based on the planning costs for comparable projects in nearby jurisdictions as of 2023 and do not include costs for design.

**Table 2.** Pedestrian Project Planning Level Cost Estimates

FACILITY TYPE	COST	UNIT	NOTES
High-Visibility Crosswalk	\$4,000	Each	
Transverse Crosswalk	\$3,000	Each	
Curb Extensions/Corner Radii	\$50,000	Each	Varies by size
Leading Pedestrian Interval	\$100,000	Each	Cost varies based on the cost of existing and required equipment
Slip Lane (Free-Right Turn Lane) Removal	\$100,000	Each	Varies by size
Pedestrian-Only Signal Phase	\$100,000	Each	Cost varies based on the cost of existing and required equipment
Median Refuge Island	\$50,000	Each	Varies by size
Curb Ramps	\$5,000	Each	
Signage	\$500	Each	
RRFB	\$60,000	Each	
Pavement Markings (Stop/Yield)	\$2,000	Each	
Wayfinding Signs	\$30,000	Per Mile	Ten signs per mile
Neighborhood Traffic Circle	\$150,000	Each	
Median (Short)	\$50,000	Each	Varies by size
Protected Intersection	\$500,000	Each	
Pedestrian Hybrid Beacon	\$400,000	Each	
Red Curb Paint	\$26,500	Per Mile	
Sidewalk	\$500,000	Per Mile	Six-foot wide sidewalk on one side of the street





Section 5

**Appendix I**



## Appendix I. Literature Review Resources and Descriptions

RESOURCE	JURISDICTION/AUTHOR	DESCRIPTION
<a href="#"><u>Frequently Asked Questions about Slow Streets</u></a>	District Department of Transportation (DDOT)	A web page with basic information about Slow Streets in Washington, D.C.
<a href="#"><u>San Mateo Countywide Bike and Pedestrian Plan Appendix A: Design Toolkit</u></a>	City/County Association of Governments of San Mateo County (C/CAG)	A design toolkit for bicycle and pedestrian infrastructure improvements.
<a href="#"><u>Minnesota Safe Routes to School: School Streets + Park &amp; Walk</u></a>	Minnesota Safe Routes to School	A guidebook for planning and implementing School Streets.
<a href="#"><u>Developing a Network of Slow Streets</u></a>	Oakland Department of Transportation (OakDOT)	A presentation about OakDOT's approach to developing a network of Slow Streets.
<a href="#"><u>Neighborhood Bike Route Implementation Guide</u></a>	OakDOT	A guide on the design and implementation considerations for neighborhood bike routes.
<a href="#"><u>Slow Streets Evaluation 2023</u></a>	San Francisco Municipal Transportation Agency (SFMTA)	An evaluation report, including safety data, for the Slow Streets program in San Francisco.
<a href="#"><u>Recommendations Report for Reduced School Zone Speed Limits</u></a>	City of Walnut Creek	A report focusing on reducing speed limits in School Zones.
<a href="#"><u>Safe Routes to School Online Guide</u></a>	National Center for Safe Routes to School	A web page with guidance on School Zones.
<a href="#"><u>Vision Zero: Reducing School Zone Speed Limits</u></a>	City of Sacramento	A web page about how the City of Sacramento reduced speed limits in School Zones.
<a href="#"><u>Pedestrian Safety Guide and Countermeasure Selection System: School Zone Traffic Calming Case Study</u></a>	Federal Highway Administration (FHWA)	A case study showing the effectiveness of diverters in a School Zone.
<a href="#"><u>PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System</u></a>	FHWA	Guidance on various pedestrian safety countermeasures and how to select them.
<a href="#"><u>Best Practices in School Zone Traffic Calming</u></a>	RadarSign	A web page with guidance on traffic calming in School Zones.
<a href="#"><u>15 MPH School Speed Limits: Supporting Slower Speeds Near Schools to Save Lives</u></a>	OakDOT	A web page about how the City of Oakland reduced speed limits in School Zones and how they prioritized schools.



RESOURCE	JURISDICTION/AUTHOR	DESCRIPTION
<a href="#"><u>SFMTA: 15 MPH School Zones Could Be Implemented Within the Year</u></a>	San Francisco Municipal Transportation Agency (SFMTA)	A web page describing how San Francisco was first city to implement School Zone speed limit reduction.
<a href="#"><u>Procedures for Speed Zoning on State Highways and Municipal Roads</u></a>	Massachusetts Department of Transportation (MassDOT)	Includes guidance on setting speed limits in School Zones in Massachusetts.
<a href="#"><u>Speed Management Plan</u></a>	SFMTA	A plan with speed management strategies in the City of San Francisco.
<a href="#"><u>Slow Streets Design Toolkit</u></a>	SFMTA	A toolkit showing the design components of Slow Streets in San Francisco.
<a href="#"><u>California Manual for Setting Speed Limits, Section 2.4 School Speed Zones</u></a>	Caltrans	Official Caltrans guidance for setting speed limits in School Zones in California.
<a href="#"><u>City of Lincoln School Zone Standards; Attachment A: School Zone Standards and Guidelines Review</u></a>	City of Lincoln, Nebraska	Contains information from the national Manual on Uniform Traffic Control Devices and other FHWA guidance on setting School Zone speed limits and provides a variety of potential design treatments near schools.
<a href="#"><u>Street Safety Toolkit</u></a>	Boston Transportation Department	A toolkit that includes design treatments for safer crossings, safer turns, and safer speeds.
<a href="#"><u>Info Brief: Re-envisioning School Streets: Creating More Space for Children and Families</u></a>	Pedestrian and Bicycle Information Center	This info brief provides basic information including the benefits, considerations, and case studies for School Streets.
<a href="#"><u>City Limits: Setting Safe Speed Limits on Urban Streets</u></a>	NACTO	A guide for setting safe speed limits to complement federal and state standards/guidance that includes information about School Zones.
<a href="#"><u>Urban Street Design Guide</u></a>	NACTO	A toolbox of street design elements, including traffic calming.
<a href="#"><u>Traffic Calming Guidance Memo</u></a>	Caltrans	A memo with a list of traffic calming measures endorsed by Caltrans.
<a href="#"><u>Traffic Control for School Areas</u></a>	Caltrans	Official Caltrans guidance about School Zone signage, pavement markings, and crossing guards.
<a href="#"><u>Residential Speed Control Program</u></a>	San Mateo County	Program for communities to apply for primarily speed humps and dips.
<a href="#"><u>Traffic Calming ePrimer</u></a>	FHWA	A webmap with a toolbox of traffic calming measures.



RESOURCE	JURISDICTION/AUTHOR	DESCRIPTION
<a href="#"><u>Safe System Approach for Speed Management</u></a>	FHWA	Provides guidance and details about the benefits and tools for speed management.
<a href="#"><u>Speed Management Program Plan</u></a>	FHWA	A plan for speed management.
<a href="#"><u>Safety Over Speed, Speed Management Resources</u></a>	Vision Zero Network	A web page with resources for speed management.
<a href="#"><u>Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed</u></a>	FHWA	An online resource that summarizes studies about engineering countermeasures used to manage speeds.
<a href="#"><u>Pedestrian Safety Countermeasures Toolbox</u></a>	Caltrans	A toolbox of pedestrian safety countermeasures.





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