



**CITY OF LOS ALTOS
CITY COUNCIL MEETING
June 23, 2015**

DISCUSSION ITEM

Agenda Item # 9

SUBJECT: Review and provide comments on the vision, goals, policies and design guidelines of the Pedestrian Master Plan

BACKGROUND

On March 24, 2015, staff provided an overview of the draft Pedestrian Master Plan. The Pedestrian Master Plan is divided into two main parts with eight sections in the body of the plan:

- A. Executive Summary
- B. Pedestrian Master Plan
 - 1. Introduction
 - 2. Vision, Goals and Policies
 - 3. Existing Conditions
 - 4. Needs Analysis
 - 5. Pedestrian Network Improvements
 - 6. Recommended Programs
 - 7. Implementation
 - 8. Appendices

Each section is an important building block which gives the Pedestrian Master Plan a lasting vision in improving and encouraging walking in Los Altos today and into the future.

Due to the vast amount of information, it was suggested to separate the review of the plan by first presenting the priority projects and school related projects, and subsequently presenting proposed policies and design guidelines.

On May 12, 2015, a subset of projects from both Table 7-4 High Priority Projects and School Route Improvement projects from Appendix E were presented to Council for inclusion for the Active Transportation Grant application. The grant was submitted to the Department of Transportation, Caltrans, on June 1, 2015.

EXISTING POLICY

None

PREVIOUS COUNCIL CONSIDERATION

September 25, 2012; October 9, 2012; June 25, 2013; April 8, 2014; March 24, 2015; and May 12, 2015

DISCUSSION

Vision, Goals and Policies

The process to develop a comprehensive Pedestrian Master Plan begins with defining a vision for the plan, and by extension a vision for the City. The vision statement below strives to accommodate a range of pedestrian abilities while trying to maintain the character of Los Altos.

Los Altos is a walkable city where people of all ages and abilities can easily, comfortably, and safely walk to downtown, neighborhood commercial centers, schools, parks, community amenities, transit services, and neighboring cities. As a viable travel mode, high rates of walking help reduce traffic congestion and the impacts of transportation on the environment. Recreational and social walking opportunities are provided in all areas of the City by a strategic and accessible network of walkways that connect neighborhoods and promote healthy, active lifestyles. A variety of context-sensitive walkway designs maintains and reflects the unique character of the City, whether it be a wooded, quiet residential neighborhood, downtown, or village commercial/mixed-use areas.

To carry out the vision, goals were developed to provide greater detail to help achieve the vision. The proposed goals are:

Goal 1: Routinely plan for pedestrian accommodation and facilities that serve people of all ages and abilities.

Goal 2: Develop a network of safe, convenient, and context-sensitive pedestrian facilities that connect residents to all community destinations (parks, shopping, schools, etc.), transit services, and neighboring communities.

Goal 3: Focus investments that improve pedestrian safety by reducing risk factors, such as vehicle speeds, crossing distance and conflict points, and by increasing education and awareness among all roadway users.

Goal 4: Increase pedestrian mode share for all types of local trips in order to reduce transportation-related greenhouse gas emissions, congestion, and parking demand.

Policies were developed to provide the framework from which to carry out the goals and improvements throughout the City. The proposed policies draw and expand on elements from the General Plan's Circulation Element, the Los Altos Bicycle Transportation Plan, and the Climate Action Plan and are more global in nature (Attachment 1). More specific policies are recommended in Chapter 5.1 and 5.2 of the plan (Attachment 2).

Design Guidelines

The design guidelines (Attachment 3) were developed to provide a foundation for a safe, functional, and inviting pedestrian network, and are a starting point for design requirements of pedestrian facilities in the City. The guidelines draw examples of successful pedestrian improvements from similar cities as well as examples from Los Altos and draw elements of the proposed policies into their design.

Review and provide comments on the vision, goals, policies and design guidelines of the Pedestrian Master Plan

About half of the proposed guidelines suggest improvements related to walkway grades and slopes, curb ramp standards and signing and striping improvements; all of which can be easily incorporated into improving pedestrian facilities. These guidelines include:

- A.2 Sidewalk Grade and Cross Slope
- A.6 Curb Ramps
- A.8 Standard Crosswalks
- A.9 High Visibility Crosswalks
- A.10 Advance Stop Bars and Advanced Yield Lines
- A.11 Uncontrolled, Mid-Block Crossing Placement and Design
- A.14 Guidelines for Regulatory Signage
- A.15 Guidelines for Warning Signage
- A.16 Guidelines for School Signage
- A.17 Guidelines for Signalized Pedestrian Crossing
- A.19 Signal Timing

The remaining proposed design guidelines are more physical in nature and are subject to further evaluation for context and location sensitivity and community input if they are considered as part of a pedestrian improvement project. These guidelines include:

- A.1 Sidewalk Standards
- A.3 Sidewalk Materials
- A.4 Sidewalk Furnishings
- A.5 Rural Walkways
- A.7 Curb Extensions
- A.12 Pedestrian Refuge Island
- A.13 Flex Use Space Parklets
- A.18 Crossing Beacons
- A.20 Leading Pedestrian Interval
- A.21 Play Zones

Policy Issues for Consideration

The development of the Pedestrian Master Plan is a process in which the City evaluates the needs of the residents and develops a plan to address those needs. Many requests are straightforward in nature, such as the City installing new crosswalks, closing sidewalk gaps and improving pedestrian safety. The City has also received requests for improvements such as lowering speed limits around schools, neighborhood gateways/pocket parks, developing new parking policies in neighborhoods/walkways and to consider walkways within a quarter mile of public schools. These concepts do have a place in a holistic transportation environment; however, they can also have impacts and are noted below separately:

Review and provide comments on the vision, goals, policies and design guidelines of the Pedestrian Master Plan

Lowered Speed Limits around Schools

Speeding around schools was a common concern mentioned during the suggested route to school map (SRTS) outreach. Parents and students have mentioned they would consider walking or biking to school if the speed limits were lowered around schools. California Vehicle Code (CVC) Section 22538.4 provides the parameters for local agencies to lower speeds around schools. The plan recommends considering lowering speed limits around schools within the parameters of the CVC.

Neighborhood Gateways/Pocket Parks

Integrating open space or open pedestrian facilities into neighborhood gateways or pocket parks are good design concepts to inspire walking and identity of a neighborhood. It can also be an effective way to reclaim unused space or unnecessarily wide asphalt to improve or add walking space.

Parking Policies

During the Plan's outreach efforts, the project team repeatedly heard that vehicles parked on the shoulder force pedestrians to walk in the street. This is especially true for narrow streets and along routes to school. Communities with similar characteristics have tried parking policies where parking is restricted during the morning commute times to school to ensure that space is given to school commutes. This can also be a benefit to the recreational walker, many of whom do their walking at the same time.

Walkways within a Quarter Mile of School Boundaries

During the SR2S map outreach, parents and students expressed concern about walking on the shoulder and walking in the street to access the school. Many have expressed that they are hesitant to walk to school because there aren't any sidewalks or walkways. A fundamental key in reducing congestion at schools is to encourage parents and students to access school via alternate modes. The implementation of walkways to schools can help reduce vehicle congestion and further encourage walking. In Los Altos, not all streets within a quarter-mile of school boundaries are suited for walkways. Further evaluation of available street right-of-way widths and local parking situations will help determine if a walkway is suitable.

Summary

Staff is seeking comments on the Pedestrian Master Plan sections pertaining to the vision, goals policies and the design guidelines. These sections work jointly to give guidance in developing pedestrian improvements in Los Altos. The comments received will be included as part of the revision to the Plan.

PUBLIC CONTACT

Posting of the meeting agenda serves as notice to the general public.

FISCAL/RESOURCE IMPACT

None

ENVIRONMENTAL REVIEW

Categorically Exempt pursuant to CEQA Section 15061 (b) (3)

Review and provide comments on the vision, goals, policies and design guidelines of the Pedestrian Master Plan

RECOMMENDATION

Review and provide comments on the policies and design guidelines of the Pedestrian Master Plan

ALTERNATIVES

No viable alternatives identified

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ATTACHMENTS:

1. Chapter 2 – Vision & Goals
2. Chapter 5.1 and 5.2 – Pedestrian Network Improvements – Policy Recommendations
3. Appendix A – Pedestrian Design Guidelines

2. Vision & Goals

The vision, goals, and policies presented in this chapter are drawn largely from the *Los Altos General Plan*, which contains numerous policy statements that are supportive of walking. All recommendations contained within the Pedestrian Master Plan process flow from the vision, goals, and policies. This overall policy framework guides and supports the specific implementation actions identified in the Plan.

2.1. Vision Statement

The vision statement expresses what walking will be like in Los Altos in the future if the city successfully implements this *Pedestrian Master Plan*. The vision statement is:

Los Altos is a walkable city where people of all ages and abilities easily, comfortably, and safely walk to downtown, neighborhood commercial centers, schools, parks, community amenities, transit services, and neighboring cities. As a viable travel mode, high rates of walking help reduce traffic congestion and the impacts of transportation on the environment. Recreational and social walking opportunities are provided in all areas of the City by a strategic and accessible network of walkways that connect neighborhoods and promote healthy, active lifestyles. A variety of context-sensitive walkway designs maintains and reflects the unique character of the city, whether it be a wooded, quiet residential neighborhood, downtown, or village commercial/mixed-use areas.

2.2. Goals and Policies

Goals expand on the vision with more detail, while policies provide more specific direction to implement the goals. The goals and policies identified here are drawn and expanded from the *General Plan's* Circulation Element (noted with the specific *General Plan* Goal and Policy numbers), the Los Altos Bicycle Transportation Plan (2012), and relevant regional and state policy priorities that emphasize integrated, multi-modal transportation planning that encourages viable travel alternatives to the automobile. More detail on these plans is provided in Appendix B.

Proposed additions to the existing General Plan policies are underlined and proposed deletions are struck through.

2.2.1 Goal 1: Routinely plan for pedestrian accommodation and facilities that serve people of all ages and abilities.

Policies/Actions:

- PL.1 The planning, funding, design, construction, operation, and maintenance of city streets shall be based on a "Complete Streets" concept that enables safe, comfortable, and convenient access and mobility for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.

- PI.2 When constructing new or renovated pedestrian and multi-use facilities, seek to go beyond the minimum design requirements where feasible in order to accommodate people of all ages and abilities, including people too young to drive, people who cannot drive, and people who choose not to drive. ¹
- PI.3 Update and expand the City's intersection evaluation and traffic impact analysis (TIA) methodologies to include pedestrian/non-motorized data collection and performance criteria, consistent with the most recent Highway Capacity Manual (HCM2010) and related best practices.
- PI.4 Work with the school districts and community organizations to create a Safe Routes to School program to help ensure students are able to safely walk (and bicycle) to and from school. [General Plan Circulation Element Policy 4.3]

PI.5 Implement universal design features and the City's ADA Transition Plan, as it relates to public rights-of-way, including curb ramps, accessible signals, crosswalk markings, and other infrastructure programs. Update the ADA Transition Plan as needed to reflect state-of-the-practice design guidelines and regulations.



Figure 2-1: Loyola Corners Shopping Center

- PI.6 Ensure specific recommendations and design guidelines from the Pedestrian Master Plan are considered as part of the City's formal residential single-family and commercial/multi-family housing design review processes. [More specifically supports General Plan Circulation Element Policy 2.6]
- PI.7 Continue to support regular meetings of the City's Bicycle and Pedestrian Advisory Commission (BPAC) to review projects, plans, policies, and data updates that relate to or impact pedestrian travel and accessibility.

2.2.2 Goal 2: Develop a network of safe, convenient, and context-sensitive pedestrian facilities that connect residents to all community destinations (parks, shopping, schools, etc.), transit services, and neighboring communities.

Policies/Actions:

- P2.1 Provide for safe and convenient pedestrian connections to and between Downtown, other commercial districts, neighborhoods, schools, City parks, recreational facilities and major activity centers within the City, as well as with surrounding jurisdictions. [Modified from General Plan Circulation Element Policy 4.2]
- P2.2 Provide trails, sidewalks or separated pathways for improved school access, as well as in areas where needed to provide safe bicycle and pedestrian access to schools expected to serve other potentially

¹ As specifically encouraged by the United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation, Regulations, and Recommendations (signed March 2010).

vulnerable and mobility-challenged populations, such as near senior facilities (including housing), parks, community services, medical/health facilities, and bus stops.

[Modified from General Plan Circulation Element Policy 4.4]

- P2.3 ~~Consider~~ Provide separated bicycle and pedestrian pathways along arterial and collector roadways, with consideration of such facilities on both sides of the street whenever practical.

[Modified from General Plan Circulation Element Policy 4.5]

- P2.4 Continue to identify and promote a Suggested Routes to School network and provide enhanced design guidelines and prioritization of these corridors.

- P2.5 Pursue potential rights-of-way such as Santa Clara Valley Water District and other utility easements for bicycle and pedestrian trail development when opportunities arise.

[General Plan Circulation Element Policy 4.6]

- P2.6 Cooperate and collaborate with adjacent jurisdictions to provide appropriate roadway transitions and street design, including pedestrian infrastructure.

[Modified from General Plan Circulation Element Policy 2.7]

- P2.7 Establish priorities for bicycle and pedestrian improvements commensurate with the volume of vehicular traffic and include those priorities when funding transportation related projects.

[General Plan Circulation Element Policy 4.7]

2.2.3 Goal 3: Focus investments that improve pedestrian safety by reducing risk factors, such as vehicle speeds, crossing distance and conflict points, and by increasing education and awareness among all roadway users.

Policies/Actions:

- P3.1 Staff will be trained in the latest design and operational best crash-reduction practices.

- P3.2 Work with neighboring cities and other jurisdictions to provide safe and adequate pedestrian and bicyclist crossings along major roadways to minimize impediments caused by vehicular traffic, especially along major roadways such as El Camino Real, Foothill Expressway, San Antonio Road, and Grant Road.

[General Plan Circulation Element Policy 4.8]

- P3.3 Achieve traffic volumes and speeds on collector and local streets that are compatible with the character of the adjacent land uses, the function of the street, and bicycle and pedestrian traffic.

[General Plan Circulation Element Policy 2.11]

- P3.4 Implement the Neighborhood Traffic Management Program and related traffic calming measures to reduce the speed and volume of traffic on local streets within the community, especially in residential areas and adjacent to schools.

[General Plan Circulation Element Policy 2.16]

- P3.5 Narrow street segments and intersection approaches at appropriate locations to improve pedestrian safety and reduce travel speeds.

[General Plan Circulation Element Policy 2.19]

P3.6 Continue to work with the Police Department to promote compliance with traffic laws to improve the safety of the local roadway system.

[General Plan Circulation Element Policy 2.2I]

P 3.7 Evaluate and improve existing and proposed uncontrolled marked crosswalks with the purpose of improving pedestrian safety and, in doing so, enhance pedestrian accessibility and mobility.

P 3.8 Prioritize investment around each school in Los Altos, such that every street with sufficient width within a half-mile of every school in Los Altos has a dedicated walkway on at least one side of the street.

P 3.9 Prioritize investment on all arterials, collectors, and neighborhood collector streets in Los Altos for dedicated walkways on both sides of the street.



Figure 2-2: Crosswalk on El Monte Road by Almond Elementary

2.2.4 Goal 4: Increase pedestrian mode share for all types of local trips in order to reduce transportation-related greenhouse gas emissions, congestion, and parking demand.

Policies/Actions:

P4.1 Annually monitor progress towards implementing the Pedestrian Master Plan with a specific focus on local vehicle trip reduction by 2020.

[Climate Action Plan Action Item 1.1.B]

P4.2 Support local events to raise awareness about school commutes, including events at local schools.

[Climate Action Plan Action Item 1.1.C]

P4.3 Continue to pursue and implement Safe Routes to School projects.

[Climate Action Plan Action Item 1.1.D]

P4.4 Develop and utilize a Complete Streets checklist for all major capital projects and maintenance programs to implement traffic calming plans and projects.

[Climate Action Plan Action Item 1.1.E]

P4.5 Encourage City employees to use non-motorized transportation, such as walking or bicycling, when conducting off-site City business.

[Climate Action Plan Action Item 5.2.B]

P4.6 Develop City-sponsored programming and materials that increase public awareness of available facilities for safe walking, such as a walking map, walking tours of the city, street fairs, and pedestrian safety pamphlets, and promote these materials on the City website and at special events.

- P4.7 Develop parking restrictions along identified suggested Safe Routes to School walking routes, in effect during morning drop-off periods (typically from 7AM to 9AM). Develop a year-long pilot-program at a single school, selected in joint cooperation with the Los Altos School District, with results measured and analyzed before a possible citywide program expansion.

5. Pedestrian Network Improvements

The following chapter presents recommended pedestrian network improvements. Recommendations were identified through community input, City staff, and the Needs Analysis Chapter. Proposed improvements are intended to make walking trips more comfortable, enjoyable, and safer for pedestrians of all ages and abilities and all trip purposes.

This chapter presents the following improvement types:

- **Policy Recommendations** outline recommended approaches and guidelines for future pedestrian projects.
- **Citywide Recommendations** identify universal pedestrian improvements that can be made across Los Altos, not specific to certain locations. Further study may be required to implement some recommendations in this section.
- **Site-Specific Projects** identify potential improvements at specific locations. These locations include intersection, crossing, streetscape, and placemaking recommendations. Further study may be required to implement recommendations in this section.
- **Priority Project Concept Sheets** provides examples of potential design approaches which the City could take when planning and designing improvements for key intersections and corridors.

Detailed recommendations for SRTS improvements are found in Appendix E: Suggested Routes to School Report and are cross-referenced in the corridor, intersection and spot recommendations. The full Design Guidelines can be found in Appendix A.

5.1. Policy Recommendations

5.1.1 Sidewalk Standards

Standardizing streetscape design by land use can ensure that future development of public rights-of-way in Los Altos' residential, commercial, and mixed use areas meet the City's vision for vibrant, healthy pedestrian environments. The Pedestrian Design Guidelines (see Appendix A) present sidewalk types for residential, commercial, and mixed use land uses.

Recommendations

- In areas zoned "Commercial Thoroughfare" adopt a walkway width standard of 12 feet or more to provide a minimum eight-foot walk zone and four-foot landscape/furnishing zone
- Consider adopting a six-foot minimum walkway width standard for new residential development
- Discourage curvilinear sidewalks with new developments, unless the design is necessary for tree preservation or otherwise to avoid features that greatly impact feasibility and cost
- Adopt the following policy regarding the installation of sidewalks near schools:
 - Sidewalks and/or paths shall be installed on at least one side of existing streets on identified Suggested Routes to School.

5.1.2 Walkway Reconstruction and Maintenance

Improving existing walkways where high usage and ADA accessibility warrant upgrades is just as important as expanding the pedestrian network. Efforts to improve and widen shoulders with repaving, and/or to identify and remove select barriers on existing shoulders is a valid strategy for enhancing the pedestrian environment where dedicated facilities are infeasible or impractical.

Recommendations

- Adopt a policy to repave and widen existing walkways, where feasible, per recommended sidewalk standards based on land use
- Improve education and enforcement efforts related to existing private property vegetation management code requirements as a prudent, cost effective way to improve ADA accessibility
- Increase CIP funding and expand to cover a wider range of walkway enhancement activities (CIP currently includes \$200,000 annually for repair of concrete sidewalk and curb/gutter).

5.1.3 Citywide Signal Timing

Traffic signal timing is the amount of time each phase of a signal is allotted for vehicles, bicycles, and pedestrians to cross. The City of Los Altos currently employs a standard walking speed of 3.5 feet per second, in compliance with the 2014 *California Manual on Uniform Traffic Control Devices* (CA MUTCD) and the *National MUTCD*. Additional signal timing considerations should be given in the following situations. Each of the policy recommendations below would be subject to future study.

Leading Pedestrian Interval (LPI)

A lead pedestrian interval is a tool where traffic signals are programmed to give pedestrians a walk indication before vehicles receive the green light to proceed. Crossing with this “head start” allows pedestrians to be more visible to motorists approaching the intersection. LPI signal timing typically allows pedestrians to start 2-4 seconds before vehicles, and is appropriate at any signalized location with significant volumes of turning vehicles.

No Right Turn on Red Restrictions

Right turn restrictions can be limited to “When Children Are Present” signage for important school routes, or may be electronic overhead signage that remains dark until actuated by a pedestrian push button (or other on-demand detection method). Figure 5-1 shows both an LPI and a right turn restriction.



Figure 5-1: Lead Pedestrian Interval and "No Right on Red" Intersection

Signal Timing near Senior Living Facilities and Schools

The US Department of Transportation (US DOT) and the Federal Highway Administration (FHWA) recommend in the *Older Driver Highway Design Handbook* a signal timing of 2.8 feet per second to accommodate older pedestrians.¹ The FHWA² and the MTC³ also recommend a slower crossing rate where concentrations

¹ FHWA Older Driver Highway Design Handbook. www.fhwa.dot.gov/publications/research/safety/97135/recl.cfm#n

² FHWA Traffic Signal Timing Manual, Section 5.3 Pedestrian Timing Intervals. ops.fhwa.dot.gov/publications/fhwahop08024/chapter5.htm.

³ MTC Safety Toolbox: Engineering, Signal Timing for Pedestrians. www.mtc.ca.gov/planning/bicyclespedestrians/tools/signalTiming/index.htm.

of children are expected. The 2014 CA MUTCD permits the use of a signal timing of 2.8 feet per second where older or disabled pedestrians routinely use the crosswalk.

Recommendation

- Study Leading Pedestrian Intervals for intersections with significant pedestrian and vehicle turning volumes. Prioritize installation in school zones.
- Study right turn on red restrictions for intersections with significant pedestrian and vehicle turning volumes. Prioritize installation in school zones.
- Adjust signal timing within an eighth of a mile (660 feet) of priority community centers, senior living facilities, and schools to 2.8 feet per second.

5.1.4 Green Infrastructure and Low Impact Development

Designs that collect, slow down, and recharge storm water back into the ground, or filter before entering the drainage pipe system, are known as 'green' infrastructure or Low Impact Development (LID). Integrating LID and Suggested Routes to School improvement priorities can create multi-faceted, sustainable projects that can attract community attention and offer teaching/volunteer maintenance opportunities for students.

Recommendations

- Incorporate green infrastructure and LID treatments on alternative walkways in Los Altos.
- Consider integrating LID treatments on routes where children access school grounds.

5.1.5 Development Review Process

The current design review process for single-family residential development and reconstruction does not specifically address planned or prioritized walkway design.

Recommendations

- Update the neighborhood design review checklist and training plan reviewers on best practices or unique designs treatments identified for Los Altos.

5.1.6 Alternative Use of Parking Stalls

Many communities allow for the flexible use of parking areas adjacent to sidewalks. This strategy increases sidewalk width for amenities and improves the business environment at little cost to the City. Parklets and flex zones, as low-cost alternatives to curb extensions, can be sponsored and implemented by community benefit districts, business owners, non-profit institutions, and community organizations. See Appendix A for design guidelines and implementation steps.

Recommendations

- Consider a permit process for parklets and modify the City's encroachment permit process to outline the steps needed to receive a permit.
- Consider designating and funding flex zones within Plaza parking lots

5.1.7 Curb Extensions

Curb extensions are an effective method to improve pedestrian visibility and reduce pedestrian crossing time. Curb extensions, as shown in Figure 5-2, extend the sidewalk or curb line out into the parking lane, reducing the effective street width. Details on curb extensions are included in Appendix A: Design Guidelines.

Recommendations

- Adopt a policy to install curb extensions at uncontrolled marked crosswalks citywide where feasible.
- Prioritize installation of curb extensions at the locations presented in Table 5-4. The locations were selected based on a number of factors, including pedestrian related collision history, vehicle volume, and pedestrian demand.



Figure 5-2: Curb extensions with landscaping

5.1.8 Pedestrian Refuge Islands

Pedestrian refuge islands, as seen in Figure 5-3, are raised islands in the middle of the roadway that create a protected space where people may safely pause or wait while crossing a street. Raised pedestrian refuge islands can be provided in painted center medians, transit boarding islands, and corner islands. Design guidelines for pedestrian refuge islands can be found in Appendix A: Design Guidelines.

Recommendations

- Institute a policy to install pedestrian refuge islands at crosswalks across streets of 60 feet width or greater
 - Promote accessible pedestrian refuges on new and existing center medians



Figure 5-3: Pedestrian refuge island (Source: Google)

5.1.9 High Visibility Crosswalks



Figure 5-4: High visibility crosswalk in Oakland, CA

High visibility crosswalks are typically used where there is existing or anticipated high pedestrian activity, where slower pedestrians are expected, at uncontrolled crossings, and where high numbers of pedestrian related collisions have occurred. Figure 5-4 shows an intersection in the Chinatown neighborhood of Oakland, CA with a design that fits the character of the neighborhood. Design guidance for high visibility crosswalks is provided in Appendix A: Design Guidelines.

Recommendations

- Adopt a single high visibility crosswalk design. This Plan recommends the continental crosswalk as the standard.

5.1.10 Advance Stop Bars & Yield Lines

Advance stop bars are placed in advance of marked crosswalks at stop controlled or signalized intersections. Advance yield lines indicate the point where vehicles should yield at uncontrolled locations. Design guidance for advance yield lines (see Figure 5-5) and advance stop bars (seen in Figure 5-6) can be found in Appendix A: Design Guidelines.



Figure 5-5: Advance yield lines



Figure 5-6: Advance stop bar from Santa Barbara

Recommendations

- Adopt a policy to incorporate advance stop bars at intersections with high pedestrian activity and those with a history of pedestrian related collisions.
- Adopt a policy to incorporate advance yield lines at all midblock uncontrolled marked crossings.
- Prioritize advance stop bars at all stop controlled or signalized intersections in Downtown and along retail corridors.

5.1.11 Flashing Beacons & Devices

The City currently uses in-pavement flashers at priority uncontrolled crosswalks. Based on community feedback, these crossings are less visible in daylight and can pose maintenance issues. Studies show pedestrian crossing beacons improve driver yield rates and reduce the number of pedestrian related collisions at higher rates than in-pavement flashers.⁴

⁴ FHWA. *Safety Effectiveness of the HAWK Pedestrian Crossing Treatment*. July 2010.

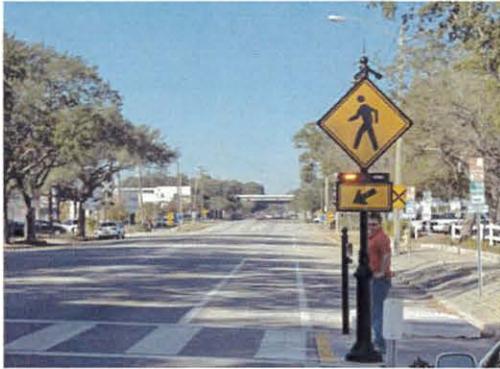


Figure 5-7: Rectangular rapid flashing beacon

Rectangular rapid flashing beacons (RRFB), as seen in Figure 5-7, approved for use at uncontrolled pedestrian and school crosswalk locations⁵, are pedestrian actuated devices mounted adjacent to the roadway that flash in an alternating pattern when activated.

Pedestrian hybrid beacons, also known as HAWK (High intensity Activated crossWalk) signals hang over the roadway like a traffic signal and flash when activated. Pedestrian hybrid beacons have been approved by the Federal Highway Administration (FHWA) and incorporated into the 2012 CA MUTCD.

Recommendations

- Discontinue in-pavement flashers in favor of an adopted policy preference for rectangular rapid flashing beacons.
- At existing uncontrolled crosswalks and future potential midblock crossings of El Camino Real, RRFB's may not provide sufficient protection while crossing the street. At such locations, a pedestrian hybrid beacon should be considered.

5.2. Citywide Recommendations

Following are general recommendations for best practices infrastructure improvements to benefit pedestrians. More detailed descriptions of individual infrastructure recommendations are contained in the Appendix A: Design Guidelines. Site-specific recommendations for infrastructure improvements are contained in section 5.3 of this chapter.

5.2.1 Pedestrian Scale Lighting

Pedestrian scale lighting is a category of lighting with frequent lampposts of lower height that illuminate the pedestrian walking area. Combined, street and pedestrian lighting increase visibility of pedestrians at night, promote perceived security for pedestrians, illuminate potential hazards, and can help create a vibrant and inviting streetscape.

Recommendation

- Prioritize pedestrian scale lighting in locations and pedestrian corridors near retail, transit and other civic facilities.

5.2.2 Lowered Speed Limits

New California law expands coverage and reduces possible speed limits for conditional school speed zones on residential streets with a total of no more than two vehicle travel lanes and an existing posted speed limit no greater than 30 mph. Speed limits within 500 feet of a school can be as low as 15 mph when children are

⁵ Approval number IA-11-83-RRBF-California Statewide.

present, and limits between 500 to 1,000 feet can be 25 mph – without the need for an approved Speed & Engineering Survey⁶.

Implementation of reduced school speed limits can occur on an individual site basis, but is recommended as a City-wide project due to the need for City Council resolution adopting such standards, and for tandem public education and outreach. Figure 5-8 documents the possible range of 15mph and 25mph conditional speed limits for schools in Los Altos.

Recommendations

- Adopt a resolution allowing City Transportation staff to consider conditional speed limits of 15-20 mph on Suggested Routes to School corridors within 500 feet of school grounds, and 25mph conditional speed limits within 1,000 feet if applicable/advantageous for enforcement.
- Analyze 85th percentile speed limits for key school routes on local streets to supplement speed data for collector arterials.

⁶ Additional interpretation of the AB321's impacts is recommended to confirm enforcement issues.

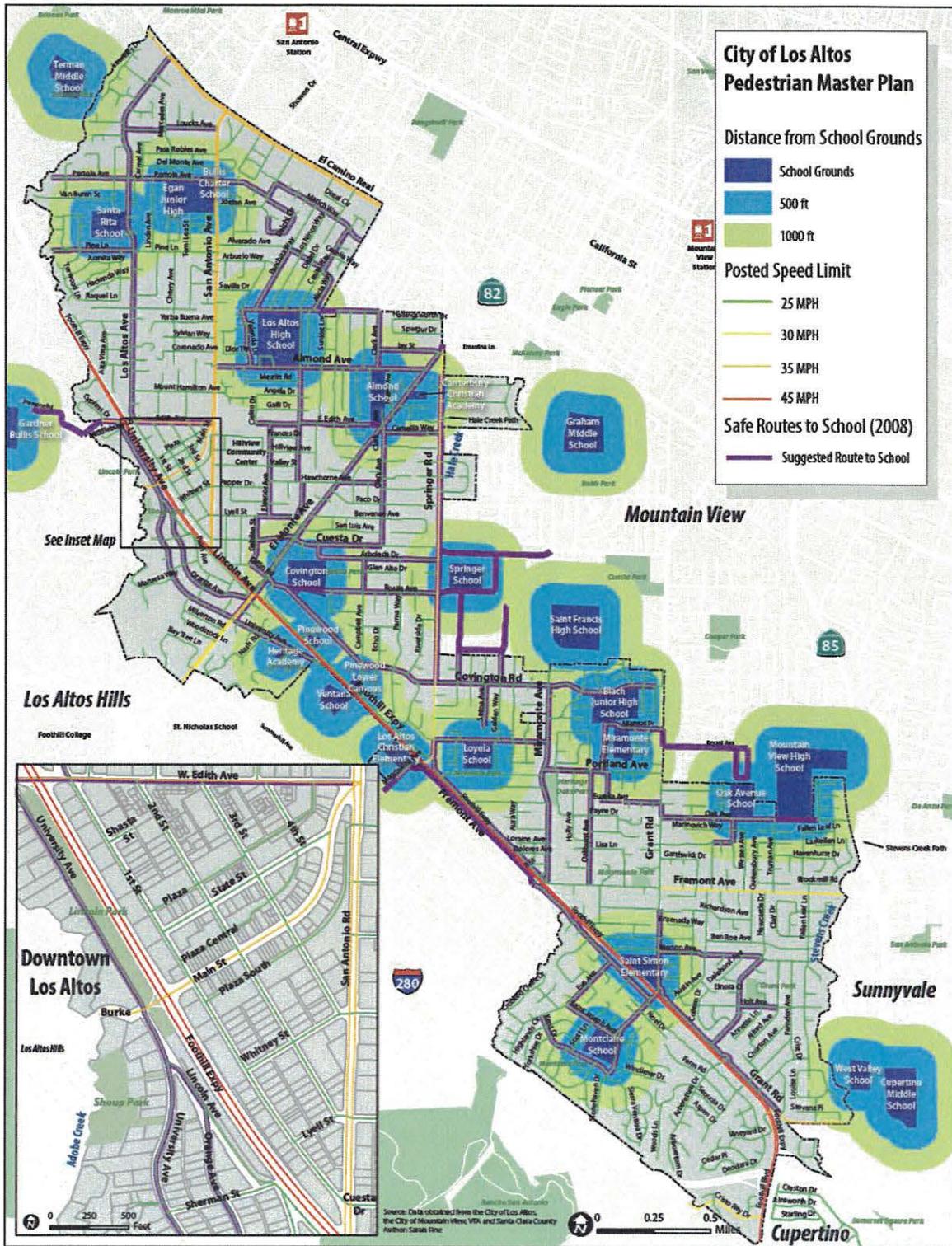


Figure 5-8: Potential areas for reduced speed limits around schools

5.2.3 Curb Ramps



Figure 5-9: Perpendicular curb ramp in San Francisco, CA

As part of the City's development of its ADA Transition Plan, the City has an established plan to install curb ramps throughout Los Altos as seen in Figure 5-9.

Recommendations

- Adopt perpendicular curb ramps as the City's preferred standard and install curb ramps citywide.
- Install perpendicular curb ramps on community identified locations and City collector and arterial streets. Priority should be given to locations near senior facilities.
- Install truncated domes at curb ramps on all Tier 1 corridor improvement projects.

5.2.4 Slip Lane Refuge Islands

Intersection slip lanes in Los Altos, free flowing lanes of right-turning vehicle traffic, often do not include warning signage or high-visibility crosswalks. The triangular median refuges are often too small for pedestrian comfort, and most slip lane approaches encourage drivers to accelerate into the area where pedestrians must cross. Where slip lanes remain necessary for vehicular access, design may be improved to reduce pedestrian stress and increase accessibility (see Figure 5-10).

Recommendations

- Consider curb extensions with minimized turning radii in lieu of slip lane refuge islands.
- Where slip lanes are appropriate, provide enhanced treatments such as raised crosswalks, warning signage (for pedestrians or combined pedestrians/bicycles), bollards (with or without lighting), and appropriate geometrics that provide proper crosswalk visibility.
- Work with Santa Clara County and Caltrans to waive inside shoulder requirements for slip lanes in favor of greater refuge space or increased barrier protection.



Figure 5-10: Slip lane refuge island

5.2.5 Interim Improvement Strategies

Low-cost, interim tactics – such as hatched striping, asphalt berms, and soft-post delineators – can more quickly bring intersections into preferred geometries from a traffic operations standpoint, and increase the visual protection and separation of pedestrians at a fraction of the cost of solutions involving drainage impacts.



Figure 5-11: Temporary pedestrian improvements

Recommendations

- Consider low-cost improvements as appropriate to test geometric reconfigurations and/or provide interim solutions until funding or final design concepts can be secured.

5.2.6 Warning Signage

The 2014 CA MUTCD requires fluorescent yellow-green school signage, and allows such coloring for other pedestrian/bicycle signage to differentiate from other warning signs.

Recommendation

- Update school zone and crosswalk assembly signage to be more consistent with current standards.

5.2.7 Traffic Signals

Audible signals emit sounds to guide visually impaired pedestrians by indicating when to cross. Different audible signals are usually used to also indicate crossing direction. Sounds are activated by the pedestrian push button.

Signs such as the R10-3e at traffic signals with pedestrian countdown signal heads and push buttons inform pedestrians of when to cross the street so that they complete their crossing before the signal changes.

Recommendation

- Consider audible signals near senior centers and living facilities and near homes of those who are visually impaired. The current Draft PROWAG (Public Rights of Way Guidelines) include requirements for audible pedestrian signals at new and modified intersections.
- Install MUTCD sign R10-3e or other comparable sign immediately above or incorporated in pedestrian pushbutton units.

5.2.8 Pedestrian Wayfinding

Pedestrian wayfinding is the installation of directional signs identifying safe routes to access downtown, civic, transit, and neighborhood retail amenities. If uniquely designed to suit local character, wayfinding can become an important placemaking tool. The City of Los Altos currently has a wayfinding plan for downtown vehicular and parking access.

Recommendations

- Design a system of pedestrian and bicycle wayfinding to direct foot and bicycle traffic to important Downtown amenities and neighborhood commercial nodes.
- Expand the City's planned commercial wayfinding program (adopted in CIP) to include directional signage for key pedestrian and bicycle destinations/facilities

5.2.9 Neighborhood Gateways / Pocket Parks and Open Spaces

The value of integrated open space/pedestrian facilities and of smaller neighborhood parks is already established in the City of Los Altos' Capital Improvement Plan (CIP) and recently adopted Parks Master Plan. The City has also invested in downtown plaza enhancements and high-quality gateway monuments at major entrance points as a way to enliven commercial areas and the City's sense of identity.

Recommendations

- At the locations identified as Gateway opportunity areas, install amenities such as drinking fountains, seating, public art, and wayfinding.
- Provide gateways at multi-use path trailheads

5.3. Site-Specific Projects

Appendix A. Pedestrian Design Guidelines

The following pedestrian design guidelines provide design requirements intended to create inviting, walkable environments for pedestrians.

The design guidelines presented in this appendix are a combination of minimum standards outlined by the California Highway Design Manual's design guidelines and the 2014 CA MUTCD. The minimum standards for pedestrian facilities used in combination with the design recommendations for issues specific to Los Altos should provide the foundation for a safe, functional, and inviting pedestrian network.

Additional design guidance and details can be found in the following documents:

- California Manual on Uniform Traffic Control Devices (2014)
<http://www.dot.ca.gov/hq/traffops/engineering/mutcd/>
- Caltrans Highway Design Manual
<http://www.dot.ca.gov/hq/oppd/hdm/hdmtoc.htm>
- Caltrans Design Information Bulletins
<http://www.dot.ca.gov/hq/oppd/dib/dibprq.htm>
- Caltrans Standard Plans
http://www.dot.ca.gov/hq/esc/oe/project_plans/HTM/06_plans_disclaim_US.htm

This appendix is not intended to replace existing state or national mandatory or advisory standards, nor the exercise of engineering judgment by licensed professionals.

A.1. Sidewalk Standards - Introduction

Discussion

Sidewalks form the backbone of the pedestrian transportation network. Good street and sidewalk design can foster healthier communities by improving public safety, enhancing mobility, reducing environmental impacts, and building community character.

Sidewalks consist of one or several zones which include through, planter/furniture, frontage, and parking lane/enhancement zones. The zones are named for the primary activity that occurs in the zone. The widths of sidewalks determine the types of pedestrian elements that can be installed and affect the pedestrian activities that occur there. In residential areas, sidewalks four to six feet wide are likely appropriate. In commercial settings with a mix of uses, wider sidewalks are sometimes essential for high pedestrian traffic and/or to accommodate amenities such as street furniture or newspaper stands. Streetscape elements can vary from a simple landscape strip in a residential setting to many elements such as street trees, pedestrian lighting with banners, and benches in areas with larger pedestrian traffic

Figure A-1 describes the recommended sidewalk zones for Los Altos by street classification. The presence and width of each zone along a given sidewalk depends on the adjoining roadway type and transportation needs, surrounding land uses, and community needs and desires.

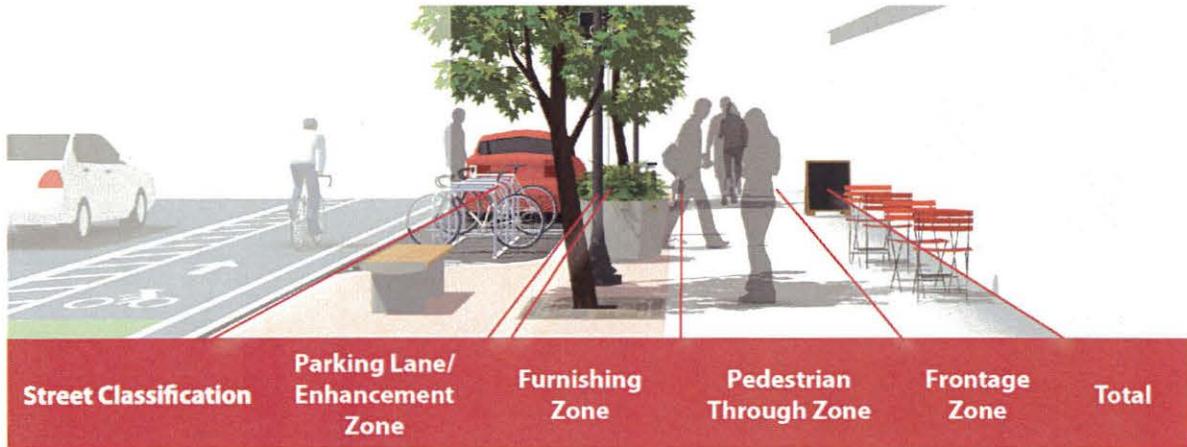


Figure A-1: Recommended sidewalk widths by street classification

A.2. Sidewalk Grade and Cross Slope

Sidewalk grade and cross slope affect user control, stability and endurance. Gentle grades are preferred to steep grades.

Design Summary

Grade

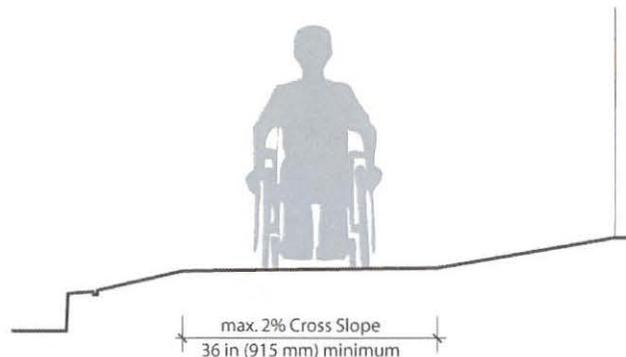
The grade of a sidewalk affects the issues of control, stability and endurance. Gentle grades are preferred to steep grades, allowing more people to go uphill, providing more control on the downhill, and minimizing loss of footing. The maximum grade of a sidewalk should be no more than 14 percent in any 2-foot section, while the running grade for a sidewalk should not exceed 5 percent.

The following terms apply to standards for grades:

- Grade is the slope parallel to the direction of travel.
- Running grade is the average grade along an entire continuous path.
- Maximum grade covers a section of the sidewalk that is larger than the running grade. It is measured over a two-foot section.
- Rate of change is the change of the grade over a distance of two feet.
- Counter slope is the grade running opposite to the running grade.

Cross Slope

- Cross-slope describes the angle of the sidewalk from the building line to the street, perpendicular to the direction of travel. All sidewalks require some cross-slope for drainage, but a cross-slope that is too great will present problems for people who use wheelchairs, walking aids, or who have difficulty walking but do not use aids. The maximum cross-slope should be no more than 2 percent (1:50) for compliance with ADA.
- If a greater slope is anticipated because of unusual topographic or existing conditions, the designer should maintain the preferred slope of 1:50 within the entire Through Passage Zone, if possible. This can be accomplished either by raising the curb so that the cross-slope of the entire sidewalk can be 1:50, or by placing the more steeply angled slope within the Furnishings Zone and/or the Frontage Zone.
- If the above measures are not sufficient and additional slope is required to match grades, the cross slope within the Through Passage Zone may be as much as 1:25, provided that a 3-ft wide portion within the Through Passage Zone remains at 1:50 cross slope.



Sidewalk cross slope should not exceed 2% to comply with ADA accessibility standards.

A.3. Sidewalk Materials

Sidewalks should be firm and stable, and resistant to slipping. Sidewalks are normally constructed out of Portland cement concrete. Although multi-use pathways may be constructed out of asphalt, asphalt is not suitable for sidewalk construction due to its shorter lifespan and higher maintenance costs.

Concrete is the most common surface for sidewalks; however, some sidewalks are designed using decorative materials, such as brick or cobblestone. Although these surfaces may improve the aesthetic quality of the sidewalk, they may also present challenges to people with mobility impairments. For example, tiles that are not spaced tightly together can create grooves that catch wheelchair casters.

Design Summary

Concrete

- Preferred material for use on standard sidewalks.
- Maintenance life: 75 years plus (with no tree root damage).

Concrete Pavers

- Acceptable material for use where aesthetic treatment is desired. May be best suited for the Furnishings Zone as streetscape accent where pedestrian through travel is not expected. Not recommended for use on sidewalk through-zone.
- Maintenance life: 20 years plus.

A.4. Sidewalk Furnishings

The furnishings zone is the area between the curb zone and the through passage zone, where pedestrians pass. The furnishings zone creates an important buffer between pedestrians and vehicle travel lanes by providing horizontal separation.

Design Summary

Width

A minimum width of 24 in (48 in if planting trees) is recommended (FHWA). On sidewalks of ten feet or greater, the furnishings zone width should be a minimum of four feet. A wider zone should be provided in areas with large planters and/or seating areas.

Transit Stop/Shelter Placement

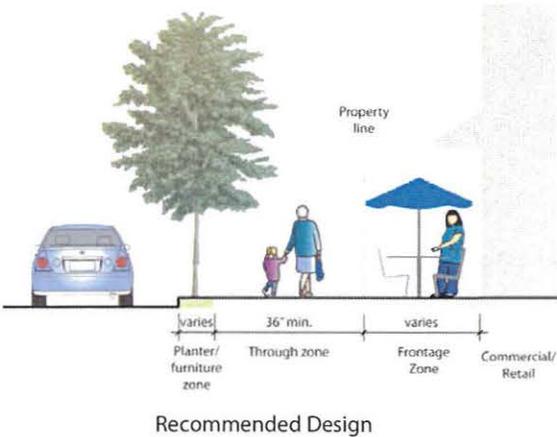
To discourage midblock crossings by pedestrians, bus stops at or near intersections are generally preferred to midblock crossings. An 8 foot by 5 foot landing pad must be provided. A continuous 8 foot pad or sidewalk the length of the bus stop, or at least from the front to rear bus doors, is recommended. At stops in areas without curbs, an 8 foot shoulder should be provided as a landing pad. Bus shelters should be provided where possible to provide visible, comfortable seating and waiting areas for pedestrians. Bus shelters must have a clear floor area of 2.5 feet by 4 feet, entirely within the perimeter of the shelter, connected by a pedestrian access route to the boarding area (AASHTO).

Street Trees and Plantings

Wherever the sidewalk is wide enough, the furnishings zone should include street trees. In order to maintain line of sight to stop signs or other traffic control devices at intersections, when planning for new trees, care should be taken not to plant street trees within 25 feet of corners of any intersection.

Street Furniture and Amenities

Street furniture should be placed in the furnishings zone to maintain through passage zones for pedestrians and to provide a buffer between the sidewalk and the street.



A.5. Rural Walkways

Recent design practices in providing safe pedestrian pathways in suburban-rural environments have demonstrated that dedicated pedestrian walkways need not be “traditional” concrete sidewalks with curb and gutter. Many treatments have successfully integrated soft surface trails, level asphalt pathways, planted bioswales and “green gutters” that help process stormwater run-off, and even low-cost berm-protected shoulders. The following are several examples of such treatments.

Berry Avenue

Los Altos, CA



The Berry Avenue multi-use path is one of three examples in Los Altos of a wide sidepath on a neighborhood roadway with a 3-4 foot natural buffer and a consistent, level asphalt surface. The path is also an example of a “one side of the roadway” path—there is no parallel path on the opposite side of Berry Avenue.



A.5.1. Rural Walkway – Decomposed Granite Path

West Fremont Avenue

Los Altos Hills, CA



As part of a Suggested Routes to School trail project, the Town of Los Altos Hills constructed a variety of trail surface and curb edge treatments to retain the rural character of the community along West Fremont Road. Notable elements include doweled woodblock curbing, drought-tolerant landscaping, and decomposed granite pathway surfacing.



A.5.2. Rural Walkway- Asphalt path

Springhill Road Pathway

Lafayette, CA



The City of Lafayette recently installed a pathway connecting homes along Springhill Road to Springhill Elementary School. The project underwent an extensive outreach process and redesign to accommodate opposition.

The asphalt pathway provides a safe route for students to walk to Springhill Elementary. A small vertical curb separates the roadway and the pedestrian pathway, and natural surfaces separate the pathway and property lines. Some segments of the pathway feature decorative pavers.



A.5.3. Rural Walkways – Asphalt Berm-Separated Walkway

Clark Avenue Asphalt Berm-Separated Walkway

Los Altos, CA



Clark Avenue is an important local roadway that links two collector arterials and provides access to multiple schools, including Los Altos High School. Although there is no rolled or vertical curb and gutter system, one side generally includes a paved shoulder with asphalt berm providing a low-cost, dedicated walkway area protected from traffic.



With additional attention to detail, this low-cost asphalt berm—installed as part of a traffic calming effort on Clark Avenue—may have also provided ADA access while improving safety for all users.

A.5.4. Rural Walkways – Green Streets

Logus Road Green Street

Milwaukie, OR



The Logus Road Green Street improvements were Milwaukie's first experiment with a "curbless" residential green street retrofit project. According to the project designers, Logus Road's "green gutter" system captures 20,000 square feet of run-off. Stormwater run-off is slowed, filtered, and infiltrated through the system of stormwater planters and pervious sidewalks. As shown in the images on the left, a slight vertical separation of the walkway is achieved via gentle cross slope within the landscaped "green gutter" system.

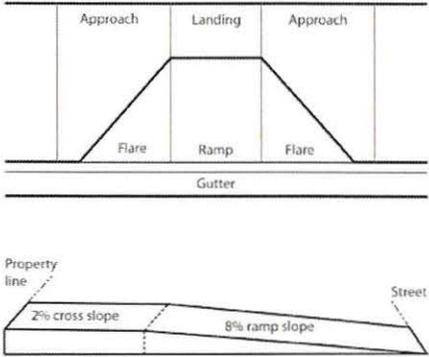
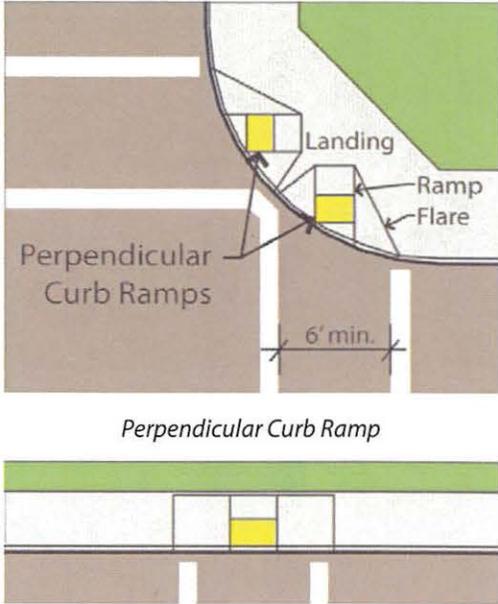
Green Street "Complete Street" Demonstration Project

Shoreline, WA

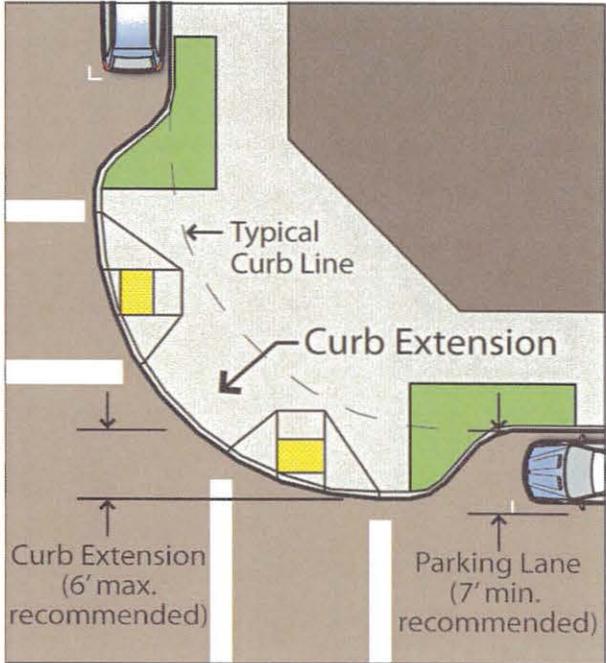


Combining a Community Development Block Grant and capital investment from the City of Shoreline, the Green Street "Complete Street" Demonstration Project used Low Impact Development (LID) design features to create both natural drainage solutions and safe access for pedestrians and bicyclists of all ages and abilities, while avoiding use of a concrete curb and gutter and retaining the street's rural character.

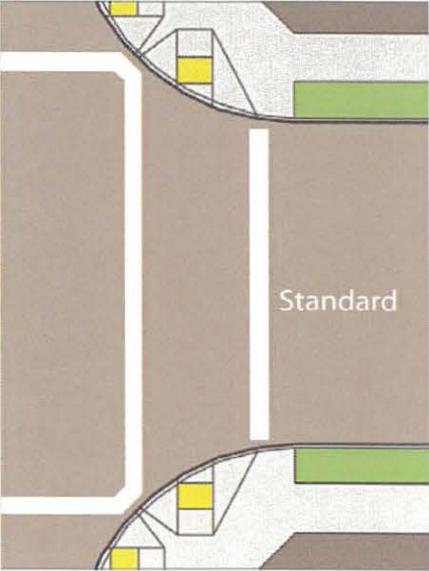
A.6. Curb Ramps

Discussion	Design Example
<p>Curb ramps are necessary for people who use wheelchairs to access sidewalks and crosswalks. ADA requires the installation of curb ramps in new sidewalks, as well as retrofitting existing sidewalks. Curb ramps may be placed at each end of the crosswalk (perpendicular curb ramps), or between crosswalks (diagonal curb ramps). The ramp may be formed by drawing the sidewalk down to meet the street level, or alternately building up a ramp to meet the sidewalk.</p>	 <p>The diagram illustrates the components of a curb ramp. The top part shows a cross-section with three main sections: 'Approach' on the left, 'Landing' in the middle, and 'Approach' on the right. Below these, the slope is labeled as 'Flare' for the approach sections and 'Ramp' for the central section. A 'Gutter' is shown at the bottom. The bottom part shows a side view of the ramp starting from a 'Property line' with a '2% cross slope' and transitioning to an '8% ramp slope' leading to the 'Street'.</p>
<p>Design Summary</p>	<p><i>Curb Ramp Elements</i></p>
<p>Orientation and Alignment Perpendicular curb ramps should be used at large intersections with consideration for curb radius. Curb ramps should be aligned with crosswalks, unless they are installed in as a retrofit and are in an area with low vehicular traffic.</p> <p>Width The minimum width of a curb ramp should be 36 inches, in accordance with Americans with Disabilities Act Accessibility Guidelines (ADAAG). Curb ramps should be designed to accommodate the level of use anticipated at specific locations, with sufficient width for the expected level of peak hour pedestrian volumes and other potential users.</p> <p>Drainage Adequate drainage should be provided to prevent flooding of curb ramps.</p> <p>Detectable Warnings Tactile strips must be used to assist sight-impaired pedestrians in locating the curb ramp. Certain exemptions apply (see ADAAG Section 4.29 and the ADA Access Board Guidelines on Accessible Public Rights of Way). Detectable warnings shall consist of raised truncated domes with a diameter of nominal 0.9 inches, a height of nominal 0.2 inches and a center-to-center spacing of nominal 2.35 inches and shall contrast visually with adjoining surfaces, either light-on-dark, or dark-on-light. The coefficient of friction of these plates should be at least 0.8 (ADAAG).</p>	 <p>The diagram shows two types of curb ramps. The top one is a 'Perpendicular Curb Ramp' shown in a cross-section. It features a 'Landing' area with a yellow tactile strip, a 'Ramp' section, and a 'Flare' section. A '6' min.' width is indicated for the ramp area. The bottom one is a 'Parallel Curb Ramp' shown in a cross-section, also featuring a yellow tactile strip on the ramp surface.</p>

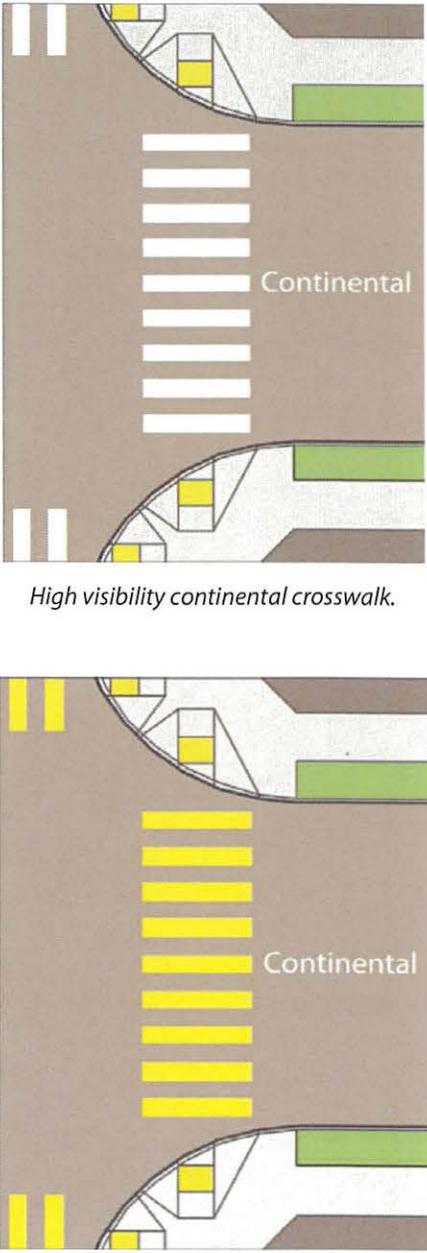
A.7. Curb Extensions

Discussion	Design Example
<p>Curb extensions are design elements that shorten pedestrian crossing distances and make the pedestrian more visible to roadway users. Curb extensions may be installed on one or both sides of a roadway. Curb extensions installed at alternating frequencies on both sides of a roadway create a “chicane” or “S” curve. Curb extension design should consider roadway drainage.</p>	 <p><i>Curb extensions can be used in a variety of locations to calm traffic speeds.</i></p>
<p>Design Summary</p> <ul style="list-style-type: none"> • Emergency vehicle operators should be consulted to ensure curb extensions do not negatively affect emergency response times. • Curb extensions should be designed so they allow buses to complete turning movements and load and unload passengers safely. • Mid-block installation with where pedestrians cross should consider raised crosswalks. • May be used where there is on-street parking. • Placement shall not encroach into bike lanes. • Placement may impact drainage, requiring storm drainage re-engineering. 	

A.8. Standard Crosswalks

Discussion	Design Example
<p>Crosswalk markings guide pedestrians across roadways by defining and delineating the path of travel. Crosswalk markings also alert motorists and bicyclists of a pedestrian crossing point across roadways not controlled by highway traffic signals or STOP signs. There are a several types of crosswalk markings, including standard (or transverse) markings. Crosswalks may be placed at intersections and at mid-block locations.</p> <p>The following factors should be considered when determining whether to mark a crosswalk at a particular location:</p> <ul style="list-style-type: none"> • Vehicular approach speeds from both directions. • Vehicular volume and density. • Vehicular turning movements. • Pedestrian volumes. • Roadway width. • Day and night visibility by both pedestrians and motorists. • Channelization is desirable to clarify pedestrian routes for sighted or sight impaired pedestrians. • Discouragement of pedestrian use of undesirable routes. • Consistency with markings at adjacent intersections or within the same intersection. <p>Motorists generally do not expect mid-block pedestrian crossings. Mid-block crossings are discouraged unless, in the opinion of the engineer, there is strong justification in favor of installation. Particular attention should be given to roadways with two or more traffic lanes in one direction as a pedestrian may be hidden from view by a vehicle yielding the right-of-way to a pedestrian.</p>	 <p style="text-align: center;"><i>Standard crosswalk.</i></p>
<p>Design Summary</p> <ul style="list-style-type: none"> • Standard crosswalk lines shall consist of solid white lines not less than 12 inches or greater than 24 inches in width. • The gap between the lines should not be less than 6 feet. • Marked crosswalks in a roadway contiguous to a school building or school grounds must be yellow. 	

A.9. High Visibility Crosswalks

Discussion	Design Example
<p>There are a number of types of high visibility crosswalks. This Plan recommends continental crosswalks as the City's preferred type. High visibility crosswalks should be used where there is existing or anticipated high pedestrian activity, where slower pedestrians are expected, at uncontrolled crossings, and where a high number of pedestrian-related collisions have occurred.</p> <p>Installation of high visibility crosswalks should be prioritized at the following location types:</p> <ul style="list-style-type: none"> • Senior living facilities and senior centers (within 1/8 mile) • Adjacent to school buildings and grounds • Retail corridors • High pedestrian related collision areas • Uncontrolled crossings <p>Retail corridors are places where there is existing and anticipated high pedestrian activity. The majority of pedestrian related collisions occurred Downtown and along El Camino Real, Alameda de las Pulgas, Delaware Street, East Poplar Avenue, and West Hillsdale Boulevard. The recommended locations for high visibility crosswalks are based on the collision data.</p>	 <p><i>High visibility continental crosswalk.</i></p> <p><i>High visibility school area continental crosswalk.</i></p>
<p>Design Summary</p>	
<ul style="list-style-type: none"> • Continental crosswalk markings are recommended for crosswalks within 1/8 mile of senior living and senior centers, adjacent to school buildings and grounds, retail corridors, high pedestrian related collision areas, at uncontrolled crossings. • Marked crosswalk in a roadway contiguous to a school building or school grounds be yellow. • Markings should be no less than six feet wide • All marked crosswalks at uncontrolled locations have high visibility striping. 	

A.10. Advance Stop Bars and Advance Yield Lines

Discussion

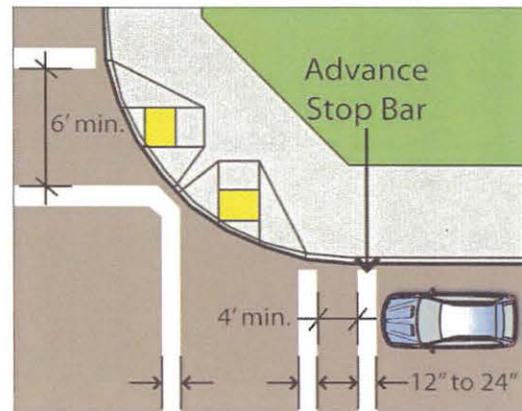
Advance stop bars and advance yield lines should be considered at crosswalks where additional space between crosswalks and stopped motorists is desired. Advance stop bars and advance yield lines increase pedestrian visibility by stopping motor vehicles in advance of marked crosswalks.

Advance stop bars consist of solid white lines extending across the approach lanes to indicate where vehicles should stop. Advance yield lines consist of a row of solid white isosceles triangles pointing toward approaching vehicles extending across approach lanes to indicate where vehicles should yield to pedestrians at uncontrolled locations. Advance yield lines should not place motorists in a position where sight lines are obstructed.

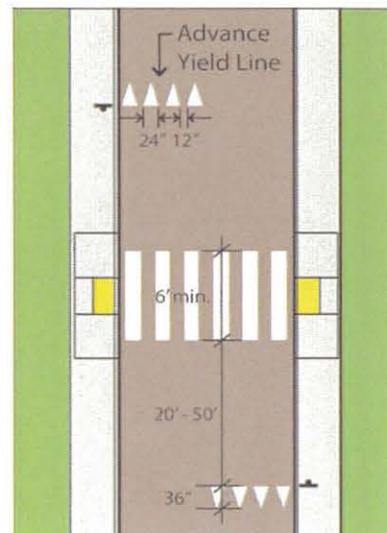
Design Summary

- Advance stop bars should be installed at all controlled intersections.
- Advance yield lines should be installed at all mid-block uncontrolled marked crossings.
- If used, advance stop bars and advance yield lines should be placed a minimum of 4 feet in advance of the nearest crosswalk line at controlled intersections, except for advance yield lines at mid-block crosswalks. In the absence of a marked crosswalk, the advance stop bars and advance yield lines should be placed at the desired stopping or yielding point, but should not be placed more than 30 feet or less than 4 feet from the nearest edge of the intersecting traveled way.
- At an unsignalized mid-block crosswalk, advance yield lines should be placed adjacent to the Yield Here to Pedestrians sign located 20 to 50 feet in advance of the nearest crosswalk line, and parking should be prohibited in the area between the advance yield line and the crosswalk.
- Advance stop bars at mid-block signalized locations should be placed at least 40 feet in advance of the nearest signal indication.

Design Example



Advance stop bars should be installed at least four feet in advance of a crosswalk at controlled intersections.



Advance yield lines should be installed 20-50 feet in advance of an uncontrolled crosswalk.

A.11. Uncontrolled, Mid-Block Crossing Placement and Design

Discussion

The National MUTCD requires yield lines and “Yield Here to Pedestrians” signs at all uncontrolled crossings of a multi-lane roadway. Yield lines are not required by the CA MUTCD but are permitted. The National MUTCD includes a trail crossing sign (W11-15 and W11-15P), which may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path.

The table at the end of A.16 is a summary for implementing at-grade roadway crossings. The number one (1) indicates a ladder style crosswalk with appropriate signage is warranted. (1/1+) indicates the crossing warrants enhanced treatments such as flashing beacons, or in-pavement flashers. (1+/3) indicates Pedestrian Light Control Activated (Pelican), Puffin, or Hawk signals should be considered.

Design Summary

Placement

Mid-block crosswalks should be installed where there is a significant demand for crossing and no nearby existing crosswalks.

Advance Yield Lines

See Section A.15.

Warning Signs

The Pedestrian Warning (W11-2) sign alerts the road user to unexpected entries into the roadway by pedestrians, and other crossing activities that might cause conflicts.

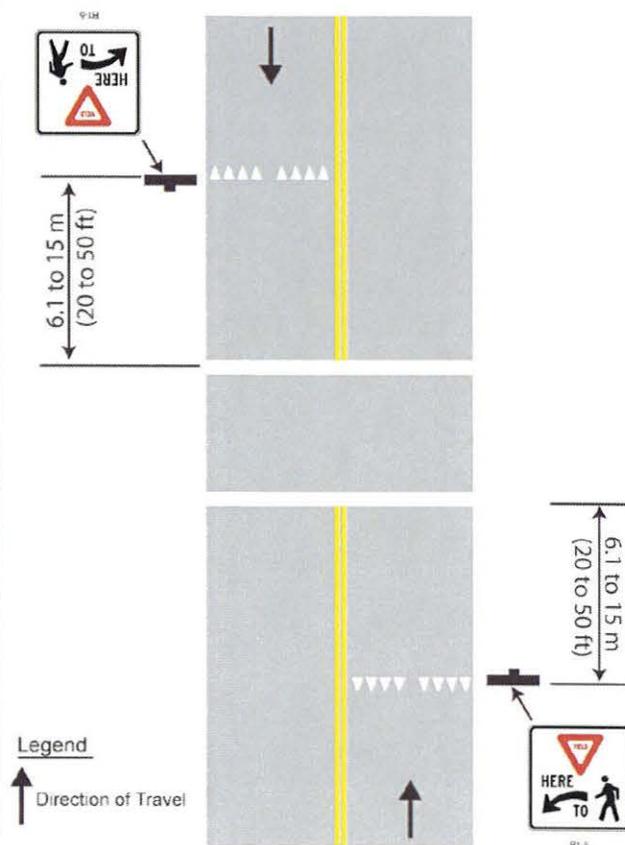
Pavement Markings

A high-visibility crosswalk should be used. Warning markings on the path and roadway should be installed.

Other Treatments

See table on the following page to determine if treatments such as raised median refuges, flashing beacons, or in-pavement flashers should be used.

Design Example



Source: California MUTCD, Figure 3B-15



CA MUTCD Regulatory Signs

Design Example	Recommended Design (continued)
	 <p>CA MUTCD Warning Signs (W11-2 and W16-7p)</p>  <p>CA MUTCD School Signs (S1-1 and W16-7p)</p>
Guidance	Cost
<ul style="list-style-type: none"> • Caltrans Highway Design Manual • MUTCD – California Supplement, Part 2 • FHWA Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations 	<p>\$3,500 (thermoplastic for crosswalk and yield lines, two advance warning signs, two warning signs at crosswalk, two curb ramps)</p>

Treatment Type by ADT and Speed Limits												
Roadway Type (Number of Travel Lanes and Median Type)	Vehicle ADT < 9,000			Vehicle ADT (> 9,000 to 12,000)			Vehicle ADT >12,000 to 15,000			Vehicle ADT > 15,000		
	Speed Limit**											
	<30 MPH	35 MPH	40 MPH	<30 MPH	35 MPH	40 MPH	<30 MPH	35 MPH	40 MPH	<30 MPH	35 MPH	40 MPH
2 Lanes	1	1	1/1+	1	1	1/1+	1	1	1+/3	1	1/1+	1+/3
3 Lanes	1	1	1/1+	1	1/1+	1/1+	1/1+	1/1+	1+/3	1/1+	1+/3	1+/3
Multi-Lane (4 or more lanes) with raised median***	1	1	1/1+	1	1/1+	1+/3	1/1+	1/1+	1+/3	1+/3	1+/3	1+/3
Multi-Lane (4 or more lanes) without raised median	1	1/1+	1+/3	1/1+	1/1+	1+/3	1+/3	1+/3	1+/3	1+/3	1+/3	1+/3

Appendix A | Pedestrian Design Guidelines

*General Notes: Crosswalks should not be installed at locations that could present an increased risk to bicyclists and pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone will not make crossing safer, nor will they necessarily result in more vehicles stopping for bicyclists and pedestrians. Whether or not marked crosswalks are installed, it is important to consider other facility enhancements (e.g. raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions), as needed, to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding which treatment to use. For each trail-road way crossing, an engineering study is needed to determine the proper location. For each engineering study, a site review may be sufficient at some locations, while a more in-depth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, etc. may be needed at other sites.

**Where the speed limit exceeds 40 MPH (64.4 km/h), marked crosswalks alone should not be used at unsignalized locations.

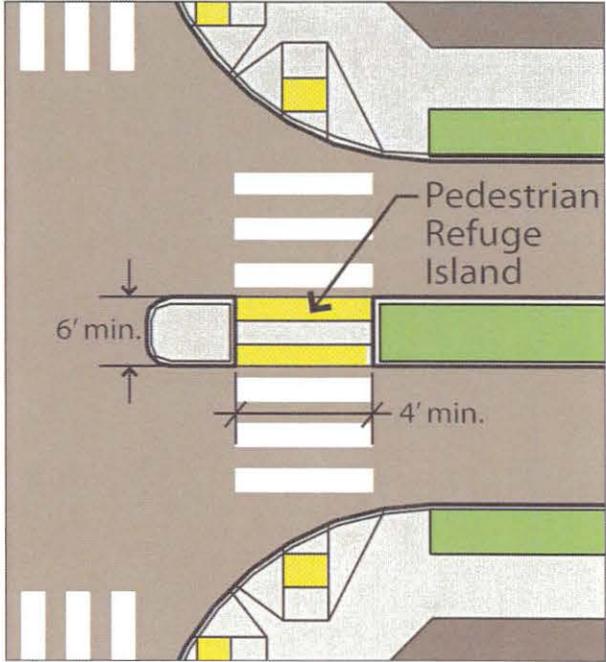
***The raised median or crossing island must be at least 4 ft (1.2 m) wide and 6 ft (1.8 m long) to adequately serve as a refuge area for pedestrians in accordance with MUTCD and American Association of State Highway and Transportation Officials (AASHTO) guidelines. A two-way center turn lane is not considered a median.

1 = Type 1 Crossings. Ladder-style crosswalks with appropriate signage should be used.

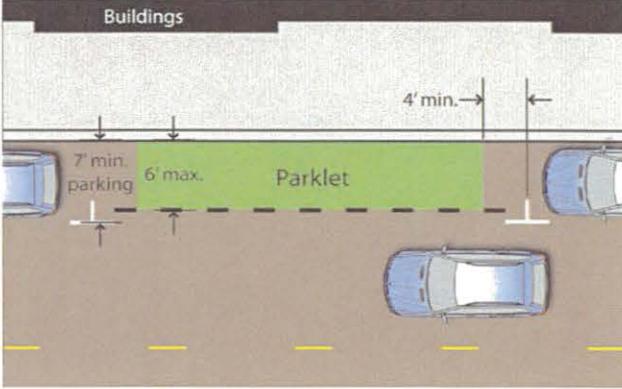
1/1+ = With the higher volumes and speeds, enhanced treatments should be used, including marked ladder style crosswalks, median refuge, flashing beacons, and/or in-pavement flashers. Ensure there are sufficient gaps through signal timing, as well as sight distance.

1+/3 = Carefully analyze signal warrants using a combination of Warrant 2 or 5 (depending on school presence) and equivalent adult units (EAU) factoring. Make sure to project usage based on future potential demand. Consider Pelican or Hawk signals in lieu of full signals. For those intersections not meeting warrants or where engineering judgment or cost recommends against signalization, implement Type 1 enhanced crosswalk markings with marked ladder style crosswalks, median refuge, flashing beacons, and/or in-pavement flashers. Ensure there are sufficient gaps through signal timing, as well as sight distance.

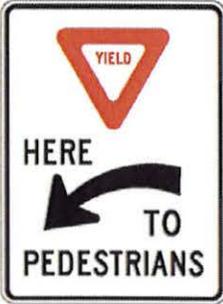
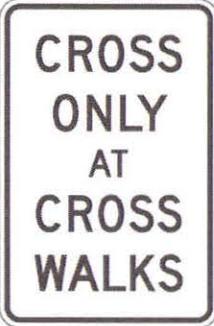
A.12. Pedestrian Refuge Island

Discussion	Design Example
<p>Pedestrian refuge islands are raised islands in the middle of the roadway that create a protected space where people may safely pause or wait while crossing a street. Pedestrian refuge islands should be placed at wide multi-lane roadways. Depending on the signal timing, median islands should be considered when the crossing distance exceeds 60 feet, but can be used at intersections with shorter crossing distances where a need has been recognized.</p> <p>Median “noses” provide additional protection for pedestrians crossing at intersections. Median noses can also prevent vehicles from encroaching into the refuge area when making left turns. However, median noses may not be feasible to install due potential to turning movement restrictions. The CA MUTCD, Caltrans Highway Design Manual, and the ADA Access Board Guidelines do not have any requirement for median noses to be installed at intersection refuge islands. Pedestrian warning signs should be installed in advance of the crosswalk.</p>	 <p style="text-align: center;"><i>Pedestrian Refuge Islands</i></p>
<p>Design Summary</p> <p>ADA Access Board Guidelines on Accessible Public Rights of Way has a section on median islands. The following guidelines are applicable:</p> <ul style="list-style-type: none"> • Medians and pedestrian refuge islands in crosswalks shall contain a pedestrian access route, including passing space connecting to each crosswalk. • Medians and pedestrian refuge islands shall be 6.0 ft minimum in length in the direction of pedestrian travel, wide enough to allow a sense of safety for pedestrians crossing the street. • Ramped up and cut-through refuge islands should be permitted. Factors to consider include slope, drainage and width of the island. Median curb ramps can add difficulty to crossing for some users. • Medians and refuge islands should have detectable warnings, with detectable warnings at cut-through islands separated by a 2-foot minimum length of walkway without detectable warnings. 	 <p style="text-align: center;"><i>Median “nose”</i></p>

A.13. Flex Use Space Parklets

Discussion	Design Example
<p>Parklets are the temporary repurposing and transformation of on street parking spaces to extend the sidewalk and create more space for pedestrian amenities or outdoor seating for adjacent restaurants and cafes. The spaces are often in the public right-of-way between the curb and travel lanes in commercial and retail areas. The parklets are intended to increase public space, enhance the pedestrian environment, and improve corridor aesthetics.</p> <p>Parklets should be implemented only in areas that have limited public space (e.g., narrow sidewalks or far from parks). The areas should have existing conditions that will attract people to the space, such as retail and high pedestrian activity. The following characteristics are recommended for parklet locations:</p> <ul style="list-style-type: none"> • Streets with speed limits under 25mph • Streets with parking lanes • Site is not in front of a fire hydrant or would restrict access to utility covers and valves • Site should be a minimum of two parking spaces or equivalent 	 <p style="text-align: center;">Parklet</p>
<p>Design Summary</p> <ul style="list-style-type: none"> • Maximum of six-foot width where there is parallel parking (angled parking areas should be considered on a case by case basis) • Deck should be flush with the curb, ½" gap maximum • Wheel stops should be placed four-feet from either end of the parklet and one-foot from the curb • Reflective hit-posts should be placed on the street side corners • Provide access to gutter area for cleaning • Provide access underneath the parklet for drainage • Outside or street side edge should be visually permeable, railing may be required • Public seating should be strongly encouraged. 	 <p style="text-align: center;">Parklet in San Francisco</p> <p style="text-align: center;"><i>Image source:</i> http://sfpavementtoparks.sfplanning.org/noe_valley_parklets.html</p>

A.14. Guidelines for Regulatory Signage

Discussion	Design Example
<p>Caltrans categorizes signs into regulatory, warning, and school signs. Regulatory signs inform road users of selected traffic laws or regulations and indicate the applicability of the legal requirements. Pedestrian regulatory signs govern pedestrian and motorist movements, such as "Yield Here to Pedestrians." The signs to the right provide examples of regulatory signs.</p>	 <p>R1-5</p>  <p>R1-5a</p>  <p>R1-6</p>  <p>R9-1</p>  <p>R9-2</p>  <p>R9-3</p>
Design Summary	
<ul style="list-style-type: none"> Regulatory signs shall be installed at or near where the regulations apply. Yield Here to Pedestrians signs should be installed at advance yield lines. In-street Yield to Pedestrian signs should be considered at non-controlled crosswalks where motorists frequently violate pedestrian right of way. In-street Yield to Pedestrian signs should be considered at non-controlled crosswalks where motorists frequently violate pedestrian right of way. 	

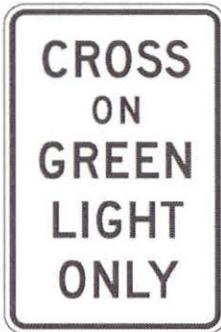
Design Example (continued)



R9-3a



R9-3b



R10-1



R10-2a



R10-3



R10-3a



R10-3b



R10-3c



R10-3d



R10-3e



R10-4



R10-4a



R10-4b

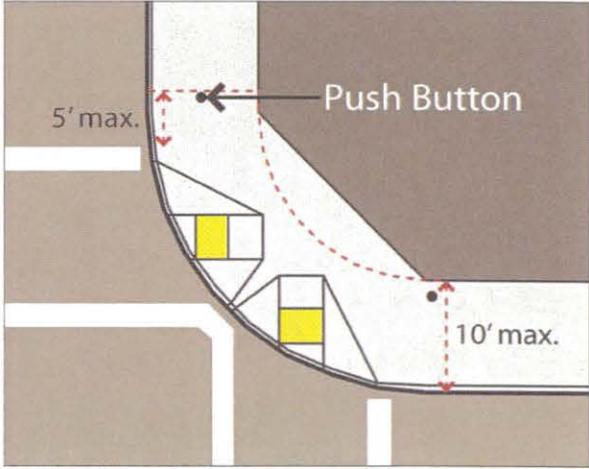
A.15. Guidelines for Warning Signage

Discussion	Design Example
<p>Caltrans categorizes signs into regulatory, warning, and school signs. Warning signs call attention to unexpected conditions on or adjacent to a highway or street. Warning signs alert road users to conditions that might call for a reduction of speed or an action in the interest of safety and efficient traffic operations. Pedestrian warning signs should be have a fluorescent yellow green background to call the attention from motorists. The signs to the right provide examples of warning signs.</p>	 <p>Fluorescent yellow green warning sign (W11-2 and W16-7p)</p>
<p>Design Summary</p> <ul style="list-style-type: none"> • Pedestrian warning signs should accompany all non-controlled crosswalks. • The use of warning signs shall be based on an engineering study or on engineering judgment. 	

A.16. Guidelines for School Signage

Discussion	Design Example
<p>Caltrans categorizes signs into regulatory, warning, and school signs. School signs call attention to school area traffic controls. The signs to the right provide examples of school signs.</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>S1-1</p>  <p>W16-7p</p> <p>School Crosswalk Warning Assembly B (CA)</p> </div> <div style="text-align: center;">  <p>S1-1</p>  <p>W66B (CA)</p> <p>School Crosswalk Warning Assembly E (CA)</p> </div> </div>
<p>Design Summary</p> <ul style="list-style-type: none"> The signs used for school area traffic control shall be retro-reflectORIZED or illuminated. Signs should be placed in positions where they will convey their messages most effectively without restricting lateral clearance or sight distances. Sign placement should consider highway design, alignment, vehicle speed, and roadside development. The School Crosswalk Warning Assembly B(CA) or E(CA) shall be posted at all yellow school crosswalks that are not controlled by a STOP (R1-1) sign, a YIELD (R1-2) sign or a traffic signal. The School Crosswalk Warning Assembly B (CA) or E(CA) shall not be used at marked crosswalks other than those adjacent to schools and those on established school pedestrian routes. 	

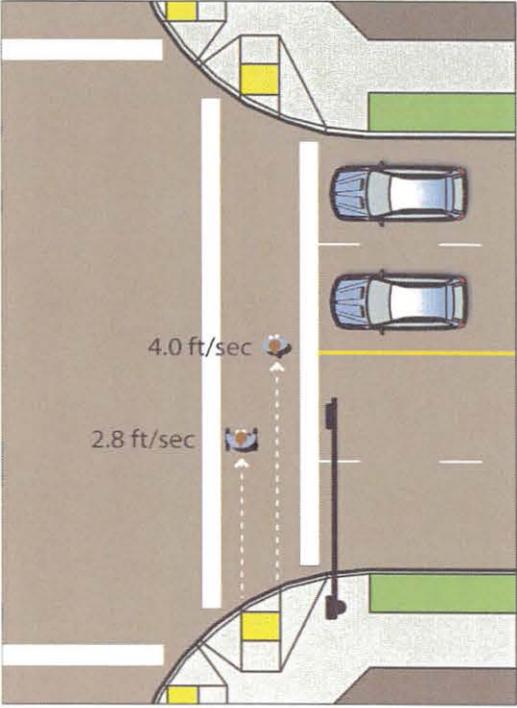
A.17. Guidelines for Signalized Pedestrian Crossing

Discussion	Design Example
<p>Pedestrian pushbuttons should be used at any signalized intersection without a dedicated pedestrian phase. Push buttons allow pedestrians to actuate a walk phase.</p> <p>All new and modified traffic signals should include accessible pushbuttons that are large and vibrate during a walk phase for visually impaired pedestrians.</p>	 <p style="text-align: center;"><i>Pedestrian Push Button</i></p>  <p style="text-align: center;"><i>Push button placement</i></p>
<p>Design Summary</p> <ul style="list-style-type: none"> Push buttons should be located within five feet outside of the transverse crosswalk line extended. Push button location should be adjacent to an all-weather surface to facilitate accessibility. Push buttons should be installed within 10 feet of the curb unless impractical. 	

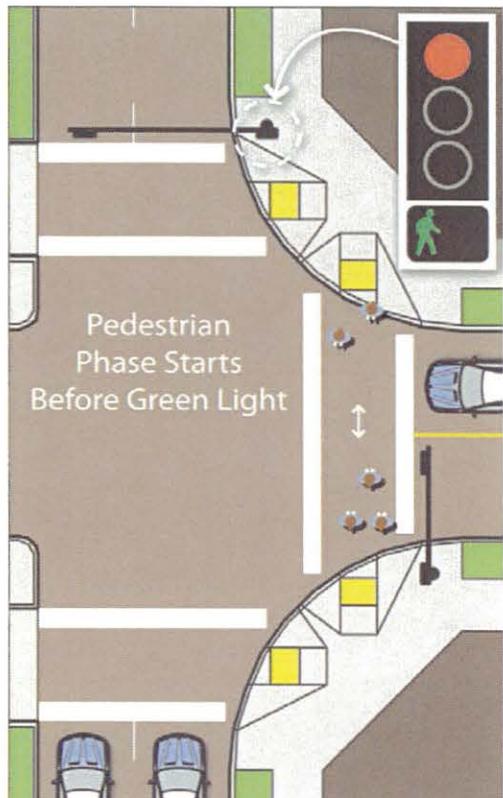
A.18. Crossing Beacons

Discussion	Recommended Design
<p>Beacons enhance uncontrolled crosswalks by using devices that call attention to pedestrians. There are two types of crossing beacons recommended in this Plan: the pedestrian hybrid beacon and the rectangular rapid flash beacon.</p> <ul style="list-style-type: none"> • Pedestrian hybrid beacons, also known as a HAWK (High intensity Activated crossWALK) Signal. It includes three signal sections, two red circular indications above one yellow circular indication (see upper photo). The signal is dark until activated. When activated, the signal flashes yellow to inform drivers to stop. The signal then becomes solid yellow followed by a dual solid red. It then flashes alternating red flashing as a pedestrian signal head flashes DON'T WALK. HAWK signals are experimental in California. Pedestrian hybrid beacons are FHWA approved and incorporated in the 2012 CA MUTCD. • Rectangular rapid flashing beacons are also pedestrian actuated devices; however they are mounted adjacent to the roadway (see lower photo). The beacon lights are rectangular LED lights installed below a pedestrian crosswalk sign that flash in an alternating pattern when activated. The beacon is dark when not activated. Caltrans has received approval from the Federal Highway Administration (FHWA) for use of RRFBs on a blanket basis at uncontrolled pedestrian and school crosswalk locations in California, including State highways and all local jurisdictions' roadways. 	<div data-bbox="824 411 1446 884" data-label="Image"> </div> <p data-bbox="959 898 1305 930" style="text-align: center;"><i>Pedestrian Hybrid Beacon (HAWK)</i></p> <div data-bbox="824 995 1446 1461" data-label="Image"> </div> <p data-bbox="946 1476 1318 1507" style="text-align: center;">Rectangular Rapid Flashing Beacon</p> <p data-bbox="818 1516 1446 1619"> <i>Image from:</i> http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/stpetersburg/intro.htm </p>
<p>Design Summary</p> <ul style="list-style-type: none"> • Crossing beacons should be installed at all uncontrolled arterial crossing locations. • Crosswalk warning beacons should be actuated to maximize yield to pedestrian compliance. 	

A.19. Signal Timing

Discussion	Design Example
<p>Pedestrian speed determines the duration of a pedestrian phase. CAMUTCD standard pedestrian speed for calculating pedestrian phasing is 4.0 feet per second. The following recommended speeds incorporate current and draft MUTCD recommendations and accommodate slow moving pedestrians such as children, seniors and people with disabilities:</p> <ul style="list-style-type: none"> • Citywide Signal Timing. The Draft CAMUTCD and the National MUTCD recommend a standard signal crossing time of 3.5 feet per second as a pedestrian speed to accommodate slow moving pedestrians. • Signal Timing Near Senior Living Facilities and Schools. The US Department of Transportation (US DOT) and the Federal Highway Administration (FHWA) recommend in Older Driver Highway Design Handbook a signal timing of 2.8 feet per second to accommodate older pedestrians. The FHWA and the Metropolitan Transportation Commission also recommend a slower crossing rate where concentrations of children are expected. <p>El Camino Real is a community identified barrier and collision data shows it is the corridor with the most pedestrian related collisions in the City. Signal timing modification to 3.5 feet per second should be expedited at the following intersections: 3rd Avenue at El Camino Real, 5th Avenue at El Camino Real, 25th Avenue at El Camino Real, 31st Avenue at El Camino Real, and 37th Avenue at El Camino Real.</p> <p>Countdown pedestrian heads display the remaining time of a pedestrian phase, informing crossing pedestrians. Countdown heads are most applicable at multi-lane arterial roadways where pedestrians have a long distance to cross. If a median is provided, pedestrians may rest and wait for the next pedestrian phase to cross the remaining roadway.</p>	<div style="text-align: center;">  </div> <p style="text-align: center;"><i>Standard pedestrian timing should be derived from 3.5 feet per second pedestrian speed.</i></p> <div style="background-color: #d3d3d3; padding: 5px;">Design Summary</div> <ul style="list-style-type: none"> • A pedestrian speed of 3.5 feet per second should be used as the standard pedestrian crossing speed (except as specified below). • Signal timing within an eighth of a mile (660 feet) of all senior centers, senior living facilities and schools should be 2.8 feet per second. • Countdown heads should be installed at multi-lane arterial roadway intersections. • Countdown head should incorporate audible instructions.

A.20. Leading Pedestrian Interval

Discussion	Design Example
<p>Leading pedestrian intervals provide a pedestrian phase two to four seconds in advance of a green light in the same direction. LPIs increase pedestrian visibility by permitting pedestrians to enter the crosswalk and motorist sight lines before motorists enter the intersection. Without LPIs, pedestrians are at greater risk of motor vehicle collision because they may enter the intersection at the same time as motorists and assume turning motorists can see them. LPIs are recommended from Tilton Avenue to 5th Avenue and from El Camino Real to Delaware Street; as well as at Delaware and 25th and 37th Avenues. A LPI along El Camino Real will require coordination with Caltrans.</p>	 <p style="text-align: center;"><i>Leading Pedestrian Interval</i></p>
<p>Design Summary</p>	
<ul style="list-style-type: none"> • LPIs should provide two to four seconds of pedestrian phasing before a green light for parallel traffic. • LPIs should be considered where improved motorist visibility of pedestrians is needed. 	

A.21. Play Zones / Home Zones

Greater use of public streets for recreation and play are increasingly important themes for planners and public officials studying rising obesity rates and keys to community vibrancy. In the Netherlands, such a focus many decades ago led to the creation of ‘woonerfs,’ or residential living streets with pedestrian priority. More recently dubbed “home zones” in the United Kingdom, the term and practice are making inroads in the United States as ‘play streets’ or ‘shared streets.’ Play Zones and Home Zones are an opportunity to improve neighborhood streets in Los Altos where narrow rights-of-way limit traditional divisions of space for pedestrians and vehicles.

In the right context, shared streets can result in slower vehicle speeds and greater use of the right-of-way for recreational and social purposes. This is because traditional traffic engineering measures can sometimes lead to counterintuitive issues, including a sense of ownership and complacency by drivers. Alternatively, when roadway design signals a space is unpredictable it forces direct interaction and navigation of space among users. By changing driver behavior, vehicular traffic slows down and community life and safety increases.¹ Reorganizing traffic lanes, condensing on-street parking and carefully placing design elements—such as street trees, seating, bollards, and play structures/elements—help sustain positive activity and a sense of place within the right-of-way and provide obvious cues to slow down.

Nationally, New York City and the City of Chicago have had successful implementations of Home Zones. New York City Department of Transportation (NYCDOT) found that in areas where Neighborhood Slow Zones were implemented there was a 10-15% decrease in speeds, 14% reduction in crashes with injuries and 31% reduction in vehicles injuries². The Albany Home Zone in Chicago’s Logan Square Neighborhood used angular parking and curb extensions to narrow the traffic lane, change the roadway characteristic and calm traffic.

In the Bay Area, San Francisco completed their first home zone project (the Minna-Natoma Home Zone) centered around Marshall Elementary School, North of the 16th Street BART Station. The goal of the project was to calm traffic in a small residential area bordered by arterial and collector streets. A combination of traffic calming measures including; raised crosswalks, speed humps, sidewalk extensions, and edge lines to narrow travel lanes were used reduce targeted vehicle speeds to 15mph.

The City of Sunnyvale has redesigned San Andreas Court as a woonerf, as part of a Caltrain overcrossing renovation project. San Andreas Court was rebuilt with improved pedestrian access, pavers, and landscaping to connect California Avenue to the overcrossing’s pedestrian ramps which is designed to have a greater pedestrian focus than the Minna-Natoma Home Zone example.

¹ Engwicht, David. *Street reclaiming: creating livable streets and vibrant communities*. 1999.

² <http://www.nyc.gov/html/dot/html/motorist/slowzones.shtml>.

Play Zones / Home Zones

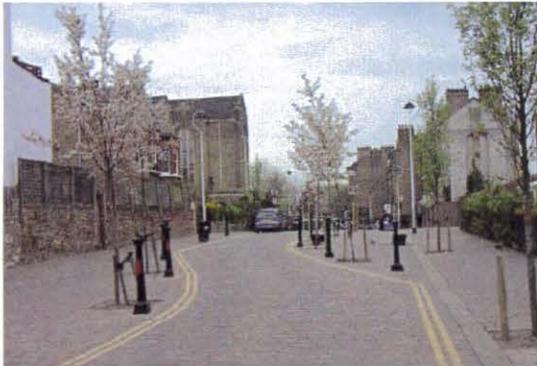


Image of a shared space Home Zone in the United Kingdom.



New York City Home Zone establishes a 20mph speed limit. Image: NYC DOT



The Albany Home Zone creates a people-friendly street in Chicago's Logan Square Neighborhood. Image: albanyhomezone.org



A group of neighbors re-purposes a local street in the Albany Home Zone for a block party to celebrate summer and community.



Lane narrowing and curb extensions have calmed traffic in San Francisco's Minna-Natoma Home Zone. Image: <http://www.sfmta.com/>



Entrance to San Andreas Court woonerf in Sunnyvale, CA

Play Zones / Home Zones

Operational Standards and Design Criteria

In Los Altos, many local streets already act somewhat like a 'home zone', with minimal to no separation between neighborly drivers, bicyclists, and walkers familiar with the area. What is necessary for full conversion to a play street are policy changes to establish operational issues of a shared street as well as infrastructure improvements to change the character of the street. Establishing a target speed limit will establish a framework for selecting appropriate traffic calming countermeasures and design treatments.

Santa Clara Valley Transportation Authority (VTA) provides technical guidance for woonerfs in the 2012 Bicycle Technical Guidelines as well as in the Pedestrian Technical Guidelines and Community Design and Transportation Manual. This document serves as a good local sources for policy and design guidance. Table 4-2 provides a list of operational standards and design details that are recommended to be address through local ordinance or guidelines.

Table A-2: Woonerf design detail from VTA’s 2012 Bicycle Technical Guideline

Operational Standards to be Addressed by Ordinance or City Guidelines
Establish Speed Limit (the target speed limit establishes the design treatments)
Pedestrians are allowed to be anywhere on the woonerf
Motor vehicles traffic may not hinder or endanger pedestrians
Parking permitted only where designated
Pedestrians may not unnecessarily hinder vehicle movement
Design Details to be Addressed by Ordinance or City Guidelines
Maximum straight road length (typically 150 feet).
Maximum speed (typically 5 mph for a more restrictive Play Zone and up to 18mph for a Home Zone).
Maximum traffic volume: 200 vehicles per hour during the peak hour.
Minimum setback to the dwelling units.
Accessibility to emergency vehicles.
Minimum and maximum spacing of the woonerf design elements
Adequate parking for the residents; Disabled parking for residents placed close to dwelling unit, as needed
No curbs; alternatively provide lengthy breaks in the curbs; if there is a curb, both ends must be marked by a planter box, tree, etc.
Signs at each entry and exit point
Maximum length or number of consecutive blocks that can be designed as woonerf
Space for landscaping, play areas and meeting areas

Play Zones / Home Zones

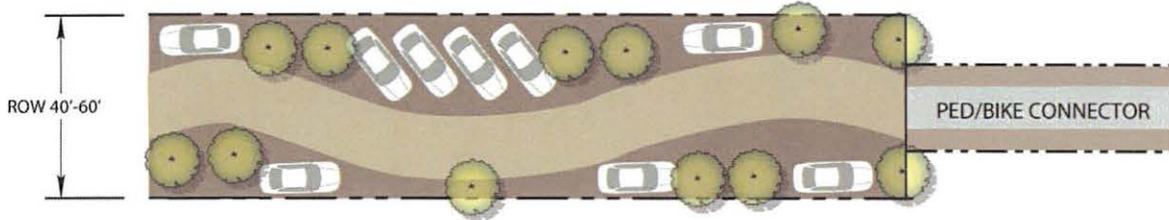


Figure 4-1: Concept of reconfiguring a 40' to 60' right-of-way for a shared street.

Application

Shared streets are primarily successful in areas where access is prioritized over mobility and speed and where high pedestrian/bicycle demand or play opportunities conflict with traditional sidewalk and crosswalk design. Streets in Los Altos that would be good candidates would be located in a small residential area with neighborhood access only. In addition, the area should have destinations that attract people walking and riding bikes, such as schools, parks, bus stops or local retail. A community-based approach is a recommended strategy for selecting candidate streets for a Play Zone/Home Zone.