



## SECTION SEVEN

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# PEDESTRIAN ELEMENT

The Pedestrian Element focuses on two different pedestrian needs: traveling along expressways and crossing the expressways. To identify projects for travel along the expressways, a pedestrian facilities plan was developed covering the entire length of each expressway. For crossing needs, high-demand crossing locations were identified for crossing enhancement treatments.

### **Pedestrian Facilities Along the Expressways**

In 1991, the Santa Clara County Board of Supervisors adopted a “Policy for Bicycle and Pedestrian Usage of the Expressways.” The policy stated that the Board is committed to accommodating pedestrians wherever possible, subject to safety considerations and fiscal constraints. Since 1991, other agencies such as the Federal Highway Administration (FHWA), Caltrans, and Santa Clara Valley Transportation Authority (VTA), have developed policies and design guidelines to facilitate pedestrian use of roadway corridors. The types and designs of pedestrian facilities on expressways will continue to evolve as new policies, legislation, and design guidelines are developed. The County’s 1991 policy is still in effect today and is supported in the Pedestrian Element’s recommendations.

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## ***Pedestrian Use of Expressways***

Pedestrians walk along the expressways for a variety of reasons including: to access a bus stop or building that fronts on the expressway; because there is no parallel facility available or no other way to cross a barrier such as a creek or freeway; because they are unaware of alternate routes; or for emergency needs (e.g., their car breaks down). Sometimes, the expressway is simply the most direct route to their destination.

There are also a variety of conditions along the expressways that affect the level of pedestrian demand and how pedestrian-friendly the expressway is. These conditions include:

- ❖ All but one of the expressways are posted with speed limits of 45 or 50 miles per hour. Some of the expressways have high-occupancy vehicle (HOV) lanes in the right-hand lane.
- ❖ Most of the shoulder widths are six feet wide but there are some areas where, due to limited right-of-way, shoulders are narrower. Shoulders are used for bicycle travel, vehicular emergencies, traffic enforcement, and other emergency vehicle use.
- ❖ Most of the expressways have little or no additional right-of-way available. Pavement and landscaping may be using all right-of-way available leaving no room behind the curb line.
- ❖ Generally, there are few destinations fronting on the expressways. Buildings tend to have their backs to the expressway with access points off a parallel local street, but some expressway sections do have retail/commercial development fronting on the expressway.
- ❖ Frontage roads and nearby parallel roads, trails, or easements are available along portions of the expressways.

The expressway vision statements all classify the expressways as arterials; however, the type of arterial ranges from high-end express arterials with some freeway-like sections to local, multimodal arterials. These vision statements imply a different approach to pedestrian facilities for each expressway. In general, for the freeway-like sections, a parallel pedestrian facility is preferred while for the local arterials, sidewalks along the expressways are encouraged.

## ***Recommended Pedestrian Facilities***

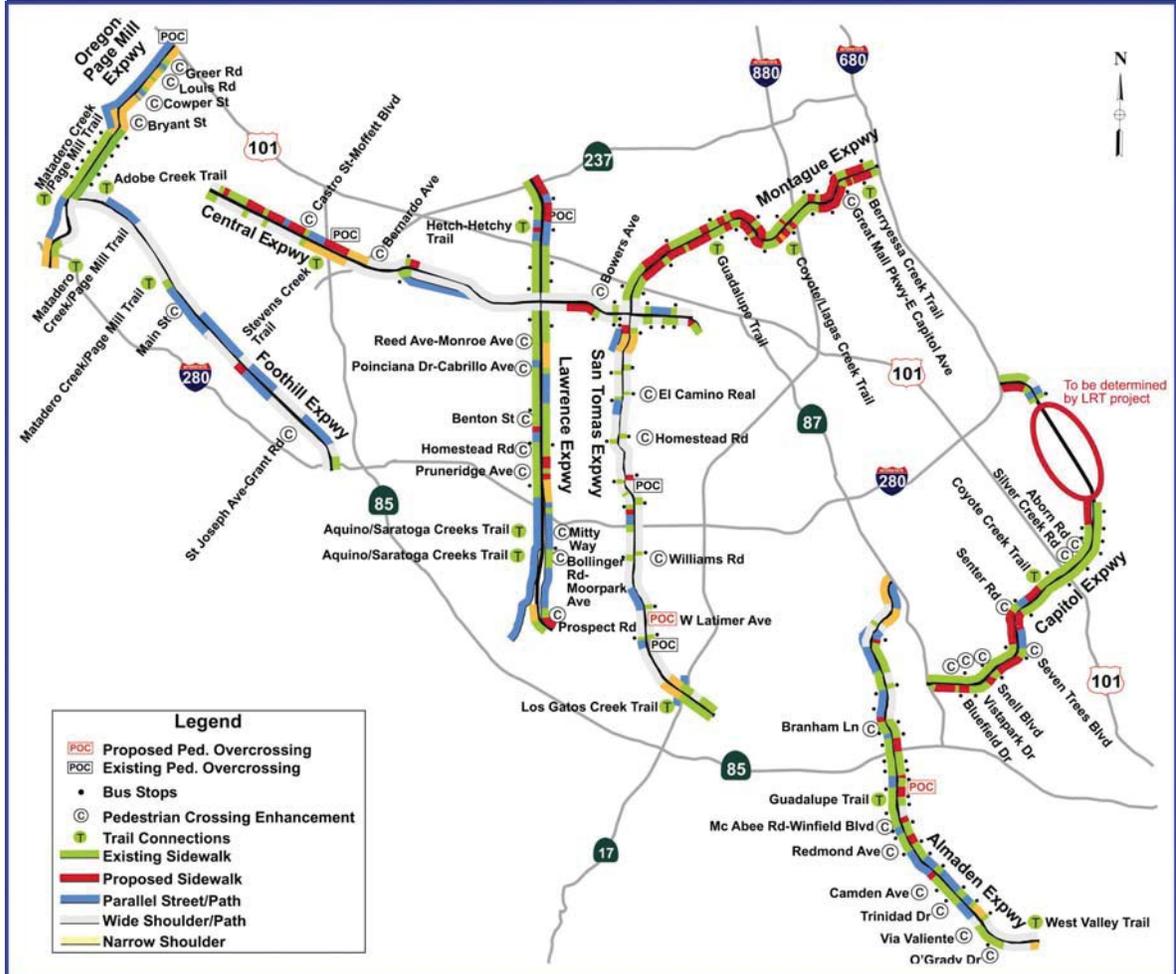
To help identify pedestrian needs and projects, an inventory of existing pedestrian facilities and conditions along each expressway was developed. The inventory included existing sidewalks, shoulder widths, informal paths, frontage roads, parallel creek trails, surrounding land uses, and locations of bus stops, schools, and other destination points. With the help of the inventory, a pedestrian facilities plan was developed covering the length of each expressway. Pedestrian treatments varied along sections of the expressways based on physical conditions, pedestrian needs, fronting land uses, and community development plans. Figure 7-1 illustrates the pedestrian plan for each expressway with the following pedestrian provisions and recommended improvements for pedestrian travel along the expressways.

**Sidewalks** – Existing sidewalk locations and proposed new sidewalks are shown. New sidewalks are recommended to close gaps, access transit stops, and provide access to land uses fronting on the expressway.

Table 7-1 provides a list of new sidewalk projects totaling \$6.6 million. Approximately \$1.4 million of this need can be met as part of roadway capacity/operational improvements. The remaining \$5.2 million in sidewalk improvements will have to be pursued as independent projects. The new sidewalk locations for Montague Expressway are not listed on Table 7-1 because they are already included in the 8-lane widening project, which is currently partially funded.

Some of these sidewalks may not be deliverable. A final determination will need to be made in context of the overall finishing treatments for the expressway. As discussed in the Finishing Program Element, when right-of-way is limited, some tradeoff decisions may be needed about sidewalks, sound walls, and landscaping for each project location as funds become available.

**Figure 7-1: Pedestrian Improvements**



**Parallel Street or Path** – Where convenient parallel streets or paths (e.g., frontage roads and creek trails) are available, they are shown as the preferred pedestrian route along the expressway. In some cases, a sidewalk is provided to access a bus stop on the expressway, but the parallel facility is shown for through travel.

Improvements to parallel streets and trails are not listed as part of the expressway program since they are outside the expressways’ right-of-way and under other agencies’ jurisdiction. The list of expressway sidewalk improvements does include improving connections to parallel facilities. In addition, approximately \$0.2 million for expressway signage directing pedestrians to the parallel paths is included in the expressway pedestrian program.

**Table 7-1: New Sidewalks**

Expressway	Location	Project Need	Cost (millions)	Potential Implementation <sup>(1)</sup>
Almaden	NW quadrant at Camden	Gap closure	\$0.08	Tier 1C roadway project
	NE of Redmond	Gap closure	\$0.15	
	NE of McAbee	Gap closure	\$0.08	
	NE of Coleman	Gap closure	\$0.23	Tier 1A roadway project
	NE of Via Monte	Gap closure	\$0.15	Tier 1A roadway project
	SE of Cherry	Gap closure	\$0.16	
	NW of Branham	Connect to parallel path	\$0.06	
	NE of Koch	Connect to parallel path	\$0.04	
Capitol	Vista Park to SR 87, south side	Gap closure	\$0.41	
	SW of Snell to SE of Monterey	Gap closure	\$0.41	
	Seven Trees to Senter, west side & SE of Senter	Gap closure & connect to parallel path	\$0.63	
	NE of Senter to NW of McLaughlin along Coyote Creek Park, north side	Connect to parallel path	\$0.21	
	SW of Quimby	Gap closure	\$0.41	
	Capitol Ave to I-680, west side	Connect to parallel path	\$0.36	Tier 1C roadway project
Central	NW of Mayfield	Gap closure	\$0.05	
	Moffett to Rengstorff, north side	Gap closure	\$0.90	
	Whisman to NW of SR 85, north side	Neighborhood circulation	\$0.41	
	NE of Mary	Connection to bus stop and businesses	\$0.05	
	Bowers to Oakmead, south side	Business access	\$0.41	Tier 1A roadway project
	SW quadrant at De La Cruz	Gap closure	\$0.05	
Foothill	SW of Magdalena with connection to Boulder frontage road	Connect to parallel path	\$0.05	

**Table 7-1: New Sidewalks (continued)**

Expressway	Location	Project Need	Cost (millions)	Potential Implementation <sup>(1)</sup>
Lawrence	Saratoga to Prospect, east side	Gap closure	\$0.18	Tier 1A roadway project
	SE of Pruneridge	Connection to parallel path	\$0.03	
	North of Pruneridge, east side	Gap closure	\$0.18	
	SW of Benton	Gap closure	\$0.03	Tier 1C roadway project
	NW of Lakehaven	Connection between parallel paths	\$0.14	
	North of Palamos to Tasman, east side	Connection between parallel paths, bus stop connection	\$0.25	
	North of Elko to Caribbean, east side	Neighborhood circulation	NA <sup>(2)</sup>	
San Tomas	SW of Stevens Creek	Gap closure	\$0.38	
	NE quadrant at Pruneridge	Bus stop connection	\$0.03	
	NW quadrant at Walsh	Bus stop connection	\$0.08	
Total Tier 1A			\$0.97	
Total Tier 1C			\$0.47	
Total Sidewalk Only			\$5.16	
<b>Grand Total</b>			<b>\$6.60</b>	

**Notes:**

New sidewalks for Montague Expressway are included in the 8-lane widening Baseline project.

- 1) Identifies which sidewalk installations are included in roadway project costs in the Capacity/Operational Improvement Element.
- 2) This sidewalk will require widening of the overpass at SR 237. An estimated cost is not available but could be \$5 to \$10 million. It should be noted that sidewalks are provided north of Elko along the west side over the overpass through to Caribbean Drive.

Additional funding will be needed for maintenance of the signs and is accounted for in the Maintenance and Operations Element.

During the community outreach process, there was one request to provide a new parallel facility: residents near San Tomas Expressway in San Jose have requested that the open creek culvert along the west side of San Tomas (from north of Hamilton Avenue to Moorpark Avenue) be covered, landscaped, and made into a parkstrip walkway. Implementation of this request does not conflict with any of the expressway plans and the County would support efforts by the city, water district, and trails program to create the parkstrip walkway.

**Wide Shoulder or Path within Expressway Right-of-Way** -- In locations where there are no sidewalks or parallel facilities and there is no major demand for pedestrian travel, these shoulder/path facilities can serve as emergency walkways and for occasional pedestrian use. No projects are recommended for these locations; however, landscaping needs to be kept trimmed back at intersection areas and along the travel way so pedestrians do not have to enter the travel lane. Landscaping maintenance costs are included in the Maintenance and Operations Element.

**Narrow Shoulder** -- These areas represent gaps in the pedestrian plan for each expressway. There is no sidewalk or parallel facility and the shoulder area is narrow. In many cases, there is a pedestrian facility on the other side of the expressway and, in some cases, a more distant parallel facility is indicated. Typically, these areas represent no or low demand for pedestrian travel. No specific improvements are recommended for these "gap" locations since there is generally no immediately apparent cost-effective solution. However, the locations are noted on the map so that shoulder widening and/or adding a pedestrian facility can be pursued if an opportunity arises (e.g., future roadway improvement or new development).



### ***Pedestrian Prohibition***

Pedestrians are currently prohibited along some sections of the expressways. Pedestrian prohibitions along expressways are a function of and enforceable through city police powers and, therefore, are established by city ordinances. When the County Board of Supervisors adopted the 1991 Bicycle and Pedestrian Policy, one of the policy statements was to encourage cities to repeal pedestrian prohibition ordinances, except where safe access is

impeded by obstacles that create an unsafe environment. Upon approval of the Expressway Study *Implementation Plan*, County staff will assist the cities with reviewing existing ordinances and revising them as appropriate to be legally enforceable, to reflect existing conditions, and to meet city objectives.

## **Expressway Pedestrian Crossings**

A key pedestrian issue for all expressways is facilitating safe pedestrian crossings, especially at high demand locations near schools, community centers, transit facilities, and trail connections. A total of 45 high demand pedestrian crossing locations have been identified through city and community comments as well as field observations (see Figure 7-1 and Table 7-2). These crossings are recommended to receive “crossing enhancement” improvements.

### ***Types of Improvements***

There is a wide variety of crossing enhancement improvements that could be applied to an intersection to make it more pedestrian friendly. Much is dependent upon existing conditions at the site. Crossing enhancement concepts include:

- ❖ Eliminate free right turns at non-signalized entrances/exits by adding “Stop” or “Yield to Pedestrian” signs.
- ❖ Eliminate free right turns at signalized intersections by modifying the signals and/or curb line so the right turns must stop at the signal, including removing pork chops where appropriate.
- ❖ Use signals or yield signs at interchange areas to support pedestrian crossings at ramp locations.
- ❖ Add pedestrian bulb-outs to shorten crossing distances.
- ❖ Use electronic signs with flashers to highlight the presence of pedestrians for motorists.
- ❖ Set pedestrian signal timing to allow enough time for crossing the full width of the expressways, especially near senior housing, senior services, or elementary schools.

**Table 7-2: Pedestrian Crossing Enhancement Locations**

Expressway	Intersection	Access Needed	Potential Implementation <sup>(1)</sup>
Almaden	O'Grady/Almaden	Trail; Bus stops; Commercial	Tier 1C roadway project
	Via Valiente	School; Commercial	Tier 2 roadway project
	Trinidad	Bus stops	Tier 2 roadway project
	Camden	School	
	Redmond	Bus stops; Commercial	
	McAbee/Winfield	Bus stops; Commercial	
	Branham	Bus stops; Commercial	Tier 2 roadway project
Capitol	Bluefield	Bus stops	
	Vista Park	Bus stops; Commercial	
	Snell	Bus stops; Commercial	
	Seven Trees	Bus stops; Commercial	
	Senter	School	Tier 1C roadway project
	Silver Creek	Bus stops; Commercial	Tier 1B roadway project
	Aborn	Bus stops; Commercial	Tier 1C roadway project
Central	Castro	Downtown; Transit Center	
	Bernardo	Commercial	
	Mary	Neighborhood circulation; Commercial	Tier 2 roadway project
	Bowers	Commercial	Tier 1A roadway project
Foothill	Main/Burke	Downtown; Park	
	El Monte	School	Funded by Measure B Sales Tax Program
	Magdalena/Springer	School; Commercial	Funded by Safe Routes to Schools Program
	St Joseph/Grant	School	
	Vineyard/Homestead	School; Commercial	Funded by Measure B Sales Tax Program

**Table 7-2: Pedestrian Crossing Enhancement Locations (continued)**

Expressway	Intersection	Access Needed	Potential Implementation <sup>(1)</sup>
Lawrence	Prospect	School; Trail	Tier 1C roadway project
	Moorpark	School; Trail	Tier 1A roadway project
	Mitty	School; Trail	Tier 1A roadway project
	Pruneridge	Bus stops; Commercial	
	Homestead	Commercial	Tier 1C roadway project
	Benton	Commercial	Tier 1C roadway project
	Cabrillo	Schools (3); Commercial	
	Reed/Monroe	School; Commercial	Tier 1B roadway project
	Sandia/Lakehaven	Neighborhood circulation	
	Tasman	Light Rail Station	Tier 2 roadway project
Montague	North First	Light Rail Station	Tier 1A roadway project
	Great Mall	Transit Center	Tier 1A roadway project
Oregon-Page Mill	El Camino	Commercial	Tier 2 roadway project
	Bryant	Neighborhood circulation	Tier 1A roadway project
	Cowper	Neighborhood circulation	Tier 1A roadway project
	Middlefield	Neighborhood circulation	Tier 1A roadway project
	Louis	Neighborhood circulation	Tier 1A roadway project
	Greer	Neighborhood circulation	Tier 1A roadway project
San Tomas	Williams	School; Bus stops	Tier 1A roadway project
	Homestead	School; Bus stops	Tier 1A roadway project
	El Camino Real	Commercial	Tier 1A roadway project
	Cabrillo	School; Bus stops	

**Notes:**

Average cost per intersection is \$0.2 million

1) Several pedestrian crossing enhancement locations are part of roadway improvement projects.

- ❖ Install pedestrian countdown timers to inform pedestrians of the time remaining to cross the street.
- ❖ Install median signal push buttons where the median is wide enough to provide safe refuge for the pedestrian.
- ❖ Use high-visibility crosswalk striping.
- ❖ Install signs to advise pedestrians to keep a clear distance from the curb while waiting to cross.
- ❖ Install pedestrian ramps on the corners of the intersection.



The effectiveness of various types of crossing enhancements in improving pedestrian safety is continuously being studied and evaluated throughout the United States and other countries. Some of the concepts listed above are experimental in nature (e.g., electronic signs with flashers to notify motorists of pedestrian presence) and the effectiveness of others are being evaluated (e.g., high-visibility crosswalks and pedestrian countdown timers). The list of pedestrian crossing enhancement concepts will be updated as needed to reflect the latest studies and the most effective improvements.

The exact improvements for each intersection must be determined on a case-by-case basis. As funds become available, the intersections will be studied to determine which types of improvements and strategies are needed. City involvement and community outreach will be included in the decisions of types of improvements to make.

### ***Improvement Costs***

The costs for these improvements can range from less than \$0.05 million to \$0.3 million per intersection. The average cost is assumed to be \$0.2 million since many of the identified locations need the more expensive intersection reconfiguration treatments. With 42 intersections listed as unfunded for crossing enhancements, the total cost estimate would be \$8.4 million if all projects were pursued independent of roadway improvements. Twenty-seven of these intersections, however, are within the project limits of recommended capacity/operational roadway improvements, leaving 15 intersections (totaling \$3.0 million) to implement as stand-alone projects.

Generally, those intersections needing curb line reconstruction or relocation of signals should be done as part of roadway improvement projects, when possible. If the crossing improvement is funded in advance of the roadway project, the improvements made must be consistent with the final plans for the roadway.

There are also additional maintenance costs associated for the improvement concepts involving electronic signage and new signal equipment. Implementation of these projects can only occur if there is adequate funding for the ongoing maintenance and operations.

### ***Pedestrian Overcrossing (POC) Structures***

Pedestrian overcrossings (POCs) are typically recommended to facilitate mid-block crossings of the expressways where high demand exists and the nearest signalized intersection is too far away for convenient pedestrian use. New POCs cost approximately \$4 million each. Figure 7-1 indicates the locations of existing POCs and the following two recommended POCs:

- ❖ Almaden Expressway – near Coleman Road to connect trails and provide access to the Almaden light rail station.
- ❖ San Tomas Expressway – near Latimer Avenue in Campbell to connect various community facilities separated by the expressway.



## Cost Summary

The total cost for the recommended pedestrian improvements is \$23.2 million. Table 7-3 provides a summary of these costs by type of project. Table 7-4 indicates that approximately \$6.8 million is already included in roadway improvement project costs, leaving \$16.4 million in stand-alone pedestrian projects.

Improvement Category	Cost (millions)
New Sidewalks	\$6.60
Crossing Enhancements	\$8.40
Parallel Street/Path Signage	\$0.20
Pedestrian Overcrossings	\$8.00
<b>Total</b>	<b>\$23.20</b>

Roadway Project Tier	Cost (millions)
Tier 1A	\$3.57
Tier 1B	\$0.40
Tier 1C	\$2.27
Tier 2	\$0.60
Pedestrian Improvements Only	\$16.36
<b>Total</b>	<b>\$23.20</b>

At this time, the *Implementation Plan* does not prioritize the pedestrian improvements. As discussed in more detail in the Funding Strategy section, the most likely fund sources for pedestrian improvements are as part of roadway projects, developer conditions, and the Valley Transportation Plan (VTP) 2020 Livable Community and Pedestrian funding program. The roadway projects are already prioritized and will be implemented as funds become available. Developer conditions will happen by opportunity regardless of priority. As the Livable Community and Pedestrian grant program is developed, those projects that can compete successfully for funding will be pursued. Therefore, the Pedestrian Element identifies needs rather than priorities to take advantage of all funding opportunities.