


Chapter 6: Implementation

Implementation of the projects and programs described in the previous chapters of this plan will require two key factors:

1. A commitment on the part of decision-makers and the public to improving the bicycling and walking environment; and
2. Funding to implement recommended projects.

To focus attention and resources on the most important projects and programs, a comprehensive prioritization methodology was developed. This methodology, as well as the resulting High Priority Projects, is described below. In addition, this chapter includes discussion of recent implementation successes, project costs, and funding opportunities.

Project Prioritization

The recommended bikeway and pedestrian networks described in Chapters 3 and 4, respectively, will provide great bicycling and walking opportunities for the residents of and visitors to the Unincorporated Areas. Recognizing that there are limited resources that can be devoted to these projects, it was necessary to develop a system for ranking or prioritizing the improvements thereby making the most effective use of available funds and staff time.

The recommended bikeway and pedestrian projects were evaluated by a total of 100 points reflecting the potential of a project to satisfy the goals and policies established in Chapter 2. This scale allowed for the weighting of importance between factors based upon the project's ability to meet the needs of the community for improved bicycle and pedestrian access.

Based upon the resulting priority score, each project was further classified with a High, Medium, and Low priority rating. Project ratings are included in **Appendix C** for bicycle projects and **Appendix D** for pedestrian projects. The High Priority projects are discussed later in this chapter. These ratings are defined as:

- **High Priority**: Projects that have the highest priority for implementation and targeted for completion within five years.
- **Medium Priority**: Projects that have moderate priority for implementation and targeted for completion within ten years.

- **Low Priority**: Projects that have the lowest relative priority and targeted for completion within 10 to 15 years.

Since the needs of bicyclists and pedestrians differ, the criteria used were customized to satisfy the particular needs of each mode. The project prioritization worksheets used in this analysis are included in **Appendix E**. The prioritization methodologies are described below.

Bikeway Project Prioritization

The criteria were divided into the following four categories. Points were assigned based upon the project's relative ability to meet the criteria within each category.

1. **Connection to Activity Centers** (total of 35 points): Projects which provide access to activity centers within and adjacent to the Unincorporated Areas such as employment centers, schools, retail centers, libraries, parks, transit stops/stations, and community/senior centers. Because of the County's focus on connecting neighborhoods to most popular destinations and maximizing the potential for bicycle commuters, this category was heavily weighted, particularly for connections to employment centers and schools.
2. **Safety** (total of 25 points): Projects which address a safety concern on a roadway with a high number of bicycle-involved collisions, a busy arterial street, or barrier or hazard to bicycle access. Because of the County's and community's focus on safety, this category was weighted to provide additional points for projects meeting the safety criteria.
3. **Connectivity** (total of 15 points): Projects which improve connectivity for bicyclists by bridging a gap in an existing bikeway, extending the existing bikeway network, connecting to an adjacent jurisdiction, providing access across a good portion of the Unincorporated Areas, or is located on the regional or countywide bikeway networks.
4. **Project Support** (total of 25 points): Projects which do not require significant additional planning, study, or modifications to implement; projects which are part of a recognized current or future development or redevelopment project or can be implemented without coordination with agencies outside the County; projects that would be competitive for available funding sources; or projects that have community support.

Pedestrian Project Prioritization

As was done with the bikeway projects, the pedestrian criteria were divided into four categories. Points were assigned based upon the project's relative ability to meet the criteria within each category.

1. **Connection to Activity Centers** (total of 45 points): Projects which provide access to activity centers within and adjacent to the Unincorporated Areas such as schools, retail and employment centers, libraries, parks, community/senior centers, and transit stops/stations. Because of the County's focus on connecting neighborhoods to the destinations most frequently accessed and a concern for the safety of school children, this category was heavily weighted, particularly for connections to schools and retail and employment centers.
2. **Safety** (total of 25 points): Projects which address a safety concern such as a high number of pedestrian-involved collisions and roadway crossings. Because of the County's and community's interest in improving safety, this category was weighted to provide additional points for projects meeting the safety criteria.

3. **Accessibility** (total of 10 points): Projects that provide access for persons with mobility limitations or communities that have been under-served by previous transportation investments.
4. **Project Support** (total of 20 points): Projects which do not require significant additional planning, study, or modifications to implement; projects which are part of a recognized current or future development or redevelopment project or can be implemented without coordination with agencies outside the County; projects that would be competitive for available funding sources; or projects that have community support.

High Priority Projects

High Priority projects are those that should receive the greatest attention for implementation over the next five years, ranking highest in the application of the prioritization criteria. The High Priority bicycle projects are listed below by community in **Table 6-1** and **Table 6-2.** The bicycle High Priority projects in **Table 6-1** represent projects that scored well in the overall prioritization ranking. 'Signage Only' projects are included in **Table 6-2**. These projects can be implemented quickly and with less financial investment compared to other more complex projects. In keeping with the County's goal to implement the bicycle network as quickly as possible and to give residents the most return for the monies spent, it was important to identify these good investment projects.

The high priority pedestrian projects are presented in **Table 6-3**. As mentioned previously in Chapter 5, providing safe routes to schools is one of the County's highest priorities. However, due to funding and staff limitations it is not possible to implement all Safe Routes to School projects in the next five years. Consequently, only the highest ranking Safe Routes to School projects are included in **Table 6-3** reflecting 1) projects that can be implemented as part of other efforts, and 2) projects that would be most competitive for available funding sources.

It should be noted that these bicycle and pedestrian projects were selected because of their ability to best meet the prioritization criteria based upon today's circumstances. Project priorities could, and should, be adjusted in the future as the County's priorities or funding opportunities change. In addition, funding availability may affect the order in which projects are completed, and other projects not within the High Priority category should not be precluded from implementation if the opportunity arises.

Table 6-1: Bicycle High Priority Projects by Community				
Roadway	**From**	**To**	**Community**	**Bikeway Type**
Countywide				
Coliseum BART to Bay Trail Connector Study	Coliseum BART Station	Martin Luther King, Jr. Regional shoreline - San Francisco Bay Trail	Alameda County	I
Union Pacific Railroad Oakland Subdivision Pathway	Bay Fair BART Station	A Street	Alameda County	I
East Bay Greenway	Bay Fair BART Station	A Street	Alameda County	I, II, & III
Eden Area				
East 14th St/Mission Blvd	150th Ave (San Leandro C.L.)	Lewelling Blvd	Ashland	IIIB
East 14th St/Mission Blvd	Lewelling Blvd	Rose St (Hayward C.L.)	Cherryland	II
Ashland Ave	East 14th St	Lewelling Blvd	Ashland	II
Grant Ave	Washington Ave/Via Alamitos	Hesperian Blvd	San Lorenzo	IIIA
Grove Way	Meekland Ave	Western Blvd	Cherryland	II
Hesperian Blvd	Lewelling Blvd	A Street	San Lorenzo	II
Meekland Ave	Lewelling Blvd	Paseo Grande	San Lorenzo	II
Castro Valley Area				
Castro Valley Blvd	Eastbound-Foothill Blvd	John Dr/Strobridge Ave	Castro Valley	II
Castro Valley Blvd	John Dr/Strobridge Ave	Redwood Rd	Castro Valley	II
Castro Valley Blvd	Redwood Rd	Crow Canyon Rd	Castro Valley	IIIB
Center St	Ray Ave	Castro Valley Blvd	Castro Valley	IIIA
Center St	Castro Valley Blvd	Grove Way	Castro Valley	II
Center St	San Lorenzo Creek	Kelly St (Hayward C.L.)	Castro Valley	II
Fairmont Dr	East 14th St	Lake Chabot Rd	Castro Valley	II
Hacienda Ave	Ricardo Ave	Hathaway Ave	San Lorenzo	II
Heyer Ave	Redwood Rd	Cull Canyon Rd	Castro Valley	IIIB
Lake Chabot Rd	Fairmont Dr	Castro Valley Blvd	Castro Valley	II
Norbridge Ave	Stanton Ave/Castro Valley Blvd	Tyee Ct	Castro Valley	II
Redwood Rd	Seven Hills Rd	Castro Valley Blvd	Castro Valley	IIIB
Redwood Rd/A St	Knox St	4th St (Hayward C.L.)	Castro Valley	II
Seven Hills Rd	Lake Chabot Rd	Madison Ave	Castro Valley	IIIA
Stanton Ave	Crest Ave	Castro Valley Blvd	Castro Valley	IIIA

Table 6-1: Bicycle High Priority Projects by Community				
Roadway	**From**	**To**	**Community**	**Bikeway Type**
East County Area				
Castlewood Dr	Foothill Rd	Pleasanton-Sunol Rd	East County-Sunol	IIIC
Dublin Blvd	Dublin C.L.	Livermore C.L.	East County-W of Livermore	II
Greenville Rd	National Dr	Patterson Pass Rd	East County-E of Livermore	II
Kilkare Rd/Main St	Foothill Rd	Niles Canyon Rd	East County-Sunol	IIIC
Mines Rd	Tesla Rd	0.3 miles south	East County-S Livermore	II
Mines Rd	Del Valle Rd	Santa Clara county line	East County-S of Livermore	IIIC
North Canyons Pkwy	Livermore C.L.	Livermore C.L. (Lorraine St)	East County-N of Livermore	I
Northfront Rd	Laughlin Rd	Greenville Rd	East County-N of Livermore	II
Patterson Pass Rd	Greenville Rd	San Joaquin county line	East County-E of Livermore	IIIC
Pleasanton-Sunol Rd	Castlewood Dr	Paloma Rd	East County-Sunol	IIIC
Tesla Rd	Greenville Rd	Cross Rd	East County-S Livermore	II
Vasco Rd	Contra Costa county line	Dalton Rd (Livermore C.L.)	East County-N Livermore	II

Table 6-2: Bicycle High Priority 'Signage Only' Projects by Community				
Roadway	**From**	**To**	**Community**	**Bikeway Type**
Eden Area				
Blossom Way	Hathaway Ave	Mission Blvd	Cherryland	IIIA
Bockman Rd	Grant Ave	Hesperian Blvd	San Lorenzo	IIIA
Channel St	Bockman Rd	Grant Ave	San Lorenzo	IIIA
Hacienda Ave	Via Alamitos	Ricardo Ave	San Lorenzo	IIIA
Hampton Rd	Meekland Ave	Mission Blvd	Cherryland	IIIA
Paseo Grande	Via Alamitos	Meekland Ave	San Lorenzo	IIIA
Paseo Larga Vista	Grant Ave	Paseo Grande	San Lorenzo	IIIA
Via Alamitos	Grant Ave	Via Nube	San Lorenzo	IIIA
Western Blvd	Hampton Rd	Sunset Blvd	Cherryland	IIIA
Castro Valley Area				
Christensen Lane	Lake Chabot Rd	Parsons Ave	Castro Valley	IIIA
Coehlo Dr	159th Ave	Bay Fair BART	Castro Valley	IIIA
D Street	Hayward C.L.	Fairview Ave/Maud Ave	Fairview	IIIA
East Ave	Hayward C.L.	Hackamore Dr	Fairview	IIIA
Elgin St	Bay Fair BART	East 14th St	Castro Valley	IIIA
Fairview Ave	D St	Hayward C.L. (Woodstock Rd)	Fairview	IIIA
Grove Way	Western Blvd	Redwood Rd	Castro Valley	IIIA
Miramar Ave	Foothill Blvd	Stanton Ave	Castro Valley	IIIA
Proctor Rd	Ewing Rd	Redwood Rd	Castro Valley	IIIA
Santa Maria Ave	Seven Hills Rd	Castro Valley Blvd	Castro Valley	IIIA
Somerset Ave	Stanton Ave	Redwood Rd	Castro Valley	IIIA
Sydney Way	Stanton Ave	Lake Chabot Rd	Castro Valley	IIIA
East County Area				
Marina Ave	Arroyo Rd	Wente St	East County-S Livermore	IIIC

Table 6-3: Pedestrian High Priority Projects by Community			
Project	**Location**	**Recommended Improvements**	**Community**
Countywide			
Coliseum BART to Bay Trail Connector Study	Coliseum BART Station to Martin Luther King, Jr. Regional shoreline - San Francisco Bay Trail	Feasibility study - best option for safe pedestrian travel	Alameda County
Union Pacific Railroad Oakland Subdivision Pathway	Bay Fair BART Station	A Street	Alameda County
East Bay Greenway	Bay Fair BART Station	A Street	Alameda County
Castro Valley Area			
Castro Valley Blvd Streetscape Improvements - Phase II	Castro Valley Blvd from San Miguel to Wisteria	Sidewalk widening, street landscaping and lighting, intersection bulb-outs, street furnishings, bicycle lanes, on-street parking, transit stop improvements	Castro Valley
Castro Valley Blvd Streetscape Improvements - Phase III	Castro Valley Blvd from Wisteria to Lake Chabot	Sidewalk widening, street landscaping and lighting, intersection bulb-outs, street furnishings, bicycle lanes, on-street parking, transit stop improvements	Castro Valley
Traffic Signal Timing Project - Castro Valley Blvd	Castro Valley Blvd. from Redwood St to Marshall St	Traffic signal timing study to reduce peak period car delay- includes study of pedestrians	Castro Valley
Castro Valley Blvd/ Redwood Rd Intersection Improvements	Castro Valley Blvd. at Redwood Rd	Improve safety for pedestrians	Castro Valley
Lake Chabot Road Sidewalk	Lake Chabot Rd-Various locations	New curb, gutter and sidewalk	Castro Valley
Safe Routes to School - Marshall Elementary School	20111 Marshall St @ Omega Ave – ¼ to ½ mile radius around school	New curb, gutter and sidewalk, textured crosswalks, bulb-outs, textured pavement, raised crosswalk, improved street lighting	Castro Valley
Safe Routes to School - Chabot Elementary School	19104 Lake Chabot Rd @ Christensen Lane -¼ to ½ mile radius around school	New curb, gutter and sidewalk, textured crosswalks, improved street lighting	Castro Valley
Safe Routes to School - Castro Valley High School	19400 Santa Maria Ave @ Mabel Ave -¼ to ½ mile radius around school	New curb, gutter and sidewalk, textured crosswalks, pedestrian ramps, improved street lighting	Castro Valley
AC Transit Castro Valley Transbay Bus Stop Access Improvements	Center St, Seven Hill Rd, Lake Chabot Rd	Improved bus stops, access to bus stops	Castro Valley

Table 6-3: Pedestrian High Priority Projects by Community			
Project	**Location**	**Recommended Improvements**	**Community**
Grove Way Bulb-out and Refuge Island Project	Grove Way from Redwood Rd to Center St	Traffic calming - Bulb outs, Refuge Islands	Castro Valley
Eden Area			
Lewelling Blvd./ E Lewelling Blvd. Improvements Project - Phase II	Lewelling Blvd/ E. Lewelling Blvd from Meekland Ave to East 14th St	Widen (from 2 to 4 lanes) and reconstruct roadway	Ashland
East 14th St/Mission Blvd Streetscape Improvements - Phase II (162nd Ave to E. Lewelling Blvd.)	East 14th St from 162nd Ave to E. Lewelling Blvd	Sidewalk widening, street landscaping and lighting, utilities undergrounding, intersection bulb-outs, drinking fountains, street furnishings, transit stop improvements	Ashland
Hesperian Streetscape Improvements - Phase I	Hesperian Blvd from I--880 to Via Mercado	pedestrian lighting, compliance with ADA, bus shelters, benches, sidewalk widening, traffic calming measures	San Lorenzo
Hesperian Streetscape Improvements - Phase II	Hesperian Blvd from Via Mercado to Hacienda Ave		
Hesperian Streetscape Improvements - Phase III	Hesperian Blvd from Hacienda Ave to Bockman Rd		
Safe Routes to School - Edendale Middle School	16160 Ashland Ave @ East 14th St -¼ to ½ mile radius around school	Textured crosswalks, improved street lighting	Ashland
Safe Routes to School - Lorenzo Manor Elementary School	18250 Bengal Ave @ Hacienda Ave -¼ to ½ mile radius around school	Reconstruct sidewalks, pedestrian ramps, textured crosswalks, improved street lighting	Cherryland
Safe Routes to School - Hesperian Elementary School	620 Drew St @ Wagner St -¼ to ½ mile radius around school	Sidewalk reconstruction, pedestrian ramps, textured crosswalks, improved street lighting	San Lorenzo
Safe Routes to School - Arroyo High School	15701 Lorenzo Ave @Grant Ave-¼ to ½ mile radius around school	Textured crosswalks, improved street lighting	San Lorenzo
Ashland Community Transit Access Project (ACTAP)	159 Ave/Coelho Dr from East 14th St to Bayfair BART	Widen sidewalks, trees, lighting, bulb-outs, way-finding signage, I/S improvements	Ashland
Cherryland Sidewalks Project - Phase 3	Meekland Ave from E Lewelling Blvd to Hayward CL/ W. "A" St.	New curb, gutter and sidewalk, landscaping, drainage	Cherryland
San Lorenzo Creek Trail	San Lorenzo Creek from Mission Blvd. to Meek Estate	The project includes a multi pathway and serves the County grow opportunity area on East 14th/Mission Boulevard.	San Lorenzo

Table 6-3: Pedestrian High Priority Projects by Community			
Project	**Location**	**Recommended Improvements**	**Community**
Via Enrico Sidewalk	Via Enrico from Washington Ave to Lorenzo Ave	Construct new sidewalk on south side	San Lorenzo
East County Area			
Safe Routes to School - Sunol Glen School	11601 Main St @ Paloma Way/ Niles Canyon Rd -¼ to ½ mile radius around school	Crosswalk improvements, intersection bulb outs, vehicle circulation in parking lot	Sunol
Main Street Improvements in Sunol	Main St at Kilkare Rd	Raised crosswalk, textured pavement and island modifications	Sunol
Safe Routes to School - Mountain House Middle & Elementary School	3950 Mountain House Rd -¼ to ½ mile radius around school	Pedestrian ramps, crosswalks/crossings	East County
Traffic Signal Project - Altamont Pass Rd @ Greenville Rd	Altamont Pass Rd at Greenville Rd	Install traffic signals with improved pedestrian accommodation including crosswalks and pedestrian signal phase	East County
Buena Vista Ave Safe Routes to Transit	Buena Vista Ave from Tesla Rd to East Ave	Improved bus stops, access to bus stops	East County

Past Expenditures

Alameda County has made substantial bicycle and pedestrian improvements since the previous plans were prepared; many of these projects were implemented as part of larger street improvement projects. Understanding the County's investment in bicycle and pedestrian infrastructure will help to determine what will be required to complete and maintain the recommended networks. The following projects have been implemented or are nearing completion.

Wheelchair Accessible Ramps: Alameda County has installed approximately 450 ramps since 2006 at intersections throughout the Unincorporated Areas at a cost of more than $1.7 million.

Streetscape Projects: The larger streetscape projects offer the opportunity to coordinate roadway improvements to accommodate all road users and land use changes as well as to upgrade utilities. While these projects generally have a high price tag they provide significant improvements to the bicycling and walking environments in the corridor. More than $40 million has been spent recently on streetscape projects in the Unincorporated Areas include:

- Castro Valley Boulevard Streetscape Project Phase I from Redwood Road to San Miguel Avenue: This project included sidewalk widening, street landscaping and lighting, intersection bulb-outs, street furnishings, bicycle lanes, on-street parking, and transit stop improvements.
- Lewelling Boulevard Streetscape Project Phase I from Hesperian Boulevard to Meekland Avenue: This project included widening and reconstructing the roadway and adding pedestrian safety improvements including new curb, gutter and sidewalk, textured crosswalks, pedestrian ramps, and improved street lighting for the San Lorenzo High School Safe Routes to School Project.

- Redwood Road Improvements at various locations: This project included traffic signal improvements, new curb, gutter and sidewalk, and lane restriping.
- East 14th Street/Mission Boulevard Streetscape Improvements Phase I from 150th Avenue to 162nd Avenue: This project included sidewalk widening, street landscaping and lighting, utilities undergrounding, intersection bulb-outs, drinking fountains, street furnishings, and transit stop improvements.
- Washington Avenue Streetscape and Widening Project from the San Leandro City Limits to Grant Avenue: This project included new curb, gutter and sidewalk, textured crosswalks, improved street lighting; center median, and Class II bike lanes as well as Safe Routes to School Improvements at Grant Elementary School.
- Sunol Town Center Streetscape and Pedestrian Improvements from Main Street/Niles Canyon Railway Station/Kilkare Road to Paloma Way: This project is currently under construction and will include walkways, bulb-outs, raised crosswalks, sidewalk lighting, pedestrian fencing, and landscaping.
- Stanley Boulevard Roadway Improvements from the Pleasanton to Livermore City Limits: This project includes Class I bike paths and Class II bike lanes.

Safe Routes to School Projects: Safe access to schools is a priority of Alameda County. Almost $7 million has been spent on these projects with new sidewalks, textured crosswalks, bulbouts, street lighting, and pedestrian ramps since the last plan update at:

- Castro Valley Elementary School
- Cherryland Elementary School
- Colonial Acres Elementary School
- Grant Elementary School
- Hillside Elementary School
- San Lorenzo High School
- Stanton Elementary School

Major Sidewalk Projects: Various sidewalk projects have been completed at a cost of approximately $11.5 million including new curb, gutter and sidewalk, landscaping and drainage on:

- 159th Avenue from Liberty Street to Marcella Street
- 167th Avenue from Liberty Street to Los Banos Street
- Hampton Road from Meekland Avenue to East 14th Street/Mission Boulevard
- Princeton Street from Willow Avenue to Laurel Avenue
- San Miguel Avenue from Somerset Avenue to Castro Valley Boulevard
- Sunset Boulevard from Meekland Avenue to Western Boulevard
- Western Boulevard from Hampton Road to Hayward City Limits/Sunset Boulevard
- Willow Avenue from Meekland Avenue to Western Boulevard

Crossing Improvement Projects: These projects, at an estimated cost of $1.7 million, involve the installation of traffic signals and various pedestrian accommodations at the intersections of:

- Redwood Road and Mabel Avenue
- Crow Canyon Road and Norris Canyon Road
- Tesla Road and South Vasco Road
- Vasco Road and Dalton Avenue

Class II Bike Lanes: These projects, for an estimated cost of $480,000, ranged from minor signage upgrades to installation of new bike lanes.

- Upgraded bike lane signage on:
    - East Castro Valley Boulevard from Villarreal Drive to Dublin Canyon Road
    - Norbridge Avenue from Tyee Court to Castro Valley Boulevard
- Upgraded bike lane signage and new pavement markings on:
    - Dublin Canyon Road from Eden Canyon Road/Palo Verde Road to Pleasanton City Limits
    - Five Canyons Parkway from East Castro Valley Boulevard to Fairview Avenue
    - Greenville Road from Patterson Pass Road to Tesla Road
- New Class II bike lanes on:
    - Castro Valley Boulevard from Westbound-Foothill Boulevard (SR 238) to John Drive/Strobridge Avenue
    - Cull Canyon Road from Briar Ridge Road to Crow Canyon Road
    - East Avenue from Vasco Road to Greenville Road
    - Hathaway Avenue from Hacienda Avenue to Mero Street (Hayward City Limits)
    - Lewelling Boulevard from Hesperian Boulevard to Meekland Avenue (part of the Lewelling Boulevard Streetscape Project Phase I)
    - Mattox Road from Mission Boulevard to Foothill Boulevard (SR 238)
    - S Livermore Avenue from Concannon Boulevard to Tesla Road
    - Stanley Boulevard from Pleasanton City Limits to Livermore City Limits (part of Stanley Boulevard Improvements)
    - Sunset Boulevard from Meekland Avenue to Western Boulevard
    - Tesla Road from S Livermore Avenue to Greenville Road
    - Vasco Road from 1.8 miles south of Contra Costa county line to 2.1 miles south of Contra Costa county line
    - Washington Avenue from San Leandro City Limits to Grant Avenue (part of the Washington Boulevard Streetscape and Widening Project
    - Wente Street from Concannon Boulevard to Marina Avenue

Class III Bike Routes: Two bike route projects were completed at an estimated cost of $30,000. Bike lane signage was installed on:

- Vasco Road from the Contra Costa county line to 1.8 miles south
- N Livermore Avenue from Manning Road to I-580 (Livermore City Limits)

Pedestrian and Bikeway Facility Costs

Bikeway Facility Costs

Estimated costs for the construction and maintenance of the recommended bikeway network are discussed below.

Construction Costs

Table 6-3 provides unit cost estimates for the construction of bikeway facilities in the Bay Area based upon recent bikeway construction and adjusted for conditions in Alameda County. These are conceptual construction cost estimates only and do not include costs for contingencies, design, administration, or right-of-way acquisition. More detailed estimates should be developed following the preliminary engineering stage as individual projects advance towards implementation.

Table 6-3: Conceptual Unit Cost Estimates for New Bikeway Construction

Facility Type: Assumptions	Estimated Cost per Mile
Class I Bike Path: Construct new path on generally flat right-of-way with no grade separations and minimal grading needed; costs of lighting, fencing, or other amenities and right-of-way acquisition are not included.	$650,000
Class II Bike Lane	
Add bike lane signage only	$6,000
Add bike lane signage and pavement markings	$18,000
New bike lanes with striping, signage, and pavement markings	$30,000
New bike lanes requiring restriping, signage, and pavement markings	$80,000
New bike lanes requiring 4-foot minimum shoulder, striping, signage, and pavement markings[1]	TBD
Class II Bike Route	
New bike route with signage only	$6,000
New bike route with signage and sharrows	$18,000
New bike route requiring restriping, signage, and sharrows	$80,000
New bike route requiring 4-foot minimum shoulder and signage[1]	TBD

[1] Conditions on roadways requiring the addition or widening of shoulders vary greatly; hence it is not possible to give an accurate estimate for costs associated with shoulder projects.

Maintenance Costs

Multi-use path maintenance includes cleaning, resurfacing, and restriping the asphalt path, repairing bridges and other structures, cleaning the drainage system, removing trash, and maintaining landscaping. While this maintenance effort may not be incrementally major, it does have the potential to develop heavy expenses if it is not done periodically.

For purposes of estimating maintenance expenses for paved pathways, $8,500 per mile per year is assumed based on information received for other similar facilities in California. This cost covers all expenses including labor, supplies, and amortized equipment costs. Tasks include trash removal, sweeping (with a mechanized sweeper), sign replacement/repair, pavement marking replacement, pavement sealing/resurfacing, and structural and drainage inspection. Underbrush and weeds should be removed to maintain a clear pathway.

Sections with narrow widths or other clearance restrictions should be clearly marked. Pathways should be designed to accommodate maintenance and emergency vehicles.

Maintenance for Class II bike lanes and Class III bike routes can generally be provided as part of the regular roadway maintenance. Additional costs should be minimal because, in most locations, the roadway surface area to be maintained will be the same with or without bike lanes or routes. For estimating purposes, maintenance costs for Class II and Class III facilities would include:

- Class II at $2,000/mile annually for sweeping, sign and stripe/pavement marking maintenance, and minor surface repairs.
- Class III at $1,000/mile annually for sweeping, signage maintenance, and minor surface repairs.

Pedestrian Facility Costs

There are a great variety of elements that are utilized for improving pedestrian circulation. Some of these are shown below in **Table 6-4** along with estimated cost for construction. Note that these costs are for construction only and do not include additional costs for design, land acquisition or contingencies.

Table 6-4: Order of Magnitude Cost Estimates for Pedestrian Facilities

Improvement	Cost Estimate Range	Unit
Advanced Stop Limit Line	$60 - $80	per each (12 inch wide x 12 foot)
Asphalt Walkway[2]	$3 - $6 per square foot	per square foot
Automated Detection (NA)	$500-$1,000 for microwave or infrared	Per each location
Countdown Pedestrian Signal	$600 - $800 per signal indication	per signal indication
Crosswalk - parallel type	$11 per linear foot	per linear foot
Crosswalk - ladder type	$50 per linear foot (10 foot wide)	per linear foot
Crosswalks - raised	$5,000 - $20,000	per crosswalk

Table 6-4: Order of Magnitude Cost Estimates for Pedestrian Facilities		
Improvement	**Cost Estimate Range**	**Unit**
Crosswalks – mid-block, in-pavement warning lights	$30,000 - $50,000	per crosswalk
Curb Extensions	$5,000 - $25,000	per extension
Curb Extensions (Long) w/storm drainage work	$20,000 - $75,000	per extension
Curb Radii Reduction	$5,000 - $10,000 per corner	per corner
Flags	$100 per crossing including holders	per XING including holders
Flashing Beacons	$10,000 - $40,000 per XING depending on placement	per XING
Lighting	$2,000 - $6,000 per light	per light
Limit Lines - advance placement	$300-$500 per limit line	per limit line
Median Refuge (Small)	$1,000	per refuge
Median Refuge Islands	$20,000 - $40,000	per refuge
Pork Chop Island	$15,000 - $35,000 per island	per island
Railings for Pedestrians	$30 per linear foot (at any crossing)	per linear foot
Raised Intersections	$50,000 - $75,000 per intersection	per intersection
Sidewalk w/ existing curb & gutter[3]	$300 per linear foot (5 foot wide)	per linear foot (5 ft wide w/vertical curb)
Sidewalk w/ new curb & gutter[3]	$500 per linear foot (5 foot wide)	per linear foot (5 ft wide)
Paved Shoulders	$8 - $15 per square foot	per square foot
Signage	$200 - $300	per each sign
Signage – Pedestrian Yield	$200 - $300	per each sign
Signage – Double fine zones	$300 - $500	per each sign
Signal - Midblock	$75,000 - $125,000	
SOURCE: Alameda County Pedestrian Master Plan for Unincorporated Areas, July 2006. Table 3		

Funding Strategy

Earlier in this chapter, the High Priority bicycle and pedestrian projects were identified based upon the project's ability to meet the needs of the community. However, this list of high priority projects is not meant to preclude the remaining projects from being implemented if the opportunity arises. There are a variety of ways that a project can be funded and constructed such as within the scope of another project. With this understanding, the County should consider the following strategies as a means for implementing the recommended bicycle and pedestrian improvements.

- There are a variety of potential funding sources including local, regional, State, and Federal options. The County should also take advantage of private contributions in developing the proposed system. This could include a variety of resources such as volunteer labor during construction or monetary donations towards specific improvements. The funding sources considered appropriate for the Unincorporated Areas are discussed in detail in **Appendix F**.
- Use the 'funding experts' available at the State, County, local, and regional agencies to keep apprised of upcoming funding opportunities.
- Prepare joint applications with other local and regional agencies for competitive funding programs at the State and Federal levels. Joint applications often increase the competitiveness of projects for funding; however, coordination amongst the participating jurisdictions is often challenging. The County should consider acting as the lead agency, with a strong emphasis on coordination between participating jurisdictions to ensure that important projects are implemented as quickly as possible.
- Use existing funding sources as matching funds for State and Federal funding. The County receives approximately $500,000 per year from TDA Article 3 and Measure B for bicycle and pedestrian improvements. This is an excellent source for matching funds.
- Include bikeway and pedestrian projects in local traffic impact fee programs and assessment districts.
- Continue to include proposed bikeways and pedestrian improvements as part of roadways projects involving repaving, widening, overlays, or other improvements. For example, when an arterial or collector is scheduled for repaving, re-evaluate roadway and lane configurations to fit bike lanes wherever possible. If necessary, consider restriping for narrower inside travel lanes or reducing the number of travel lanes. If bike lanes are still not possible, investigate providing wider curb lanes.

Implementation Strategy

The following strategies are suggested to support implementation of the recommended bicycle and pedestrian improvements and to measure overall success of the bicycle and pedestrian program.

- **Staffing**: Continue to designate existing staff (Transportation Engineer or Planner) to be responsible for plan review, coordinating with county and outside agency staff, pursuing outside funding sources, and overall implementation of this plan.
- **Plan Review**: All traffic impact studies, street improvement projects, land use changes and development projects should be routed through appropriate County staff to ensure that bikeway projects and pedestrian improvements are consistent with this plan and meet the design guidelines for minimum (or better) bicycle and pedestrian facilities. The review should also include an assessment of impacts to existing bicycle and pedestrian safety, access, and mobility and strategies to mitigate any impacts. Plan review should follow the principles of Complete Streets to ensure that safe access for all roadway users (pedestrians, bicyclists, motorists, and transit users of all ages and abilities) is maintained.
- **Monitoring**: A monitoring plan should be developed and followed to measure success of the plan and to ensure that all opportunities are being taken advantage of to implement the plan. This includes:

  - **Safety Monitoring**: Conduct an annual review of recent bicycle and pedestrian-involved collision data and compare to incidents in previous years to identify patterns by location and collision types. Evaluate these findings against recently completed bicycle and pedestrian projects to assess the impact of these projects on bicycle and pedestrian safety.
  - **Funding Monitoring**: Work closely with various funding agencies such as MTC, Alameda County Transportation Commission, Bay Area Air Quality District, and Caltrans to keep abreast of funding opportunities and to follow up on applications to ensure maximum success.
  - **Operations Monitoring**: Coordinate with the County Sheriff's Department to direct needed enforcement of traffic laws affecting bicyclists and pedestrians.

- **Maintenance**: A regular maintenance program should be developed to maintain bicycle and pedestrian facilities in good usable condition. This program should include:
  - Annual review of bicycle facilities to assess the condition and needed repair or replacement of signage, striping, or pavement markings.
  - Regular sweeping of on-street and off-street facilities no less than four times a year. Obstructions and potholes should be repaired as soon as possible after being reported.
- **Outreach**: The general public and interested parties should be kept apprised of successes and opportunities for bicycling and walking in the Unincorporated Areas. Some strategies include:
  - Bicycle and pedestrian promotional and educational events, such as Bike to Work Day and Walk to School Week.
  - Updates to the County's website on new or renovated facilities.
  - A mailing list of organizations and individuals that will support events and efforts by the County to encourage bicycling and walking.
  - Community bicycling and walking maps to promote bicycling and walking in neighborhoods and to educate all road users on the rules of the road and other safety information. The cost of printing and updating this map could be subsidized by advertising revenues from local bike shops and other retailers. Distribution of the map may include residents, schools, bicycle clubs, major employers, senior centers, libraries, and local bike shops as well as an on-line resource for use by businesses in their promotional outreach programs.
  - Brochures for residents, schools, and employers addressing opportunities for safe routes to school programs, employer incentive programs for walking and bicycling to work, and tips for bicycling/walking with your children.