

## **INTRODUCTION**

In July 2001, the Alameda County CMA Board of Directors adopted the first Alameda Countywide Bicycle Plan. The 2001 Plan was developed by an appointed Bicycle Task Force, in conjunction with the CMA and Alameda County Public Works Department. Cross county corridors and alignments were determined by assembling information from discussions with city staff, reviewing locally adopted bicycle plans and route maps, and collecting data in the field and from other sources. The purpose of the countywide bicycle network was to connect local jurisdictions and or/countywide attractions by maximizing existing bicycle facilities and planning for new or upgraded facilities. The proposed bicycle network also provides connections to adjacent counties.

In 2005, the CMA began a focused update of the 2001 Alameda Countywide Bicycle Plan that was funded by ACTIA Measure B and TDA funds. The update was led by ACTAC with input from ACTIA's BPAC and ABAG, East Bay Regional Park District, BART, AC Transit, Port of Oakland, UC Transit, LAVTA, MTC, Caltrans and the East Bay Bicycle Coalition. Key components of the focused update were to:

- Identify facilities that have been completed since the Plan was adopted;
- Revise maps and appendices to add new projects, remove completed or deleted projects, and modify alignments on the Countywide Bicycle network;
- Develop a fiscally constrained list of High Priority Projects;
- Update graphics to improve readability for the general public and local agencies and make it easier to incorporate network changes. Develop graphics that are compatible with GIS;
- Develop an amendment process for including minor changes to the Plan and allowing for substitute projects between updates as well as developing a mechanism to track future changes;
- Update project costs and revise funding section to reflect new or modified sources of funding;
- Improve ability to tabulate facilities by category (e.g., city, planning area, county);
- Clarify issues related to the Bay Trail and Transit Hubs;
- Show the relationship between the Countywide Bicycle Plan High Priority projects and the Regional Bicycle Plan and the Countywide Pedestrian Plan High Priority projects, as appropriate; and
- Produce an updated Alameda Countywide Bicycle Plan document, specifically Chapters 3 and 5 and related Appendices.
- Update remaining chapters to make information and statistics current.

## **Countywide Bicycle Network**

This chapter describes the recommended updated cross-county bicycle corridors for Alameda County. The countywide network is composed of 22 corridors that are divided into 60 projects. Each project is further divided into separate segments that can be implemented by the jurisdictions. The system includes trails of regional transportation significance, as well as spur routes to regional attractors. The bicycle network has three levels of investment, similar to the 2004 Alameda Countywide Transportation Plan.

### **The Vision**

The Vision includes the entire 549-mile Countywide Bicycle network and two additional components that are not necessarily capital related: Rehabilitation of the Existing On-Street Countywide Bicycle System and Transit-priority Zone projects. The Vision would be equivalent to the Big Tent alternative in the Countywide Transportation Plan.

### **The Financially Constrained Network**

These are the capital projects, rehabilitation projects, and transit-priority zone projects from the Vision that can be implemented within 25 year planning period *and* are within the estimated revenues available over that period. The Financially Constrained network is based on a skeletal countywide bicycle network that consists of north-south and east-west routes that are the most needed to establish a basic, usable network. The two added components, Rehabilitation of the Existing On-Street Countywide Bicycle System and Transit-priority Zones, are financially constrained, but not defined in this update. Because the amount of funding is small for these components and they are likely to be oversubscribed, criteria are defined to allow eligible projects to be funded rather than establishing a list of high priority projects. The Financially Constrained Network is equivalent to the Committed and Tier 1 Investment program in the Countywide Plan.

### **The High Priority Projects**

The High Priority Projects are selected by the jurisdictions from the Financially Constrained Network. The process for selecting the high priority projects is described more fully in Chapter 5. These High Priority Projects are the focus for funding and implementation over the next 4 to 5 years when the next update to the Countywide Bicycle Plan is anticipated. The projects are equivalent to the Five High Priority Projects currently adopted by the ACCMA Board and ACTAC that are the focus of funding efforts in the short term.

The focus of Chapter 3 is to present the Vision and Financially Constrained networks.

## **Cross-County Bicycle Corridors**

The cross-county corridors tend to parallel the County's major geographic features, such as the San Francisco Bay and the coastal range, due to the landscape and geography of the County and the regional attractors. West of the East Bay Hills, the predominant travel direction is north-south, so the north-south corridors are spaced quite closely together whereas the east-west corridors are several miles apart. In the

Tri-Valley area, there is significant east-west as well as north-south travel demand, so the corridors are more evenly spaced.

The cross-county bikeway system uses five bikeway categories (the three types of bicycle facilities described by the Caltrans *Highway Design Manual* (HDM) Chapter 1000 and some refinement of Class III categories). The five categories are:

- Class I (bike path/multi-use path)  
Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians with crossflow minimized. In the Alameda Countywide Bicycle Plan, Class I facilities are referred to as multi-use bikeway facilities in the Countywide Bicycle Plan and can be paths or trails that accommodate both bicycles and pedestrians.
- Class II (bike lane)  
Provides a striped lane for one-way bicycle travel on a street or highway.
- Class III (bike route)  
Provides for shared use of an arterial (motor) roadway with signed bike route.
- Class III (bike route)  
Provides for shared use of an arterial (motor) roadway (with wider shoulders, preferably four feet minimum in width) with signed bike route.
- Class III (bike route)  
Provides a signed bike route on local streets and bicycle boulevards.

*Note:* A more detailed description of these categories and how they are used in the plan is presented in Appendix C-1.

Route alignments considered the needs of the bicycle users, safety, ease of implementation, compatibility with local bike plans, and regional transportation significance. These cross-county corridors use some or all of the following options: arterial and collector roadways, local streets, connecting pathways and/or rail rights-of way.

## THE VISION NETWORK

When completed, the proposed 2006 countywide Vision Network will total 549 miles; about 212 of these miles are existing facilities and 337 miles are new or improved facilities. In addition, there will be 17 new traffic signals, improvements to 27 freeway interchanges, 12 new bicycle/pedestrian bridges, underpasses and overcrossings and other needed improvements. This compares to 500 miles in the 2001 Countywide Bicycle Plan with 120 miles of existing facilities, 22 new traffic signals, improvements to 29 freeway interchanges, and 9 new bicycle/pedestrian bridges, underpasses and overcrossings and other needed improvements.

The recommended updated cross-county corridors are depicted in Figure 3-1 and listed in Table 3-1. The 22 corridors were subdivided into 60 projects, which are described in more detail in Appendix C-3. The

cross-county corridors have been numbered odd for north-south corridors and even for east-west corridors based on the interstate highway route numbering system.

## **Additional Corridors**

The following corridors were added to the Vision Network.

- Corridor 15 was extended from San Leandro to Castro Valley along Lewelling Boulevard connecting to Corridors 35 and 40. Extending Corridor 15 to Castro Valley provides east-west connections from Corridor 15 and connects to Corridor 25 and Corridor 35 in Central County. This route was not available in the development of the original Countywide Bicycle Plan.
- Corridor 80 was extended in Fremont along Fremont Boulevard from Grimmer Boulevard to the Santa Clara County line to provide additional north-south access on the west side of I-880. The proposed extension of Fremont Boulevard will provide connections to existing bike lanes in Santa Clara County.
- Corridor 105, a north/south corridor, was added through the City of Alameda to facilitate countywide travel.
- An east-west corridor was added in North County connecting the Bay Trail, Corridor 5 to the Berkeley Hills and Contra Costa County through Albany. This route was not available in the development of the original Countywide Bicycle Plan and has been added as Corridor 100.
- Two east-west corridors were added in Central and South County to provide additional east-west countywide connections between Corridors 25 and 35. The corridors are on Industrial Parkway in Central County (Corridor 110) and Central/Peralta/Mowry in South County (Corridor 120).

## **Criteria for Inclusion on the Vision Network**

Some of the roadways chosen for inclusion in the countywide network have existing Class II bike lanes. Other roadways or trails are depicted on existing city and/or regional plans, and bike lanes or paths are either under development or not yet built. While one of the primary criteria for inclusion on the countywide network was consistency with local plans, this was not always possible. Therefore, in some cases, the cross county bicycle route is not on an existing city plan but was chosen because it provides the most logical connection between other route segments and/or directly serves a regional attractor.

In some instances there were few practical choices to serve a corridor, while in other cases there were many. In the 2001 Bicycle Plan, the most feasible route alignments were rated based on screening criteria that included:

- Connectivity—bicycle use, serves attractors, gap closure, serves commuters;
- Safety—traffic volumes, bicycle collisions history, number of obstacles; and
- Feasibility—ease of implementation and project support.

The specific screening criteria are contained in Appendix C-2. For the 2006 Update, the 2001 network was retained and updated to reflect alignment modifications due to changes in locally adopted bicycle

plans and to make corrections to the network as appropriate. As a result, approximately 49 miles of additional countywide facilities were added to the Vision Network for a total of 549 miles of existing and proposed facilities.

## THE FINANCIALLY CONSTRAINED NETWORK

From the 545-mile Vision Network, a Financially Constrained Network was developed. The Financially Constrained network is a 201-mile skeletal network that emphasizes connections, as much as, possible to adjacent counties, to transit, and between cities and the unincorporated areas of Alameda County; that focuses on commute trips for bicycles; and that fits within the revenue estimates described in Chapter 5. Of the 201 miles, 102 miles exist and 99 miles are proposed. Figure 3-1 also shows the Financially Constrained network overlayed on the Vision Network.

## RECOMMENDATIONS FOR BIKEWAY TYPE

Each corridor is composed of roadway and trail segments of varying geometries and traffic conditions. In 2001, the most appropriate bikeway type for each corridor segment that did not have existing bike lanes or a bike path was determined based on field reviews, input from local jurisdictions and the Bicycle Task Force. These facilities were reviewed by ACTAC for the 2006 Update to reflect segments that were constructed since 2001 and to reflect new or modified alignments in locally adopted bicycle plans if appropriate. Since 2001, about 90 miles of bikeway facilities on the countywide bicycle network have been implemented.

The recommendations for those roadways that do not have existing bike facilities are presented in Appendix C-3. It should be noted that recommendations for specific bikeway types are based on standard bicycle planning principles and data known to the consultant at this point in time. The specific recommendations and alignments may change as detailed engineering studies are done to determine the feasibility of implementing a particular project.

**Table 3-1—Cross-County Bicycle Corridors**

| Corridor Number/Name         | Location  |
|------------------------------|---|
| <b>North-South</b>           |   |
| 5—Bay Trail                  | Albany, Berkeley, Emeryville, Oakland, San Leandro, San Lorenzo, Hayward, Union City, Newark, Fremont |
| 15—Alameda/Doolittle Road    | Alameda, Oakland, San Leandro, Castro Valley  |
| 25—I-880                     | Albany, Berkeley, Emeryville, Oakland, San Leandro, San Lorenzo, Hayward, Union City, Newark, Fremont |
| 35—I-580/MacArthur Boulevard | Albany, Berkeley, Oakland, San Leandro, Castro Valley, San Lorenzo, Hayward, Union City, Fremont      |
| 45—SR-13                     | Emeryville, Berkeley, Oakland   |
| 55—Skyline/Palomares Road    | Berkeley, Oakland, Unincorporated County, Castro Valley   |
| 65—I-680/Foothill Road       | Fremont, Pleasanton, Dublin, Unincorporated County  |

| Corridor Number/Name                  | Location   |
|---------------------------------------|--|
| 75—Dougherty Road                     | Dublin, Pleasanton, Unincorporated County                                    |
| 85—Tassajara Road                     | Dublin, Pleasanton, Unincorporated County                                    |
| 95—Vasco Road                         | Livermore, Unincorporated County   |
| <b>East-West</b>                      |  |
| 10—Fruitvale/Joaquin Miller           | Oakland, Alameda   |
| 20—Hegenberger/73 <sup>rd</sup>       | Oakland  |
| 30—Estudillo/Crow Canyon              | San Leandro, Unincorporated County, Castro Valley                            |
| 40—SR-92/Dublin Blvd.                 | Hayward, Castro Valley, Unincorporated County, Pleasanton, Dublin, Livermore |
| 50—Stoneridge/ Jack London Blvd.      | Pleasanton, Unincorporated County, Livermore                                 |
| 60—Stanley/East Avenue                | Pleasanton, Unincorporated County, Livermore                                 |
| 70—Vineyard/Tesla                     | Pleasanton, Livermore  |
| 80—SR-84/Niles Canyon Road/Vallecitos | Newark, Fremont, Union City, Unincorporated County, Livermore                |
| 100—Buchanan/Marin                    | Albany, Berkeley   |
| 105—Central Avenue                    | Alameda  |
| 110—Industrial Parkway                | Hayward  |
| 120—Central/Peralta/Mowry             | Fremont  |

*Note:* The East Bay Regional Park District (EBRPD) and city trails that parallel on-street segments of these cross-county bicycle corridors are listed in Table 3-2 and are part of the Vision Network.

The needed improvements are generally self-explanatory, such as “construct new bike path.” However, for some, there are several approaches to implementation. For example, bike lanes can be implemented by restriping existing lanes or may require the removal of motor vehicle travel or parking lanes or in some cases roadway widening. If a travel lane or parking lane is to be eliminated, then a method for determining the traffic impacts to the CMP and MTS networks must be developed.

## **REGIONAL BICYCLE TRAIL SYSTEM**

Some cross-county corridors use multi-use bikeway facilities, often called trails, as the preferred alignment. This is evident on Route 35 where the Ohlone Greenway in Berkeley was chosen. Most routes, however, are composed of roadways. Segments of these routes may parallel existing or proposed multi-use bikeway facilities. Those multi-use bikeway facilities that serve the same corridor as a cross-county corridor are considered part of the Countywide Bicycle Network and projects that are necessary to complete these multi-use bikeway facilities are included in the capital project list. This is consistent with the goals and objectives of the Countywide Transportation Plan and the Measure B Expenditure Plan, the latter of which states: High priority will be given to EBRPD projects included in the Countywide Bicycle Plan. These multi-use bikeway facilities are listed in Table 3-2.

**Table 3-2—Regional Multi-use Bikeway Facilities on the Vision Network**

| Proj. # | Trail Name   | Corridor #                  | Jurisdictions   | Status   |
|---------|--|-----------------------------|---|--|
| 1/2     | Bay Trail  | 5                           | Albany, Berkeley, Emeryville, Oakland, San Leandro, Unincorporated County, Hayward, Union City, Newark, Fremont | Partially constructed segments.  |
| 20      | Las Positas Creek Trail  | T-40                        | Livermore   | Partially constructed segments.  |
| 21      | Arroyo Del Valle Trail   | T-60                        | Pleasanton  | Planning underway.   |
| 29      | Shadow Cliffs to Iron Horse (includes Alamo Canal and Arroyo de la Laguna) | T-65A, I-680/ Foothill Road | Dublin, Pleasanton, EBRPD   | Partially constructed segments. Feasibility study underway for Alamo Canal Trail gap closure at I-580. |
| 30      | Niles Canyon to Shadow Cliffs Trail  | T-65B, I-680/ Foothill Road | Unincorporated County, Pleasanton, EBRPD  | In Adopted Trail Plans.  |
| 32      | Shadow Cliffs to Del Valle Trail/Arroyo del Valle/Sycamore Grove Trail     | T-70, Vineyard Avenue       | Pleasanton, Livermore, EBRPD  | Partially constructed segments. Planning underway.   |
| 34      | Iron Horse Trail (Alameda County line to Shadow Cliffs)                    | T-75, Dougherty Road        | Dublin, Pleasanton, EBRPD   | Complete to Dublin/Pleasanton BART station.  |
| 35      | Iron Horse Trail (Shadow Cliffs to San Joaquin County line.                | T-75, Dougherty Road        | Livermore, Alameda County, EBRPD  | Feasibility study needed.  |
| 36      | Alameda Creek Trail  | T-80, SR-84                 | Union City, Fremont, EBRPD  | Completed.   |
| 37      | Isabel Trail (Shadow Cliffs to Morgan Territory Road)                      | T-80, Isabel Avenue         | EBRPD, Livermore  | Partially constructed segments.  |
| 39      | Tassajara Creek Trail  | T-85, Tassajara Road        | Dublin, EBRPD   | Partially constructed segments.  |
| 52      | Arroyo Mocho Trail   | T-50, Stoneridge Drive      | Pleasanton, Alameda County (Zone 7) Water Agency, Livermore   | Complete in Pleasanton.  |
| 53      | Brushy Peak to Del Valle Trail   | T-95 Vasco Road             | Livermore, EBRPD, Dept. of Water Resources  | Feasibility study needed.  |

## **Spot Improvements**

“Spot improvements” is a large category that includes many different types of safety and access improvements that significantly improve the safety, convenience, travel time, ambiance and/or overall utility of a bicycle route. A Spot Improvement is generally limited to a specific location or intersection, as opposed to the improvements described above, which are applied to an entire segment. Examples of spot improvements include:

- Improving site specific hazards such as railroad tracks or unsafe drainage grates
- Providing a signal or other device to help bicyclists cross an arterial (exact device to be determined during implementation phase)
- Bicycle/pedestrian overcrossings needed above a freeway or other barrier

## **Spur Routes**

It was not always possible for the cross-county corridors to directly serve all or even the most significant of the major regional attractors identified in Chapter 2. Those destinations with the most existing or potential bicycle traffic deserve a signed bicycle facility (spur) from the nearest cross-county corridor to facilitate bicycle access. Specific locations not served by a cross-county corridor that are served by spur facility are:

- Shellmound to Maritime Bikeway (Corridor 5)
- Coliseum BART to the Bay Trail (Corridors 5, 20 and 25)
- Oakland to Alameda (Corridor 15)
- Alameda Ferry Terminal via Atlantic (Corridor 15)
- Corridor 25-35 Connector via Telegraph Avenue (Corridors 25 and 35)
- BART Stations: 19th Street, Rockridge and Ashby (Corridors 25, 35 and 45)
- South Berkeley to downtown Oakland connection via California Avenue (Corridors 25 and 35)
- Oakland Ferry Terminal via Clay Street (Corridor 25)
- Bay Bridge via West Grand Avenue (Corridor 25)
- Montclair via Fruitvale/Tiffin/Waterhouse/Leimert/Park Boulevard (Corridor 35)
- UC Berkeley via Hillegass Avenue and Hearst Avenue (Corridor 35)
- Downtown Piedmont (Corridor 35)
- CSU Hayward via Carlos Bee Road (Corridor 35)
- Ohlone College, Fremont via Washington Blvd. (Corridors 35 and 65)
- Downtown Fremont (Corridor 35)
- Corridor 45-55 Connection via Old Tunnel Road (Corridors 45 and 55)



- Contra Costa County via Wildcat Canyon Road (Corridor 55)
- Contra Costa County via Pinehurst Road (Corridor 55)
- Downtown/UC Berkeley via Spruce Street (Corridor 55)

## **TRANSIT-PRIORITY ZONES**

In the 2001 Bicycle Plan, 31 transit stations, hubs and terminals were identified on the Countywide Bicycle Network maps as needing improved bicycle access to transit so that countywide bicycle trips could be linked with transit. While the 2001 Bicycle Plan addressed design recommendations for existing and future transit stations and identified need for improvement of bicycle access to transit, it did not address what it meant to improve bicycle access to transit or how it could be implemented. Additionally, with the exception of a few fund sources such as Measure B and Transportation for Livable Communities, transit access projects have not competed as well for funding compared to the larger capital projects on the Countywide Bicycle Network.

In the 2006 Update to the Bicycle Plan, ACTAC addressed this issue by defining Transit-priority Zones and creating a separate component through which access to transit projects could be implemented. Because the amount of revenue identified for Transit-priority Zone projects is small at this time and it is likely that the category will be oversubscribed, criteria are defined that would allow eligible projects to be funded in the category rather than establishing a list of high priority projects. The need to establish a complete list of transit access projects is identified as an outstanding issue in Chapter 5. The definition of Transit-priority Zones and eligibility criteria are presented below along with station access design recommendations. The available revenue estimate is presented in Chapter 5.

### **Definition of Transit-Priority Zones**

The objective is to improve connections between bicyclists and transit in Alameda County. This would be accomplished by improving connections to transit stations including all BART stations, ACE stations, Amtrak stations, and ferry terminals and improving connections to buses on trunkline service routes. The Countywide bicycle network should try to have at least one direct connection to every major transit and hub with a focus on hubs, stations and terminals that have multiple types of transit or demonstrate high demand for bicycle use. Major and trunkline bus transfer points, by service provider, are listed below.

#### **AC Transit**

- BART stations
- Solano/San Pablo Avenues
- University/San Pablo Avenues
- 40<sup>th</sup> Street/San Pablo Avenue
- MacArthur Boulevard/Broadway
- Webster Street/Santa Clara
- Park Street/Santa Clara Avenue

- Fruitvale Avenue/MacArthur Boulevard
- 73<sup>rd</sup> Avenue/MacArthur Boulevard
- 73<sup>rd</sup> Avenue/International Boulevard
- Chabot College
- Union Landing Transit Center
- Ardenwood Park and Ride
- Lido Faire Shopping Center
- Ohlone College

#### **UC Transit**

- BART stations
- Union Landing Transit Center
- Alvarado Boulevard/Dyer Street

#### **LAVTA**

- BART station
- Livermore Transit Center
- Valley Care Medical Center
- Lawrence Livermore National Laboratory
- Las Positas College
- Valley Care Hospital
- Stoneridge Mall
- First and Neal Streets

Ideally, the bicycle connection would provide direct access from all four quadrants to the periphery of the transit hub, station, or terminal. Implementation of improvements on transit district property would be the responsibility of the transit district and improvements on jurisdictional roadways would be the responsibility of the jurisdictions. Transit-priority Zone projects improve access to transit. Types of projects that would be considered for promoting bicycle access to transit hubs, stations, and terminals and intermodal connections between bikes and other transit connections are:

- On-street bikeways to provide continuous entry to the transit hub, station or terminal.
- Multi-use bikeway facilities to provide continuous entry to the transit hub, station or terminal.

- Upgrades to streets with existing bikeways to improve bicycle access (i.e., upgrades to rail crossings and street pavement conditions).
- Bicycle parking and storage.
- New or retimed traffic signals that benefit bicycle safety and access as a primary use.
- Station pathfinder or wayfinding signs.
- Stair channels.
- Racks on buses and at bus stops.
- Traffic safety and personal security projects.

### **Prioritization Criteria**

The following criteria will be applied to transit access projects in Transit-priority Zones.

#### **General**

- Project must be ready (e.g., has community and other agency support, fully funded, not dependent on another project, environmentally cleared. Project readiness is more precisely defined by funding source).
- Project meets the definition of a Transit-priority Zone as defined in the Alameda Countywide Bicycle Plan and described above (e.g., improves connections to transit).
- Project results in a usable segment or defined facility (e.g., bike lockers, bike parking, bike racks, signing, stair channels, etc).
- If project is not on a transit district property, it has the support of the local jurisdiction in which it is located or if the project is on transit district property and is proposed by a local jurisdiction it has the support of the transit district on which it is located.

#### **Bikeway Projects**

- Project provides at least one safe, convenient route to a transit station/hub. Highest priority would be for connecting from a countywide corridor. Next highest priority would be from route on a local network.
- Project provides uninterrupted access and entry to the transit station/hub or improves access (e.g., upgrades to rail crossings for which the jurisdiction has control of and street pavement).
- Project serves a transit station/hub with the highest existing or potential demand for bicyclists or, if a BART station, is identified as a priority station in the most recent BART Bicycle Access and Parking Plan Table A-11: Bicycle Access Growth Potential.

## Infrastructure Projects

- Project serves a transit station/hub with the highest existing or potential demand for bicyclists or, if a BART station, is identified as a priority station in the most recent BART Bicycle Access and Parking Plan Table A-11—Bicycle Access Growth Potential.

## Bicycle Parking/Storage Projects

- Project provides adequate facilities (e.g., parking, storage, racks) to meet demand plus 10 percent.
- Project serves a transit station/hub with the highest existing or potential demand for bicyclists or, if a BART station, is identified as a priority station in the most recent BART Bicycle Access and Parking Plan Table A-11: Bicycle Access Growth Potential.

## Station Access Design Recommendations

Implementing Transit-priority Zone projects should help ensure that transit stations and their immediate vicinity are designed to encourage bicycling. This includes creating bike lanes on approaching roads, designing bicycle entrances to reduce potential conflicts with automobiles and pedestrians, and providing signage to assist bicyclists in getting from the station to nearby bikeways. The emphasis of Transit-priority Zone projects may differ for existing vs. future stations.

## Existing Stations

Specific design recommendations for existing stations include:

- Creating at least one designated bicycle entrance, with signage and separation from auto traffic;
- Installing mid-block crossings where station entrances do not coincide with intersections along with appropriate traffic control devices. It is recommended that the visibility of these crossings to approaching motorists be enhanced with signs, pavement flashers and other methods per the judgment of the local traffic engineer;
- Locating bicycle ramps adjacent to stairways; and
- Placing bike storage facilities in covered areas near station entrances.

## Future Stations

Specific design recommendations for future stations include:

- Creating station entrances directly on the street, so that stations are not surrounded entirely by parking (Castro Valley BART station is a good example of this);
- Incorporating bikestations or other bike storage facilities in convenient locations;
- Installing bicycle-friendly fare gates and ramps;
- Bicycle ramps adjacent to stairways; and

- Encouraging cities to install bikeways and provide safe pedestrian and bikeways leading to transit stations.

## **REHABILITATION OF THE EXISTING ON-STREET BICYCLE SYSTEM**

Addressing the rehabilitation of existing on-street bicycle system was added to the 2006 Update to ensure that bicycle lanes on the countywide network are replaced or proposed bicycle lanes are installed when local roadways are rehabilitated. Existing on-street bicycle facilities should be rehabilitated concurrently with a roadway rehabilitation project on the same roadway as part of the roadway rehabilitation project, whenever possible. Rehabilitation of a roadway should include curb-to-curb resurfacing to accommodate bicyclists. However, in instances where there are not enough funds to rehabilitate the existing bicycle facility at the same time, the funds from this component would be available to supplement roadway rehabilitation funds for bicycle projects that meet the criteria. Rehabilitation of existing on-street countywide bicycle network facilities is the responsibility of the jurisdictions.

Because the amount of revenue identified for rehabilitation bicycle projects is limited at this time and it is likely that the category will be oversubscribed, criteria are defined that would allow eligible projects to be funded in the category rather than establishing a list of high priority projects. It is recognized that there are other bicycle maintenance and rehabilitation needs that need to be addressed. These as well as a need to establish a complete list of bicycle rehabilitation projects are identified as outstanding issues in Chapter 5. The criteria are presented below. The available revenue estimate is presented in Chapter 5.

### **Prioritization Criteria**

The following criteria will be applied to on-street bicycle rehabilitation projects.

- Project is an existing bicycle facility on the Vision Network of the Alameda Countywide Bicycle Network.
- Project must be ready (e.g., has community and other agency support, fully funded, not dependent on another project, environmentally cleared. Project readiness is more precisely defined by funding source.)
- Project results in improving a usable segment (e.g., extends pavement from road to edge, removes a roadway barrier to bicycle travel).
- Project extends the service life of an existing segment and is not a routine maintenance project.
- Project serves a roadway with the highest existing or potential demand for bicyclists.

## **RELATIONSHIP BETWEEN THE PEDESTRIAN AND BICYCLE PLANS**

ACTIA is developing the first Alameda Countywide Pedestrian Plan. It will serve as a companion to the Alameda Countywide Bicycle Plan developed by the ACCMA. Wherever possible, efforts were made to coordinate the two plans, including revenue projections, mapping and efforts to show how countywide bicycle projects coincide with areas of significance in the Countywide Pedestrian Plan. Both plans recognize the need to design facilities that consider both bicyclists and pedestrians and that also avoid

potential conflict between the two modes (e.g., the design of one facility type should not preclude the other). Recommendations for reducing bicycle and pedestrian conflicts on shared facilities and opportunities for designing for both modes are summarized below. For specific bicycle and pedestrian best practices, refer to Appendix C-4 of the Countywide Bicycle Plan and the Toolkit for Improving Walkability in Alameda County, a companion document to the Alameda Countywide Pedestrian Plan. Chapter 5 presents a comparison of revenue estimates and overlapping bicycle and pedestrian projects.

## **DESIGNING STREETS FOR BICYCLISTS AND PEDESTRIANS**

If there is sufficient right-of-way along a roadway, both a bike lane and sidewalk should be provided. However, along streets with limited rights-of-way where both sidewalks and bike lanes cannot fit, sidewalks should be provided and bicyclists would be accommodated on the roadway. Both modes share the shoulder when neither sidewalks nor bike lanes are available, although this situation is not common in Alameda County. Wider curb lanes and other improvements can improve bike safety on roadways. Medians and curb extensions should be discouraged where that installation of them will preclude bicycle lanes.

### **Bicyclists on Sidewalks**

Keeping bikers off the sidewalk can be accomplished by providing bicyclists a more appropriate place to ride. For example:

- Bike lanes on arterials will discourage bicyclists from riding on the sidewalk; and
- Parallel bike routes, on calmer streets, will reduce the incidence of sidewalk riding.

### **Separate Entrances for Bicyclists and Pedestrians**

At entrances to transit stations and other major attractors, pedestrians and bicyclists should have separate pathways, or bicyclists should be directed to enter via the roadways. Where possible, pedestrians should not be channeled in front of the bike parking facilities.

### **Dual-Modes along Multi-Use Facilities (Class I)**

Multi-use Class I facilities, where bicyclists and pedestrians share the facility, are an important component of the bikeway network. Some facilities are long enough and well-located to provide a car-free environment for a large portion of a bicycling trip. However, their popularity with slow cyclists—including families with children and non-bicyclists such as joggers, roller-bladders, parents with baby strollers, people walking their dogs and other groups—limits their usefulness to cyclists who ride over 15 mph. Serious bicyclists can rarely ride as fast on a multi-use Class I facility as they can on city streets. This is due both to the design of the multi-use Class I facility and also due to the high numbers of slower users. The following strategies would reduce pedestrian and bicycle conflicts on multi use facilities.

- Shared-use pathways with significant volumes of both bicyclists and pedestrians should have a paved width of at least 12-16 feet to allow for both pedestrians and bicyclists. Ideally, there would be two paths, one for each mode.

- Where the Highway Design Manual minimum standard is provided, signs should be posted advising cyclists to pass on the left and to call out when passing, and for pedestrians to keep to the right.
- Providing a graded shoulder will help reduce conflicts because many runners and walkers prefer to walk on the softer surface. This increases the effective width of the pathway by allocating more paved width to bicyclists. Wider facilities may be substituted for graded shoulders.
- In some settings like college or business park campuses where there are few or no motor vehicles, pedestrians and bicycles share the same internal pathways. This can result in the same conflicts that arise on any other multi-use bikeway. It is recommended that a hierarchy still be adhered to with bicyclists on a roadway and pedestrians on an adjacent sidewalk or path, so that there is a clear differentiation between where bicyclists are expected and where pedestrians are expected. Where it is impossible to maintain separate facilities and bikes and pedestrians must share, similar strategies to those described above may be appropriate.

## **Bike Parking**

Bicycle parking should be located so that it does not interfere with pedestrian circulation. Specifically:

- In vehicular parking lots and near building entrances, bike racks should not be placed in the pedestrian line-of-travel to the front door or placed such that the parked bicycle would encroach into the pedestrian pathway.
- On sidewalks, five feet of clear space should remain between the parked bicycle and other obstructions such as buildings, light poles and other street furniture.

## **BIKE/TRANSIT INTERFACE**

There are three areas of concern to bicyclists at transit stations: on-board access to the transit service, bicycle storage, and station design and access, including integration with the surrounding neighborhood. Bicyclists should be able to safely and conveniently take their bicycle with them or store it at the station. In turn, bicyclists need to be aware of the needs of other transit users. The following recommendations address ways to improve bicycle access on transit vehicles and to transit stations in Alameda County.

### **Onboard Access**

In general, the county's transit providers have good onboard bicycle access. Both ferry services and four bus providers, Union City Transit, WHEELS (LAVTA), County Connection (serves Dublin BART Station), and Santa Clara VTA (serves Fremont BART Station), allow full onboard access; the remaining bus and rail service providers allow bicycles onboard with some restrictions. Ideally, transit providers would allow bicycles on all trains and bike racks on all buses. Achieving this goal requires more spaces for bicycles onboard and increasing the flexibility of bicycle policies onboard when designated spaces are full. Recommendations are noted below.

### **ACE Train**

The ACE Train appears to provide sufficient bicycle space. However, the train could consider allowing bicycles on the train even when the formal spaces are filled.

## Amtrak California/Capitol Corridor

All of Amtrak's Capital Corridor trains have bike racks. However, Amtrak trains are spacious and could consider a permit for unboxed bicycles on trains without racks or when the racks are full.

## BART

BART permits bicycles on trains, except during the commuter peak period. BART's Performance Research Staff identified current time restrictions based on load factors (times when trains consistently have several passengers standing and are too crowded to accommodate bicycles). "Black-out" periods were created using these load factors and adjusted to provide the most user friendly and consistent schedule possible. Given long term ridership trends, it is unlikely that the peak period ridership will decrease enough to allow less frequent bicycle restrictions or that BART will be able to increase train capacity to accommodate the ideal bicycle schedule of full bicycle access on all trains at all times.

The BART Bicycle Advisory Task Force (BBATF) provided input to the current bicycle rules. The success of the rules is still under evaluation. Bicycle ridership at BART has increased with the implementation of the new "Bike-Friendly" policies. The overall policy is that bicycles are not permitted on crowded cars regardless of the time or route. Cyclists are expected to use good judgment even outside the "black-out" periods.

Providing additional cars for bikes during peak hours is not feasible since BART station platforms have a 10-car maximum. BART is currently testing remodeled cars with expanded multi-use areas and has sought funding to remodel additional cars. This expanded area will have had a seat removed to allow for more open space near the door that will accommodate a full bike length. This area will be tested to see how the space is utilized and for customer reaction. Wheelchair users will have first priority for this space and then it is recommended for bicyclists and passengers with luggage.

## AC Transit

All AC Transit buses are equipped with bicycle racks. Racks are mounted on the front of the bus and each holds two bikes. Space on the rack is available on a first-come-first-served basis. If the rack is full, bicyclists must wait for the next bus. On the M and U lines, there are often under carriage bike racks that can accommodate two additional bikes. From 5:30 a.m. to midnight, bicycles are not permitted inside the bus. From midnight to 5:30 a.m. weekdays and midnight to 9:00 a.m. weekends and holidays, bikes may be carried inside on buses with at least two doors if the rack is full and space is available inside the bus. AC Transit could consider expanding the policy to allow bikes on the bus when the racks are full and the bus has room to other hours. Recently, AC Transit has received funding to study bicycle parking at bus stops.

## Dumbarton Express

Dumbarton Express has bicycle racks. However, when these are full, this service could explore additional ways to allow cyclists to bring their bikes on the bus.



## **Bicycle Storage at Stations**

Transit riders who bike to the station need a variety of storage options depending on the purpose of their trip and the time they arrive and leave the station. Efforts are underway to find funding to install electronic bike lockers to replace existing single user lockers. Once installed, e-lockers would allow for any bicyclist to have access to any available locker for a rental fee.

Bike racks are ideal for riders who need maximum flexibility, but they are less secure than other storage options. Bike lockers provide both flexibility and security, but they usually require bicyclists to reserve lockers in advance, and at some stations all available lockers have been rented. Finally, the guarded storage at bike stations provides the most security, but they are not open during all hours. Ideally, high volume stations should be equipped with attended bicycle parking facilities, and others should have a combination of good-quality racks and lockers that meets or exceeds the number of bicycle users.

Storage facilities are appropriate at rail and ferry stations due to the nature of their service. The ACE train, Amtrak, and ferries appear to provide ample bicycle storage at their termini for their passengers, and they should continue to monitor use and periodically survey passengers to determine whether more storage is needed. Buses generally travel shorter distances and provide more comprehensive service, so storage is recommended only for long-haul trips. Specific recommendations include the following:

### **BART**

The attended bike parking facility at the downtown Berkeley Bikestation functions at or beyond capacity at all times. Some of the demand for the bike station could be alleviated if the Berkeley Bikestation facility is physically expanded extends the hours of operation, or additional bike stations were provided at other stations such as North Berkeley. A bike station has been in operation at the Fruitvale BART station as part of the Transit Village project since December 2004. Based on existing bicycle rack-and-locker occupancy as well as bicycle theft rates, bike stations could be considered at the North Berkeley, Ashby, MacArthur, 12th Street, 19th Street, West Oakland, and Lake Merritt BART stations. A full list of priority stations for rack-and-locker installation is shown in the BART 2002 Bicycle Access and Parking Plan available on BART's webpage.

Attended bike parking facilities have on-going operating costs. Funding options are being explored for use in the development of a long-term strategy to cover the operating costs of attended bicycle facilities. A combination of sources is being explored, including the support of local jurisdictions, BART, revenue generating retail activities, user fees, and grant funds, to ensure a healthy on-going operating program.

### **Buses**

AC Transit could consider additional bicycle storage facilities at the Transbay Terminal and along other heavily-traveled Transbay routes to serve long-haul passengers and at the Eastmont Town Center.

## SUMMARY OF RECOMMENDATIONS

### Countywide Bicycle Network

The purpose of the countywide bicycle network is to connect local jurisdictions to countywide attractions and activities, and to and maximize existing bicycle facilities by planning for new, upgraded or linked facilities. Opportunities include:

- Updated information and maps depicting the countywide bicycle network can be accessed at the CMA's website at [www.accma.ca.gov](http://www.accma.ca.gov).
- Bikeway facilities have been recommended under five categories:
  - Multi-use bikeway facility (shared use path)
  - Bike lanes
  - Arterial, signed route
  - Arterial with wider shoulders
  - Local roadways and bicycle boulevards
- Roadways chosen for inclusion are either listed in a city bicycle plan or, if not, follow the most logical connection between other route segments or directly serves a regional attractor.
- Route alignments considered the needs of bicyclists such as:
  - Safety
  - Ease of implementation
  - Compatibility with local bike plans
  - Regional transportation significance
- Improvements to local streets and roads, including bike lanes and routes, are the prerogative of the affected jurisdiction, and no improvements can be made or funding applied for without the consent of the jurisdiction.
- Ways to improve connections and access between bicycles and transit are recommended and include:
  - Development of on-street bikeways to provide continuous entry to transit hubs, stations or terminals.
  - Development of multi-use facilities to provide continuous entry to transit hubs, stations or terminals.
  - Upgrades to streets with existing bikeways to improve bicycle access (i.e., upgrades to rail crossings and street pavement conditions).
  - Installation of bicycle parking and storage.
  - Installation of new or retimed traffic signals.

- Installation of station pathfinder or wayfinding signs.
- Provision of stair channels
- Installation of racks on buses and at bus stops
- Implementing traffic safety and personal security projects
- A method of providing supplemental funding for rehabilitation of the on-street existing countywide bicycle network is recommended.
- The relationship between the Countywide Bicycle Plan developed the ACCMA and the Countywide Strategic Pedestrian Plan developed by ACTIA is described including ways to design for both modes.

