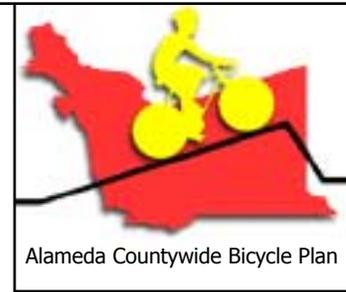


Table of Contents



CHAPTERS	PAGE
Executive Summary	
Vision Statement	E-1
Measure B	E-1
Purpose of the Bicycle Plan	E-1
Goals and Objectives	E-2
Plan Organization	E-2
Summary of Existing Conditions	E-3
Countywide Bicycle Network	E-4
Pedestrian Facilities and Transit Access	E-6
Recommended Bicycle Programs	E-8
1. Introduction and Overview	
Vision Statement	1-1
Setting	1-1
What is the Plan and Why Have One?	1-2
Why Encourage Bicycle Transportation?	1-3
Plan Development Process	1-4
Plan Coordination	1-5
Goals and Objectives	1-8
Bikeway Types	1-11
2. Existing Conditions	
Existing Bicycle & Pedestrian & Intermodal Conditions	2-1
Geographic and Other Barriers	2-1
Existing Bicycle and Walking Commute Share	2-2
Regional Travel Characteristic Surveys	2-3
Existing Bicycle Counts and Surveys	2-4
Regional Attractors/Generators	2-5
Existing Bicycle Plans	2-11
Other Bicycle Route Maps	2-11
Existing Pedestrian Policies, Practices and Procedures	2-17
Connections to Adjacent Counties	2-18
Bicycle or Pedestrian Collisions with Motor Vehicles	2-21
Conflicts Between Bicyclists and Pedestrians	2-31
Bicycle Parking and Support Facilities	2-32
Bicycle Access and Transit	2-34

Bicycle Education Programs 2-48
 Summary of Existing Conditions 2-48

3. Proposed Facility Improvements

Cross-County Bicycle Corridors 3-1
 Criteria for Inclusion on the Countywide Network 3-2
 Bikeway Recommendations. 3-3
 Regional Trail System. 3-4
 Pedestrian Facilities 3-16
 Pedestrian-Bicycle Conflicts. 3-18
 Recommendations for Bike/Transit Interface. 3-20
 Bicycle Storage at Stations 3-21
 Station Recommendations for Pedestrian Access. 3-24
 Summary of Facility Recommendations 3-24

4. Proposed Programs

Cost Estimates for Recommended Bicycle Programs 4-1
 Signage Program 4-1
 Maintenance Program 4-5
 Bicycle Parking Program 4-6
 Education Program 4-7
 Summary of Recommended Bicycle Programs. 4-10

5. Implementation Plan

Recommended Projects 5-1
 Cost Estimates 5-7
 Funding Availability 5-9
 Funding Sources 5-9
 Prioritization of Projects 5-11
 Next Steps and Issues to be Resolved 5-14

6. Design Guidelines and Best Practices

Purpose of Countywide Design Guidelines and Best Practices. . . 6-1
 Design Differences Between Bicycle and Pedestrian Facilities . . . 6-1
 Existing Bicycle Design Practices in Alameda County 6-1
 Recommended Bicycle Design Practices 6-2
 Recommended Pedestrian Design Practices 6-24
 Model Bicycle Education Programs. 6-25

Acknowledgements after Appendices

Abbreviations after Appendices

APPENDICES

Appendix C-3 and Appendices E-1, E-2, E-3 and E-4 are bound within this volume. The complete appendices are bound in a separate volume of the Alameda Countywide Bicycle Plan - Technical Appendices Volume II, which is available at the Alameda County Congestion Management Agency.

- A-1 - Bicycle Transportation Account Requirements
- A-2 - BAAQMD Transportation Control Measures
- B-1 - Commute/ Mode Share/Trip Purpose Data
 - Table B-1 Alameda County Bike-Walk Mode Share by Year
 - Table B-2 - Weekday Bicycle and Walk Trips by Purpose - All Bay Area Counties
- B-2 - Major Employers in Alameda County
- B-3 - Pedestrian Goals and Policies
- B-4 - Bicycle and Pedestrian Collision Data
- B-5 - Collision Rates - Methodology
- B-6 - Bicycle Parking Inventory at Major Attractors in Alameda County
- B-7 - Existing Bicycle Parking in Local Jurisdictions
- B-8 - Existing Bicycle Education Programs in Alameda County
- C-1 - Description of Bikeway Categories
- C-2 - Screening Criteria
- C-3 - Cross County Corridor Descriptions
- C-4 - Pedestrian Conditions at Transit Stations
- D-1 - Public Education and Outreach to Encourage Walking
- D-2 - Bicycle Education
- E-1 - Recommended Capital Projects
- E-2 - Unit Cost Assumptions
- E-3 - Priority Scoring of Capital Projects
- E-4 - Description of High Priority Projects
- F-1 - Bicycle Design Guidelines and Practices Used in Alameda County
- F-2 - Pedestrian Guidelines

TABLES

E-1	Cost Summary - Countywide Bicycle Plan.	E-6
E-2	High Priority Projects.	E-7
2-1	Duration (minutes) of Bicycle and Walk Trips - Bay Area	2-3
2-2	Bicycle/Pedestrian Mode Share for Major Employers Survey Results by City	2-5
2-3	Status of City/County Bicycle Plans	2-17
2-4	High Motor Vehicle/Bicycle and/or Pedestrian Collision Intersections	2-26
2-5	Bicycle Collision Rates by City.	2-27
2-6	Pedestrian Collision Rates by City-Alameda County	2-29
2-7	Rates of Drivers at Fault in Pedestrian/Motor Vehicle Collisions	2-30
2-8	Summary of Existing Bicycle Programs and Ordinances.	2-40
2-9	Bicycle Storage at ACE Stations in Alameda County	2-41
2-10	Bicycle Storage at Amtrak Stations in Alameda County	2-42
2-11	Bicycle Storage at BART Stations in Alameda County	2-44
2-12	Bicycle Storage at Alameda/Oakland Ferry Terminals in Alameda County	2-45
2-13	Bicycle Storage at Harbor Bay Ferry Terminals in Alameda County	2-46
2-14	Summary of Bicycle and Pedestrian Safety Education in Alameda County	2-49
3-1	Cross-County Bicycle Routes.	3-3
3-2	Regional Trails in the Countywide Bicycle Network	3-15
4-1	Recommended Programs for the Countywide Bicycle Plan	4-1
4-2	Projected Maintenance Needs.	4-6
5-1	Summary of Recommended Bikeway Types by Crosscounty Corridor	5-2
5-2	Unit Construction Cost Assumptions for Bikeway Improvements	5-7
5-3	Total Network Costs by Improvement Type	5-8
5-4	Summary of Available Funding Sources for Implementation, FY 2001-2020	5-11
5-5	High Priority Projects.	5-13
6-1	Operational Differences Between Walking and Bicycling	6-2
6-2	Optimum Bike Lane Widths (feet).	6-4
6-3	Bicycle Signal Standards	6-15
6-4	Bikeway Surface Tolerances	6-16
6-5	Bicycle Parking Requirement Recommendations	6-19
6-6	Model Bicycle Education Programs	6-26

FIGURES

2-1	Existing Bicycle and Walking Commute Share.	2-2
2-2	Regional Age and Gender by Bicycle or Walk Mode.	2-4
2-3	Regional Attractors and Generators.	2-6
2-4	Existing and Proposed Bicycle Facilities from Local and Regional Bicycle Plans.	2-12
2-5	Bicycle Collision Locations	2-24
2-6	Pedestrian Collision Locations.	2-25
2-7a	Bicycle Collisions per Million Bicycle Miles of Travel	2-28
2-7b	Bicycle Collisions per Million Bicycle Trips.	2-28
2-8	Bike Parking	2-28
3-1	Recommended Cross County Bicycle Corridors	3-5
5-1	High Priority Projects (follows)	5-12
6-1	Trail Sections versus Pedestrian Volumes	6-5
6-2	Typical Trail Bollards	6-7
6-3	Bike Lanes on Arterials	6-5
6-4	Bike Lanes on Bus Routes	6-7
6-5	Bike Route on Local Streets	6-9
6-6	Bicycle-Friendly Arterial Roadways	6-11
6-7	Bike Route on Arterial with Narrow Lanes	6-13
6-8	Guidelines for Placement of Bicycle Lockers	6-20
6-9	Guidelines for Placement of Inverted U-Racks	6-21
6-10	Guidelines for Placement of Wave Racks	6-22
6-11	Guidelines for Placement of Coat Hanger Racks	6-23

Executive Summary



VISION STATEMENT

“To establish and maintain bicycling as a viable mode of transportation and integrate it with other modes of transportation; to assure that bicycling is safe for bicyclists of all abilities; and to encourage multi-jurisdictional coordination to plan, fund, design and construct bicycle projects.”

The Bicycle Task Force, in conjunction with the Alameda County Congestion Management Agency, adopted the above vision statement to guide the development of this plan and Alameda County’s bicycle program. The goal is to increase the potential for bicycle transportation by integrating bicycling into the Alameda County transportation system. Through input from the bicycling public in coordination with local, regional, state and federal agencies-bicycle trips will be made possible where such trips were not possible before this plan.

MEASURE B

In November, 2000, voters in Alameda County sanctioned “Measure B,” the half-cent sales tax that is the continuation of an existing sales tax measure that expires in 2002. Five percent of the \$1.4 billion dollar measure, or \$70,000,000 is programmed for non-motorized transportation. Twenty-five percent of this or \$17.5 million is reserved for regional projects, including funding for the high priority regional capital projects identified in the Countywide Bicycle Plan. High priority will also be given to East Bay Regional Park District projects included in the Countywide Bicycle Plan. The remaining seventy-five percent of the non-motorized funds from Measure B, or \$52.5 million, will be designated as local capital funds so that local agencies can implement local projects.

The ACCMA’s website www.accma.ca.gov contains up-to-date maps of the cross-county corridors.

PURPOSE OF THE BICYCLE PLAN

States and communities of all sizes throughout the country are undertaking significant investments in facilities to encourage bicycle and pedestrian transportation. Federal policy through the Transportation Equity Act for the 21st Century (TEA-21) legislation strongly supports such activities, and significant sources of funding for these types of projects are available through the Transportation Enhancement Program and, in non-attainment areas, through the Congestion Mitigation and Air Quality (CMAQ) improvement program of TEA-21.

“...one of the most significant results of increased accommodation for bicycles is the improved quality of life enjoyed by area residents.”

The Alameda County Long Range Transportation Plan-Transportation Vision for 2018 and Beyond has two policy goals consistent with a bicycle plan:

- 1. improve mobility and**
- 2. improve air quality**





GOALS AND OBJECTIVES

The Bicycle Task Force Members established the following goals for this plan:

1. Create and maintain an inter-county and intra-county bicycle network that is safe, convenient and continuous.
2. Integrate bicycle travel in transportation planning activities and in transportation improvement projects.
3. Encourage policies and actions that foster bicycling as a mode of travel.
4. Improve bicycle safety through facilities, education and enforcement.
5. Maximize the use of public and private resources in establishing the bikeway network.

PLAN ORGANIZATION

The Plan is organized as follows:

VOLUME I

Chapter 1: Overview of the Countywide Bicycle Plan

Chapter 2: Bicycling/Pedestrian Conditions in Alameda County

Chapter 3: Countywide Network and Proposed Improvements

Chapter 4: Proposed Programs

Chapter 5: Prioritized Projects and the Implementation Plan

Chapter 6: Design Guidelines Best Practices

Appendix C-3: Cross County Corridor Descriptions

Appendix E: Description of Recommended Capital Projects

VOLUME II

Appendices A-F include supporting documentation for this study and are included in a separate technical volume available from the Alameda Congestion Management Agency.

SUMMARY OF EXISTING CONDITIONS

- According to the 1990 Census, 1.3 percent of Alameda County residents commute to work on bicycle and 4.1 percent walk to work.
- Over two-thirds of existing bicycle or walk trips take less than 15 minutes.
- Young males between 5-17 years are the most likely walkers and bicyclists. Both genders between the ages of 30-50 are least likely to bike or walk. Walking as transportation becomes increasingly significant for women over age 50.
- A lack of systematic data collection on bicycle and pedestrian trips and discontinuous routes in Alameda County point to the need for more cooperation between planning entities.
- Most general plans for the jurisdictions in Alameda County encourage the use of nonmotorized transit.
- Eight of 15 jurisdictions in Alameda County have adopted bicycle plans and the East Bay Regional Park District has an adopted plan.
- Intercounty connections exist in the eastern part of the County through the EBRPD multiuse trail network, such as the Iron Horse Trail, and existing roadways, in Northern Alameda County via the Ohlone and Bay Trails and existing roadways and in Southern Alameda County via the bike path on the Dumbarton bridge.
- Oakland's International Boulevard, Berkeley's Shattuck Avenue and Fremont's Fremont Boulevard have the highest number of bicycle and pedestrian trips, and the highest number of bicycle-only collisions with motor vehicles in the county.
- The top three causes for bicycle/motor vehicle collisions were:
 - Bicyclist not cycling in same direction as traffic
 - Bicyclist failing to use right edge of roadway
 - Both bicyclist and driver failing to yield right-of-way
- Bicycle parking and facilities such as showers and lockers are essential components of bike transportation, though few ordinances exist to encourage these "support facilities."
- Bicycle and pedestrian facilities and access enhance air quality and congestion mitigation benefits of transit.
- Most transit providers in the county offer bicycle parking facilities, though supply is often at or near capacity.
- During peak commute hours, bicycles have limited access to BART and are especially limited on runs going to San Francisco.



- All BART stations in Alameda County have bicycle storage facilities. The first BikeStation in Alameda County was installed at the downtown Berkeley BART in 1999 and new BikeStations are planned for Fruitvale and Embarcadero BART Stations.

Two keys to a successful bicycle network:

- 1. Match the type of facility with the needs of the users.**
- 2. Improve the safety of all facilities.**

COUNTYWIDE BICYCLE NETWORK

This study defined five categories of bike facilities (refining beyond the three Caltrans classifications, see Appendix C-1 for a more detailed description):

1. Class I - Bike trail/shared-use path (Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians)
2. Class II - Bike lanes (Provides a five-foot striped lane adjacent to the vehicular travel lane for one-way bicycle travel)
3. Class III - Arterial signed as bike route (Provides for shared use with pedestrians/motor vehicles)
4. Class III - Roadway with wider shoulders, preferably 4 feet minimum in width
5. Class III - Local roadways and Bicycle Boulevards

Cross-County Bicycle Corridors

- The purpose of the countywide bicycle network is to connect local jurisdictions and countywide attractions to maximize existing bicycle facilities by planning for new, upgraded or linked facilities.
- 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 serve a regional attractor.
- The cross county corridor alignments considered:
 - The needs of bicycle user groups
 - Safety
 - Ease of implementation
 - Compatibility with local bike plans
 - Regional transportation significance
- Regional or city trails that serve the same corridor as a cross-county route are also considered to be part of the Countywide Bicycle Network. A list of these trails is presented below after the countywide corridors.

The recommended cross-county corridors of the Alameda Countywide Bicycle Plan are:

<u>North-South Routes</u>	<u>Location</u>
Route 5-Bay Trail	Albany, Berkeley, Emeryville, Alameda, Oakland, San Leandro, San Lorenzo, Hayward, Union City, Newark, Fremont
Route 15-Alameda-Doolittle Road	Alameda, Oakland, San Leandro
Route 25-Highway 880	Albany, Berkeley, Emeryville, Oakland, San Leandro, San Lorenzo, Hayward, Union City, Fremont, Newark
Route 35-Highway 580/MacArthur	Albany, Berkeley, Oakland, San Leandro, Castro Valley, San Lorenzo, Hayward, Union City, Fremont
Route 45-Highway 13	Emeryville, Berkeley, Oakland
Route 55-Skyline - Palomares Road	Berkeley, Oakland, Unincorporated County, Castro Valley
Route 65-Highway 680/Foothill Road	Fremont, Pleasanton, Dublin, Unincorporated County
Route 75-Dougherty Road	Dublin, Pleasanton, Unincorporated County
Route 85-Tassajara Road	Dublin, Pleasanton, Unincorporated County
Route 95-Vasco Road	Livermore, Unincorporated County
<u>East-West Routes</u>	<u>Location</u>
Route 10-Fruitvale/Joaquin Miller	Oakland, Alameda
Route 20-73rd/Hegenberger	Oakland
Route 30-Estudillo/Crow Canyon	San Leandro, Unincorporated County, Castro Valley
Route 40-Highway 92/Dublin Blvd.	Hayward, Castro Valley, Unincorporated County, Pleasanton, Dublin, Livermore
Route 50-Stoneridge/Jack London Blvd.	Pleasanton, Unincorporated County, Livermore
Route 60-Stanley/East Avenue	Pleasanton, Unincorporated County, Livermore
Route 70-Vineyard/Tesla	Pleasanton, Livermore
Route 80-SR 84 -Niles Canyon Road/Vallecitos Road	Newark, Fremont, Union City, Unincorporated County, Livermore



Summary of Capital Projects and Programs

Eighteen cross-county corridors were identified, along with ten trails that parallel segments of the on-street routes. When completed, the proposed countywide bikeway network will total 500 miles; about 120 of these miles are existing facilities, and 380 miles are new or improved facilities. In addition, there will be 22 new traffic signals, improvements to 29 freeway interchanges, 9 new bike/pedestrian bridges and other needed improvements. The estimated cost of implementing the entire network is about \$190 million, in addition to the \$17 million for the programs, as shown in Table E-1, for a total cost of about \$207 million. The estimated available funding in the twenty year horizon is \$80 to \$100 million.

Table E-1 COST SUMMARY COUNTYWIDE BICYCLE PLAN		
	Annual Cost	Total Costs Twenty Year Cycle
Cross County Corridor Capital Projects*		\$190,000,000
Signage Development Program**	One time	\$150,000
Maintenance Program	\$665,000	\$13,300,000
Parking Program	\$100,000	\$2,000,000
Education/Promotion Program	\$100,000	\$2,000,000
	Total	\$207,450,000
Wilbur Smith Associates July 2001		
*See Appendix E-1 for a cost breakdown by project.		
**Does not include cost of signs; costs for actual signs is a capital project		

Since the forecasted funds are less than the total costs, the projects were prioritized. Twenty-seven high priority projects were identified totaling about \$106 million and are summarized in Table E-2 below.

PEDESTRIAN FACILITIES AND TRANSIT ACCESS

To improve transit access and pedestrian circulation and safety, this chapter presented recommendations on:

- Designs to reduce pedestrian/motor vehicle collisions
- Strategies to reduce pedestrian/bicycle conflicts
- Expanded bicycle access to transit stations and vehicles
- Improved pedestrian access to transit stations
- Providing lighting and signage

**Table E-2
HIGH PRIORITY PROJECTS**

Project #	Name	Corridor #	Total Cost
1	Bay Trail - Northern Alameda County	5	\$2,806,515
3	Fruitvale-Broadway	10	\$3,067,741
5	73rd Avenue-Hegenberger	20	\$3,765,353
6	Berkeley-Emeryville I-880 corridor	25	\$2,332,721
7	Oakland I-880 Corridor	25	\$2,178,235
8	BART Trail/San Leandro St	25	\$5,653,700
9	Southern Alameda County I-880 Corridor	25	\$6,610,743
10	Davis -Estudillo-Crow Canyon Road	30	\$7,293,554
11	Northern Alameda County-I-580-Foothills-	35	\$4,626,152
13	Southern Alameda County-I-580-Foothills-	35	\$7,048,378
14	Highway 92 Corridor	40	\$2,135,234
15	E. Castro Valley Blvd- Dublin Canyon	40	\$2,845,427
20	Las Positas Creek Trail	40	\$2,952,326
22	Highway 13 Corridor	45	\$3,543,072
23	Stoneridge Blvd	50	\$1,723,972
24	Stoneridge Blvd-Jack London Connection	50	\$3,979,232
28	San Ramon-Foothill Rd-I-680 Corridor	65	\$5,735,928
29	Iron Horse to Shadow Cliffs Trail	65	\$4,568,200
33	Dougherty - Hopyard Roads	75	\$3,006,838
34	Iron Horse Trail	75	\$5,220,800
41	Damon Slough Bridge	5	\$1,300,156
42	San Leandro Slough Bridge	5	\$1,300,156
44	42nd Avenue Bridge	25	\$1,300,156
45	Hegenberger Undercrossing	25	\$1,300,156
46	Emeryville Ped/bike Overcrossing	45	\$6,500,780
47	Highway 24 Ped/bike Overcrossing	45	\$6,500,780
51	Oakland-Alameda Connection	15	\$6,500,650

Total Cost \$105,796,954

NOTES:

1. See Appendix E-2 for Unit Cost Assumptions.

2. Total Cost includes 30% for design and administration and contingencies. Does not include right-of-way acquisition or factors for inflation.



RECOMMENDED BICYCLE PROGRAMS

Four programs are recommended to complement and enhance bicycle transportation in Alameda County: Signage, Maintenance, Parking, and Education/Promotion.

The design portion of the Signage Program is estimated to cost \$150,000. Included in the capital costs of the routes is \$2000/mile for labor and materials to install the route and directional signs on the 500 mile Countywide bicycle route network.

The Maintenance Program will help member agencies keep roadways and trails at their optimum for bicycle transportation. The items that would be funded include:

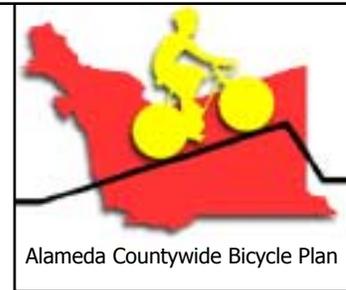
1. Signal detector adjustment
2. Replacement of bike route signs
3. Repaint bike lane stripes and legends
4. Trimming of shrubbery encroaching on bike lanes or trails
5. Roadway and trail sweeping

This program is estimated to cost \$665,000 annually and \$13.3 million for the twenty year horizon.

A Bicycle Parking Program would help local agencies fund parking facilities. A total of \$2 million is recommended, which would be \$100,000 per year for twenty years. The parking funded under this program should conform to the guidelines in Chapter 6.

The Bicycle Education and Promotion Program at the County level would provide assistance and organizational help to local agencies. It is estimated to cost \$100,000 per year, mostly in staff time and printed materials.

Chapter 1: Introduction and Overview



VISION STATEMENT

“To establish and maintain bicycling as a viable mode of transportation and integrate it with other modes of transportation; to assure that bicycling is safe for bicyclists of all abilities; and to encourage multijurisdictional coordination to plan, fund, design and construct bicycle projects.”

The purpose of the Bike Plan is to increase the potential for bicycle transportation by integrating bicycling into the Alameda County transportation system. This plan was developed through input from the bicycling public, in coordination with local, regional, state and federal agencies.

Alameda County’s transportation infrastructure is in the midst of change. With a population of 1.45 million, the study area encompasses high-density communities near the San Francisco Bay and medium to low density suburban and rural areas in the Tri-Valley communities of Dublin, Pleasanton and Livermore. Providing transportation choices is an important feature of the region’s current transportation philosophy.

SETTING

Alameda County is well-suited for accommodating bicycles as transportation as it has long dry summers and is relatively flat for most of its urbanized areas. These two conditions along with California’s general interest in outdoor sports and the environment combine to make bicycling one of the most popular outdoor recreational activities. Bicycling as transportation is therefore a logical next step.

The County’s Long Range Transportation Plan, A Transportation Vision for 2018 and Beyond, has two policy goals that promote bicycling: improving mobility and improving air quality. The functional requirements for fulfilling these goals include: “A balanced transportation system that employs a continuous network of freeways, parkways, major arterials, transit services and bicycle and pedestrian facilities to move people and goods as efficiently as possible”. This bicycle plan will present the best choice of bicycle projects as a network for the future transportation system as well as to encourage bicycling.

In November 2000, voters in Alameda County sanctioned “Measure B”. Measure B is the half-cent sales tax and is the continuation of an existing sales tax measure that expires in 2002. The Alameda County Transporta-



tion Authority's Expenditure Plan estimates that it will raise a total of \$1.4 billion between 2002 and 2022, allocating approximately \$70 million to general non-motorized transportation. Of this, 25 percent will be available to the county for regional bike plan implementation. Additional funding is earmarked for specifically identified projects, such as the Iron Horse Trail, as well as for pedestrian programs.

The Countywide Bicycle Plan represents direct input from staff, bicycle advocates, and local citizens. Based on this input, two problems were defined:

- Roads, old and new, are generally not as bicycle-friendly as desired.
- It is unclear who is responsible for bikeway planning especially when facilities cross city boundaries.

A plan does not implement itself. Support from elected officials, staff, the cycling community and other residents is essential for the potential benefits of the Countywide Bicycle Plan to be realized. The future holds opportunities as well as challenges. The Plan identifies the steps that must be taken to capitalize on the opportunities and to face the challenges.

WHAT IS THE PLAN AND WHY HAVE ONE?

This Plan framework provides the background, direction and tools to improve Alameda County's bicycling environment. The purpose of this Plan is to develop a strategy to encourage more bicycling for transportation in Alameda County. It is a comprehensive plan addressing policies, standards, education and intermodal linkages. This Plan includes recommended projects and programs to improve bicycle transportation and safety across city boundaries as well as connections to the neighboring counties of Contra Costa, Santa Clara, San Mateo, San Francisco and San Joaquin.

This Countywide Bicycle Plan focuses on facilities that provide direct, convenient connections to desired destinations such as workplaces, shops, parks, schools, libraries and greenways. It also identifies off-road trails that can be used for recreation and for transportation purposes. The Plan will help with interjurisdictional coordination in the planning of bike facilities that cross boundaries and affect more than one city or one planning agency. Without such a guide, opportunities for improvements could be missed or efforts could be uncoordinated. Finally, this Plan will serve as a tool to obtain bicycle project funding and program acquired funds. This Countywide Bicycle Plan will be incorporated into the Countywide Transportation Plan, which is updated every two years.

WHY ENCOURAGE BICYCLE TRANSPORTATION?

States and communities of all sizes throughout the country are undertaking significant investments in facilities to encourage bicycle and pedestrian transportation.

Why should cities and counties encourage bicycle transportation? Non-motorized travel has benefits in a number of areas, as outlined below:

1. Personal reasons

- Offers least expensive mode of travel (except for walking).
- Reduces travel time compared to walking or where parking is scarce.
- Provides door-to-door access.
- Provides cardiovascular fitness.

2. Environmental reasons

- Reduces air pollution/global warming/acid rain.
- Decreases reliance on petroleum products.
- Decreases noise pollution from automobiles.
- Decreases land area devoted to parking.
- Is the most energy-efficient mode of transportation.

3. Societal reasons

- Reduces vehicle miles of travel.
- Improves public health through a cleaner environment, more exercise.
- Provides mobility for citizens without cars or those too young to drive.
- Improves overall quality of life.
- Increases 5-minute catchment area of public transit from ¼-mile by walking to 1-mile by biking.

Additionally, federal policy through the Transportation Equity Act for the 21st Century (TEA-21) legislation strongly supports such activities, and significant sources of funding for these types of projects have been made available through the Transportation Enhancement Program and, in non-attainment areas, through the Congestion Mitigation and Air Quality (CMAQ) improvement program of TEA-21.

"...one of the most significant results of increased accommodation for bicycles is the improved quality of life enjoyed by area residents."



PLAN DEVELOPMENT PROCESS

The Alameda County Bicycle Plan was created through a year-long process with the Bicycle Task Force (BTF) members, City and County staff and the Consultants working together to formulate a plan that is responsive to the issues and needs in Alameda County. This group met approximately once a month. Meetings were open to the public and the Alameda County Congestion Management Agency posted notices inviting and encouraging citizens to attend. Several interim work products were produced and discussed at the BTF meetings. The result of this collaborative effort is this draft Bicycle Plan. The efforts of the Bicycle Task Force are acknowledged. The following list identifies the representatives and participants on the Task Force:

Bicycle Task Force (BTF) Members and Participants

(See acknowledgements page for a list of Task Force members.)

- ACCMA Planning Area Representatives
 - Planning Area 1: Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont
 - Planning Area 2: San Leandro, Western Unincorporated Alameda County, Hayward
 - Planning Area 3: Fremont, Newark, Union City
 - Planning Area 4: Dublin, Livermore, Pleasanton, Unincorporated Alameda County
- East Bay Bicycle Coalition (EBBC)
- Alameda County Congestion Management Agency (ACCMA)
- East Bay Regional Park District (EBRPD)
- AC Transit
- BART
- Livermore Amador Valley Transportation Authority (LAVTA)
- Association of Bay Area Governments (ABAG)
- Caltrans
- Metropolitan Transportation Commission (MTC)
- Port of Oakland

Consultants

- Wilbur Smith Associates
- Pittman & Hames
- Bicycle Solutions

PLAN COORDINATION

The recommendations of the Countywide Bicycle Plan will need to be coordinated with other agencies and stakeholders. The Bicycle Transportation Account (BTA) requires a discussion of interagency coordination so that bicycle planning is well integrated with other efforts in the county. Ongoing programs that relate both directly and indirectly to non-motorized transportation are discussed below, along with how the Countywide Bicycle Plan is consistent with and complementary to other plans and programs. The relationship between transit, bicycling, and walking as transportation is addressed in detail in Chapter 2.

Local Agency Input into the Countywide Bicycle Plan

Each city in the county as well as Alameda County, ABAG, MTC, Caltrans, EBRPD, LAVTA, BART and AC Transit were contacted by the consultant to receive their perspective on regional issues related to non-motorized transportation. Throughout the planning process, many agencies and members of the public provided written comments regarding specific issues they would like to see addressed by the Countywide Bicycle Plan. Input was received on the cross-county bicycle route alignments through individual cities and on connectivity issues between cities.

The status of bicycle planning efforts of local agencies within Alameda County and regional connections to adjacent counties are summarized in Chapter 2. Eight of the fourteen cities in Alameda County have recently adopted bicycle plans as has the EBRPD. In addition, the Alameda County Public Works Agency (PWA) prepared a bicycle plan for the western unincorporated areas of San Lorenzo, Castro Valley, Ashland, Cherryland, and Fairview.

Alameda County CMA

The Alameda County CMA was created in 1991 by a joint powers agreement among the cities of Alameda County, the County of Alameda and the transit operators. The ACCMA was formed in response to Proposition 111, passed by California voters in 1990. Proposition 111 increased the statewide fuel tax to fund transportation projects and required all urban counties to designate a congestion management agency to plan for use of these new funds.

The ACCMA has two plans which guide its approach to managing congestion and improving mobility: the 25-year Countywide Transportation Plan and the five-year Congestion Management Program (CMP). Based on its long range plan and the CMP, the ACCMA recommends projects to be funded from the following programs: Federal Surface Transportation Program (STP) and Congestion Mitigation & Air Quality Program (CMAQ), and State Transportation Improvement Program (STIP). The CMA is the program administrator for the Transportation Fund for Clean Air (TFCA).

BTA REQUIREMENTS

Senate Bill 1095, approved in 1993, (now section 891.2 of the Streets and Highways Code) requires that bicycle transportation plans, in order to be eligible for Bicycle Transportation Account (BTA) funds, contain eleven elements. Also, to be eligible, the local agency board must adopt the plan or certify that it has been updated.. A list of the required elements and where they are contained within this plan is presented in Appendix A-1.

ACTA/ACTIA

Alameda County Transportation Authority (ACTA/ACTIA) is responsible for implementing transportation projects funded by the existing and future half-cent sales tax in Alameda County, known as Measure B. Five percent of the total funds from the recently approved measure (or \$70 million over twenty years) would be earmarked for bicycle and pedestrian projects. Twenty-five percent would be for regional projects and 75 percent would go to the individual cities to implement city priorities.

The 25 percent designated for regional projects would be available for funding specific projects as well as planning and design support and a countywide bike/pedestrian coordinator position. The Year 2000 Measure B states that the bike and pedestrian program can fund projects that expand and enhance bicycle and pedestrian safety and facilities in Alameda County, focusing on high priority projects like gap closures, and intermodal connections. Allocation and use of funds are guided by the rules described in the Expenditure Plan which states that the 25 percent funds will be reserved for regional planning and regional projects, including the preparation of local master plans, design support services to local agencies, funding for a Countywide Bicycle and Pedestrian Coordinator position, and funding for high priority regional capital projects identified in the Countywide Bicycle Plan. High priority will be given to EBRPD projects included in the Countywide Bicycle Plan. Priority will also be given to projects which significantly leverage other outside funding sources.

The 75 percent funds would go directly to cities for specific capital projects that were identified and prioritized through a local or regional planning process and will be allocated to cities based on population.

AC Transit

The Alameda Countywide Bike Plan is consistent with transit improvement efforts in that it encourages non-motorized access to transit. In terms of long-range surface transportation planning, there are significant opportunities to consider transit and bicycling jointly to enhance intermodal linkages, bicycle access to transit, bicycle parking at transit stations and stops, and the design of roadways to jointly accommodate both transit vehicles and bicycles.



There are two long-range planning studies in progress, as well as one future study, that address bus transit improvements which could affect bicycle accommodation on the study streets. AC Transit is currently preparing the Berkeley-Oakland-San Leandro Major Investment Study (MIS). The study area extends from downtown Berkeley through Oakland and San Leandro to Bayfair Mall/BART. The study is looking at several streets in the north study area including College/Broadway and Telegraph, and International/East 14th Street in the south study area. The timeframe for

the study is to develop a preferred alternative by early 2001 and to prepare the Environmental Impact Review (EIR) and the in-depth analysis later in 2001. The study will evaluate a range of options from simple street improvements, enhanced bus stops, bulb-outs, shelters, and signal priority; to more involved improvements such as bus rapid transit and light rail, including a dedicated right-of-way for light-rail transit (LRT) and bus rapid transit (BRT).

AC Transit also participated in the development of the San Pablo Corridor Plan. The Plan, managed by the ACCMA, identified immediate, near and long-term transportation strategies to serve the needs of residents, businesses and other users of the transportation system in the corridor. The current San Pablo Transit Study, which extends from downtown Oakland to Contra Costa College and to MacDonald Avenue, is a result of this Plan. The San Pablo Transit Study will evaluate current bus service, and provide recommendations regarding the types of local and express bus services that will work best for this transportation corridor and ways to implement the new services. Any roadway improvements, such as removal of on-street parking or shared bike and bus lanes, could benefit bicycling. However, it is possible that given the limited right-of-way, recommendations to improve transit could decrease the likelihood of other projects that would help bicycling, such as bike lanes.



The third AC Transit study is planned but not yet funded to look at MacArthur Boulevard. MacArthur Boulevard is the second busiest corridor in the AC Transit service area with over 22,000 riders a day, (second to E. 14TH Street/International Boulevard.)

East Bay Regional Park District

EBRPD is the Regional Special District which functions as the Alameda (and Contra Costa County) Parks and Recreation Agency. As of 2001, EBRPD manages and maintains 59 parks and close to 1000 miles of trails in over 91,000 acres of open space in Alameda (and Contra Costa County). Of 1000 miles of trails, over 150 miles are regional trails which connect parks, residential areas, business parks, multi-modal transportation facilities and the extensive network of regional trails. Regional Trails function as both recreation and non-motorized transportation corridors. As an example of how EBRPD works with local jurisdictions on trails management, EBRPD currently manages and maintains approximately 25 miles of SF Bay Trail where the trail is located on EBRPD property.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the agency charged with developing programs to implement the Clean Air Plan (CAP) for the nine-county Bay Area region. The Countywide Bicycle Plan is consistent with the BAAQMD goals and policies. Specifically, the Transpor-

tation Control Measures (TCM) developed by BAAQMD are consistent with the implementation of a countywide bicycle plan. They are presented in Appendix A-2.

Metropolitan Transportation Commission (MTC)

MTC is the regional agency responsible for Bay Area transportation planning and coordination, and prepares the Regional Transportation Plan (RTP) addressing the region's transportation needs for a twenty-five year horizon. MTC is currently preparing a Regional Bicycle Plan that will be incorporated into the current RTP planning process. The projects listed in the Alameda Countywide Bicycle Plan should be considered first priority for the regional bicycle network in Alameda County.

GOALS AND OBJECTIVES

The Bicycle Task Force established the following goals and objectives to establish and integrate a countywide bicycle network, foster bicycling as a mode of travel, promote bicycle safety and education and implement the Countywide Bicycle Plan. The detailed goals and objectives are:

1. Establish a Countywide Bicycle Network

Create and maintain an inter-county and intra-county bicycle network that is safe, convenient and continuous.

Objectives/policies

- Increase the potential for bicycle transportation by closing gaps in existing bikeways.
- Designate appropriate bicycle facilities to serve routes which link major activity centers, including transit stations, schools, parks and employment and shopping centers, as well as routes which serve major corridors.
- Designate appropriate bicycle facilities on routes linking schools, after-school child care facilities, libraries, parks, and recreational sites to facilitate the mobility of school-aged children.
- Consider the needs of bicyclists for smooth and level pavement in all roadway maintenance practices.
- Include bike/pedestrian facilities in all transportation projects where feasible and appropriate.

2. Integrate Countywide Bicycle Network

Integrate bicycle travel in transportation planning activities and in transportation improvement projects.

Objectives/policies

- Include a bicycle and pedestrian element in all transportation studies.
- Encourage and facilitate multimodal interface by including bike parking at multimodal transfer points and by supporting bikes-on-board transit vehicles.
- Coordinate with other local, regional, state, and federal agencies to plan, design, fund and construct bicycle projects.
- Utilize transportation models based on person-trips and estimate future bike trips and walking trips.
- Develop a checklist of guidelines that address bicycle and pedestrian access to be used in the planning and programming of all CMA-funded transportation projects.

3. Encourage policies and actions that foster bicycling as a mode of travel.

Objectives/policies

- Encourage land use plans to include bicycle/pedestrian connections.
- Promote pavement management programs that encourage bicycle/pedestrian travel.
- Encourage bike parking facilities at employment sites, schools, and shopping areas.
- Encourage bicycling as a means to reduce traffic congestion, particularly in local TDM plans.
- Address impacts of development or transportation projects on bicycle/pedestrian access, circulation and safety.
- Establish guidelines that encourage:
 - Bicycle parking ordinances
 - Bicycle parking facilities
 - Showers/lockers ordinances
 - City bicycle fleets
 - Bicycle/car-pooling/transit programs (e.g. through the implementation of financial incentive programs)
- Encourage the establishment of citation diversion programs for bicyclists.
- Promote bicycle planning and engineering training programs for city and county staff.

4. Promote Bicycle Safety and Education

Improve bicycle safety through facilities, education and enforcement.

Objectives/policies

- Identify primary bicycle accident types, locations and ages of individuals involved in the bicycle accidents by periodically reviewing the Statewide Integrated Traffic Record System (SWITRS) and determine measures to mitigate these collisions.
- Develop a proactive program to identify and eliminate obstacles, including deferred maintenance.
- Encourage bicycle safety education programs targeted at the following audiences in order to reduce bicycle accident rates, improve public awareness of bicycling and increase bicycle mode share:
 - adult cyclists
 - elementary school students
 - junior high and high school students
 - motorists
 - general public
- Develop safety programs and design guidelines for multimodal facilities that will alleviate conflicts between bicyclists and other users such as pedestrians, roller bladers, joggers, and equestrians.
- Encourage enforcement efforts on the most common motorist and bicyclist violations.

5. Promote Implementation of the Countywide Bicycle Plan

Maximize the use of public and private resources in establishing the bikeway network.

Objectives/policies

- Maintain designated bikeways as well as all roadways as part of a regularly scheduled maintenance program.
- Consider bicycle volumes and bicycle routing in the prioritizing of roadways in the pavement management system.
- Incorporate bicycle/pedestrian access in non-freeway roadway projects to provide such facilities most cost-effectively.
- Develop a prioritized list of bicycle projects to be able to maximize funding opportunities.
- Encourage public/private, inter-jurisdictional and intra-jurisdictional partnerships in designing, funding and constructing new projects.

BIKEWAY TYPES

The following descriptions of bicycle-related terms are provided to assist readers who are unfamiliar with bicycle terminology. The terms bicycle and bike are interchangeable. See Appendix C-1 for a more detailed description.

- **Bikeway** - A thoroughfare suitable for bicycles - it may either exist within the right-of-way of other modes of transportation, such as highways, or along a separate and independent corridor.
- **Bicycle Facilities** - A general term denoting improvements and provisions to accommodate or encourage bicycling, including parking facilities, maps, all bikeways and shared roadways.
- **Bicycle Path (Bike Path or Class 1)** - A bikeway physically separated from motorized vehicular traffic and either within the highway right-of-way or within an independent right-of-way. Bike path facilities are often excellent recreational routes and can be developed where right-of-way is available. Typically, bike paths are a minimum of 10 feet to 12 feet wide, with an additional graded area maintained on each side of the path.
- **Bicycle Lane (Bike Lane or Class 2)** - A portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are ideal for minor thoroughfares or collectors. Under certain conditions, bike lanes may be beneficial on streets with significant traffic volumes and/or speeds. Under ideal conditions, minimum bike lane width is four feet.
- **Signed Bike Route (Class 3)** - A segment of a system of bikeways designated by appropriate directional and/or informational signs. In this plan, a Class 3 signed bike route may be either a local or residential street, bicycle boulevard, an arterial with wide outside lanes, or a roadway with a paved shoulder.
 - **Paved Shoulder** - The part of the highway that is adjacent to the regularly traveled portion of the highway, is on the same level as the highway, and when paved can serve as a bikeway. Paved shoulders should be at least four feet wide and additional width is desirable in areas where speeds are high and/or a large percentage of trucks use the roadway.
 - **Wide Outside Lane** - An outside (curb) lane on a roadway that does not have a striped bike lane, but is of sufficient width for a bicyclist and motorist to share the lane with a degree of separation. A width of 14 feet is recommended to safely accommodate both motor vehicles and bicycles.
 - **Bicycle Boulevard** - A residential street that has been modified for bicyclist safety and access.



Bike Path - Class 1



Bike Lane - Class 2



Wide Outside lane - Class 3



Paved Shoulder - Class 3