Appendix B-1
COMMUTE AND TRAVEL SURVEYS

RIDES FOR BAY AREA COMMUTERS

RIDES surveys were conducted as a telephone survey of a one week commute pattern in the Spring.[1] (Data are available at the county level only, not by city). These surveys indicate that the biking and walking trips have fallen dramatically since 1993, not only in Alameda County, but regionwide. Bicycle mode share in Alameda County fell from a high of 2.5 percent in 1993 to 1.0 percent in 1999. The reasons for this are not entirely clear, although the rainy season in Spring 1999 may have affected the survey results, as well as the relatively small sample size.

Table B-1-1
ALAMEDA COUNTY BIKE-WALK MODE SHARE
COMMUTE TO WORK TRIPS BY YEAR
Alameda County Residents

	1990	1993	1994	1996	1999
Bicycle	1.3%	2.5 %	1.8%	2.0%	1.0%
Walk	4.01%	3.5 %	3.0%	3.8%	1.7%

Source: 1990 data from 1990 Census-Working Paper No. 5 Journey to Work data, April 1993. All other years: Rides for Bay Area Commuters, Commute Profile 1999: A Survey of San Francisco Bay Area Commute Patterns (August 1999).

Table B1-1 reflects only work trips. However, as discussed in Chapter One, work trips are only part of the picture. Data from the National Personal Transportation Survey conducted by FHWA in 1995 indicate that only about 13 percent (approximately one out of eight) of bicycle trips are work trips. Mode splits data on the other trip purposes is presented below.

METROPOLITAN TRANSPORTATION COMMISSION (MTC) REGIONAL TRAVEL SURVEY

The Metropolitan Transportation Commission (MTC) conducted a survey of regional travel characteristics in 1990 and 1980. The results of these surveys show regional and subregional travel characteristics with an emphasis on average weekday intraregional travel made by residents of the nine-county Bay Area. The data includes information on the components of travel (trip purpose, time of day, etc.), household travel rates, personal characteristics of the trip

[1] RIDES conducts a telephone survey of adults over age 18 who are employed 35 hours or more outside the home. The survey is conducted in the Spring, usually March or April, using random digit dialing, and asks the question "How do you usually get to work?" Thus, the results can be affected by the weather of that particular period when the survey is conducted. The sample size for Alameda County has historically been about 400. The data are felt to be valid at the county level, but not at the city level. More details about the study and the methodology are available on the RIDES wbesite:www.rides.org.

maker, and county-level and county-to-county travel patterns. Table B1-2 presents the bike and walk share of the five main trip purposes for Alameda County and the eight counties in the Bay Area.

Table B-1-2
Weekday Bicycle and Walk Trips by Purpose
All Bay Area Counties

COUNTY	Home-Based				Non-Home-Based
Alameda	**Work**	**Shop**	**Soc/Rec**	**School**	
Bicycle	1.1%	1.0%	0.8%	1.2%	0.9%
Walk	2.4%	8.2%	3.3%	8.3%	12.8%
Contra Costa					
Bicycle	0.2%	0.4%	0.4%	0.5%	0.4%
Walk	1.1%	2.5%	2.4%	4.4%	11.5%
Marin					
Bicycle	0.4%	0.5%	2.7%	1.4%	1.5%
Walk	1.4%	4.3%	3.0%	3.8%	15.3%
Napa					
Bicycle	0.9%	1.1%	1.1%	3.0%	0.9%
Walk	1.9%	6.2%	5.9%	8.6%	9.1%
San Francisco					
Bicycle	1.2%	0.1%	0.1%	0.2%	0.6%
Walk	5.8%	14.7%	6.7%	5.4%	24.4%
San Mateo					
Bicycle	1.5%	0.5%	1.6%	1.2%	0.6%
Walk	1.6%	5.1%	3.3%	7.0%	9.1%
Santa Clara					
Bicycle	1.1%	0.5%	0.9%	1.8%	0.6%
Walk	1.6%	2.6%	2.4%	6.3%	4.4%
Solano					
Bicycle	0.7%	0.2%	0.5%	1.2%	0.2%
Walk	2.9%	3.5%	2.9%	6.0%	7.1%
Sonoma					
Bicycle	0.9%	0.6%	2.4%	1.4%	0.9%
Walk	2.2%	4.4%	4.0%	2.5%	8.9%
Nine-County Bay Area, Average - 1990					
Bicycle	1.3%	0.7%	3.0%	4.2%	0.9%
Walk	3.0%	8.0%	10.8%	21.5%	13.7%
Nine-County Bay Area, Average - 1980					
Bicycle	1.7%			3.2% (Other)	1.1%
Walk	4.0%			13.7% (Other)	13.0%

Source: San Francisco Bay Area 1990 (and 1980), Regional Travel Characteristics, Working Paper #4, 1990 MTC Travel Survey

Appendix B-2
ALAMEDA COUNTY MAJOR EMPLOYERS

The major employers in Alameda County depicted in Figure 2-3 were determined by contacting individual city staff, from data contained in city websites and from data available from RIDES. In many cases, an employer has more than 700 employees but the employees are scattered among several sites. (School districts are the best example of this.) The site specific employee counts were determined for the major attractors since in bicycle planning one goal is to serve the high density areas, and therefore it is the concentration of employees that is of interest.

For the purposes of this study, each downtown area is assumed to be a major attractor in and of itself, and is shaded on the map. If there is a single employer of more than 700 employees within a downtown area, it is included in the following Table B-2-1, but is not included on Figure 2-3. Employer sites of more than 500 employees at a single site outside of downtown areas are shown on Figure 2-3.

Table B-2-1
MAJOR EMPLOYERS (500 or more employees)

Alameda (*2000)*
Alameda Unified School District (1,086)
City of Alameda (1,027)
Telecare Corporation (800)
Lucent Technologies
Albany (*2000)*
Alameda County Sheriff's Department (720)
Golden Gate Fields (620)
Berkeley*1999)*
University of California, Berkeley (12,377)
Lawrence Berkeley National Laboratory (3,832)
Alta Bates Medical Center (2,065)
City of Berkeley (1,569)
Berkeley Unified School District (1,200)
Bayer Corporation (1,101)
Kaiser Permanente Medical Group (700)
California Department of Health Services (600)
Dublin (*2000)*
Advanced Solutions (750+ expected)
Emeryville (*2000)*
Chiron (1,920; 2,320 expected by 2010)
Pixar (610 now; 860 expected)
Sybase (600)
Fremont (*1999)*
New Motors Manufacturing, Inc. (4,700)
Washington Hospital (1,347)
City of Fremont (1,200)
Sysco Food Services of San Francisco, Inc. (1,100)
HMT Technology Corp. (1,050)
Ohlone College (750)
Synnex Info Technologies (600)
Hayward (*1999)*
Hayward Unified District (2,100)
Mervyn's (2,000)
Kaiser Permanente Medical Center (2,200)
California State University, Hayward (1,600)
Pacific Bell (940)
City of Hayward (835)
Livermore *(1998)*
Lawrence Livermore National Laboratory (8,857)
Livermore Valley Joint Unified School System (1,300)
Sandia National Laboratory (1,200)
Valley Memorial Hospital (925)
CCI/Triad (900)
ValleyCare Health System (850)
Wente Vineyards (525)

Newark (*1999)*
Sun Microsystems (2,000)
Ross Stores (1,000)
Solectron Corporation (500)
Oakland (*1996)*
County of Alameda (10,850)
Oakland City Unified School District (6,620)
City of Oakland (4,830)
San Francisco Bay Area Rapid Transit (2,950)
Summit Medical Center (2,250)
United Air Lines Inc (1,880)
Federal Express Corp (1,680)
Southwest Airlines Company (1,620)
East Bay Municipal Utility District (1,600)
Peralta Community College (1,500)
Kaiser Permanente Medical Group Inc (1,460)
Clorox Company (1,340)
Kaiser Foundation Hospitals (1,340)
Kaiser Foundation Health Plan Inc (1,230)
United Parcel Service Inc (1,160)
Oakland Scavenger Company (1,130)
Diocese of Oakland, Roman Catholic B (1,020)
US Army (760)
Oakland-Alameda Coliseum Inc (750)
K Mart (740)
American Protective Services Inc (650)
Pleasanton (*1999)*
Hacienda Business Park
- PeopleSoft (2,700)
- Providian Financial (1,850)
- AT&T (1,652)
- Pacific Bell Wireless (1,000)

Stoneridge Mall
- Macys (904)
- Pro Business Payroll (850)
- Farmer's Insurance (760)

City of Pleasanton (500)
San Leandro (*1997)*
Lucky Stores (1,192)

San Leandro Unified School District (838)
Media Copy (700)
Galen Health Care, Inc. (599)
City of San Leandro (598)
Union City (*1999)*
Southern Wine & Spirits (650)
San Francisco Newspaper Agency (600)

Appendix B-3
PEDESTRIAN GOALS AND POLICIES

Alameda

City of Alameda General Plan Diagram and Summary: Land Use Element	
Goals	Guiding Policies: Retail Business and Services
Policies	Maintain neighborhood business districts for small stores that attract mainly pedestrian traffic and can be acceptable neighbors for nearby residents.
Transportation Element	
Goals	Guiding Policies: Pedestrian Routes
Policies	Ensure that automobile circulation improvements do not degrade the pedestrian environment. Provide space for pedestrians, wheelchair, and bicycle crossing on both sides, if feasible, as part of any modification to bridges providing access to and within the City. Identify potential conflicts between bicyclists and pedestrians and develop projects to minimize such conflicts (e.g. Bay Farm Island Bridge and Shoreline paths).
Goals	Guiding Policies: Flooding
Policies	Support a multi-use concept of waterways, including, where appropriate, uses for flood control, open space, nature study, habitat, pedestrian circulation, and outdoor sports and recreation.

Albany

Traffic Management Plan for the City of Albany	
Goals	1) Provide equal rights of access for non-automobile modes. 2) Reduce automobile trips in the City of Albany by encouraging use of non-automobile modes. 3) Create conditions throughout the City for safer and more convenient walking and bicycling, especially for children going to and from school.
Policies	1) Address traffic and crime safety issues which were raised by parents as reasons which discourage them from allowing children to walk or bike to school, and address risky pick-up and drop-off areas at schools.
Implementation Programs	Existing: Continue school crossing guard program. Crossing guards help to increase child pedestrian safety. Phase I: City staff, School District, Police Department, and parents begin a dialogue on initiating a school safety program…. Phase II: Physical improvements to enhance transportation facilities in and around schools.
Policies	2) Address crosswalk/pedestrian visibility issues.
Implementation Programs	Phase I: Implement crosswalk policies to be determined by the Traffic and Safety Commission. Maintain existing crosswalks where appropriate. Phase II: Consider funding/implementation of demonstration project for new pedestrian crossing treatments on key corridors (e.g., Solano Avenue, San Pablo Avenue, Marin Avenue) to enhance safety.

Berkeley

Berkeley General Plan (1977)	
Policies	2.80 Develop those pathways dedicated but not improved for public use. 2.81 Where feasible, develop new pathways to improve access between the campus and the Central District 2.82 Maintain and improve sidewalks in commercial areas with participation from users and adjacent residents or businesses so they are safe, clean, attractive, and as free as possible from air and noise pollution.
Implementation Programs	Establish safe, attractive pedestrian connections between residential areas, transit shopping areas, and schools and other community facilities. Ensure that sidewalks are kept in good repair and level with a suitable grade for pedestrian and wheelchairs. Discourage and, when possible, prevent new developments from creating uncomfortable steep grades. Ensure adequate unobstructed sidewalk passage by appropriate placement of street furniture and amenities and prevention of obstruction of travel ways by such items as advertisement signs, merchandise, and utility boxes.
Berkeley Draft General Plan (1999)	
Policies	T-43 Pedestrian Priority When addressing competing demands for sidewalk space, the needs of the pedestrian shall be the highest priority. T-44 Pedestrian Crossing Provide safe and convenient pedestrian crossings throughout the City.
Implementation Programs	Seek to ensure that the distance between signal controlled or well lighted and signed pedestrian priority crossings is never more than one quarter mile At hazardous or heavily used pedestrian crossings, consider all way stop pedestrian crossings. Consider pedestrian crosswalk "runway" lights in the pavement at dangerous pedestrian crossings. Encourage and educate public on the use of crosswalks; enforce jay walking regulations on main arterials.
Policies	T-45 Pathways Develop and improve the public pedestrian pathway system. Improve those pathways dedicated but not improved for public use. Allocate resources to:
Implementation Programs	Develop and maintain a complete and accurate inventory of Berkeley's Pathway Network, to include all known public paths. Maintain a database of City-owned paths, dedicated easements and rights of way. Work with residents and interest groups adjacent to pathways to prepare a "Top Priority Improvement List" for pathway restoration. Give highest priority for public investment to paths that: 1) include neighbor support and clear title, 2) paths with utility for evacuation, 3) paths which continue existing paths, and 4) paths which improve neighborhood circulations and provide access to community services and facilities.

Dublin

Eastern Dublin Specific Plan	
Goals	5.4 To provide a safe and convenient circulation system in eastern Dublin designed for functional and recreational needs. 5-15 Provide north-south trail along Tassajara Creek, and trails along other stream corridors as shown on the pedestrian and bicycle system map. 5-16 Provide sidewalks and other streetscape amenities in the Town Center and Village Center areas in conformance with the Specific Plan design guidelines

	Implementation Programs	5C. The City shall require development applicants in eastern Dublin to submit detailed pedestrian circulation plan for review and approval by the City. This plan shall include the following components as deemed applicable under this specific plan by the Director of Public Works/City Engineer. Any proposed improvement other than the City of Dublin Standard Plans must be approved by the Director of Public Works/City Engineer.
Emeryville		
	Emeryville General Plan	
	Goals	Circulation Element Goal L: Establish a citywide network of interconnected pedestrian and bicycle routes to provide access to the major features, attractions and activities of the city, thus providing recreational benefits and reducing dependence on automobiles.
	Policies	Policy L-2 Minimize auto hazards and avoid heavily trafficked streets. Policy L-3 Networks shall be integrated into regional networks.
	Implementation Programs	The plan calls for three new pedestrian ways: Watergate Boardwalk, Powell Street Peninsula Park, and Powell Overcrossing.
	Emeryville Bicycle and Pedestrian Plan (1998-2010)	This plan serves as the implementing document for Goal L of the General Plan.
Fremont		
	Transportation General Plan	
	Goals	T 1.1.4 A roadway system within the historic community commercial centers should service these areas but not encourage through traffic that disrupts pedestrians, bicyclists and transit users.
	Policies	1. Implement the above policy by establishing appropriate roadway widths design standards and traffic controls in proposed design and development plans for the City's historic community commercial centers in Irvington, Niles, Centerville and Mission San Jose. Roadway design standards in these areas may not be consistent with typical roadway standards for streets of similar classification elsewhere in the City.
	Goals	T 2.4.1 Complete the bicycle route system identified on the Planned Bicycle Route, Horse and Foot Trails.
Hayward		
	Circulation Element	
	Goals	8. Create improved and safer circulation facilities for pedestrians.
	Policies	8.1 Complete planned sidewalk system and maintain and repair sidewalks to ensure pedestrian safety.
	Implementation Programs	8.1.1 Continue to require installation of sidewalks in conjunction with new development consistent with other policies and regulations. 8.1.2 Continue to fund the sidewalk Rehabilitation Program and the installation of curb ramps on an annual basis.
	Policies	8.2 Consider design and operational improvements to facilitate safe pedestrian movements.
	Implementation Programs	8.2.1 Design safe pedestrian crossings of arterial to access major shopping areas and transit stops. 8.2.2 Increase consideration of pedestrian needs including appropriate improvements to crosswalks, signal timing, signage, and curb ramps.
	Policies	8.3 Enhance pedestrian linkages from neighborhoods to recreational facilities and open spaces with pedestrian paths, creekside walks, and utility greenways.
	Implementation Programs	8.3.1 Seek opportunities during the review of new developments for the provision of adequate access to open space and recreational facilities.

		8.3.2 Encourage design of developments which contributes to continuous pedestrian pathways and pedestrian connectivity.
	Policies	10.2 Alternatives to automobile transportation will be encouraged through development policies and provisions of transit, bike and pedestrian users.
	Implementation Programs	10.2.2 Encourage major traffic generators to design facilities providing enhanced access for transit and pedestrian users. 10.2.3 Continue to require large developments to provide bus turnouts and shelters, and convenient pedestrian access to transit stops. 10.2.4 Encourage continuous, safe routes for pedestrian and bicycle travel through new developments. 10.2.5 Encourage design features in proposed developments which tend to decrease walking distances to transit.
Livermore		
	Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study	
	Goals	1.0 Develop a comprehensive bikeway, pedestrian, and equestrian system as a viable alternative to the automobile for all trip purposes.
	Policies	Construct new facilities identified in the proposed system and provide for the maintenance of both existing and new facilities.
Newark		
	Transportation Chapter	
	Goals	2. Promote the development and use of alternative modes of transportation.
	Policies	d. Assure safe and convenient pedestrian access to and through new private and public developments.
	Implementation Programs	7. Work with private developers through the development review process to assure adequate pedestrian access.
Oakland		
	General Plan, Land Use and Transportation Element	
	Goals	T4 Increase use of alternative modes of transportation
	Policies	T4.1 The City will require new development to incorporate design features in their projects that make use of alternative modes of transportation more convenient T4.2 Through cooperation with other agencies, work to create incentives to encourage travelers to use alternative transportation options T4.5 Prepare, adopt, and implement a Bicycle and Pedestrian Master Plan as a part of the Transportation Element of this General Plan T4.6 Alternative modes of transportation should be accessible for all of Oakland's population T4.7 Where rail lines (including sidings and spurs) are to be abandoned, first consideration should be given to acquiring the line for transportation and recreation uses, such a bikeways, footpaths, or public transit.
	Goals	T6 Make streets safe, pedestrian accessible, and attractive
	Policies	T6.1 Collector streets shall be posted at a maximum speed of 25 miles per hour, except where a lower speed is dictate by safety and allowable by law. T6.2 Design of the streetscape, particularly in neighborhoods and commercial centers, should be pedestrian-oriented. T6.3 The waterfront should be made accessible to the pedestrian and bicyclists in Oakland's neighborhoods.

	General Plan, Open Space, Conservation and Recreation Element	
	Goals	OS-5 To develop a system of linear parks and trail which (a) links existing parks together; (b) provides safe, convenient access to open space from residential areas and employment centers; (c) provides places to hike, bike, and experience Oakland's scenery; and (d) provides a means of moving from one place to another without an automobile.
	Policies	OS-5.1 Improve trail connections with Oakland, emphasizing connections between the flatlands and the hill and shoreline parks; lateral trail connections between the hill area parks; and trails along the waterfront.
	Implementation Policies	OS-5.1.1 Trail Funding Establish an Interdepartmental Committee (including the Offices of Planning and Building, Parks and Recreation, and Public Works, and the City Manager's Americans with Disabilities Compliance Unit) to seek State, federal and East Bay Regional Park District funding for urban trail improvements, including improved access for the disabled.
		OS-5.1.3 Designation of Urban Trails. Explore the feasibility of designating sidewalks along certain Oakland streets as elements of an "urban trail" system
	Policies	OS-5.2 Joint Use of Rights-of-Way. Promote the development of linear parks or trails within utility or transportation corridors, including transmission line rights-of-way, abandoned railroad rights-of-way, and areas under the elevated BART tracks.
		OS-5.3 Trail Design Principals. Plan and design all new trails in a manner which: (a) minimizes environmental impacts; (b) fully considers neighbor privacy and security issues; (c) involves the local community in alignment and design; and (d) considers the needs of multiple users, including pedestrian, bicycles, and wheelchair users.
	Implementation Programs	OS-5.3.1 Preparation of Urban Trail Plan Prepare an Urban Trail Master Plan. Prior to the development of this Plan, designate a staff person as the City's Trails Coordinator.
	Policies	OS-5.4 Maintenance of Mid-Block Paths Maintain a network of mid-block paths and stairsteps in Oakland to enhance neighborhood character and provide pedestrian "short-cuts" through developed areas.
	Implementation Programs	OS-5.4.1 Mid-Block Path Inventory. Inventory and assess all mid-block pedestrian paths and determine which should be retained and which should be declared surplus.
Piedmont		
	General Plan Circulation Element	
	Goals	E. Provide for the safety and convenience of pedestrian circulation
	Policies	1. Promote safety of pedestrian traffic through pathways.
	Implementation Programs	1. The City will provide for adequate maintenance of pathways.
	Policies	2. Minimize adverse impacts on property owners
	Implementation Programs	2. The City will consider night lighting and determine the need for the provision of additional lighting as needed for safety.
	Policies	3. Maintain sidewalks in proper repair to promote health, safety, and welfare.
	Implementation Programs	3. The City will update the rating system of the pedestrian pathways conducted by the Police Department.
		4. The City will review problems associated with specific pathways as appropriate.
		5. The City may conduct a study to determine and assess options for future sidewalk maintenance.

Pleasanton		
	Community Trails Master Plan	
	Goals	Provide the citizens of Pleasanton with a city-wide network of trails and routes that are, as much as possible, accessible to a variety of users, including, but not limited to, pedestrians, bicyclists, equestrians, and the physically disabled.
	Policies	a. Create a city-wide trails system that promotes safe and convenient linkages to residential neighborhoods, and places of work, shopping, schools, parks, etc. b. Identify recreation and open space linkages and opportunities that would assist in future planning for the city of Pleasanton. c. Provide a safe alternative circulation system with an emphasis on avoiding/minimizing encounters with automobiles whenever possible.
San Leandro	The upcoming version of the General Plan will include language about pedestrians; the current does not.	
Union City		
	General Plan for Union Landing; Land Use Element	
	Goals	2. To encourage the development of uses, features and conditions in Union Landing that will allow the area to become the major commercial area of Union City, including opportunities for daytime and evening uses.
	Policies	1. The development of Union Landing should incorporate landscaped areas that can become the focus of appropriate activities. When practical, pedestrian areas should be linked together to encourage a leisurely shopping environment. 2. The street system in Union Landing should focus on pedestrian links. All key entry points to Union Landing should be enhanced to attract people to the area. 4. Restaurants and commercial entertainment uses should be adjacent to pedestrian areas and linked by pedestrian ways. Commercial kiosks could be developed in the area for selling flowers, newspapers, snacks, etc. that would enhance the area for pedestrians.
	Goals	6. To establish site planning and architectural standards that ensure a high quality of development and that establishes a strong sense of design unity, but that do not unduly restrict individual creativity or the opportunity for visual excitement.
	Policies	1. All uses within Union Landing should be integrated by an attractive, well landscaped circulation system that accommodates public transportation facilities, private vehicles and pedestrians. In particular, the design should encourage pedestrian movement between activity areas. Further, attractive pedestrian links should be made to adjacent residential areas outside of Union Landing. 2. Buildings should be clustered around landscaped pedestrian areas. Buildings should have good visibility afforded to retailers. All buildings should be unified by architectural design, signing, lighting, etc.; and, as appropriate, should be in harmony with the design of similar public facilities, structures and signing. 3. All public facilities and structures, and other features should be unified through common design characteristics. Landscaping within the public right-of-way, sidewalk design and materials, crosswalk materials, streetlights, bus stops, street and directional signing, etc., should all be designed in harmony and to establish a special character for Union Landing. 4. Directional signing at the Nimitz Freeway as well as landscaping and architectural features visible from the Freeway should all be designed to attract passersby to the area. The view from the Freeway should be carefully planned and controlled.

	5. Individual site design should ensure that:
Implementation Programs	a. Development is well integrated with existing and proposed development on adjoining properties. Visual, pedestrian and vehicular integration should be achieved.
Goals	8. To allow the development of various forms of commercial activities recognizing changing market conditions while organizing these activities into distinctive areas within Union Landing
Policies	1. There are five types of commercial development appropriate for Union Landing including Sub-Regional Commercial, Sub-Regional Specialty Commercial, Community Commercial, Auto Mall, and Office. Each of these development types are as follows:
Implementation Programs	b. Sub-Regional Specialty Commercial - This type of development, which should clustered in an area of at least 15 acres, is intended for a variety of uses that can provide a mix of retail, office and entertainment uses in an environment that emphasizes pedestrian access and high quality design. This development type needs to take advantage of good access from arterials such as Dyer Street or Alvarado-Niles Road. Freeway visibility is not as critical for this development type as for others. As a result, appropriate locations for this form of development would be either on the eastern, central or southern portion of Union Landing.

Appendix B-4
BICYCLE AND PEDESTRIAN COLLISION DATA

Summary of Average Walk Trip Length by City of Production-- 1998 TABLE B5-12

CITY OF PRODUCTION	WITHIN CITY	OTHER ALAMEDA COUNTY CITIES	UNINCORPORATED COUNTY	OTHER COUNTIES	**TOTAL WALK TRIPS**
Alameda	0.8	3.2	---	14.5	0.9
Albany	0.5	2.4	---	2.0	1.2
Berkeley	0.9	2.3	---	2.3	1.0
Dublin	0.0	16.7	---	2.8	0.6
Emeryville	0.0	2.7	---	---	1.1
Fremont	0.8	2.7	---	4.8	0.9
Hayward	0.8	2.5	2.4	28.7	0.9
Livermore	0.4	---	3.0	42.5	0.5
Newark	0.5	2.6	---	11.5	0.7
Oakland	1.0	2.3	---	16.0	1.1
Piedmont	0.1	2.0	---	---	1.3
Pleasanton	0.5	3.2	2.0	15.7	0.6
San Leandro	0.6	2.6	---	23.0	0.9
San Lorenzo/Castro Valley	0.7	2.5	2.4	21.2	0.9
Union City	0.5	3.0	---	29.7	0.9
TOTAL	0.8	2.6	2.4	4.3	1.0

Appendix B-5
COLLISION RATES PER PERSON MILES OF TRAVEL

The accident rates per million bicycle miles travelled (BMT) and per million bicycle trips (BT) were determined to compare accident rates between cities in Alameda County. (They cannot be compared them to state and national rates, since travel data is unavailable). The MTC travel forecasting model, which estimates the number of bicycle trip productions and attractions within each city, was used to total the number of bicycle-passenger miles of travel and to determine the collision rate per million miles of bicycle travel. (This is similar to how vehicular accident rates are analyzed.) Since the data is based on MTC Travel Analysis Zones which do not exactly align with city boundaries, the data is approximate for each city.

BICYCLE MILES OF TRAVEL BY JURISDICTION

In order to develop a measure of exposure of bicyclists to traffic, an estimate was prepared of bicycle trips and bicycle miles of travel within and between Alameda County jurisdictions. A similar exercise was undertaken for walk trips. These analyses were based on the Metropolitan Transportation Commission (MTC) 1998 model data, as described below.

1998 DAILY BICYCLE TRIPS

Daily bicycle trips were determined from the trip tables by purpose developed for MTC's regional model. These tables provide a matrix of trips from each of 1099 Traffic Analysis Zones (TAZ's) in the Bay Area to each of the other TAZs, for each trip purpose and transportation mode. Bicycle trips were extracted from each trip purpose table and summed to give a matrix of total daily bicycle trips trips among the 1099 Bay Area TAZ's. Using U.S. Census Place Name boundary files to develop a correspondence between community boundaries and analysis zones, the matrix was then compressed to yield a matrix of bicycle trips within and between 15 Alameda County communities, plus trips from Alameda County communities to unincorporated areas of the County and to neighboring Counties.

The daily matrix of bike trips within and between Alameda County communities is shown in Table B5-1. It should be noted that this and the tables which follow are in Production-Attraction format; trips "produced" in Berkeley and "attracted" to Oakland include, for example, trips from a home in Berkeley to a workplace in Oakland, **and** the return trip home to Berkeley. This format was maintained for bookkeeping purposes; both trips (home to work and work to home), in this example, are considered to "belong" to Berkeley.

Table B5-2 presents the same information as Table B5-1, but aggregates the cities in Alameda County into two categories. .

DAILY BICYCLE MILES OF TRAVEL

Daily bicycle miles of travel for 1998 were derived based on the MTC regional highway network for 1998. It was assumed, for this analysis, that bicyclists would primarily use city streets, and

that they would choose the shortest-path routes to their destinations. The 1998 MTC network was "skimmed", using a MINUTP model routine, to generate a matrix of shortest distance paths from each zone to each other zone in the Bay Area; this zone-to-zone distance matrix was then multiplied by the matrix of bicycle trips from zone to zone, yielding a 1099 by 1099 matrix of bicycle miles of travel. The last step in this analysis was to compress the bicycle-miles of travel to Alameda County communities; this was done as described above for daily bicycle trips.

Tables B5-3 and B5-4 present bicycle miles of travel in Alameda County in both detailed and summary format. It should be noted that this is only an approximation of the share of the County-wide bicycle travel belonging to each community since over half of the total travel involves trips which cross city lines: However, a more precise allocation of miles of travel to jurisdictions would require a complexity of effort which is beyond the scope of this task.

AVERAGE BICYCLE TRIP LENGTH

Once bicycle trips and bicycle miles of travel by jurisdiction were calculated, average bicycle trip length was calculated by dividing miles of travel by number of trips. The results of this analysis is summarized in Tables B5-5 and B5-6.

WALK TRIPS

An analysis of walk trips was performed using steps identical to those described for bicycle trips, yielding total walk trips, person-miles and average trip lengths. The results of this analysis are presented in Tables B5-7 through B5-12

DATA LIMITATIONS

The methodologies used, and tools available, for the analyses reported above are capable of providing reasonably accurate results for intra-city travel and travel between cities in densely developed areas. At the outskirts of the study area, especially in the vicinity of unincorporated areas, model limitations will produce some distorted results. The network, being highway oriented, contains no trails or bike paths, and minor roadways which are not direct tributaries to major roadways are typically not coded. As a result, zone-to-zone paths found by network skims may include some extremely roundabout routings, and path distances for a few zone-to-zone trips may be significantly exaggerated. This phenomenon, however, is reflected in only a small number of atypical trips. Similar cautions apply to interpretation of the results for walk trips.

Appendix B-6
BICYCLE PARKING AT MAJOR ATTRACTORS IN ALAMEDA COUNTY

Jurisdiction	*Major Attractor*	*Existing Parking Supply*	*Parking for Employees*	*Recommendations*
Alameda	Southland Shopping Center	8 bike racks, 6-8 bike slots each; Class II	No	Class 1 bike parking for employees- lockers or keyed room Class 2 bike racks-
Alameda	College of Alameda	3 bike racks in center of courtyard: Class III	No	Class 1 bike parking for employees/students- fenced and attended corral Class 2 bike racks
Albany	Golden Gate Fields			Class 1 bike parking for employees Class 2 bike racks
Berkeley	Memorial Stadium	none	No	Bike corral during football games
Berkeley	UC Berkeley	Numerous bike racks throughout campus, as a result of major emphasis on improving bike parking in the last 5 years	Yes at some buildings	Continue existing program
Dublin	Dublin Blvd shopping district	Sporadic	none	Class 2 bike racks
Emeryville	Emeryville Public Market			Class 1 bike parking for employees Class 2 bike racks
Fremont	Ohlone Junior College	No area for bicycle parking; mtn bikers do ride thru campus	No	Class 1 bike parking for employees/students- fenced and attended corral Class 2 bike racks
Hayward	CSU-Hayward	24 bike racks; Class III	No	Class 1 bike parking for employees/students- fenced and attended corral

				Class 2 bike racks
Hayward	Southland Mall	4-5 bike racks, 3-4 bike slots each; Class II	No	Class 1 bike parking for employees Class 2 bike racks Class 1 bike parking for employees Class 2 bike racks
Hayward	Chabot Junior College	12 bike racks, 8 slots each; Class III	No	Class 1 bike parking for employees/students-fenced and attended corral Class 2 bike racks
Livermore	Las Positas Junior College	3 bike racks, 4-5 bike slots each; never full; Class III	No	Class 1 bike parking for employees/students-fenced and attended corral Class 2 bike racks
Newark	New Park Mall	7 bike racks-one at each entrance plus 2 at Target; each holds 6-8 bikes; Class III	employees park bikes in hallways and under stairwells	Class 1 bike parking for employees Class 2 bike racks
Oakland	Network Assoc Coliseum	1 bike rack; Class III	No	Class 1 bike parking for employees Class 2 bike racks
Oakland	Laney College	2 bike racks; Class III	No	Class 1 bike parking for employees//students-fenced and attended corral Class 2 bike racks
Oakland	Merritt College	3 bike racks; Class III	No	Class 1 bike parking for employees/students-fenced and attended corral Class 2 bike racks
Piedmont	City Center/Library			
Pleasanton	Stoneridge Mall	4 racks with 3 bike slots each=one at every entrance; not being used; Class II	No	Class 1 bike parking for employees Class 2 bike racks
San Leandro	Bayfair Mall	5 bike racks= one at every entrance; Class II	No	Class 1 bike parking for employees Class 2 bike racks

Appendix B-7
BICYCLE PARKING

Appendix B-7

Summary of Local Jurisdictions Bike Parking Conditions

Alameda *City of Alameda Bicycle Master Plan, 1999*
In Alameda, provision of bicycle facilities is currently limited to a few bicycle racks at parks, schools and several commercial areas. Typically, bicyclists visiting stores, restaurants, places of employment and community facilities must find alternative resources to temporarily store their bicycles. Recommendations in the City's recently completed *Bicycle Master Plan* for bicycle parking and other support facilities include additional public bike parking (general locations) and requirements for bike parking in new commercial construction and existing non-residential uses. The *Plan* also recommends a special program to construct bicycle corrals where needed at all elementary, middle and high schools.

Albany *Bicycle Master Plan, 1997*
The City of Albany has limited bicycle facilities, mainly consisting of bicycle racks. However, the *Master Plan* recommends 38 detailed locations for the implementation of new facilities, including Class I and Class II (clustered and linear) parking. The *Plan* also recommends adoption of requirements to provide bicycle parking in new or redevelopment projects, and at all places of employment (one space per 30 full-time employees).

Berkeley *Berkeley Bicycle Plan, 1999*
The City recently installed over 150 bike racks in commercial areas and has been installing additional bike racks on an as-needed basis, as funds are available (see Appendix F1). BART also recently completed a project to upgrade their bike parking and to add high security on-demand bicycle parking at its three Berkeley stations and MacArthur Station. The University has, over the last several years, significantly increased their bicycle parking and continues to do so as funds are available. The Berkeley BikeStation at the downtown Berkeley BART station parks 75 bikes at one time. The hours are 6:00 a.m. to 9:30 p.m. Monday through Friday; and 9 a.m. to 6 p.m. Saturday. It has been open for almost one year and it's been extremely successful. During the summer months through September, 2000, there have been 75 to 90 bikes parked per day on weekdays and the facility has been very close to capacity.

Berkeley is one of the few cities in Alameda County that requires developers to provide bicycle parking in new construction. The City's current Zoning Ordinance requires the installation of one bicycle parking space for each 2,000 square feet of new construction in most commercial districts. In the West Berkeley commercial, manufacturing, and mixed-use districts, bike parking in excess of the requirement may replace up to 10 percent of the required auto parking.

The City's recently completed *Bicycle Plan* (a component of its *General Plan*) acknowledges a need for additional bicycle parking (general locations), and recommends that the City explore developer requirements to provide shower and lockers facilities.

The plan also recommends that the City provide additional support facilities for bicyclists (including air for tires and tools for repair) at its civic center, local libraries and other public locations.

Dublin

The City of Dublin has minimal bicycle support facilities, although Dublin is one of the few cities in Alameda County with a requirement for bicycle parking in its zoning ordinance (one bicycle rack per 20 vehicle spaces). Provision of existing showers and lockers has not been significant enough to be tracked.

Emeryville

Emeryville Bicycle and Pedestrian Plan, 1998-2010

The City of Emeryville has limited bicycle support facilities, and is pursuing installation of bike racks at several civic locations. In addition, the zoning ordinance allows developers to receive credit up to 1/40 of vehicle parking for an equivalent number of bicycle parking spaces.

Fremont

The City of Fremont has minimal bicycle support facilities, mainly consisting of a limited number of bicycle racks. No plans for future implementation currently exist and provision of existing racks, showers and lockers has not been significant enough to be tracked.

Hayward

Bicycle Master Plan, 1997

The City of Hayward has a fairly comprehensive and well-documented network of bicycle support facilities, including bicycle parking at 44 locations and shower/locker facilities at 14 large employers scattered through the city (see Appendix F1). In 1994, the City conducted a transportation survey of large employers as a component of its Trip Reduction Ordinance (TRO), which also required employers to develop and implement a trip reduction program. Some potential measures identified for inclusion in a trip reduction program were: (1) providing weather protected and secure bicycle storage within the building or in racks/lockers , and (2) the installation of showers, lockers, or changing facilities.

The 1997 *Master Plan* calls for additional bike parking and parking improvements (general locations) as well as continued work with large employers to provide parking, shower and locker facilities.

Livermore

Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study, 1996

The City of Livermore currently has bicycle racks in place at local schools, the Las Positas College, City Hall and Lawrence Livermore Laboratory. However, bicycle racks at commercial/office/industrial developments are often inadequate in number and design,

and are often poorly placed. Although the City also provides sheltered areas, bathrooms and drinking fountains at several parks and schools, few support facilities exist at major regional destinations in Livermore. The *Bicycle/Pedestrian Plan Update* does not make specific recommendations with regard to bicycle support facilities.

Newark

The City of Newark has minimal bicycle support facilities, mainly consisting of a limited number of bicycle racks. No plans for future implementation currently exist, and provision of existing racks, showers and lockers has not been significant enough to be tracked.

Oakland

City of Oakland Bicycle Master Plan, 1999

The City of Oakland *Master Plan* cites a shortage of bicycle parking facilities, with the exception of bicycle racks at some parks, public buildings and a few locations downtown (see Appendix F1). The City secured grant funding to increase bicycle parking at locations throughout the City, including bike racks at 20 Oakland Parks and Recreation Centers accommodating 100 bicycles. The city has also installed a bike parking cage for 50 bikes in the City Admin Garage. This is a state of the art facility with card access to the building, nearby cage and showers, automatic door closure, emergency exit, floor to ceiling security, and information display case. The cage and 5 public crank case racks are in close, direct view of the guard. With other TFCA funding, the City installed public racks for 50 bikes in the new Ogawa Plaza (City Hall) for 100 bikes at 20 parks and recreation centers. The new City Racks Program Phase I installed bike parking for 400 bikes in commercial districts throughout the City. Phase II is currently underway, to install parking for 400 more bikes in the next year. The City has recently developed a Bicycle Parking Directory that shows City Racks bicycle parking as well as miscellaneous other city and business-installed bike parking. A recent bicycle needs survey cited the top locations with inadequate bicycle parking facilities as being: Piedmont Avenue, Grand Avenue (near Lake Merritt), College Avenue and BART stations. The locations of existing showers and lockers (trip end facilities) are also given in Appendix F1.

The *Master Plan* recommends implementation of other additional short and long-term parking (general locations) through development of a bicycle parking ordinance (sample ordinance provided), as well as general recommendations for shower and locker facilities.

Piedmont

The City of Piedmont has minimal bicycle support facilities, mainly consisting of a limited number of bicycle racks. No plans for future implementation currently exist and provision of existing racks, showers and lockers has not been significant enough to be tracked.

Pleasanton

Community Trails Master Plan, 1993

The City of Pleasanton has minimal bicycle support facilities, mainly consisting of a limited number of bicycle racks. No plans for future implementation currently exist and provision of existing racks, showers and lockers has not been significant enough to be tracked.

San Leandro

City of San Leandro Bikeway Plan of the Circulation Element, 1997

San Leandro provides a fairly extensive network of bicycle parking at schools, as indicated on Table 3 in Appendix F1. Notable exceptions include the Marina Community Center, parks and the downtown area, each of which has only a limited supply of bicycle racks. The *Bikeway Plan* recommends that additional parking facilities be implemented (using standards developed by the Development Services department as part of the building permit process), and that City officials facilitate arrangements between bicycle commuters and local health clubs that provide showers and lockers.

Union City

Union City Park and Recreation Master Plan, 1999

Bicycle parking racks are in place at 10 of 16 Union City parks, and at 11 of its 12 elementary, middle and high schools (see Appendix F1). No plans for future bicycle rack implementation currently exist and provision of showers and lockers has not been significant enough to be tracked.