

BART

Bicycle Access and Parking Plan

Volume 1



**Bay Area Rapid Transit District
Customer Access Department**

August 2002

Prepared by Wilbur Smith Associates • 1145 Market Street, Tenth Floor • San Francisco, California 94103-1545

ACKNOWLEDGEMENTS

BOARD OF DIRECTORS, 2002

President —Joel Keller
Vice-President —Peter W. Snyder

District 1 —Dan Richard
District 2 —Joel Keller
District 3 —Roy Nakadegawa
District 4 —Carole Ward Allen
District 5 —Peter W. Snyder
District 6 —Thomas M. Blalock
District 7 —Willie B. Kennedy
District 8 —James Fang
District 9 —Tom Radulovich

EXECUTIVE STAFF

Thomas E. Margro, General Manager
Dorothy W. Dugger, Deputy General Manager
Scott Schroeder, Controller-Treasurer
Sherwood G. Wakeman, General Council
Kenneth A. Duron, District Secretary
Theresa E. Murphy, AGM —Administration
Katherine Strehl, Executive Manager, External Affairs
Gary Gee, Chief of Police
Paul Oversier, AGM —Operations
Gary LaBonte, Executive Manager, Transit System Development
James Van Epps, Executive Manager, West Bay Extension
Ann Branston, Executive Manager, Planning and Budget
John Mack, Executive Manager, Transit System Compliance
Eugene Skoropowski, Executive Manager, Capitol Corridor

PROJECT TEAM

BART Staff

Harley Goldstrom, Department Manager, Customer Access
Laura Timothy, Senior Planner & BART Project Manager, Bicycle Program, Customer Access

Consultants

Rochelle Wheeler, Transportation Planner & Project Manager

Wilbur Smith Associates

Carol Levine, Project Manager/Transportation Planner
Michelle DeRobertis, Transportation Engineer

Acknowledgements

BART Bicycle Advisory Task Force
BART Planning Department Staff, Office of Planning and Budget
BART Operations Staff
BART Marketing and Research Department Staff

TABLE OF CONTENTS

Chapter	Page
Introduction	I
1. Existing Conditions	
History of Bicycles and BART	1-1
Rules and Schedule Restrictions for Bicycles on BART Trains and in Stations.....	1-2
BART Plans, Policy Documents and Relevant Studies	1-3
Station Facilities	1-7
Ridership Characteristics	1-13
Station Area Demographics	1-18
Policies and Goals of Cities and Counties within the BART Service Area	1-19
Summary	1-24
2. Systemwide Bicycle Access and Parking Needs Assessment	
Bicycle Access Targets.....	2-1
Goals and Objectives	2-2
Systemwide Access Needs Assessment.....	2-2
Systemwide Parking Needs Assessment.....	2-3
Systemwide Promotion Needs Assessment	2-5
3. Systemwide Bicycle Access and Parking Recommendations	
Access	3-1
Local Access to Station.....	3-1
Access to Bicycle Parking and Fare Gates	3-2
Access to Station Platforms	3-4
Parking.....	3-6
Class 1 Bicycle Parking	3-7
Class 2 Bicycle Parking	3-10
Location of Bicycle Parking Facilities.....	3-11
Determining Bicycle Parking Supply	3-14
Future Station Projects and Transit Villages	3-16
Design Guidelines for Bicycle Access and Parking	3-16
Bicycle Access and Parking during Construction.....	3-17
Promotion.....	3-18
Promote the Benefits of Bicycling to BART	3-18
Provide Incentives to Bicycling to BART	3-19
Support and Applaud Bicycling to BART	3-20
Educate Customers on Bicycling to BART	3-20
Prioritization of Recommendations	3-21
Short-term Implementation Projects	3-21
Long-term Implementation Projects	3-23

TABULATIONS

Table	Page
1-1 Stations with the Highest Number of Reported Thefts of Bicycles and Bicycle Parts – Annual Average for 1999-2001	1-12
1-2 Stations with the Earliest Automobile Parking Fill Times	1-13
1-3 Stations that Attract the Most Riders	1-14
1-4 Stations with More Home-Based Ridership	1-15
1-5 Home-Based Entries as Percent of System Home-Based Entries.....	1-15
1-6 Stations with More Non-Home-Based Ridership	1-16
1-7 Non-Home-Based Entries as Percent of System Non-Home-Based Entries	1-16
1-8 Bicycle Mode Share to BART Stations	1-17
1-9 Bicycle Mode Share Increases from 1992 (AM Peak for all trip origins).....	1-18
1-10 Percent of Households without Cars within one mile of Station.....	1-18
1-11 Percent of Households without Cars within one mile of Stations for Stations with Auto Parking	1-19
1-12 Policies of City/County Bicycle Plans Related to BART-Alameda County	1-20
1-13 Policies of City/County Bicycle Plans Related to BART-Contra Costa County.....	1-22
1-14 Policies of City/County Bicycle Plans Related to BART-San Mateo County	1-23
3-1 Summary of Appropriate Bicycle Parking by Station Area	3-13

ILLUSTRATIONS

Figure	Page
3-1 Bicycle entrances to BART station	3-3

APPENDICES

Appendix A

Table A-1:	Bicycle restrictions during peak hours
Table A-2:	Bicycle parking supply and demand at BART stations
Table A-3:	Bicycle theft at BART stations
Table A-4:	Automobile parking supply and demand at BART stations
Table A-5:	Comparison of station entries
Table A-6:	Mode split to BART stations
Table A-7:	Bicycle Mode Share Changes from 1992 to 1998
Table A-8:	Population and employment within 1 mile of station
Table A-9:	BART and transit related goals and policies from city bike plans
Table A-10:	Summary of BART Station Characteristics (2 pages)
Table A-11:	Bicycle Access Growth Potential (3 pages)
Table A-12:	Worksheet for Stairchannel Priority Ranking

Appendix B

- Figure B-1: Placement criteria for bicycle lockers
- Figure B-2: Placement criteria for inverted U-racks
- Figure B-3: Placement criteria for wave racks
- Figure B-4: Placement criteria for space-efficient wall mounted racks
- Figure B-5: Placement criteria for eLockers
- Figure B-6a: Sample of space-efficient bicycle racks-page 1
- Figure B-6b: Sample of space-efficient bicycle racks-page 2
- Figure B-7a: Sample of space-efficient lockers-page 1
- Figure B-7b: Sample of space-efficient bicycle racks-page 2
- Figure B-8: Miscellaneous parking alternatives

Appendix C

- Table C-1: Cost and placement dimensions of various bike parking racks/lockers

Appendix D

- Table D-1: Complete List of Recommendations from Chapter 3

Appendix E

- Table E-1: Transportation Funding Sources and Eligible Projects

Appendix F

- Checklist for the Evaluation of Existing BART Stations, Future Station Projects and Transit Village Developments

This Page Intentionally Left Blank

INTRODUCTION

In 1999, the BART Board of Directors adopted its new Strategic Plan developed to guide BART into the 21st Century and to fulfill its mission statement of providing "safe, clean, reliable, and customer-friendly regional public transit". Dramatic increases in ridership in the year 2000 placed significant pressure on all aspects of the BART system and most particularly on the demand for automobile parking. Although ridership has recently experienced some decline with the changes in the economy, the demand for automobile parking has remained high. Of the 28 BART stations that provide auto parking, all but 4 are filled by 9 AM with more than half filling before 8:30 AM¹. To meet the goal specified in the Strategic Plan to encourage and facilitate improved access to and from stations by all modes, BART is committed to achieving a 10% shift in the access mode split by reducing the percentage of parked Single Occupancy Vehicles relative to other modes, such as transit, taxi, carpool, drop-off, walking and bicycling. As part of this commitment and with an increased focus on station-level planning, the BART Board directed staff to prepare Station Access Plans. The Station Access Plans will examine and prioritize station access improvements, which could include physical enhancements, new programs, or policy changes that would facilitate BART's goal to achieve patronage targets by mode for each station and to support systemwide targets.



PURPOSE OF THE BART BICYCLE ACCESS AND PARKING PLAN

As a component of the Station Access Plans, the BART Bicycle Access and Parking Plan provides BART with the strategies necessary to enhance the attractiveness of the bicycle as an access mode and thereby increase the bicycle mode share. The challenge of this task can be clearly defined by these three simple questions:

1. How do we get the cycling customer to the BART Station?
2. What do we do with the bicycle at the BART Station?
3. How do we inform and convince the potential cycling customer to bicycle?

¹ BART Access Evaluation System, Jan 2002.

The BART Bicycle Access and Parking Plan consists of two volumes. Volume 1, included here, presents a systemwide approach to planning for bicycle access and parking in the BART system. Volume 2 will include site-specific bicycle access and parking plans for each station and is being developed in stages. Plans for the following 14 stations will be completed by September 2002 with the remaining stations to follow over the next few years.

- 16th Street
- 24th Street
- Balboa Park
- Coliseum/Oakland Airport
- Dublin/Pleasanton
- El Cerrito Plaza
- Embarcadero
- Fruitvale
- Pittsburg/Bay Point
- Pleasant Hill
- Richmond
- San Leandro
- Union City
- West Oakland

Volume 1 is organized in 3 chapters. Chapter 1 surveys the existing conditions of the BART system including BART plans and policy documents related to bicycle issues, station facilities, ridership, service area demographics and relevant planning efforts of jurisdictions in the BART service area. Chapter 2 begins with a list of the goals and policies recommended to guide efforts at enhancing the attractiveness of the bicycle as an access mode. A description of the systemwide needs for bicycle access, parking and promotion are included. Finally, Chapter 3 presents the recommendations developed to meet the goals outlined in Chapter 2. The recommended strategies address improvements for systemwide bicycle access, parking, promotion, and future station projects and transit villages.

Volume 2 of the Bicycle Access and Parking Plan will include discussions of existing conditions and needs specific to each station as well as recommendations for improving bicycle access and parking. Other than documenting existing policies, the issue of bicycles on BART trains is beyond the scope of this plan and is not discussed.



Chapter 1

EXISTING CONDITIONS

HISTORY OF BICYCLES AND BART

Bicycles on BART Trains

- **October 1974** - Bicycles first authorized on BART on a temporary basis with the following regulations: Folding bikes allowed at all times. Only standard size bicycles allowed in the BART system and then during off-peak hours only (5-6:30am; 9am-3:30pm; after 6:30pm). Bicycles allowed only in rear of last car. No more than 5 bicycles allowed per train. Permits required to take a bicycle on the train. Permits issued for 3-year time periods with registration and payment of three dollars. These policies became permanent in December 1975.
- **January 1978** - Bicycles allowed on weekends from 9am-12 midnight.
- **1980** - Test program of reverse commute on the Concord line between Rockridge and Concord Stations.
- **August 1987** - A 6-month trial period of extended reverse commute began to include all stations from Embarcadero to Richmond, Concord, and Fremont in the morning commute and from Richmond, Concord and Fremont to Embarcadero in the evening commute. Oakland's 12th Street and 19th Street Stations were excluded from bicycle access during peak times. In addition, bicycles were permitted on the front and rear of the last car of the train. Temporary permits that were issued by agents were valid for 3 weeks rather than the previous one round trip. Policies were formally adopted in 1988.
- **October 1996** - A 6-month trial period was initiated which eliminated the requirement for a permit to bring bicycles on the train. Bicycles were allowed in the rear door of any car except the first car. Policies were formally adopted in March 1997.
- **July 1998** - Time restrictions were tailored to focus on specific trains rather than entry stations. Bicycles were also permitted on trains in the "shoulder" period (times directly before or after the peak of the peak period) and at all times on the Richmond/Fremont line. With this new policy, bicycles were restricted for approximately 1-1/2 hours during the AM peak and 2 hours during the PM peak. Previous restrictions prohibited bicycle in the system for 2-1/2 hours in the AM peak and 3 hours in the PM peak.
- **April 1999** - Bicyclists no longer required to use the rear door of the car.



Bicycle Parking

Bicycle parking was installed at most stations when BART stations were first constructed using post and chain style racks and plywood bicycle lockers. The lockers were assigned to customers on a first come basis. Bicycle parking was not provided at the downtown and/or underground stations.

- **1996** - Over 700 plastic lockers were purchased and installed systemwide to replace the existing wooden lockers and provide additional locker spaces.
- **Fall 1998** - A bicycle parking demonstration program was begun at selected stations in Berkeley and Oakland. Free, on-demand, day-use lockers were installed at North Berkeley, Downtown Berkeley, Ashby and MacArthur Stations. These lockers were later removed after significant problems with abuse, vandalism, and arson. The old post and chain bicycle racks were also replaced at these three stations (excluding Downtown Berkeley) with “Wave” and “U” style bicycle racks. In addition, a canopy was constructed at the North Berkeley Station to protect the bicycle racks and a stairchannel was installed at the Downtown Berkeley Station.
- **October 1999** - As part of the demonstration program mentioned above, The Berkeley Bikestation began operating as BART’s first Bikestation. The Bikestation is an attended bicycle parking facility located on the concourse level of the Downtown Berkeley BART Station.
- **October 2000** - Bicycle racks installed on the concourse level of the 16th Street Station in the paid area as part of a demonstration project.
- **2001/2002** - All of the old post and chain style racks were replaced with “Wave” and “U” style racks systemwide and approximately 1,300 new rack spaces were added. Additionally, some plastic lockers were replaced with new perforated metal lockers.

RULES AND SCHEDULE RESTRICTIONS FOR BICYCLES ON BART TRAINS AND IN STATIONS

The current rules for bicycles in the BART system are:

- Bicycles are allowed on all trains, except on those trains shown in highlighted areas of the BART schedules published in the *All About BART* brochure and available on the BART website at www.BART.gov.
- Bicycles are not allowed on any trains at 16th Street, 24th Street, Balboa Park, Civic Center, Colma, Daly City, Glen Park, Montgomery, and Powell Stations during both peak periods.
- During morning commute hours, bicycles are allowed in Embarcadero Station only for trips to the East Bay.
- During the evening commute hours, bicycles traveling from the East Bay must exit at Embarcadero Station.



- During morning and evening commute hours, bicycles are not allowed in the 12th and 19th Street Stations in downtown Oakland.
- Bicycles are never allowed on crowded cars.
- Bicycles are allowed in any car but the first car of a train.
- Folding bicycles are allowed on all trains at all times. During commute times, folding bikes must be folded before entering the paid area at Embarcadero, Montgomery, Powell, Civic Center, 12th Street and 19th Street Stations. At all other stations, they may be folded on the platform but before boarding a train.
- Bicyclists must use elevator or stairs -- not escalators, and always walk bikes.
- Bicyclists must yield priority seating to seniors and people with disabilities, yield to other passengers, hold bikes while on the trains and not block aisles or doors or soil seats.
- In the case of an evacuation, bicycles must be left on the train.
- Bicyclists under 14 years old must be accompanied by an adult.
- Gas powered vehicles are never permitted.

Restrictions to bicycle access on the trains have an impact on the use of the stations by bicyclists and the demand for bicycle parking at the stations. Refer to Table A-1 of Appendix A for a summary of these restrictions.

BART PLANS, POLICY DOCUMENTS AND RELEVANT STUDIES

This section briefly discusses the most recent BART documents relating to station access and/or bicycle issues. These policy documents provide guidance for setting the goals and policies of this plan located in Chapter 2. In addition, sources of ridership and demographic data are described.

BART Strategic Plan (1996)

The *BART Strategic Plan* provides the platform for making decisions and taking action on the issues facing BART today and in the future. To fulfill its mission of providing "safe, clean, reliable, and customer-friendly regional public transit in order to increase mobility and accessibility,

Goal: "Encourage and facilitate improved access to and from our stations by all modes."

strengthen community and economic prosperity, and preserve the environment in the Bay Area", BART has identified seven focus areas that will have a major impact on the system's future success. Of particular interest in bicycle planning for the BART system is the goal to "encourage and facilitate improved access to and from our stations by all modes." The objective of this goal is to achieve a shift in access modes away from the parked single occupant vehicle and to other modes. Strategies include improving access for bicycles and promoting innovative parking strategies such as the Bikestation, an attended bicycle parking facility.

Access Management and Improvement Policy Framework (May 2000)

The BART Board of Directors adopted this document on May 25, 2000 in response to the Strategic Plan. It includes the goals of enhancing customer satisfaction, increasing ridership by

enhancing access to the BART system, creating access programs in partnership with communities, and managing access programs and parking assets in an efficient, productive, environmentally sensitive and equitable manner.

Five and Ten Year Access Targets (September 2000)

This document was prepared in support of the Access Management and Improvement Policy Framework discussed above. The proposed access targets include a reduction in the share of peak period riders arriving by solo driving with corresponding increases in carpool, passenger drop off, taxi, transit, walk and bicycle modes.

The proposed targets shift the solo driver from 38% in 1998, to 33% in 2005, to 31% in 2010.

The proposed targets shift the solo driver from 38% in 1998, to 33% in 2005, to 31% in 2010. Factors such as the availability or attractiveness of the mode (e.g. transit service, available parking, feasible walking or bicycling distances), time and cost, predictability, convenience and safety influence how riders choose to get to stations. Ease of access will largely determine whether a person will use BART in the first place. Between 1999 and 2001, BART ridership grew very rapidly while the supply of parking at stations remained constant. BART's attractiveness as a travel mode outweighed access mode limitations such as parking supply. Commuters seemed to be willing to find new access arrangements such as parking outside the BART station, switching to stations with available parking or switching access mode entirely by using carpools, drop-off, transit, walking or bicycling.

BART can influence mode choice through its own initiative and through collaboration with local communities, transit operators and employers. Bicycle-related activities under the control of BART include on-site bike paths, signage, lockers and racks, information, marketing, incentives and rules for bringing bikes on trains. Activities under the control of potential BART partners include bike paths, lanes, and routes to the station, shower facilities, lockers and racks, and employer benefit policies.

Since 1987, bicycle access to the BART system during the AM peak has increased from about 1% to 2%¹. This trend is thought to be a result of the increased amount of bicycle parking available at stations, improved outreach, and major changes in bicycle policies. Without any specific policy actions taken by BART, it is estimated that the bicycle mode share for the AM peak will remain at 2% for Year 2005 and increase to 2.5% for Year 2010. These rates constitute the baseline. Based upon the directives of the *BART Strategic Plan* to shift access away from the parked single occupant vehicle and to other modes, the access target for bicycle mode share during the AM peak is set at 2.5% for Year 2005 and at 3.0% for Year 2010. Programs proposed to meet these targets include enhanced bicycle storage facilities at stations and partnerships with local jurisdictions for improved station area bicycle access.

The access target for bicycle mode share during the AM peak is set at 2.5% for Year 2005 and at 3.0% for Year 2010.

¹ Note that the various documents describing bicycle access to BART stations may use different time periods (i.e. AM peak, PM peak or all day) or trip origins (i.e. all trips, home origin trips or work origin trips) in their description of bicycle mode share. These differences result in different mode share percentages for the same year.

Short Range Transit Plan and Capital Improvement Program (FY2002 Update)

These documents list all the projects that the District would implement over a ten year period if adequate funding were available. "Track One" projects include those for which potential funding sources can be identified; "Track Two" are other important projects for which funding sources can not yet be reasonably identified. Two bicycle-related projects listed in the Capital Improvement Program have already been initiated: A bicycle locker comparison project at Walnut Creek Station and an analysis of how to better accommodate bicycles on station stairs at 16th Street Station. Both these projects are related to the station access improvement efforts continued through FY2001 with the adoption of the Access Management and Improvement Policy Framework in May 2000.

Bicycle Policy Evaluation (January 1998)

This study was conducted to obtain customer feedback on the 1997 policy changes of eliminating the need for permits and allowing bicycles in the rear door of all but the first car. Policy changes under consideration such as modifying peak travel time restrictions, physical changes to the stations and the cars, allowing bicycles on escalators and the potential for increased bicycle access to BART were also surveyed.

Of customers who drove alone, 23% said "Very Possible" to use a bicycle to BART with 21% responding "Somewhat Possible".

The information presented in the report is based upon a telephone survey of BART riders, passenger and bicycle counts taken on 189 trains, opinions expressed by participants in a BART Bicycle Workshop, and BART data drawn from Police and Customer Service reports. Although most of the data concerned bicycles on BART trains, some findings are relevant to access and parking issues. The findings showed that bicycle access to BART appeared to be growing. Customers who had used a bike at least once in the last 3 months to get to BART had increased from 8% to 15% (based upon findings of previous contact in February 1997). 34% of all customers that did not use a bicycle to BART said that it is "Very Possible" for them to use a bicycle to BART, 18% responded with "Somewhat Possible". More significant are the responses from customers who drove alone or carpooled. Of customers who drove alone, 23% said "Very Possible" to use a bicycle to BART with 21% responding "Somewhat Possible". 28% of customers who carpooled considered it "Very Possible" to use a bicycle to BART. The major reasons for not riding a bicycle to BART were beyond the control of BART. These reasons were no bicycle available, too far to ride, dress code requirements, not physically able or prefer to walk. Of those factors under the control of BART, bicycle parking security accounted for 7% and not being allowed to bring bikes on trains during peak hours accounted for 5% of responses.

Bicycle Policy Study (March 1998)

This report explores the policy and operational dimensions of bicycle use in the BART system including past experiences as well as proposed policy alternatives. The following policy modifications were recommended.

1. Proceed with bicycle programs that encourage customers to park their bikes at the stations.
2. Evaluate the safety and acceptability of allowing bikes on escalators.

3. Modify peak hour access to prohibit bicycle access on crowded commute-direction trains during the peak of the peak.
4. Develop extensive customer outreach and education programs.

Changes to the BART bicycle policy made in July 1998 were a result of this study.

Bicycle Policy Evaluation (February 1999)

This report documents the impact of the 1998 BART bicycle policy changes which focused peak hour time restrictions on specific trains rather than entry stations. With this new policy, bicycle restrictions were reduced in the AM peak from 2-1/2 hours to approximately 1-1/2 hours and in the PM peak from 3 hours to 2 hours. Additionally, bicycles were permitted at all times on the Richmond/Fremont line. The results were based upon passenger and bicycle counts taken on board BART trains, the Comment/Complaint Program of BART's Customer Service Department, findings of the bicycle policy question included in the customer survey conducted in fall of 1998, and policy enforcement data from BART Police records.

Key findings of this report state that the initial impact of the October 1996 policy changes appeared to have stabilized. The policy restricting bicycles to the rear of a car continued to be largely ignored. The majority of trains during the off-peak hours did not carry bicycles and bicycles were spread more evenly throughout the train with the policy restricting bicycles from the first car being followed. Finally, bicyclists accounted for about 1.2% of riders on the Richmond/Fremont line during peak hours and, overall, customers remained supportive of the use of bicycles on BART.

BART Station Profile Study (August 1999)

The BART Station Profile Study presents the findings of the latest survey of BART customers from September 29 – October 29, 1998. A major objective of the study was to provide travel pattern and demographic insights that could be used to evaluate current and future services offered by BART. Findings included systemwide and individual station breakdowns of trip purpose, ingress and egress mode, and satisfaction with BART. Results were tabulated for peak hours as well as midday and evening periods. Bicycle access from home to BART was estimated to have increased from 1% in 1992 to 3% in 1998. The breakdown of bicycle access from home to BART for 1998 includes 2% in the AM peak, 3% in the PM peak, and 4% off peak. The AM peak period is from 5:30am to 10am. This document provides a wealth of information, some of which has been used in the Plan.

Bicycle Access to BART from Home

2% - AM peak
3% - PM peak
4% - Off peak
3% - All day

BART Customer Satisfaction Study (2000)

This report details the results of the most recent Customer Satisfaction Survey which was conducted in Fall of 2000. The findings are a result of questionnaires completed by over 5,400 customers selected at random.

In the survey, customers were asked to rate BART on 43 specific service characteristics on a scale from 1=Poor to 7=Excellent. Included in that list was availability of bicycle parking which received a rating of 4.56; this represents a decline of 0.15 from survey findings in 1998. In

response to the question of how did the customer travel between home and BART that day, 3% overall said that they biked with 2% in the peak period, 4% in the off-peak period and 3% on the weekend. Of those customers that biked, 74% were satisfied overall with BART, 15% were neutral, and 11% were dissatisfied.

Overall, 3% of BART customers biked to the station; 2% biked in the peak period; 4% in the off-peak period and 3% on the weekend.

BART customers were asked specifically if BART's bike policy is adequate. Of all respondents, 33% felt the policies were adequate, 6% thought they went too far, 14% thought they didn't go far enough, 27% didn't know and 20% didn't respond. Of customers who used a bicycle to access BART, 37% felt the policies were adequate, 3% thought they went too far, 45% thought they didn't go far enough, 5% didn't know and 10% didn't respond.

BART Station Access Evaluation System

The BART Station Access Evaluation System was begun in 1992 to provide BART with background data and analysis related to station access. The Evaluation System was initially developed by Wilbur Smith Associates (WSA) and continues to be updated quarterly. It is currently in a Microsoft Access database and is available to BART staff on their computer network. The Evaluation System contains station information about automobile parking, bicycle parking, station area characteristics, station equipment and available transit. There is also a GIS module which provides station area demographics for the 1-mile radius of each station as well for the home-based and work-based catchment area. The catchment areas were defined as a result of the 1998 Station Profile Study and identify the area providing riders to each station for either the home-based trip or non-home-based trip. Population, household and employment data is based upon ABAG's Projections98 data by census tract. Travel to work data is provided by 1990 census figures.

STATION FACILITIES

This section describes the supply and use of existing bicycle and automobile parking available at the stations. Also included is a listing of bicycle-related programs currently being considered for future implementation. This discussion is intended to assess how stations currently operate and to provide background for the needs analysis in Chapter 2.

Bicycle Parking-Supply and Demand

Bicycle Racks - Bicycle racks are provided by BART at most stations with the exception of the following downtown and/or underground stations: 12th Street, 19th Street, Embarcadero, Montgomery, Powell, Civic Center, 24th Street, and Downtown Berkeley. Generally, bicycle racks are located outside of the paid and free areas but within the drip line of the station facility. 16th Street Station is the only underground station with bicycle racks and the only station with racks located in the paid area. In October 2000, six wave racks were installed on the concourse level.



BART "Wave" Racks

BART is currently conducting the 2001/02 Rack and Locker Project that includes upgrading racks and increasing parking capacity. The bicycle racks are being upgraded by removing the older post and chain racks and replacing them with "Wave" and "U" style racks. At the request of the BART Bicycle Advisory Task Force, BART ordered and installed racks with square tubing and higher and wider loops than the standard wave rack. Each "Wave" rack has the capacity for 7 bicycles and the "U" racks will each park 2 bicycles. In addition to upgrading the racks throughout the system, additional capacity is being provided for many of the stations. The goal is to double the capacity of racks currently in the system. When the current project installation is completed, a total of 2,716 bicycle parking spaces in racks will be available systemwide. A complete listing of these spaces by station is included in Table A-2 of Appendix A.



BART "U" Rack

Bicycle Racks are more than 50% occupied at:

- Ashby
- Bay Fair
- Fruitvale
- MacArthur
- North Berkeley
- Walnut Creek

Use of bicycle racks varies greatly from month to month and from station to station. Factors such as weather, available light, surrounding topography, availability of car parking, availability of feeder transit service, and distance to the station have a great deal to do with a customer's decision to bicycle to BART. As shown in Table A-2 of Appendix A, bicycle racks are more than 50% occupied at six stations. More than half of the stations have an occupancy rate of at least 25%. At many stations, especially those without bicycle parking, bicycles can be found locked to trees, light posts, sign poles and parking meters.

Bicycle Lockers - Many of the BART stations have bicycle lockers with the exception of the following downtown and/or underground stations: 12th Street, 19th Street, Embarcadero, Montgomery, Powell, Civic Center, 16th Street, 24th Street, and Downtown Berkeley. The lockers are assigned to individuals on an annual contract basis for a \$30/year fee. There are waiting lists for lockers at two-thirds of the stations. As part of the 2001/02 Rack and Locker Project, BART will replace or relocate lockers at several stations and, in some cases, provide additional lockers. The new lockers to be installed are made of perforated metal. Some are fully perforated on all sides and the top for use where there is an overhanging or roof to provide protection from the weather. Where there is no such covering, the lockers are not perforated on the top. The lockers at Walnut Creek have an electronic locking device that is being tested for future use on all lockers.



BART Bicycle Lockers

At some stations there are enough lockers to meet demand. However, most stations will continue to have an insufficient supply of lockers given current demand (assessed by the existing waiting list) even after the additional lockers have been installed. Table A-2 in Appendix A details the supply of bicycle lockers at BART stations including the location of additional lockers to be provided, the number of rented lockers and the number of customers on the waiting list for a locker.

Bicycle Parking Available in the BART System

- 2,716 spaces in bicycle racks
- 818 spaces in bicycle lockers
- 227 Bikestation spaces (77 in Downtown Berkeley; 150 at Embarcadero)

As shown in Table A-2, bicycle lockers are in great demand throughout the BART system. Of the 30 stations that provide lockers, they are fully rented at 21 stations. Nine stations have waiting lists of more than 15 people; at some stations the waiting list is greater than the actual supply of lockers. The new lockers that have been added at MacArthur, Pleasant Hill, Orinda, and Walnut Creek have mitigated this unmet demand somewhat but not completely.

Downtown Berkeley Bikestation - The Downtown Berkeley Bikestation opened in October 1999 with the purpose of promoting intermodal transportation with BART and AC Transit, as well as increasing the amount of local trips by bike to the Downtown Berkeley commercial district. The Bikestation provides secure bicycle parking in addition to bike-transit information, bike resources and events calendar, and Bike-check Fridays – an optional free bike “check up” service.



Downtown Berkeley Bike Station

As part of a follow up survey of the BART Demonstration Bicycle Parking Project², it was learned that 71% of bicyclists entering Downtown Berkeley Station were in favor of an attended bicycle parking facility. In response, BART entered into an agreement with the Bicycle-Friendly Berkeley Coalition (BFBC) to manage and operate a Bikestation at the Downtown Berkeley BART Station. BART, the Bay Area Air Quality Management District and the City of Berkeley provided funding for the project. The demonstration project was for an 18-month period ending in April 2001. Additional funding was secured to continue operations for the present. Because of the success of the Bikestation, funding strategies are being explored to continue operations into the future.

The Bikestation is located on the concourse level of the station and is constructed of a large metal cage built around an unused agent booth. Storage for 77 bicycles is available on double-decker bike racks with excess bikes being stored on ceiling hooks and on the floor. Hours of operation are currently from 7am – 9:30pm weekdays. The Bikestation is closed on weekends and holidays.

² The BART Demonstration Bicycle Parking Project began in 1998 and focussed on bicycle parking improvements at the four stations with the highest bicycle ridership in the BART system: Ashby, Downtown Berkeley, North Berkeley and MacArthur Stations. For more information see the History of Bicycle Parking section of this chapter.

First time users of the Bikestation are required to fill out a signature card which is kept on file. Customers are required to give their name when checking in bikes and are presented with a claim check used to retrieve the bicycle. Bicycles must be picked up by 10am the following day or a \$3 fine is charged. Bicycles left for more than 72 hours can be confiscated. As of October 2000, more than 1500 registration cards had been filled.

In the fall of 2000, a survey was conducted to measure and describe the use of the Bikestation and to investigate the benefits of the Bikestation to its users and to BART. Questionnaires were handed out to Bikestation customers on Wednesday, September 27, 2000 and Thursday September 28, 2000. During the survey days, 80-90 bikes were parked each day requiring use of the overflow parking space. Results of the survey were collated and presented in the “Downtown Berkeley BART Bikestation Demonstration Project Follow Up Evaluation”, December 2000. Findings included:

- Most trips were from home to work or school.
- Most trips were to a destination in San Francisco.
- 72% parked their bikes before riding BART, 18% parked their bikes after riding BART and 7% didn't ride BART at all.
- 2/3 of customers used the Bikestation at least three days a week.
- 80% had taken BART for similar trips before the Bikestation, 7% had driven, and 3% had bicycled the whole way.
- 75% would continue to use BART without the Bikestation while 20% might consider switching to car or bus if the Bikestation was not available.

Bicycle-Related Programs

BART Bicycle Advisory Task Force (BBATF) – A BART bicycle advisory group has been in existence since service began in 1972 although the name and purpose of the group has changed over the years. The BBATF, the current organization around since 1994, works with BART to improve bicycle access to BART and on BART trains. Specifically, the Bicycle Task Force reviews proposed bicycle policies and offers suggestions for improvements; discusses problems and complaints regarding bicycles on BART; makes recommendations to BART staff and the Board of Directors; and acts as a liaison between BART and bicycle advocacy groups and associations. The BBATF meets every other month and includes six appointed members, two people from each county represented by BART: Alameda, Contra Costa and San Francisco. Members are drawn from each county's Bicycle Advisory Committee.

Bike racks in the paid area - As mentioned in the above section, bicycle racks have for the first time been located in the paid area of a BART Station. The racks were installed in 16th Street Station as part of a demonstration project to find bicycle parking solutions for stations with few other parking options either because of space limitations or the lack of security in areas available for bicycle parking. The use of these racks is being monitored to see if their location in the paid area reduces the incidence of bicycle theft and/or vandalism, poses a hazard to customers, or adversely affects the maintenance and operation of the station. The outcome of this demonstration project will influence future similar installations.



Bicycle Parking at 16th Street

Shared-use bicycle lockers – Shared-use bicycle lockers are lockers that are not assigned to a specific customer and are available for use on an as-needed basis. The user provides their own lock or the lockers are outfitted with an electronic locking device that requires a pass code/credit/debit card. There are currently no shared-use lockers on BART property although in 1998 they were provided as part of a demonstration project. Unfortunately, they had to be removed after being vandalized, set on fire, used to store inappropriate items and, in some cases, used as shelter by the homeless. The City of El Cerrito will be installing 48 shared-use lockers on city-owned property at the El Cerrito Plaza BART Station. These lockers are of a new design which is theft, vandal and fire-resistant.

Stairchannels – A stairchannel is a smooth channel along the edge of a stairway that is used to roll a bicycle up and down the stairs. Since bicycles are not allowed on the escalators and elevators are often not conveniently located, stairchannels are an enhancement that makes taking bikes up and down stairs more manageable. A stairchannel is located in the Downtown Berkeley Station. Unfortunately, it is of poor design and is not suitable for its intended use. BART Engineering is currently exploring various design options to find one that is functional, easily maintained, and does not pose a safety risk to other stair users.



Stairchannel at Downtown Berkeley Station

Bikestations – The success of the Downtown Berkeley Bikestation has sparked an interest in adding more of these facilities to the BART system. Plans are currently underway to open Bikestations in both the Embarcadero and Fruitvale Stations. The Fruitvale Bikestation will be part of the Fruitvale Transit Village project now under construction. The Bikestation at Embarcadero Station has been built and will begin operations by January 2003. It will provide parking for 150 bicycles.

Bicycle Theft

The potential for theft of either the entire bicycle or individual components is a strong deterrent to choosing to ride a bicycle to the BART station. With peak hour restrictions to bringing bicycles on the trains, it is often necessary for the customer to park their bicycle at the station. Although bicycle parking facilities are provided at many of the stations, these racks and even lockers do not provide a 100% guarantee that the bicycle will not be tampered with or stolen. Many factors play a part in the security of bicycle parking including the type of racks or lockers utilized, their location within the station area, the type of lock used to secure the bicycle, and the way the bicycle is locked to the rack.

The stations with the highest average incidents of reported bicycle theft or theft of bicycle parts at BART stations for the years 1999-2001 are presented in Table 1-1 below. This table shows that 6 stations averaged more than 25 occurrences of bicycle or bicycle parts theft each year. Nine other stations averaged more than 10 similar occurrences each year. As noted above, these bicycle and bicycle part thefts could be the result of many different factors. It is difficult to know exactly why some stations have a higher number of thefts than others. In some but not all cases, a higher number of thefts is seen at stations with high bike usage. The theft rate (the occurrences of bicycles or bicycle parts stolen per the number of bicycles parked) has not been calculated since the monthly count of bicycles parked at each station needed to make this calculation was not available. In the future it would be useful to calculate the theft rate. A complete listing of reported thefts at all stations is included in Table A-3 of Appendix A.

Table 1-1: Stations with the Highest Number of Reported Thefts of Bicycles and Bicycle Parts - Annual Average for 1999-2001			
Station	Annual Average	Station	Annual Average
North Berkeley	56	Pleasant Hill	26
Ashby	41	El Cerrito Plaza	19
Concord	36	Dublin/Pleasanton	19
MacArthur	28	Fruitvale	18
Fremont	26	Rockridge	16
<i>Systemwide Annual Average Bicycle and Bicycle Part Thefts - 11</i>			
Source: BART staff, March 2002			

Auto Parking Supply and Demand

Of the 39 stations in the BART system, 28 stations include BART-provided auto parking. Demand for auto parking is very competitive especially in the morning. Of the 28 stations with parking, at 2 stations (West Oakland and Lake Merritt), the unrestricted parking fills before 7am; 9 stations fill between 7am-8am; 13 stations fill between 8am-9am. Only 4 stations (North Concord/Martinez, Hayward, South Hayward and Castro Valley) do not fill by 9am. These fill times are based upon the latest findings of the Station Access Evaluation System quarterly surveys (January 2002) and do vary from year to year and month to month. A complete list of parking at BART stations and fill times is included in Table A-4 in Appendix A. The stations with the earliest fill times are included here in Table 1-2

Table 1-2: Stations with the Earliest Automobile Parking Fill Times

Station	Fill Time	Station	Fill Time
West Oakland	5:50 AM	Daly City	7:35 AM
Lake Merritt	6:30 AM	MacArthur	7:35 AM
Fruitvale	7:00 AM	Walnut Creek	7:44 AM
Pittsburg/Bay Point	7:25 AM	El Cerrito Del Norte	7:45 AM
Colma	7:32 AM	El Cerrito Plan	7:45 AM

Source: BART Access Evaluation System, 2002

RIDERSHIP CHARACTERISTICS

This section describes ridership on the BART system in terms of the volume of customers handled, breakdown of home-based and non-home-based trips, and how customers arrive at the station. These findings identify which stations are currently successful at attracting a large share of bicycle use and will be used to make the decisions about future bicycle programs.

Ridership

Ridership on the BART system has seen some dramatic changes over the last several years. Year 2000 brought record breaking ridership levels with each month 10%-17% higher than the same period in 1999. In September of 2000, average weekday trips peaked at 341,182, 14% higher than the same period in 1999. As expected, BART has felt the effects of the recent downtrend in the economy. Although ridership growth continued in first half of 2001, it was at a much slower pace than the previous year. By July 2001, ridership had dropped below 2000 levels although it was still 3%-10% higher than the same period in 1999. These total numbers give us some indication of the demand for access to the station. However, the following discussion of specific ridership characteristics will tell us more about what bicycle access and parking improvements will benefit each station.

A comparison of station entries was compiled from the BART Station Profile Study and includes total trips for the whole day. The entries are described as being either home-based or non-home-based. The home-based entry begins from the customer's home and conversely, the non-home-based trip begins from the work place, school or other activity and is generally the 'return' trip. This analysis provides information on the number and type of trip that each station attracts on a daily basis. These characteristics influence the quantities and types of bicycle parking needed at a specific station. For example, the customer usually makes decisions about how they will make that day's trips before leaving home. If a bicycle is going to be used during the day, it will generally be brought into the BART system at this time and either be carried on the train or parked at the station. Bicycle racks and stairchannels may be appropriate for these types of stations with high numbers of home-based trips. Of course, there are also customers who currently or in the future will desire to store their bicycles at their destination station. Bicycle lockers or a Bikestation would be necessary for secure overnight parking at these types of stations with a high number of non-home-based trips.

Table 1-3 shows the stations that carry the most riders. A complete listing of all stations for this table and for Tables 1-4 through 1-6 below can be found in Table A-5 of Appendix A. Overall ridership is not necessarily an indication of bicycle access potential but does identify those stations which serve the greater number of customers and, therefore, based purely on overall ridership, have the larger number of potential bicycle users.

Station	% Entries of System Total	Station	% Entries of System Total
Montgomery	11.1%	12 th Street	3.9%
Embarcadero	9.6%	24 th Street	3.7%
Powell	7.7%	Downtown Berkeley	3.7%
Civic Center	5.3%	16 th Street	3.4%
Balboa Park	4.0%	El Cerrito Del Norte	2.5%
Source: BART Station Profile Study, August 1999			

Table 1-4 identifies the stations that attract more home-based customers than non-home-based customers. Bicycles are not allowed on trains or in the stations during the AM peak to BART's major destinations, i.e. downtown San Francisco and Oakland. Because of the bicycle restrictions during the AM peak, the stations used for the home-based trip is where most customers will require bicycle parking.

Station	Home-based	Station	Home-based
Pittsburg/Bay Point	95%	Castro Valley	86%
El Cerrito Plaza	89%	West Oakland	84%
El Cerrito del Norte	89%	Lafayette	83%
North Concord/Martinez	89%	Orinda	82%
Pleasant Hill	86%	Glen Park	81%

Source: BART Station Profile Study, August 1999

Table 1-5 includes the stations with the highest percentage of the system total of home-based entries. For the most part, the stations shown in Table 1-5 are different from those included in Table 1-4. Although the stations in Table 1-5 tend to have a lower percentage of home-based entries, these stations are carrying on a systemwide basis a larger absolute number of home-based customers than those in Table 1-4. Consequently, it is likely that there are higher absolute numbers of potential bicyclists at these stations than those shown in Table 1-4.

Station	Home-Based Entries	Station	Home-Based Entries
24 th Street	5.8%	Fruitvale	3.8%
Balboa Park	5.5%	16 th Street	3.5%
El Cerrito del Norte	4.6%	Daly City	3.5%
Glen Park	4.0%	Colma	3.3%
Pleasant Hill	3.9%	Concord	2.9%

Source: BART Station Profile Study, August 1999

Table 1-6 identifies the stations that attract more non-home-based customers. The non-home-based trip is generally during the PM peak and is the return from work-to-home trip. Walking and transit have the higher shares of access mode because most customers do not have a vehicle available at the work end and BART's work destinations, downtown San Francisco and Oakland, are more suited to transit or walking. To store a bicycle at the destination station would require secure overnight parking.

Station	Non-home-based	Station	Non-home-based
Embarcadero	93%	Downtown Berkeley	71%
Montgomery	92%	19 th Street	71%
Powell	18%	12 th Street	64%
Civic Center	77%	16 th Street	51%

Source: BART Station Profile Study, August 1999

Table 1-7 includes the stations with the highest percentage of the system total of non-home-based entries. Unlike the home-based station tables, these stations are identical to those listed in Table 1-6.

Station	Non-Home-Based Entries	Station	Non-Home-Based Entries
Montgomery	20%	Downtown Berkeley	5%
Embarcadero	17%	12 th Street	5%
Powell	12%	19 th Street	3%
Civic Center	8%	16 th Street	3%

Source: BART Station Profile Study, August 1999

Mode Split

There are many factors that influence a passenger's mode choice in accessing the BART station. These include: availability of a car, age and fitness of passenger, the terrain and distance to station, weather, daylight, availability and cost of auto parking, availability of secure bicycle parking, bicycle access to trains, availability and cost of local transit, and cycling conditions on roadways leading to the station.

The most recent mode split data to all BART stations is available from the BART Station Profile Study. The mode split data presented in this document is calculated for all home origin trips regardless of time of day. For use in the BART Station Access Evaluation System, mode split data was also generated for the AM peak regardless of trip origin. Both data sets will be discussed in the following section and the source of the data will be clearly identified to avoid confusion. Refer to Table A-6 of Appendix A for a complete listing of the mode split data by station.

Stations with the greatest bicycle mode share during the AM peak (5:30am – 10am) for all trip origins are shown in Table 1-8 below. Although Embarcadero Station does not currently provide bicycle parking, it has the highest bicycle mode share since it is the only San Francisco station available to East Bay-bound passengers with bicycles during the AM peak.

Table 1-8: Bicycle Mode Share to BART Stations					
Station	Bicycle Mode Share (1)	Number of Bicyclists (2)	Station	Bicycle Mode Share (1)	Number of Bicyclists (2)
Embarcadero	8.4%	144	Fruitvale	4.5%	208
Ashby	7.5%	193	MacArthur	3.4%	147
North Berkeley	6.5%	127	Rockridge	3.2%	92
Lake Merritt	5.4%	105	Hayward	3.0%	80
Downtown Berkeley	4.6%	185	El Cerrito Plaza	2.8%	142
<i>Systemwide Bicycle Mode Share for All Day Home Origin Trips Only - 3.0%</i>					
(1) For AM peak, all trip origins, BART Access Evaluation System, 2002.					
(2) For Home Origin Trips only all day, BART Station Profile Study, August 1999.					

The stations shown in Table 1-9 below experienced the greatest increases in bicycle mode share from the time the 1992 Passenger Profile Study was completed to when the Station Profile Study was conducted in 1998. Systemwide, the bicycle mode share for all day home-origin trips increased from 1% to 3%. These increases can be attributed to many factors particularly the elimination of the permit requirement and reductions in peak hour restrictions for bicycle access to the BART system. Bicycle mode share changes from 1992 to 1998 for all stations are included in Table A-7 of Appendix A.

Table 1-9: Bicycle Mode Share Increases from 1992 (AM peak for all trip origins)			
Station	Change in Bicycle Mode Share	Station	Change in Bicycle Mode Share
Ashby	6.5	Hayward	2.3
North Berkeley	4.5	Rockridge	2.2
Embarcadero	4.4	El Cerrito Plaza	1.8
Lake Merritt	3.4	Civic Center	1.7
Fruitvale	2.5	Downtown Berkeley	1.6
<i>Systemwide Bicycle Mode Share Increase from 1992 to 1998 - 2.0</i>			
Source: BART Access Evaluation System, 2002			

STATION AREA DEMOGRAPHICS

This section is included to provide some understanding of the community surrounding the stations in the BART system and identify the potential for bicycle access based upon demographics.

Auto ownership

Existing or potential BART customers who do not have the use of a car may be more likely to bicycle to a BART station. The BART stations with the highest percentage of households without car ownership are shown in Table 1-10 below. This table is based upon 1990 census data and is calculated for a 1-mile radius area from the station. A full list of stations is included in Table A-8 of Appendix A.

Table 1-10: Percent of Households without Cars within 1 Mile of Station			
Station	Households	Station	Households
Powell	70%	12th Street	47%
Montgomery	67%	Lake Merritt	43%
Civic Center	67%	19th Street	42%
Embarcadero	63%	16th Street	41%
West Oakland	49%	Coliseum/Oakland Airport	34%
Source: BART Access Evaluation System, 2002			

Table 1-11 below includes the car ownership data for only those stations that provide car parking. Again, this table is based upon 1990 census data and is calculated for a 1-mile radius area from the station.

Table 1-11: Percent of Households without Cars within 1 Mile of Station for Stations with Automobile Parking			
Station	Households	Station	Households
West Oakland	49%	Ashby	24%
Lake Merritt	43%	Richmond	24%
Coliseum/Oakland Airport	34%	North Berkeley	18%
MacArthur	29%	Rockridge	17%
Fruitvale	26%	San Leandro	14%

Source: BART Access Evaluation System, 2002

Population and Employment

Population and employment for a 1-mile radius from each BART station is shown in Table A-8 of Appendix A. Powell, Montgomery, Embarcadero, Civic Center, 16th Street and 24th Street Stations have among the highest numbers of both population and employment. Pittsburg/Bay Point, Orinda, Lafayette, North Concord/Martinez, South Hayward, and Union City have among the lowest. There is a significant disparity between population and employment figures for the stations. Powell Station has the highest population (100,436) while Orinda has the lowest (3,582). For employment figures, Powell Station is again the highest (311,449) with Pittsburg/Bay Point the lowest (754).

POLICIES AND GOALS OF CITIES AND COUNTIES WITHIN THE BART SERVICE AREA

Since BART stations are located within other governmental jurisdictions, their policies pertaining to bicycles and transit can significantly impact the BART station within their boundaries. The existing goals and policies of these cities relevant to BART bicycle access and parking are described in the tables below. Most applicable are the policies concerned with bicycle access on city and county roadways although bicycle parking issues are also included. The exact wording of pertinent policies is presented in Table A-9 of Appendix A.

Bay Area Region

While there is no regionwide government, the Metropolitan Transportation Commission does play a significant role in making policy for transportation issues and distributing much of the transportation funding. In December of 2001, the MTC adopted the region’s first ever bicycle plan. Objective 2.0 of this plan deals with multimodal integration and directs transportation planning efforts to “Develop and enhance opportunities for bicyclists to easily access other modes of transportation”. The Plan also supports “Exploring station access and development of a safe-routes-to-transit program.”

Alameda County

There are nineteen BART stations in Alameda County. These fall within the city limits of eight cities plus Castro Valley in unincorporated Alameda County. (This counts both the City of Dublin and the City of Pleasanton which share the Dublin/Pleasanton BART station). Eight cities in the county have adopted bicycle plans as has the County and the western unincorporated areas of Castro Valley/San Lorenzo. These plans and their policies relating to BART are described below.

Objective 2.0 Multimodal Integration

Develop and enhance opportunities for bicyclists to easily access other modes of transportation

Policies

- 2.1 Encourage transit agencies to promote, provide, and maintain convenient and secure bike parking facilities-racks, bike lockers, in-station bike storage, and staffed bicycle parking facilities-at transit stops, stations, and terminals.
- 2.2 Facilitate multimodal transportation cooperation with local and regional transit agencies to ensure bicycles can be accommodated on all forms of transit and that adequate space is devoted to their storage on board whenever possible.
- 2.3 Improve bicycle access to transit hubs and stations by means of signage and bikeways.
- 2.4 Encourage bicycle-friendly development activity and support facilities, e.g., bicycle rental and repair, around transit stations.

**Table 1-12: Policies of City/County Bicycle Plans Related to BART
Alameda County**

Jurisdiction	Number of BART Stations	Bike Projects, Programs or Policies Pertaining to BART
County - entire county	19	In the recently adopted (July 2001) Countywide Bicycle Plan, all BART stations are served by a countywide route or a designated spur route. In addition, the plan states that improved bicycle access to transit stations is a high priority within a one-mile radius of each station.
County - Western unincorporated areas	One-Castro Valley	This plan, adopted in 1999, has several policies that support bicycle access to transit. Two routes serve the Bay Fair Station and two routes serve the Castro Valley Station.
Alameda	None	While Alameda has no BART station, the 1999 bike plan does include references to BART stations in its goals and policies.
Albany	None	While Albany has no BART station, the bike plan, (adopted in 2000) does support bike access to multimodal stations.
Berkeley	Three	Access to transit and BART stations are included in the goals and policies of the 1999 Bike Plan. The bike network directly serves all three BART stations by several routes including bicycle boulevards. The existing Bikestation at the Downtown Berkeley BART station was developed in cooperation with the City.
Dublin/Pleasanton	One	No bike plan.

**Table 1-12: Policies of City/County Bicycle Plans Related to BART
Alameda County**

Jurisdiction	Number of BART Stations	Bike Projects, Programs or Policies Pertaining to BART
Emeryville	None	The 1998 Bike Plan recommends bike lanes on 40 th Street as the primary bike access to MacArthur BART. This connects to Oakland's planned bikeway on 40 th Street that would complete the connection to MacArthur BART. In addition, the City provides free shuttle service to and from MacArthur BART station. This shuttle has front loading bike racks that hold two bicycles.
Fremont	One	While Fremont does not have an adopted bike plan, bike lanes provide access to the station from all directions.
Hayward	Two	The Hayward Bicycle Plan includes policies to work with BART. An existing bike lane serves each of the Hayward BART stations.
Livermore	None (A Livermore station is being studied.)	The Livermore Trails and Bikeways Plan was adopted in December 2001 as an element of the city plan. Access to transit and multimodal stations is included in the goals and policies.
Newark and Piedmont	None	No bike plan.
Oakland	Eight	The Bicycle Plan, adopted in 1999, includes connections to all BART stations within the bicycle network as well as policies regarding connections to BART and transit. The City has included Downtown BART stations in its proactive program to install bike racks in the downtown area. Connections to all BART stations are also included in the bike network.
San Leandro	Two	The 1997 Bike Plan includes goals for bike storage at BART and other transit terminals as well as improved access to all multi-modal stations.
Union City	One	While Union City does not have an adopted bike plan, there are bike lanes on Decoto Road and Alvarado-Niles Road both of which serve the BART station. In addition, the Alameda Creek Trail also has a spur which ends near the station.

Contra Costa County

There are ten BART stations in Contra Costa County. Seven of the sixteen cities in Contra Costa County have BART stations within their city limits; in addition the Pleasant Hill BART station is located on unincorporated county lands but serves Pleasant Hill and northern Walnut Creek. The County is currently developing a bicycle plan, but few of the cities in Contra Costa County have bicycle plans.

Jurisdiction	Number of BART Stations	Bike Projects, Programs or Policies Pertaining to BART
County - entire county	Ten	The County recently completed a thorough inventory of the Ohlone Trail in El Cerrito and Contra Costa Canal trail in Concord, Walnut Creek and Pleasant Hill and made specific recommendations to improve these trails for transportation. In addition, the County completed a Bicycle "Issues and Options" Report in January 2002 and expects its final draft bicycle plan to be ready in early summer with the final by the end of the year.
El Cerrito	Two	Redevelopment plans for the El Cerrito Plaza Station include better bicycle parking. As part of this effort, 48 shared-use lockers will be installed by the City on city-owned property at the El Cerrito Plaza BART station. The current city policy of lighting the Ohlone Trail at night encourages bike and pedestrian access to both stations.
Richmond	One	No bike plan.
Orinda	One	The City recently completed construction of the St. Stephens trail parallel to SR 24 which significantly improved nonmotorized access to the Orinda Station. The City also striped new bike lanes on Moraga Way and extended existing bike lanes on Camino Pablo from Orinda Way to the BART station.
Lafayette	One	No bike plan.
Walnut Creek	One	No bike plan.
Pleasant Hill	One (actually in unincorporated county)	No bike plan. A bike/ped bridge crossing Treat Boulevard is being studied to connect the Iron Horse Trail with Pleasant Hill BART
Concord	Two	The City is currently developing a citywide trails master plan which is addressing both onstreet and offstreet bike and pedestrian routes to all activity centers including BART stations.
Pittsburgh/Bay Point	One	No bike plan.
All other cities	None	No bike plans.

San Francisco City and County

San Francisco has eight BART stations. The City provides bicycle lockers for rent in downtown parking garages and the Transbay Terminal. In addition, all stations are served by existing and proposed bike routes as identified in the 1996 Bicycle Plan. The planned Bikestation at the Embarcadero BART Station is a cooperative venture between the City and BART.

San Mateo County

San Mateo County has two existing BART stations, Daly City and Colma. Four extension stations are expected to open by the end of 2002. The new stations will serve South San Francisco, San Bruno, San Francisco International Airport (SFIA) and Millbrae. The SFIA Station is actually in the City/County of San Francisco. The county has adopted a Bicycle Plan as well as a County Trails Plan. Few cities in the BART service area have bicycle plans.

**Table 1-14: Policies of City/County Bicycle Plans Related to BART
San Mateo County**

Jurisdiction	Number of BART Stations	Bike Projects, Programs or Policies Pertaining to BART
County - entire county	2 Existing 4 due to open in late 2002	County Bicycle Plan adopted in 1999; County Trails Plan adopted in 2001. BART and Samtrans are jointly planning and constructing the Colma to Millbrae Bikeway Project, which will roughly follow the right-of-way for the BART line extension. The bikeway will be a combination of Class I, II and III facilities, just less than 8 miles in length, and running through the cities of Millbrae, San Bruno, South San Francisco and the Town of Colma. The bikeway is expected to be completed by early 2005.
Colma	1	No bike plan. In the vicinity of the station, designated county routes are located on San Pedro Road, El Camino Real and Junipero Serra Boulevard
Daly City	1	No bike plan. Designated county routes are located on John Daly and Junipero Serra Boulevards in the vicinity of the station.
Millbrae	1	Draft Bicycle Plan is currently being prepared. Future projects include the SFIA Bay Trail from existing Bay Trail at Bayfront Park in Millbrae to S Airport Blvd @ N Access Road just north of SFIA. Included in this project is a bike/ped bridge crossing of US 101 at Millbrae Ave adjacent to the BART/Caltrain Station.
San Bruno	1	No bike plan. Bike routes designated in the City's General Plan are not located in the vicinity of the future BART station. Two county designated routes, Sneath Lane and El Camino Real, are in the vicinity of the station.
San Francisco City/County	1	San Francisco International Airport is contained within the City/County of San Francisco
South San Francisco	1	No bike plan. In the vicinity of the station, designated county routes are located on El Camino Real and Junipero Serra Boulevard. Proposed bikeways in the Transportation Element of the General Plan include a bike path on the linear park on the BART right-of-way between the new South San Francisco and San Bruno BART Stations

SUMMARY

This discussion of existing conditions provides the background necessary to identify needs and make recommendations for bicycle access and parking improvements in the BART system. The findings are summarized in the two pages of Table A-10 of Appendix A. For the purposes of comparison, many of the characteristics are classified as either high, medium or low based upon parameters outlined in the table. From this data, a factor for comparison was developed to identify which stations would be most successful in attracting additional bicycle ridership. This factor, the *Bicycle Access Growth Potential* is based upon a quantitative evaluation of station ridership and demographic, topographic and traffic characteristics of the surrounding station area. It is intended to measure the comparative potential of the station to attract new bicycle traffic in the AM peak period and, thereby, increase the station's bicycle access mode share. Note that this rating is not a definitive indication of what effect bicycle-related improvements will have on station ridership but rather should be used to prioritize between stations to determine where improvements would most likely have the most positive impact on bicycle ridership. For a listing of the *Bicycle Access Growth Potential* for each station, refer to Table A-10 of Appendix A. For more detailed information on how the *Bicycle Access Growth Potential* was derived, refer to Table A-11 of Appendix A. The characteristics of Table A-10 are used in Chapter 3 of this plan to categorize stations and determine the recommendations appropriate for each.



Chapter 2

SYSTEMWIDE BICYCLE ACCESS AND PARKING NEEDS ASSESSMENT

This chapter presents the goals and objectives recommended for the development of bicycle programs necessary to achieve the access targets for bicycle mode share described below. The goals and objectives are based upon policies set forth in the BART planning documents reviewed in Chapter 1 to provide "safe, clean, reliable, and customer-friendly regional public transit." Following the goals and objectives is an assessment of the needs of the BART system to meet the outlined goals and objectives. Both discussions are organized into the three main topics of access, parking and promotion.

BICYCLE ACCESS TARGETS

Targets for the bicycle mode share during the AM peak have been set at 2.5% for Year 2005 and 3.0% for Year 2010¹. The most recent analysis of station mode split was conducted in 1998 and shows an AM peak bicycle mode share of 2%². Illustrated in numbers of bicyclists, there were approximately 1,900 cyclists in 1998; meeting the targets set for the Years 2005 and 2010 would result in approximately 3,100 and 4,000 bicyclists, respectively. This reflects an increase of approximately 2,100 more customers using a bicycle to access BART stations during the AM peak between 1998 and 2010.

The most recent surveys of BART station access mode were conducted in 1998. Without a current survey, it is difficult to determine how close BART is to meeting the Year 2005 target goal, which is three years away. Comparing the available bicycle parking supply to the projected number of bicyclists who will be using the BART system in the Years 2005 and 2010 will give some indication of the system's ability to accommodate the increased bicycle ridership. Existing bicycle parking includes 2,716 spaces in bicycle racks, 818 spaces in lockers, and 227 spaces in Bikestations for a total of 3,761 spaces of bicycle parking systemwide. Of course, this is just a rough indication of bicycle parking supply and demand and does not take into account whether bicycle parking is available at the stations where it is most in demand or whether the type of available parking meets the preferences of the users, i.e. lockers versus racks. While at most stations, bicycle rack usage is below 30%, the demand for bicycle lockers far exceeds the supply with some stations having long waiting lists.

While there appears to be enough bicycle parking systemwide to accommodate the 2005 access target (but not the 2010 target), the availability of bicycle parking is obviously not the only factor affecting the mode choice of the BART customer. Many of these parking spaces are unused. Making the choice to bicycle to BART also includes consideration of the ease of finding the station, safety of routes to the station, directness and convenience to bicycle parking and station platforms, topography surrounding the station, and ability to bring bicycles on the BART train. Although this Plan is intended to help BART meet the mode share targets mentioned above, it is

¹ Five and Ten Year Access Targets, September 21, 2000

² BART Station Profile Study, August 1999

difficult to make any predictions on exactly which bicycle facilities will help reach these targets and what impact each improvement will have. The *Bicycle Access Growth Potential* table was developed as a tool to assist in determining those stations where bicycle improvements will likely create the greatest increases in bicycle users.

GOALS AND OBJECTIVES

Goal: Enhance the attractiveness of the bicycle as an access mode and thereby increase the bicycle mode share.

Objectives

- Provide safe and convenient bicycle access between communities and the BART stations.
- Provide secure, convenient and ample bicycle parking at all BART stations. Incorporate innovative solutions to meet parking demand given space, budgetary and maintenance limitations.
- Promote the bicycle as a viable access mode to the BART system.
- Provide comprehensive guidelines for future station projects and transit village developments on BART station property.

SYSTEMWIDE ACCESS NEEDS ASSESSMENT

Imagine this scenario of your first cycling trip to the BART station. Using the same route you have driven a hundred times, you find yourself on a six-lane arterial needing to make a left turn into the station. You take a deep breath, blast across three lane of traffic to the relative safety of the left-turn pocket. Unfortunately, no cars are in the pocket ahead of you to trigger the left-turn signal. As you sit for three signal cycles waiting for a car to rescue you, you think for the first time today “why am I doing this?”

After you have entered the station property, you follow the flow of traffic into the parking lot. You are trying to find the bicycle parking while avoiding the motorists who are intent on finding parking of their own. The motorists have finally parked and are now pedestrians intent on catching their train. After your second pass through the parking lot, you finally realize that the road signed “buses only” would have taken you right to the station. In a hurry yourself, you jump the curb, ride through the planter, down the sidewalk and finally gain access to the station.

Although this scenario may be greatly exaggerated, each one of these conditions can be found at a station in the BART system. Bicycle access routes to and from BART stations need to be direct, safe and easy to find. They should minimize conflicts with pedestrians, motorists and buses.

Wayfinding - To encourage the BART customer to use their bike to get to a BART station, they must be able to find it. Although a patron may know their way to the station by car, the route more suitable for the bicyclist may differ. Signs should be posted on the closest arterials and bikeways to connect them to the station along the most bicycle-friendly route. This is especially

important for bicyclists not familiar with the area. Based upon the adjacent roadway configuration and location of existing bikeways, a separate bicycle entrance to the station may be preferable and available; these should be identified and clearly marked. As important as it is to be able to find the station, it is equally useful to find the way out. This can often be a difficult task especially at stations that have large parking areas. Maps and signage in the station and at exits would assist bicyclists and pedestrians in finding the most direct route to their desired destination.

Mitigation of conflicts – To maximize cyclists’ safety, provisions are needed to get bicyclists into and through the station area and, finally, to the bicycle parking areas or onto the platform itself. There are many users at the stations; the challenge is to accommodate them all safely and conveniently. Potential conflicts between bicycles and cars, buses, and pedestrians must be identified and mitigated. Wherever possible, pedestrians and bicycles should be separated.

Convenience - Train platforms at all BART stations are located above or below the ticket and paid areas. Platforms can be reached via stairs, escalators and elevators. Bicycles are not allowed on escalators at any time so bicyclists must use stairs or elevators for platform access. At many of the stations, particularly the larger downtown subway stations, elevators are not conveniently located to the busiest part of the station or the fare gates. Using the stairs poses other problems; having to carry a bicycle up several flights of stairs may be more than some customers can manage especially when there are stairs leading from the ground level to the fare gates and more stairs to the platform. Also, transfer stations with two platforms, such as MacArthur, require customers to carry their bicycles down one set of stairs and up another to transfer to another line. Alternatives need to be found to make taking a bicycle on BART more convenient for customers of all ages and fitness levels.

Coordination with local jurisdictions and transit agencies - Local jurisdictions should be encouraged to include BART stations in bicycle planning efforts by providing links between the BART stations and their bikeway networks. In addition, BART should work with other transit agencies to provide bicyclists with easy and convenient transfers between systems.

SYSTEMWIDE PARKING NEEDS ASSESSMENT

To encourage more customers to ride their bicycles to BART, it is necessary to provide for storing bicycles at the station. With the crowded conditions on many trains and the peak hour restrictions for bicycles on trains, parking the bicycle at the station is often the best or only alternative. Bicycle parking should meet the diverse needs of its customers by accommodating the daily and occasional commuter as well as the off-peak and weekend riders. All types of bicycle parking must provide:

Bicycle Security – To encourage the BART customer to ride a bicycle to the station and leave it at the station, secure bicycle parking must be made available. Since many customers are using BART for access to a job, bicycles will often be left at the station for 10 hours or more. Knowing that their bicycle will not be stolen or vandalized is critical to encouraging someone to ride their bike.

Station Security – Bicycle parking, particularly bicycle lockers, should not pose a security risk in light of today’s unfortunate but real concerns about terrorism or other hazards to public safety. Bicycle parking should not be constructed of flammable materials or allow the placement of incendiary devices.

Weather Protection – The best bicycle parking provides the bicycle with protection from the elements.

Personal Safety – To be encouraged to ride a bicycle to BART, the BART customer must feel safe when arriving at and leaving the BART station. This includes adequate lighting in bicycle parking areas, safe routes through BART parking lots, and connection to well-lit and bicycle-safe streets into the adjoining communities. Video cameras, in addition to increasing bicycle security, may also increase personal safety.



Parking Canopy at North Berkeley Station

Convenience – Bicycle parking must be located near the station entrance within sight of the station agent and/or in a heavily traveled area. There should be no barriers between the bicycle parking and the station entrance. Bicycle parking should be placed on paved surfaces and the area kept free of debris, broken glass and abandoned bicycles. The location of bicycle parking should not adversely impact pedestrian circulation and should avoid placement too close to walls and landscaping that may hinder maximum use of the facilities.

Ample supply – The supply of bicycle parking must be adequate to meet existing demand and provide for future growth in the bicycle mode share. Bicycle parking supplies must be continually monitored to insure that each customer has parking available when it is needed. If the bicyclist is not confident that their bicycle can be securely parked, the bike will not be ridden to the station.

Extension Stations under Construction

The opening of four new extension stations in San Mateo County and at San Francisco International Airport (SFIA) in late 2002 will bring new opportunities and considerations for bicycles in the BART system. The four new stations are Millbrae, San Bruno, South San Francisco and SFIA. The Millbrae Station will provide a direct connection between BART and Caltrain allowing passengers to easily travel from San Jose to San Francisco and the East Bay. Caltrain allows bicycles in specially designed rail cars with no restrictions to travel during peak hours. However, rack space on the bicycle-accessible cars is limited and demand is high. Commuters traveling on Caltrain with their bicycles who wish to transfer to BART during peak hours will require secure bicycle parking at the point of transfer due to bicycle restrictions on BART trains. Considering this, a Bikestation or other Class 1 bicycle parking facility may be beneficial at Millbrae Station as a joint development project between BART and Caltrain. In conjunction with service to San Francisco International Airport, multi-day long-term bicycle

parking may be needed to serve BART patrons who are bicycling to BART for the trip to the airport. This type of parking would be beneficial to both airport customers and employees.

SYSTEMWIDE PROMOTION NEEDS ASSESSMENT

Promoting the bicycle as a viable alternative to the automobile is essential to increase the bicycle's access mode share to BART. As part of this effort, a promotion program should:

- Promote Bicycling to BART
- Provide Incentives for Bicycling to BART
- Support and Applaud Bicycling to BART
- Educate Customers on Bicycling to BART

Since 1974 when bicycles were first allowed on the trains, BART has continually simplified and relaxed the rules and restrictions governing bicycles. Bicyclists now experience more freedom to ride BART than ever before. The increases in BART ridership over the years is partly due to a growing demand for transportation in the Bay Area but can also be attributed to the extensive marketing campaigns encouraging us to "ride the BART". Similar programs are needed to promote bicycle access to the BART station.

Current bicycle promotion by BART is mostly rules based. There are ads in the trains, the "All About BART" brochure, and the BART website, which address what to do with bicycles during emergencies, when bicycles are permitted on trains, and where to enter and exit the fare gates with bicycles. In addition, BART does participate in the yearly Bike-To-Work Day event.



This Page Intentionally Left Blank

Chapter 3

SYSTEMWIDE BICYCLE ACCESS AND PARKING RECOMMENDATIONS

The following recommendations were developed to provide the means necessary to reach the bicycle mode share goals outlined in Chapter 2. Recommendations are included for improvements to bicycle access, parking, promotion, and future station projects and transit villages. A complete list of all recommendations presented in this chapter is included in Appendix D. A table of transportation funding sources can be found in Appendix E.

ACCESS

Providing for bicycle access to and from the BART station will require both on-site improvements to the BART property and off-site coordination with local communities. For the purposes of this study, bicycle access has been broken down into three station layout components:

- Local access to station (i.e. off-site)
- Access to bicycle parking and fare gates
- Access to station platforms

In this section, each issue will be discussed with appropriate recommendations for improving bicycle access included. Signage is an essential part of all categories.

Local Access to Station (i.e. off-site)

Coming from the surrounding communities, bicyclists should be able to take a direct, safe and well-marked route to the BART station. These improvements would be the responsibility of the local jurisdiction(s) but should be supported and encouraged by BART. The implementation and maintenance of bikeways on streets leading to the station should be given top priority in a city's bikeway improvement program. Whether streets leading to a BART station are designated bicycle facilities or not, they should be maintained in good condition. This includes good quality pavement, bicycle-safe drainage grates and upgraded railroad track crossings. Signs to the stations should be located on nearby bikeways as well as on all major arterials and collectors in the vicinity of the station. BART could develop a standard "Bicycles to BART" signage program and provide these sign designs to the local jurisdictions. For exiting bicyclists, local area maps should be posted in the station identifying the location of surrounding streets, popular destinations and existing bikeways. These maps would also benefit pedestrians.

Recommendations - Local Access to Station

- A-1. Work with local jurisdictions to provide direct, safe and well-marked routes to/from the BART station. Ensure that these routes have bicycle lanes, if possible, or wide curb lanes at a minimum, and that all actuated traffic signals near the BART station can be activated by bicycles.

- A-2. Encourage local jurisdictions to give streets leading to BART station top priority for bicycle facilities.
- A-3. Encourage local jurisdictions to maintain streets leading to BART in good condition including good quality pavement, bicycle-safe drainage grates and upgraded railroad track crossings.
- A-4. Develop a “Bicycle to BART” signage program.
- A-5. Encourage local jurisdictions to provide signage to the BART station from adjoining streets and bikeways.
- A-6. All bicycle-related signs should be integrated with signage for other modes, as feasible, and should not interfere with pedestrian, ADA or vehicle circulation.
- A-7. Provide area maps in the station locating surrounding streets, popular destinations and existing bikeways.

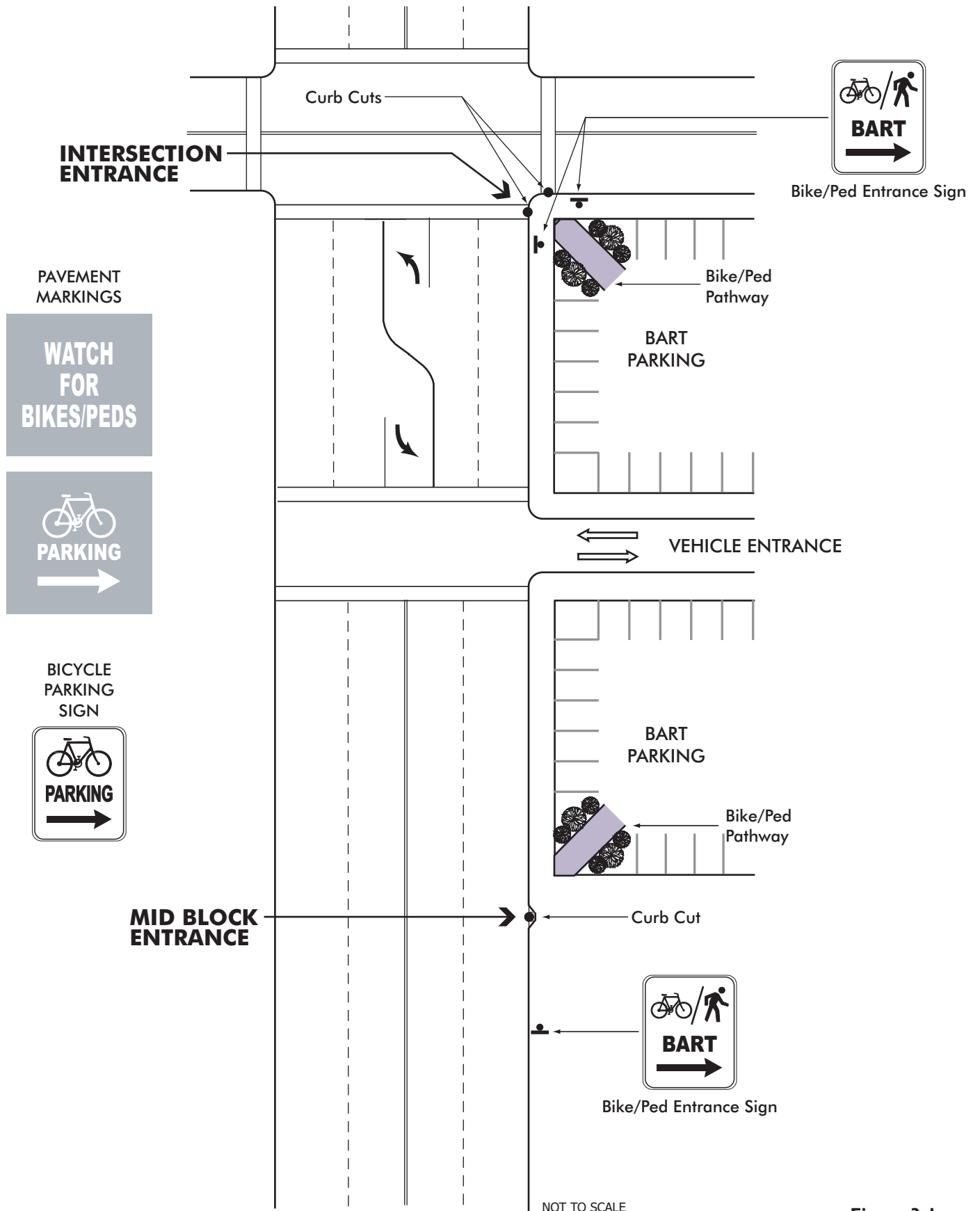
Access to Bicycle Parking and Fare Gates

Primary bicycle access to the station should be provided at each vehicle entrance. Many BART stations are located on major arterials and, although the station covers a large area, vehicle entry is only available in a few locations and often controlled by traffic signals. If these signals are actuated (signal phasing may only be changed by vehicle activation), all movements leading to and from the station should be sensitive to bicycle traffic. For some signals, this may require an upgraded vehicle loop detection system; for others, the application of a bicycle loop detection pavement marking to identify the location of the bicycle-sensitive loop will be adequate. To safely accommodate both bicycle and motor vehicle traffic, wide curb lanes of approximately 14 feet in width should be provided along these entry roads.



Separate bicycle/pedestrian entrances should be provided at all intersections adjacent to the BART property for persons using the crosswalks and at mid block locations where the vehicle entrance is more than 100 feet from the first edge of the BART property. Examples of these separate bicycle/pedestrian entrances are shown in Figure 3-1. In both cases, the entrance pathways should be about 8 feet wide to safely accommodate both pedestrians and bicyclists. The curb cuts or ramps, provided at both ends of the entrance pathway, should also be designed to comfortably accommodate both pedestrians and bicyclists with adequate width and turning radii. Signs should be provided to inform bicyclists of this entrance. Also, pavement markings should be added to the parking lot or roadways adjacent to the bicycle entrances to alert motorists to the possibility of bicyclists entering the roadway. Signs or pavement markings should be used to direct exiting bicyclists to the bicycle pathways and entrances.

Once on the station property, following vehicle routes often leads to automobile parking areas and so it is often difficult for the bicyclist to find the way to bicycle parking and the stations themselves. The roads directly adjacent to the station are often restricted to bus use or are for



NOT TO SCALE

Figure 3-1
BICYCLE ENTRANCES TO BART STATION

one-way traffic only. Routes should be identified to lead bicyclists to/from bicycle and vehicle entrances to the station, bicycle parking areas and fare gates. These routes should be marked with signs or pavement markings, as shown in Figure 3-1, or with specially colored pavement to alert both bicyclists and motorists to the routes and, thereby, minimize conflicts between bicyclists, automobiles, buses and pedestrians. It is preferable if bicycle routes through the station property do not follow roadways with parking on one or both sides of the street. At some stations, it may be possible to route bicycles on roads currently restricted to buses but only if these roads are not directly adjacent to bus loading zones. Sidewalks should only be designated for bicycle travel where they have been specifically designed to accommodate bicyclists (i.e. the paths are designed to the appropriate width for the expected volume of bicycles and pedestrians and curb cuts are installed.) Closer to the station or when space is not adequate for shared use, bicyclists may be directed to dismount and ‘walk their bikes’ with signs or pavement stencils.

For bicyclists leaving stations located within a sea of parking, signage should also be provided to direct cyclists to the major streets bordering the station. Local maps and directional signage will also benefit pedestrians.

Recommendations - Access to Bicycle Parking and Fare Gates

- A-8. Work with local jurisdictions to insure that actuated traffic signals at vehicle entrances to the BART station are bicycle-sensitive for all movements leading into and exiting the station and the location of bicycle-sensitive loop detectors are identified with bicycle loop detector pavement markings.
- A-9. Provide bicycle/pedestrian entrances, with minimum widths of eight (8) feet, into BART property at each intersection adjacent to BART property.
- A-10. Provide mid block bicycle/pedestrian entrances where appropriate.
- A-11. Provide safe, direct and well-marked bicycle routes through station property from station property entrances to bicycle parking and fare gates minimizing conflicts between bicyclists, pedestrians, automobiles and buses. Sidewalks shall be used as bicycle routes only when they have been designed to safely accommodate the expected volumes of bicycle and pedestrian traffic.

Access to Station Platforms

To pass through the fare gates, a bicyclist must take his/her bicycle through the emergency gate adjacent to the station agent, leave the bicycle in the paid area, exit the emergency gate and then pass through the fare gates to validate his/her ticket. Accessible fare gates, which were installed in the extension stations for customers in wheelchairs, make it easier and safer for bicyclists to enter and exit the paid areas. Because bicycles are not left unattended, they are less likely to be stolen or to cause a safety hazard for other station patrons. Accessible gates should be included with all new gate installations and, where possible, when existing gate arrays are upgraded.



Gaining access to train platforms, fare gates or transferring lines requires customers to carry their bicycles up and down many flights of stairs or use the often less-than-conveniently-located elevators. Bicycles are prohibited on escalators in transit systems throughout the country for customer safety. Therefore, it is especially important that elevators are kept functioning and their locations are clearly marked. At new stations, elevators should be designed to accommodate several bicycles and preferably have 2 doors for entry and exit on opposite sides. If elevators are added to an existing station, they should be similarly designed. Some platform elevators, especially at the larger Downtown San Francisco stations, are not located near the fare gates. Customers using these elevators must travel a distance to validate their ticket before taking the elevator to the platform. In these cases, ticket validation equipment should be located at the platform elevators to minimize the inconvenience to bicyclists and other elevator users.

Stairchannels are another option to facilitate moving bicycles up and down stairs safely and easily to gain access to fare gates, platforms and when making transfers. Stairchannels need to be designed properly or they will be difficult and unsafe to use as is the stairchannel installed in the Downtown Berkeley Station. The stairchannel must be built to accommodate all bicycles including those carrying racks and bags, as well as to not interfere with drainage or litter cleanup.

Ultimately, all stations should have stairchannels on at least one set of stairs leading from the fare gates to the platform(s) and, if necessary, from the fare gates to the street. To prioritize the stations for retrofitting with stair channels, a *Stairchannel Priority* factor was derived. The *Stairchannel Priority* is based upon the number of bicyclists currently using the station and whether or not the station is a 2-level station (fare gates are above or below street level), a transfer station or has bicycle parking below or above street level. The stations with the highest ratings are included to the right. To see the full list of *Stairchannel Priority* rating for all stations, refer to Table A-10 of Appendix A. For more detailed information on how the *Stairchannel Priority* was calculated, refer to Table A-12.

The selection of which stairways in a station to improve with stairchannels is important especially in the larger downtown San Francisco and Oakland stations. Because of the expense, it may not be possible to initially treat each stairway. The stairways deserving priority for stairchannels are those in the busiest part of the station and not located near the elevators. Consideration must be given to the width of the stairway and the possible impact of the stairchannel on pedestrian level-of-service. Signage must be provided at both the top and bottom of each stairway and escalator directing bicyclists to the stairs with the stairchannels. Also, the

Stations with Top Stairchannel Priority Ratings	
Station	Stairchannel Priority
Embarcadero	Immediate
Downtown Berkeley	Immediate
16th Street	Immediate
Lake Merritt	High
19th Street	High
MacArthur	High
12th Street	High
Civic Center	High
Powell	High
Richmond	High
Fruitvale	High

location of stairchannels and an explanation of how to use them should be included in bicycle-related materials as well as being part of bicycle promotion campaigns.

Recommendations - Access to Stations Platforms

- A-12. Install accessible fare gates with new gate installations and when existing fare gate arrays are upgraded.
- A-13. Keep elevators functioning and clearly marked.
- A-14. Elevators added to new stations or upgraded at existing stations should accommodate several bicycles and preferably have opposing doors for entry and exit.
- A-15. Where platform elevators are not located near the fare gates, ticket validation equipment should be provided at the elevator.
- A-16. At each station, provide well-designed stairchannels on at least one set of stairs leading from the fare gates to each platform and, if necessary, from the street to the fare gates. Give priority to stations with high bicycle use, 2-level stations, transfer stations, or stations with bicycle parking below or above street level per Stairchannel Priority rating on Table A-10 of Appendix A.
- A-17. Install signage at the top and bottom of each stairway and escalator directing cyclists to stairways with stairchannels.
- A-18. Include stairchannel locations and directions for their use on bicycle promotional materials.



PARKING

Selecting bicycle parking for a station requires consideration of many factors including parking types, station locations, and supply. Each of these factors is discussed below with guidelines on how to select the appropriate parking type, where to locate each type and how much to provide. A summary of cost and placement dimensions of the various parking facilities mentioned below can be found in Table C-1 of Appendix C.

Bicyclists, like motorists, look for convenient and secure parking near BART stations. Bicycle parking located within view of the station agent or areas with heavy foot traffic will deter theft and vandalism. If bicycle parking is not in a secure and convenient location, bicyclists will instead make use of the closest stationary object by locking bicycles to signs, railings, or trees thereby interfering with pedestrian and ADA circulation requirements.

To guarantee that bicycle parking is used, it must be secure, safe, protected, convenient and available as outlined in Chapter 2. Bicycle parking is often categorized in Class 1 and Class 2 types. Class 1 is a method of bicycle parking that protects the entire bicycle and its components from theft, vandalism and inclement weather. It is designed for long-term use, typically by commuters, and is most often provided with bicycle lockers or an attended parking facility such as a Bikestation. Class 2 parking is most appropriate for leaving a bicycle for 2 hours or less and can be provided with properly designed and located bicycle racks. Class 2 bicycle parking may also be appropriate for long-term use if it is located in a highly visible and heavily traveled area.

The rack must be made of a substantial vandal-resistant material and of a design that allows the frame and at least one wheel to be secured with a user-provided U-lock or padlock and cable.

Class 1 Bicycle Parking

There are various types of Class 1 bicycle parking available on the market today. The selection of which is most appropriate will depend upon the volume and type of users, space requirements and available funding. The most popular types are discussed below including the benefits, disadvantages and requirements of each. Additional information on bicycle parking facilities discussed here is included in Table C-1 of Appendix C.

Bicycle Lockers - Like bicycle racks, lockers should be placed so that security is maximized, pedestrian circulation is not adversely impacted, and lockers can be used to their maximum design capacity. Criteria for bicycle locker placement are illustrated in Figure B-1 of Appendix B. Requirements for bicycle lockers are:

Bicycle Locker Placement Criteria:

- Lockers should be placed in a visible, well-lighted location.
- Lockers should provide enough space to accommodate the bicycle and accessories.
- Lockers should provide protection from weather.
- Lockers should be accessible only to one user at a given time.
- Lockers should be made of durable materials that resist theft, vandalism and fire.
- Because of the present concerns over the possibility of terrorist activities, lockers should be constructed of see-through materials such as steel mesh so that the contents of lockers are visible to security and station personnel.



Under the current system of locker rental, lockers are reserved by a single user who rents it for several months or a year at a time. This system does not provide locker parking to the bicyclist that needs a locker only occasionally. Also, there is a long waiting list at many stations for lockers. This is especially unfortunate since many lockers are rented but often unused while potential users continue to wait for a locker to become available.

Shared-use lockers or lockers that are available daily on a first-come first-served basis allow multiple users over the course of a day in much the same way as BART auto parking. Earlier attempts to provide shared-use lockers at BART stations have not been successful as noted in Chapter 1. There is a need for shared-use lockers because they are an efficient use of limited locker resources and they provide secure bicycle parking for the occasional user. The previous problems with shared-use lockers can be addressed with lockers that allow BART staff to monitor what is kept in the lockers and limit access to pre-registered users or those with debit/credit cards. New technologies are being developed that incorporate these requirements into new locker designs. BART is currently testing the eLocker™ Bicycle Locker at several

stations. These lockers, illustrated in Figure B-7b of Appendix B, include walls of perforated steel and can have electronic locking devices. Although these lockers are being assigned to individual users, the lockers at the Walnut Creek Station are outfitted with the electronic locking devices to allow future testing of shared-use lockers. As mentioned in Chapter 1, the City of El Cerrito is installing 48 eLockers™ on city-owned property at the El Cerrito Plaza BART Station. Similar lockers have also been ordered by Caltrain and the City of Sunnyvale.

Some thought should also be given to providing multiple-day long-term secure parking for customers commuting on BART to the Oakland or San Francisco airports. This need might be met with Bikestations or long-term shared-use lockers.

Adequate space is always a factor when considering the selection and location of bicycle lockers. There are several space-efficient designs currently available, illustrated in Figures B-7a and B-7b of Appendix B, which may be suitable in locations where lockers previously did not fit.

Bikestations – The Bikestation is a relatively new concept in bicycle parking but has proven to be very popular with bicyclists and is an excellent method for providing large quantities of secure bicycle parking in a space-efficient manner. **A Bikestation should be considered at a station when the demand for Class 1 bicycle parking exceeds 100 bicycles. They are most appropriate for stations that have demand during the whole day.** Such a station will have home-based use by commuters who park in the AM peak, work-based use by commuters who park overnight to use their bikes from BART to work, and off-peak use by those shopping and running errands.

Bikestations are not appropriate at all stations, especially those with low levels of bicycle use. They require operating funds for an attendant, suitable space in the station and may not always be open during BART's hours of operation. To offset the cost and space requirements of a Bikestation, it may be included as part of an off-site development adjacent to the BART station. Since space would not be as much of a restriction in these instances, a bicycle shop with repair services could also be included. This option would be most suitable for the downtown subway stations that do not have adequate space for a Bikestation or as part of a redevelopment project at existing stations. Advertising and signage would be required to alert BART customers of the available bicycle parking facility. Downtown Bikestations would also be available to downtown employees and visitors; as a joint venture between BART, downtown employers and the city, operating costs could be shared.

As part of Bikestation designs, it is valuable to include some provision for after-hour bicycle retrieval. One possibility is a night retrieval locker that opens both on the inside and outside of the Bikestation. With a phone call from the bicyclist, the bicyclist is given a retrieval code, the bicycle is placed in the locker, and the bicyclist is able to retrieve the bicycle from the outside. With the inside locker door locked, the Bikestation is secure but the bicyclist is able to get her/his bike.

Currently Bikestations are being implemented at Embarcadero and Fruitvale Stations.

Bike enclosure – The bike enclosure is made of a secure, tamper-resistant material surrounding secure bicycle racks. There are various methods used for locking the enclosure, ranging from standard keys to card keys or electronic locking devices requiring a Personal Identification Number (PIN) number or code. Before using the bike enclosure the first time, users must apply to receive the key(s) or codes necessary for access. It is strongly recommended that bicycles be locked securely when in the enclosure as multiple users do have access. Size of the bike enclosure can vary depending upon available space and the number of bicycles expected. It is more space-efficient than lockers and is self-serve so an attendant is not required. The enclosure does have its disadvantages; since the enclosure is accessible to many users, it may not provide the same high level of security for either the bicycle or accessories as afforded by a locker or Bikestation.

Bike Tree™ – The Bike Tree™, shown in Figure B-8 of Appendix B, is a unique solution to the need for secure bicycle parking. To use the Bike Tree™, you enter a PIN code by means of a smartcard; the bike is then lifted to a height of over 13 feet, where it is protected under a shelter. The owner can then retrieve the bicycle by using the smartcard with a PIN code. The Bike Tree™ also parks many bikes within a small footprint. As shown in Table C-1 of Appendix C, it is the most space efficient bicycle parking type.

The Bike Tree™ completely protects bicycles from the elements and makes theft and vandalism almost impossible. Basic elements can be fixed to building facades, or be assembled as stand-alone "trunks" of 3 to 12 bicycle parking spaces. The combination of several Bike Trees™ is known as a Bike Bower™, and forms a weather-protected pavilion with walkways for pedestrians. Single Bike Trees™ can be used to provide shelter at bus stops. Bike Trees™ do have their disadvantages; since they are a new design in bicycle parking and the few existing installations are located in Europe, they have no track record in the United States. In addition, they are quite costly when compared to other Class 1 parking types.

Bicycle Garage - Although a very costly and long-term solution, the automated bicycle parking garage may be a viable future alternative for stations with high bicycle parking demand. An example is included in Figure B-8. Currently bicycle garages can be found in Europe and Japan.

Bicycle Racks in the Paid Area – As discussed in Chapter 1, the viability of bicycle racks in the paid area is currently being tested through a demonstration project at 16th Street Station. This project includes security cameras which have not yet been activated. Once the cameras are fully operational and it is found that bicycle racks in the paid area can provide security for the bicycle equal to that provided by standard Class 1 facilities, it may be appropriate to consider bicycle racks in the paid area as an alternative to other Class 1 parking.

Equipment Lockers - Small lockers, like the kind found in bus stations or airports, might be useful for the bicyclist to secure their bike accessories. Helmets, water bottles, quick-release seats and lights can be removed from the bicycle and left locked in a small locker at the station. However, with today's increasing concerns over station security, equipment lockers may not be currently feasible.

Class 2 Bicycle Parking

The Class 2 bicycle parking currently provided at BART stations include "U" racks and "Wave" racks. Specifications for these racks can be found in Figures B-2 and B-3 of Appendix B. The square tubing and wide loop design of these racks seems to be working well. One drawback to these rack designs is that they are space-intensive. Besides the "Wave" and "U" style racks currently being used by BART, many other varieties of rack are available. Many are more space-efficient and should be considered for future installations especially in space constrained areas. Several of these options are shown in Figures B-4, B-6a and B-6b of Appendix B. They include vertical racks, wall racks, staggered racks and stacking racks. When using any of these rack designs, their use and location should satisfy the criteria listed above. More detailed information on these rack designs is included in Table C-1 of Appendix C.

To be effective, bicycle racks must be placed such that security is maximized, pedestrian circulation is not adversely impacted, and the racks can be used to their maximum design capacity. Adequate maneuvering room for getting to the rack and locking the bicycle to the rack should be provided. Plan and profile placement location criteria diagrams are included in Figures B-2 through B-4 of Appendix B. Since bicycle racks are less secure than bicycle lockers, guidelines for their placement are more stringent. A complete list of recommended bicycle rack location criteria is included here. Although some of the existing stations may not accommodate all of these criteria, new stations and major rehabilitation projects at existing stations should be built to these specifications.

Bicycle Rack Placement Criteria:

- Landscaping, fences, or other obstructions should not obscure racks.
- Racks should be lit at night to protect both the bicycle and the user.
- Racks should be located within sight of the station agent, vendors, passing pedestrians or in a highly visible area with heavy foot traffic. If such space is not available, consideration should be given to installing racks within the paid area of the station. Racks should not be used if these parameters cannot be met.
- Where possible, protection from the weather should be provided for bicycle racks. Covered bicycle racks are important for stations where bicycles are not protected by the overhanging station. Such covered systems can add an attractive element to station design and be integrated with bus shelters. Some samples of covered bicycle parking are shown in Figure B-8 of Appendix B.
- Ground surface of the bicycle parking area should be an all-weather and drainable material such as asphalt or concrete; care should be taken when using brick, or other materials that can become slippery when wet.



- Racks should be located outside the typical pedestrian and ADA access pathways, with additional room for bicyclists to maneuver outside the pedestrian pathway (See Figures B-2 through B-4 of Appendix B).
- Racks shall be located at a sufficient distance, or provided with a physical barrier, from motor vehicles to prevent damage to parked bicycles from motor vehicles.
- Signage should be posted to direct bicyclists to the locations of bicycle racks.
- Similarly, signs indicating the location of bicycle parking should be posted wherever a NO BICYCLE PARKING sign is posted.

Location of Bicycle Parking Facilities

BART currently provides Class 1 (bicycle lockers and Bikestation), and Class 2 ("Wave" racks and "U"-racks) bicycle parking facilities that are typically sprinkled about the station where space permits. With the variety of bicycle parking alternatives available, making the decision about which type to use and where to locate them may become confusing. For guidance in making the most appropriate and effective choices, this section further describes the requirements of each parking type, identifies the suitable station locations and makes recommendations of type and location for future bicycle parking installations. Since each BART station is different, it is necessary to find some common ground between the stations for this systemwide discussion. For this reason, the BART stations were divided into design areas. Station platforms are not included, as they do not have adequate space to accommodate bicycle parking. Recommendations for bicycle parking at BART stations are presented for each design area. They are:

- Paid area - Area inside and at the same level as the fare gates; does not include train platforms.
- Free area – Area immediately outside the fare gates, within view of the station agent and often including ticket vending machines.
- Drip line of station facility – Area literally covered by the station, i.e. under the BART tracks/overhang. This area is primarily for passenger circulation and includes the sidewalks that access the station from the parking lot and the passenger waiting areas for buses, taxis and kiss-and-ride. It also may include benches, vendors or existing bicycle parking. For the purposes of locating bicycle parking, this area also includes the pedestrian plazas of some stations which are adjacent to the free area but may be beyond the BART tracks/overhang.
- Outside the station/automobile parking area – Area beyond the pedestrian-oriented portion of the station used for surface automobile parking.
- Automobile parking garage – Area in the unattended BART parking garage.
- Adjacent off-site area – Area outside the station property adjacent to the BART station. For subway stations, this area would include the street level above the station.



Paid Area - The paid area of the BART station is a very secure and desirable location for bicycle parking. However, it is a disadvantage to have to carry bicycles up or down stairs at those stations where the paid area is above or below street level. Nevertheless, priority should be given to Class 2 bicycle rack parking in the paid area since it will benefit most from the secure location.

Bicycle racks in the paid area must not interfere with pedestrian circulation and the use of maintenance equipment. In addition, it must be possible to keep the area around racks clean. The bicycle racks recently installed in the paid area of 16th Street Station were located in just such an out-of-the-way location. Unfortunately, not all stations have such areas available. To maximize the potential for locating bicycle racks in the paid area, vertical, staggered and stacking bicycle racks are available. These racks can be mounted on the wall or have a freestanding circular configuration. Bicycles can be locked with a standard U-lock or cable. Samples of these racks are shown in Figures B-6a and B-6b of Appendix B. If bicycle theft or vandalism continues to be a problem, security cameras should be included as part of the bicycle rack installation.

Free Area - Free areas are congested at many stations and may not be appropriate for bicycle parking. However, if space is available, the free area provides a secure and convenient location that is protected from the weather. As in the paid area, stairs may be a disadvantage. Bicycle racks would be appropriate for the central, visible locations while lockers, Bikestations or bike enclosures could be located in the less busy entrances and peripheral corridors. If the paid and free areas are the only locations available for bicycle parking, as in the case of downtown subway stations, then the recommendation would be to utilize the parking type that provides the most parking spaces. To maximize the supply of bicycle parking available, space-efficient racks or lockers should be used. As previously mentioned, security cameras should be included as part of the installation if bicycle theft or vandalism continues to be a problem or other security issues are of concern.

Drip Line of Station Facility - This is a good location for bicycle parking; it is convenient, visible and the station overhang provides protection from the weather. The portions of the drip line of the station facility that are within view of the station agent and/or in heavily traveled areas are appropriate for bicycle racks. Bicycle lockers, the Bike Tree™ or bike enclosures should be used for locations outside the direct view of station agents. The Bike Tree™ can be incorporated with bus loading areas providing shelter for bus passengers as well as bicycle parking. Again, vertical racks and lockers may be used in this location to maximize parking supply. Obscure or distant locations that are beyond the sight of station agents or BART customers should only be used for Bikestations or other attended parking. To maximize parking security, security cameras may be included as part of bicycle rack or locker installations in this area.

Outside the Station/Auto Parking Area - The parking lot is not appropriate for Class 2 parking of any kind both for convenience and security issues. Because automobile parking is generally located beyond passenger drop-off, taxi and bus zones, it is outside the high traffic areas of the station especially once auto parking is filled. Bicycles will be at risk from theft or vandalism. Also, bicyclists will not use this remote parking but will lock their bikes to signs, railings or trees closer to the station. Bicycle lockers or cages, however, could be placed in the auto parking area as long as they are located close to the station. However, these spaces are generally reserved for

handicapped parking and removing auto parking of any kind is understandably a touchy issue. Considering that 12 space-efficient vertical bicycle lockers can fit into 2 standard parking spaces, it may worthwhile to explore this option.

Automobile Parking Garage – Class 2 bicycle parking is not recommended for unattended parking garages because bicycles will be at risk from theft and vandalism especially after the garage is full and pedestrian traffic through the area is minimal. If future plans for the parking garages include parking attendants, bicycle racks can be placed near the attendant. Bicycle lockers and enclosures can be used in the parking garage but should be placed in a central heavily traveled area to enhance security, and on the first floor to improve safety and convenience. Security cameras should also be included with these installations.

Adjacent off-site area – Bikestations, Bike Trees™, bike enclosures or lockers could be included as part of an off-site development adjacent to the BART station. Since space would not be as much of a restriction, a bicycle shop with repair services could be included with these parking options. This recommendation would be most suitable for the downtown subway stations that do not have adequate space for lockers or a Bikestation within the station itself. Advertising and signage would be required to alert BART customers of the available bicycle parking facility. Such downtown Bikestations could also be used by downtown employees, as a joint venture between BART, downtown employers and the local jurisdiction, and could include other services such as a café, newsstand or dry cleaners.

Table 3-1 below summarizes the above discussion of suitable locations for the different types of bicycle parking.

Table 3-1: Summary of Appropriate Bicycle Parking by Station Area						
	Paid Area	Free Area	Drip Line of Station	Surface Auto Pkg	Auto Pkg Garage	Off-site
Class 1						
Standard Lockers	Maybe	Yes	Yes	Yes	Yes	Yes
Space-efficient Lockers	Yes	Yes	Yes	Yes	Yes	Yes
Bikestation	Maybe	Yes	Yes	Yes	Yes	Yes
Bike enclosure	Maybe	Yes	Yes	Yes	Yes	Yes
Bike Tree™	No	No	Maybe	Yes	No	Yes
Bike Garage	No	No	No	Yes	No	Yes
Equipment Lockers	Yes	Yes	Yes	No	Maybe	No
Class 2						
“Wave”/“U” Racks	Yes	Yes	Yes	No	No	No
Space-efficient Racks	Yes	Yes	Yes	No	No	No

Clustered Parking - At some stations it may be possible to cluster parking facilities together thereby creating a sense of place and a focus for bicycle-related activities. These installations may be called a 'Bike Pavilion' or 'Bike Garden'. Security cameras can be used more effectively in a central parking design and parking may be combined with vending stands or sitting areas. Signage to bicycle parking can be minimized. However, if space in appropriate locations is not adequate for the parking clusters, the tendency may be to relocate parking to less desirable areas. Consequently, security may be compromised and parking underused. The decision to cluster bicycle parking should be made on a station by station basis allowing for space sufficient to provide adequate parking for current needs and to support future growth.

Determining Bicycle Parking Supply

Selecting the appropriate parking facilities and finding the best location is only part of the equation for adequate bicycle parking. Determining how much bicycle parking to provide is the final component. Automobile parking requirements for a project are based on well-tested trip generation tables and parking demand guidelines which use land use and project size to determine how much parking should be provided. Unfortunately there is no such methodology available for bicycle parking. Estimating bicycle parking demand is not just a matter of evaluating station ridership, trip origin characteristics, peak hour bicycle restrictions on trains, availability of transit and bicycle mode share. Station service area demographics such as the number of households without an available car, age breakdown, and income must also be considered. Topography of the surrounding community, bicycle-friendliness of surrounding roadways and an adopted local bicycle plan are also factors.

Existing Demand - For existing stations, perhaps the simplest and most effective determinant for evaluating adequate parking supply is current usage. Existing demand for bicycle parking should be met with additional capacity provided for desired growth. This requires the monitoring of parking usage on an annual basis at which time any necessary additional parking should be provided. The supply of Class 1 bicycle parking should accommodate existing demand, i.e. provide lockers or other Class 1 parking for all customers on the locker waiting list, plus an additional 10% for growth. Refer to Table A-2 in Appendix A for current locker and rack usage. Many of the stations have a waiting list for lockers that exceeds the total number of lockers available. Most stations have a locker occupancy rate of at least 75%. Understandably, supplying that many new lockers may require adding more lockers to a station than funding or space requirements will allow. In some cases, utilizing space-efficient lockers, Bikestations, bike enclosures or even racks located in the paid area should be explored as alternatives. The supply of Class 2 bicycle parking should provide for current demand plus an additional 20-30% to accommodate seasonal fluctuations in use and future growth. All stations currently meet these requirements for Class 2 parking. Stations having low bicycle rack usage, below 10%, and high or very high locker usage, might indicate that bicycle racks are not placed in preferable secure locations and that patrons are hesitant to use them. In these cases, it might be appropriate to replace racks with lockers or move racks to the paid area or more visible locations to accommodate long-term parking demand.

As with all public improvement projects, there are limited funds for new bicycle parking facilities at BART stations. Bicycle parking facilities, especially lockers, Bikestations and bike enclosures, can be somewhat costly. To make the most of what funds are available, a *Parking*

Improvement Priority factor was developed to prioritize which stations are in most need of bicycle parking improvements. This factor is based upon whether or not Class 1 and Class 2 parking is available at the station and the level of existing demand for Class 1 parking. The list below identifies the 18 stations with a High *Parking Improvement Priority* rating. Each of these stations either has no Class 1 and Class 2 bicycle parking available or has a waiting list for bicycle lockers which is greater than half the actual locker supply. Refer to Table A-10 in Appendix A for the rating of all stations. Bicycle parking improvements can be further prioritized with the application of the *Bicycle Access Growth Potential*, discussed in the Summary section of Chapter 1.

- 12th Street
- 16th Street
- 19th Street
- 24th Street
- Civic Center
- Coliseum/Oakland Airport
- Dublin/Pleasanton
- Fremont
- Fruitvale
- Lafayette
- Lake Merritt
- MacArthur
- Montgomery
- Orinda
- Powell
- Richmond
- San Leandro
- West Oakland

Future Demand - Estimating parking demand for future stations is more difficult but can be approached in one of two ways. The first method would be to collect ridership and trip type projections for the new station and demographic, topographic, and bicycle use characteristics of the station area. This information would be compared to the data collected for existing stations in Chapter 1 and summarized in Table A-10 to find the existing station that most closely fits these characteristics. Similar quantities of bicycle parking would be provided for the new station assuming demand is being met at the existing station. The second method would be to provide enough parking for the systemwide bicycle mode share. For example, if the station was to be completed in 2010, a 3% bicycle mode share is the goal for the AM peak. So parking should be provided for 3% of the projected AM peak ridership at the new station. Although both these methods are a bit crude, they should provide a ballpark figure that can be incorporated into the station design. When stations are designed, additional station area should also be set aside to accommodate the future growth in demand. Factoring in the *Bicycle Access Growth Potential*, discussed in the Summary section of Chapter 1, would supplement the evaluation by either method by providing an additional means of comparison in the first method or by providing more specific insight into how the station will compare to the systemwide average.

Recommendations —Bicycle Parking

- B-1. Provide adequate Class 1 parking to meet existing demand plus an additional 10% for future growth. Prioritize improvements with the application of the High Parking Improvements Priority and/or Bicycle Access Growth Potential per Table A-10 of Appendix A.
- B-2. Provide adequate Class 2 parking to meet existing demand plus an additional 30% to accommodate seasonal fluctuations and future growth. Prioritize improvements with the application of the High Parking Improvements Priority and/or Bicycle Access Growth Potential per Table A-10 of Appendix A.
- B-3. Reevaluate parking supply annually and provide additional parking as needed.
- B-4. Develop a toolbox of bike parking facility types that are approved for use in the BART system. Include location and installation standards for each type.

- B-5. Evaluate location of racks where they are underutilized to determine if changes to rack location, installation of security cameras, additional lighting and/or protective coverings are needed. Make appropriate changes.
- B-6. Provide bicycle parking at stations which currently have no bicycle parking following recommended placement criteria and location guidelines. Prioritize improvements with the application of the High Parking Improvements Priority and/or Bicycle Access Growth Potential per Table A-10 of Appendix A.
- B-7. Develop demonstration project(s) for shared-use lockers. Focus on stations with very high locker usage per Table A-10 of Appendix A.
- B-8. Develop demonstrations project(s) for the most promising new types of bicycle parking, i.e. vertical lockers and racks, Bike Tree, bike enclosure, staggered racks and stacked racks.
- B-9. Develop demonstration project(s) for installation of equipment lockers. Focus on stations with high use of bicycle racks per Table A-10 of Appendix A.
- B-10. Continue and expand demonstration project for bicycle racks in the paid area.
- B-11. Evaluate bicycle parking at stations with high theft rates to determine if changes in parking type, facility location, installation of security cameras, and/or additional lighting could improve security.
- B-12. Consider including Bikestations as part of future transit village redevelopment projects on BART property especially when demand for Class 1 parking exceeds 100 spaces.
- B-13. Investigate the feasibility of providing multi-day, long-term bicycle parking for customers using BART to access Oakland and San Francisco International Airports.
- B-14. Develop and implement a maintenance program to regularly clean and maintain bicycle lockers and rack areas, including the removal of abandoned bicycles.

FUTURE STATION PROJECTS AND TRANSIT VILLAGES

Design Guidelines for Bicycle Access and Parking

Station expansion projects, transit village developments, and other smaller station access improvement projects are being planned for many BART stations to increase capacity of stations, to provide transit-oriented mixed-use development on land now underutilized by station parking areas, and to enhance station access. In fact, construction of the first phase of the Fruitvale Transit Village is currently underway. These projects are beneficial to BART and neighboring communities and provide an excellent opportunity for integrating bicycle-related facilities at the beginning of the design process. The access and parking recommendations discussed in this chapter are certainly applicable to any project and should be included in its design. There are, however, additional needs for these types of projects which should be taken into account. The following discussion highlights these distinct requirements. A checklist for the evaluation of existing stations, future station projects and transit village developments can be found in Appendix F.

Station expansion projects are driven by the necessity to increase station capacity. Enlarging the size of the paid area and adding stairways, escalators and/or gate arrays may be components of the project. Bicycle parking located within the footprint of the affected area will most likely need to be removed and appropriate new locations for bicycle parking must be identified following the

guidelines discussed above. Expansion projects may also provide an opportunity to improve bicycle access to the platform by installing stairchannels on new stairways, larger elevators and accessible fare gates.

Development of a transit village adjacent to the BART station will affect both bicycle access and parking. With careful attention to design, it can have a highly positive impact on the bicycling environment in and around the station. Bicycle access to the station from the surrounding major roads and bikeways must be maintained. Although pedestrian-oriented spaces are a strong element of the transit village, pedestrian improvements should not preclude bicycle travel. Bicyclists must be allowed to cross these areas or be provided with direct and safe routes without conflicts with autos and buses. Automobile parking garages will generally be included in the development to replace surface parking. Traffic is concentrated at the entrances and exits to the structure; parking garages should be designed to avoid major conflicts with bicycle and pedestrian traffic. Secure bicycle parking and other bicycle-related services of benefit to the BART bicycle commuter can be incorporated with retail development. Without the space restrictions of the BART station, it may be possible to include a Bikestation with a bicycle repair shop, café or even video rental store.

Bicycle parking and access should be considered even with relatively smaller projects that change the station design, and where possible, bicycle enhancements should be incorporated into the project. For example, if a new pedestrian pathway or accessible path is provided, it should be designed to accommodate bicycles especially when there is no comparable bicycle path nearby. With the installation of new elevators, larger elevators should be considered to accommodate bicycles and wheelchairs easily. These additional enhancements will in some, but not all cases increase the cost of the project; funds for these improvements may be available from grant sources.

Bicycle Access and Parking during Construction

Whether construction at a BART station is a major project, like station expansion or the construction of a transit village or a minor renovation of existing facilities, bicycle access to the station and adequate bicycle parking facilities should be maintained during all phases of construction. If construction will impact automobile flow or parking supply, detours and temporary parking will be provided. The same consideration should be given to bicycle traffic. Alternative detour routes should be signed and temporary bicycle parking provided to replace parking removed or blocked by construction. Access routes should be kept as clear as possible of construction debris, potholes and uneven pavement surfaces. Temporary road hazards caused by construction should be clearly identified. The quantity of temporary bicycle parking must be adequate to satisfy the above requirements for meeting existing demand plus 10% for Class 1 and 30% for Class 2. The location of temporary bicycle parking facilities must also meet the location criteria discussed earlier in this chapter for the placement of Class 1 and Class 2 parking.

Recommendations —Future Station Projects and Transit Villages

- C-1. Design all projects that affect the station and surrounding areas in compliance with the criteria and recommendations included in this Plan using the Checklist for Evaluation found in Appendix F.

- C-2. Provide safe and direct bicycle access through the transit village to the BART station. Wherever possible, separate bicycle routes from those for pedestrians and motor vehicles.
- C-3. Provide bicycle access through all areas of the transit village. Avoid the designation of pedestrian-only zones which exclude bicycles.
- C-4. Design parking garages to avoid major conflicts with bicycle and pedestrian traffic at structure entrances and exits. Where bicycle routes must cross garage entrances/exits, provide additional traffic control or calming devices to alert motorists to the bicycle crossings.
- C-5. Explore opportunities for the incorporation of a Bikestation or other secure bicycle parking into transit village development.
- C-6. During periods of construction, maintain direct and safe access routes from adjoining communities to the BART station. Provide well-marked detours when normal access routes are closed.
- C-7. During periods of construction, maintain adequate parking supply to meet current demand, insure that all temporary construction bicycle parking conforms to recommended placement criteria. Develop temporary parking guidelines and requirements to be placed in contract specifications.

PROMOTION

A bicycle promotion program for BART should be designed around the four main elements outlined in Chapter 2. They are:

- Promote Bicycling to BART
- Provide Incentives for Bicycling to BART
- Support and Applaud Bicycling to BART
- Educate Customers on Bicycling to BART

Promote Bicycling to BART

Bicycling to BART is an enjoyable, low cost and healthy alternative to driving. The cost of purchasing and operating a bicycle is much less than that for a car especially with today's high fuel prices. Car insurance rates are often lowered when the car is not used for daily commuting. Bicycling provides healthy exercise and can replace the time and money spent in lengthy workouts in the gym. Bicycling provides more trip flexibility by eliminating the constraints caused by competition for auto parking. Bicycling instead of driving also benefits the community by reducing air pollution, traffic congestion, and energy consumption. BART benefits by the reduction in demand for expensive auto parking and by the potential for increases in ridership. These benefits need to be promoted to the existing and potential BART customer and the existing and potential bicycling customer.

Recommendations —Promotion

- D-1. Media Campaigns —Develop a media campaign using television and radio public service announcements and advertising in BART stations and on trains.

- D-2. Internet —Use the BART website (www.bart.gov) and the San Francisco Bay Area Transit Information website supported by the Metropolitan Transportation Commission (www.transitinfo.org) to promote bicycling to BART.
- D-3. Bicycle Hot Line —Use the existing BART phone center to provide a telephone Hot Line for reporting damaged or unavailable bicycle parking, missing bike route signs, abandoned/vandalized bicycles locked to racks, stolen bicycles and other bicycle-related hazards on BART property.
- D-4. "Bicycle to Your BART Station" Day - Sponsor a program to target a specific station for encouraging customers to bicycle to BART. Provide secure attendant parking for that day. This could be a roving program traveling between stations perhaps on a monthly basis. A multiple day or weeklong program may be necessary, at first, to attract the attention of BART customers. The program could also include weekend bicycle rides, co-sponsored with local bicycle groups, which would familiarize people with taking their bikes on BART, while also identifying the recreational areas that are accessible by BART.
- D-5. Informational Brochures - Publish a "BART & Bicycles" brochure, similar to the "BART & Buses" brochure, with information on BART bicycle rules, etiquette when bringing bicycles on trains, location of safe and secure bicycle parking at BART, and the location of bikeways leading to the station. Include general information about bicycles, other needed equipment for bicycle commuting, secure bicycle locking techniques and the "Bicycle Buddies" program sponsored by RIDES to match new bicycle commuters with experienced commuters who are willing to assist and escort them during their first bicycle commutes.
- D-6. Advertisements on Bicycle Parking - Use bicycle racks and lockers to advertise the "BART & Bicycles" program and provide information on how to sign up for lockers, use the bicycle racks and how to get more information on bicycle commuting.

Provide Incentives to Bicycling to BART

Many existing travel demand management (TDM) programs use monetary or other incentives to lure the prospective participant out of his/her single-occupant-vehicle and into a carpool or transit. A similar strategy can be used to encourage customers to bicycle to BART.

Recommendations - Incentives

- D-7. Parking —Adequate, secure and protected long-term bicycle parking must be provided. Recommendations for suitable bicycle parking at BART stations have been discussed earlier in the previous section.
- D-8. Cash Incentives —Provide free BART tickets for customers who bicycle. This may be done in conjunction with "Bicycle to Your BART Station" Day. Institute a parking cash-out program whereby the BART customer receives reimbursements in the form of free BART rides for bicycling a certain number of days a month. Registration in this program could also make participants eligible for monthly drawings for prizes or discount coupons or credit at bike stores, restaurants or other retail businesses.
- D-9. Convenience Incentives —One of the major obstacles to bicycle commuting is the perceived inconvenience factor. "What do I do with my cycling clothing and helmet?" "How can I take a shower after my ride?" And "how do I handle a flat tire?" These concerns can be addressed by establishing programs that:

- Partner with nearby health clubs to provide bicycle parking, showers and clothing storage at their facility.
- Provide small lockers at the BART station for storage of helmets and bicycle attachments for those parking in bicycle racks.
- Partner with local bike shops for emergency on-call bicycle repair service or bicycle storage.

Support and Applaud Bicycling to BART

Endorsement of bicycle commuting by those in charge is a significant aspect of a promotion program. Prospective bicycle commuters are more apt to try out this underutilized mode if it is accepted and supported by BART Board members and BART employees from department heads to station agents and train drivers. The following recommendations outline programs that can be implemented to support and applaud bicycling to BART.

Recommendations - Support

- D-10. Support from the BART Board of Directors —Encourage Board members to speak publicly about the benefits of bicycling to BART. Ask for their participation in a program to greet bicyclists as they arrive at BART stations and distribute bicycle promotional items emblazoned with the BART logo such as t-shirts, seat covers or water bottles. Sponsor a ride for employees of local city governments and large employers with a BART Board member to demonstrate their support for bicycle commuting.
- D-11. Special Programs —Participate in regional and national events such as Bike to Work Day, Beat the Backup Day, Save the Air Days, Earth Day and Transit Week. Use this opportunity to promote bicycle commuting to BART.
- D-12. BART Employees - Incorporate education about bicycling issues into BART training for staff members who work directly with customers. Encourage BART employees to use a bicycle as part of their commute as a way to increase their understanding of bicycling issues and thereby improve customer service to bicyclists, especially by station agents and train operators.

Educate Customers on Bicycling to BART

Education on bicycling to BART should include not only information on how to safely ride a bicycle and how to securely lock it at the station but should also include the opportunities and benefits available by bicycling to BART. The following programs focus on the education of BART bicyclists, potential bicyclists and BART personnel.

Recommendations —Education

- D-13. Available Materials —Post local area maps in the stations locating bikeways and the nearest bicycle shops. Include a phone list of bicycle shops that can be contacted for emergency repairs. Provide local bicycle route maps, safety information, effective-cycling pamphlets, guidelines on how to securely lock bicycles, and flyers of upcoming bicycle events for customer use.

- D-14. Education Campaign - Develop a BART/bicycle commuter program to educate existing and potential bicycle commuters of the opportunities for bicycling to BART, bicycle parking available at BART, proper locking equipment and how to use it, rules for bicycles on BART and proper bicycling techniques. Target stations with High Bicycle Access Growth Potential.
- D-15. Enforcement —Once adequate bicycle parking and access routes have been installed, initiate a program to enforce restrictions on bicycles illegally parked to railings, fences and trees, and on bicycle riding in pedestrian-only zones.



PRIORITIZATION OF RECOMMENDATIONS

The numerous projects and programs recommended in this plan will take many years to implement given funding limitations and the time required to develop the project and work through the internal approval processes. To guide implementation, key recommended projects and programs have been selected and prioritized for short-term or long-term implementation. Priority was assigned based upon assessment of overall station needs; input from customers, BART staff and the BART Bicycle Advisory Task Force; and the relative time and expense of project implementation. The projects that address the most immediate needs of the BART system are identified for short-term implementation. Projects that were determined to take longer for implementation or require relatively more funding dollars are included as long-term recommendations. Each is followed by the specific recommendation(s) it describes. The order of these lists does not reflect any suggested order for implementation.

Short-Term Implementation Projects (by 2005)

1. Work with local jurisdictions to provide direct, safe and well-marked routes to/from the stations and to give these streets top priority for bicycle facilities. (A-1, A-2, A-5, A-6)
2. Encourage local jurisdictions to maintain streets leading to BART stations in good condition. (A-3)
3. Develop a "Bicycles to BART" signage program. (A-4)
4. Provide safe, direct and well-marked routes between entrances to station property and bicycle parking and fare gates. (A-11)
5. Provide informational maps and signs to orient bicyclists to surrounding roadways. (A-7)
6. Develop design for stairchannels and install at stations with Immediate Stairchannel Priority as identified in Table A-10 in Appendix A. (A-16)
7. Meet existing demand for Class 1 bicycle parking. Focus on stations with Very High or High locker usage as identified in Table A-10 of Appendix A. Reevaluate annually. (B-1, B-4)
8. Maintain a supply of Class 2 bicycle parking that is 30% above current demand. Reevaluate annually. (B-2, B-4)

9. Provide bicycle parking facilities for stations that are currently without parking especially stations that have restrictions on bicycles during the peak periods. Focus on stations with High Parking Improvements Priority or High Bicycle Access Growth Potential as identified in Table A-10 of Appendix A. (B-3)
10. Develop a toolbox of bike parking facility types that are approved for use in the BART system. Include location and installation standards for each type. (B-5)
11. Include additional stations in the demonstration project for racks located within the paid area. (B-10)
12. Develop demonstration project(s) for the most promising new types of bicycle parking, such as: (B-7, B-8)
 - Shared-use lockers
 - Vertical lockers and racks
 - Bike enclosure
 - Staggered and/or stacked racks
13. At stations where bicycle racks are underutilized and/or theft rates are high, evaluate rack placement and relocate racks to improve convenience and security, replace with lockers if necessary, install security cameras and/or add amenities such as rack coverings and lighting. (B-6, B-11)
14. Select future Bikestation sites and begin process of obtaining funding partners. (B-12)
15. Develop station-specific bicycle promotion, focusing on stations with High Bicycle Access Growth Potential as identified in Table A-10. Include “Bike to Your BART Station” Day with commuting demonstrations, education materials, and bicycle safety rodeos. Provide attendant parking for that day. Encourage participation with free BART rides, helmet raffle, and give-away items like water bottles. (D-4, D-8, D-10, D-13, D-14)
16. Develop “BART & Bicycles” Brochure. (D-5)
17. Institute the “Bicycle Hot Line”. (D-3)
18. Participate in Bike-To-Work Day with energizer stations, attendant parking and free BART rides. (D-11)
19. Advertise new bicycle parking and parking demonstration projects currently underway or planned at BART. (D-1, D-2, D-5, D-6)
20. Incorporate education about bicycle issues into BART training for employees who work directly with customers. (D-12)
21. Provide input to the 14 Station Access Plans currently being developed for siting of new bicycle parking facilities and recommended access improvements.
22. Update this plan every two years including monitoring bicycle mode share in the AM peak to determine if mode share goals (2.5% in 2005; 3% in 2010) should be reevaluated and increased.

Long-Term Implementation Projects (by 2010)

23. Work with local jurisdictions to fund, design and construct bicycle/pedestrian only entrances at BART station property borders. Include appropriate traffic control devices and signage at entrance points and well-designed curb cuts and ramps. (A-8, A-9, A-10)
24. Continue to work with local jurisdictions to provide good bikeway access to the station from all directions. (A-1, A-2)
25. Provide stairchannels at all stations using the prioritization of the Stairchannel Priority factor in Table A-10 of Appendix A. (A-16)
26. Continue to provide more Class 1 bicycle parking where needed. (B-1)
27. Continue to promote and advertise bicycle-friendly improvements at BART. (D-1, D-2, D-5)
28. Develop bicycle access plans for the remaining 25 stations to include location of new bicycle parking facilities and recommended access improvements.
29. Implement recommended improvements outlined in the plans for the 14 stations included in short-term recommendations.



This Page Intentionally Left Blank

APPENDIX A

Table A-1: Bicycle Restriction During Peak Hours

Station	AM PEAK	PM PEAK
12th Street	No bicycles in the station	No bicycles in the station
16th Street	Restrictions on all trains	Restrictions on all trains
19th Street	No bicycles in the station	No bicycles in the station
24th Street	Restrictions on all trains	Restrictions on all trains
Ashby	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Balboa Park	Restrictions on all trains	Restrictions on all trains
Bay Fair	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Castro Valley	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Civic Center	Restrictions on all trains	Restrictions on all trains
Coliseum/Oakland Airport	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Colma	Restrictions on all trains	Restrictions on all trains
Concord	Restrictions to SF/Colma	Must exit at Embarcadero
Daly City	Restrictions on all trains	Restrictions on all trains
Downtown Berkeley	Restrictions to SF/Colma	Must exit at Embarcadero
Dublin/Pleasanton	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
El Cerrito Del Norte	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
El Cerrito Plaza	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Embarcadero	Restrictions to SF/Colma	Restrictions on all trains
Fremont	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Fruitvale	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Glen Park	Restrictions on all trains	Restrictions on all trains
Hayward	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Lafayette	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Lake Merritt	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
MacArthur	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Montgomery	Restrictions on all trains	Restrictions on all trains
North Berkeley	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
North Concord/Martinez	Restrictions to SF/Colma	Must exit at Embarcadero
Orinda	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Pittsburg/Bay Point	Restrictions to SF/Colma	Must exit at Embarcadero
Pleasant Hill	Restrictions to SF/Colma	Must exit at Embarcadero
Powell	Restrictions on all trains	Restrictions on all trains
Richmond	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Rockridge	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
San Leandro	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
South Hayward	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Union City	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB
Walnut Creek	Restrictions to SF/Colma	Must exit at Embarcadero
West Oakland	Restrictions to SF/Colma	Must exit at Embarcadero; Restrictions to PB

PB = Pittsburg/Bay Point Station

Table A-2: Bicycle Parking Supply and Demand at BART Stations (as of project completion by mid-2002)

Station	Bicycle Racks		Lockers				
	Spaces Available (1)	Rack Usage (2)	Spaces Available	Rented (3)	Waiting List (3)	Spaces Added (4)	Total Spaces
12th Street	0	N/A	0	0	0	0	0
16th Street	42	29%	0	0	0	0	0
19th Street	0	N/A	0	0	0	0	0
24th Street	0	N/A	0	0	0	0	0
Ashby	147	53%	32	24	0	4	36
Balboa Park	35	7%	12	11	0	0	12
Bay Fair	42	50%	16	8	0	0	16
Castro Valley	20	10%	19	18	0	0	19
Civic Center	0	N/A	0	0	0	0	0
Coliseum/Oakland Airport	105	25%	2	2	5	0	2
Colma	40	10%	22	13	0	0	22
Concord	126	42%	40	37	0	0	40
Daly City	49	2%	20	9	0	0	20
Downtown Berkeley	0	N/A	0	0	0	0	0
Dublin/Pleasanton	66	33%	24	24	31	0	24
El Cerrito Del Norte	154	33%	27	27	5	0	27
El Cerrito Plaza	124	28%	29	29	9	0	29
Embarcadero	0	N/A	0	0	0	0	0
Fremont	121	22%	34	34	21	0	34
Fruitvale	137	69%	14	14	51	0	14
Glen Park	28	4%	12	12	6	0	12
Hayward	70	8%	20	20	6	0	20
Lafayette	84	29%	30	30	18	0	30
Lake Merritt	56	5%	20	20	44	0	20
MacArthur	84	52%	18	18	38	12	30
Montgomery	0	N/A	0	0	0	0	0
North Berkeley	208	78%	55	55	5	0	55
North Concord/Martinez	60	14%	16	8	0	0	16
Orinda	26	19%	16	16	22	8	24
Pittsburg/Bay Point	24	42%	19	13	0	0	19
Pleasant Hill	308	35%	68	68	25	22	90
Powell	0	N/A	0	0	0	0	0
Richmond	21	30%	2	2	4	0	2
Rockridge	133	25%	56	56	2	0	56
San Leandro	84	7%	28	28	17	0	28
South Hayward	56	14%	30	30	1	0	30
Union City	84	12%	20	4	0	0	20
Walnut Creek	91	63%	48	48	8	16	64
West Oakland	91	29%	8	8	8	0	8
TOTAL SPACES	2,716		757	686	326	62	819

(1) Total number of bicycle rack parking spaces when 2001/02 bicycle rack and locker project is completed.

(2) Usage is based upon the parked bicycles counted at 9am during quarterly updates of BART Station Access Evaluation System.

Note the usage counts may have occurred before the new racks were installed as part of the 2001/02 bicycle rack and locker project.

(3) As of January 2002.

(4) Spaces in bicycle lockers added with the 2001/02 bicycle rack and locker project.

Source: BART Access Evaluation System, Jan 2002 and BART Staff

Table A-3: Bicycle Theft at BART Stations

<i>Station</i>	<i>Reported Thefts (1)</i>			<i>Average</i>
	<i>1999</i>	<i>2000</i>	<i>2001</i>	
12th Street	2	0	0	1
16th Street	0	1	18	6
19th Street	0	0	0	0
24th Street	1	0	1	1
Ashby	56	29	38	41
Balboa Park	4	1	5	3
Bay Fair	16	16	12	15
Castro Valley	10	14	12	12
Civic Center	0	0	0	0
Coliseum	1	3	5	3
Colma	8	6	4	6
Concord	46	34	29	36
Daly City	2	6	11	6
Downtown Berkeley	0	1	0	0
Dublin / Pleasanton	7	23	27	19
El Cerrito Del Norte	7	15	6	9
El Cerrito Plaza	28	20	10	19
Embarcadero	1	0	0	0
Fremont	21	38	19	26
Fruitvale	16	21	17	18
Glen Park	2	2	3	2
Hayward	9	17	13	13
Lafayette	3	9	10	7
Lake Merritt	7	8	11	9
MacArthur	26	15	43	28
Montgomery	0	0	0	0
North Berkeley	66	55	46	56
North Concord	9	2	6	6
Orinda	1	4	4	3
Pittsburg / Bay Point	23	8	11	14
Pleasant Hill	30	12	35	26
Powell	0	0	0	0
Richmond	14	8	5	9
Rockridge	13	21	15	16
San Leandro	6	15	11	11
South Hayward	2	5	5	4
Union City	2	4	5	4
Walnut Creek	5	4	11	7
West Oakland	5	4	5	5
TOTALS	449	421	453	Systemwide Average 11

SOURCE: BART Staff, March 2002

(1.) Includes theft of bicycles and/or bicycle parts.

Table A-4: Auto Parking Supply and Demand at BART Stations

<i>Station</i>	<i>Parking Supply</i>	<i>Unrestricted Spaces Fill By</i>
Ashby	611	8:00 AM
Bay Fair	1,630	8:40 AM
Castro Valley	1,123	9:20 AM
Coliseum/Oakland Airport	1,037	8:40 AM
Colma	2,485	7:32 AM
Concord	2,435	9:00 AM
Daly City	1,852	7:35 AM
Dublin/Pleasanton	3,039	8:50 AM
El Cerrito Del Norte	2,256	7:45 AM
El Cerrito Plaza	759	7:45 AM
Fremont	2,026	8:35 AM
Fruitvale	940	7:00 AM
Hayward	1,439	N/A
Lafayette	1,543	8:00 AM
Lake Merritt	206	6:30 AM
MacArthur	607	7:35 AM
North Berkeley	816	8:10 AM
North Concord/Martinez	1,975	N/A
Orinda	1,406	8:28 AM
Pittsburg/Bay Point	2,031	7:25 AM
Pleasant Hill	3,447	8:35 AM
Richmond	643	8:00 AM
Rockridge	911	7:55 AM
San Leandro	1,237	8:50 AM
South Hayward	1,220	N/A
Union City	1,196	8:00 AM
Walnut Creek	1,989	7:44 AM
West Oakland	420	5:50 AM
Total Spaces	41,279	

SOURCE: BART Station Access Evaluation System, January 2002

Table A-5: Comparison of Station Entries

<i>Station Name</i>	<i>Total Entries (1)</i>	<i>Home-Based Entries (2)</i>	<i>% of System Home-Based (3)</i>	<i>Non-Home-Based Entries (4)</i>	<i>% of System Non-Home-Based (5)</i>
12th Street	3.9%	35.6%	2.9%	64.4%	4.8%
16th Street	3.4%	49.5%	3.5%	50.5%	3.3%
19th Street	2.5%	29.3%	1.5%	70.7%	3.4%
24th Street	3.7%	74.0%	5.8%	26.0%	1.9%
Ashby	1.3%	71.9%	2.0%	28.1%	0.7%
Balboa Park	4.0%	66.4%	5.5%	33.6%	2.6%
Bay Fair	1.5%	78.3%	2.5%	21.7%	0.6%
Castro Valley	0.6%	86.1%	1.1%	13.9%	0.2%
Civic Center	5.3%	22.8%	2.5%	77.2%	8.0%
Coliseum/Oakland Airport	1.6%	55.0%	1.9%	45.0%	1.4%
Colma	2.0%	80.1%	3.3%	19.9%	0.8%
Concord	1.9%	73.0%	2.9%	27.0%	1.0%
Daly City	2.4%	68.4%	3.5%	31.6%	1.5%
Downtown Berkeley	3.7%	28.7%	2.2%	71.3%	5.2%
Dublin/Pleasanton	1.5%	72.7%	2.3%	27.3%	0.8%
El Cerrito Del Norte	2.5%	88.8%	4.6%	11.2%	0.5%
El Cerrito Plaza	1.4%	89.1%	2.6%	10.9%	0.3%
Embarcadero	9.6%	6.5%	1.3%	93.5%	17.4%
Fremont	1.8%	62.0%	2.3%	38.0%	1.3%
Fruitvale	2.4%	75.1%	3.8%	24.9%	1.2%
Glen Park	2.4%	81.1%	4.0%	18.9%	0.9%
Hayward	1.5%	59.8%	1.9%	40.2%	1.2%
Lafayette	1.0%	83.5%	1.7%	16.5%	0.3%
Lake Merritt	1.4%	52.2%	1.5%	47.8%	1.3%
MacArthur	2.0%	65.0%	2.7%	35.0%	1.3%
Montgomery	11.1%	7.7%	1.8%	92.3%	19.7%
North Berkeley	1.1%	78.4%	1.8%	21.6%	0.5%
North Concord/Martinez	0.5%	88.8%	1.0%	11.2%	0.1%
Orinda	0.9%	82.0%	1.5%	18.0%	0.3%
Pittsburg/Bay Point	1.3%	95.2%	2.6%	4.8%	0.1%
Pleasant Hill	2.2%	86.2%	3.9%	13.8%	0.6%
Powell	7.7%	17.7%	2.9%	82.3%	12.3%
Richmond	1.8%	75.6%	2.7%	24.4%	0.8%
Rockridge	1.4%	78.6%	2.2%	21.4%	0.6%
San Leandro	1.5%	73.7%	2.3%	26.3%	0.8%
South Hayward	0.9%	78.6%	1.5%	21.4%	0.4%
Union City	1.2%	70.2%	1.7%	29.8%	0.7%
Walnut Creek	1.7%	68.4%	2.4%	31.6%	1.0%
West Oakland	1.3%	84.3%	2.3%	15.7%	0.4%

(1) Station entries as percentage of total system entries.

(2) Station home-based entries as percentage of station entries.

(3) Home-based entries as percentage of system home-based entries.

(4) Station non-home-based entries as percentage of station entries.

(5) Non-home-based entries as percentage of system non-home-based entries.

SOURCE: BART Station Profile Study, August 1999.

Table A-6: Mode Split to BART Stations

<i>AM Peak for All Trip Origins (1)</i>									<i>Home Origins All Day (2)</i>	<i>Actual Bicyclists from Home Origins All Day (2)</i>
<i>Station Name</i>	<i>Drove Alone</i>	<i>Carpool</i>	<i>Drop-Off</i>	<i>Walk</i>	<i>Bicycle</i>	<i>Transit</i>	<i>Motorcycle</i>	<i>Taxi</i>	<i>Bicycle</i>	
12th Street	9%	2%	16%	27%	1%	45%	0%	0%	1%	40
16th Street	1%	2%	5%	72%	1%	19%	1%	0%	3%	144
19th Street	10%	4%	19%	46%	2%	19%	0%	1%	3%	62
24th Street	3%	1%	6%	63%	2%	27%	0%	0%	1%	80
Ashby	34%	4%	9%	40%	8%	6%	0%	0%	7%	193
Balboa Park	9%	5%	18%	19%	1%	48%	0%	0%	1%	76
Bay Fair	54%	5%	15%	13%	2%	11%	1%	0%	2%	68
Castro Valley	71%	4%	11%	8%	1%	5%	0%	0%	1%	16
Civic Center	1%	1%	6%	39%	3%	50%	1%	1%	4%	140
Coliseum/Oakland Airport	40%	5%	15%	5%	1%	34%	0%	0%	2%	52
Colma	58%	10%	11%	3%	0%	17%	1%	1%	0%	0
Concord	61%	7%	14%	9%	2%	6%	1%	1%	2%	81
Daly City	46%	10%	13%	12%	1%	17%	1%	1%	0%	0
Downtown Berkeley	7%	1%	9%	59%	5%	19%	0%	0%	6%	185
Dublin/Pleasanton	72%	8%	11%	1%	2%	7%	1%	0%	2%	62
El Cerrito Del Norte	47%	7%	10%	9%	1%	26%	0%	1%	1%	63
El Cerrito Plaza	52%	6%	6%	29%	3%	4%	1%	0%	4%	142
Embarcadero	4%	2%	10%	30%	8%	44%	1%	1%	8%	144
Fremont	62%	6%	12%	8%	1%	10%	0%	1%	2%	63
Fruitvale	39%	8%	12%	10%	5%	26%	0%	1%	4%	208
Glen Park	12%	3%	16%	41%	1%	26%	1%	1%	2%	110
Hayward	55%	4%	12%	11%	3%	16%	0%	1%	3%	80
Lafayette	74%	6%	9%	5%	1%	4%	1%	0%	2%	48
Lake Merritt	32%	6%	14%	27%	5%	16%	0%	0%	5%	105
MacArthur	38%	5%	11%	24%	3%	18%	1%	0%	4%	147
Montgomery	1%	0%	4%	24%	1%	69%	0%	1%	2%	49
North Berkeley	51%	5%	8%	27%	7%	3%	1%	0%	5%	127
North Concord/Martinez	68%	11%	11%	5%	1%	4%	0%	0%	1%	13
Orinda	74%	5%	11%	2%	2%	6%	0%	0%	2%	40
Pittsburg/Bay Point	53%	13%	15%	3%	1%	15%	1%	0%	1%	35
Pleasant Hill	61%	7%	9%	15%	1%	7%	1%	1%	2%	108
Powell	0%	1%	5%	40%	0%	53%	0%	1%	3%	118
Richmond	37%	8%	15%	19%	2%	19%	0%	1%	3%	114
Rockridge	47%	8%	8%	29%	3%	4%	1%	1%	3%	92
San Leandro	57%	5%	12%	14%	2%	10%	1%	0%	2%	64
South Hayward	56%	5%	16%	13%	1%	10%	0%	0%	2%	42
Union City	60%	4%	8%	12%	2%	14%	0%	0%	2%	48
Walnut Creek	63%	8%	10%	9%	1%	8%	0%	1%	2%	66
West Oakland	63%	8%	10%	9%	1%	9%	1%	0%	1%	31

(1) BART Access Evaluation System, Jan 2002

(2) BART Station Profile Study, August 1999.

Table A-7: Bicycle Mode Share Changes from 1992 to 1998

<i>Station</i>	<i>1992 Bicycle Access to Station (%)</i>	<i>1998 Bicycle Access to Station (%)</i>	<i>Change in Mode Share</i>
12th Street	1.00%	0.80%	(0.2)
16th Street	0.50%	0.50%	0.0
19th Street	1.00%	1.50%	0.5
24th Street	1.00%	1.50%	0.5
Ashby	1.00%	7.50%	6.5
Bay Fair	0.50%	1.70%	1.2
Balboa Park	0.50%	0.50%	0.0
Civic Center	1.00%	2.70%	1.7
Coliseum/Oakland Airport	1.00%	1.20%	0.2
Colma	No data available	0.00%	N/A
Concord	1.00%	1.60%	0.6
Castro Valley	No data available	1.30%	N/A
Daly City	0.50%	0.50%	0.0
Downtown Berkeley	3.00%	4.60%	1.6
Dublin/Pleasanton	No data available	1.90%	N/A
Embarcadero	4.00%	8.40%	4.4
El Cerrito Del Norte	0.50%	0.60%	0.1
El Cerrito Plaza	1.00%	2.80%	1.8
Fremont	0.50%	1.00%	0.5
Fruitvale	2.00%	4.50%	2.5
Glen Park	1.00%	0.90%	(0.1)
Hayward	0.50%	2.80%	2.3
Lafayette	0.50%	0.90%	0.4
Lake Merritt	2.00%	5.40%	3.4
MacArthur	2.00%	3.40%	1.4
Montgomery	0.50%	0.50%	0.0
North Berkeley	2.00%	6.50%	4.5
North Concord/Martinez	No data available	0.50%	N/A
Orinda	1.00%	1.90%	0.9
Pittsburg/Bay Point	No data available	0.60%	N/A
Pleasant Hill	0.50%	1.20%	0.7
Powell	0.50%	0.00%	(0.5)
Richmond	0.50%	1.60%	1.1
Rockridge	1.00%	3.20%	2.2
South Hayward	0.50%	1.30%	0.8
San Leandro	1.00%	1.60%	0.6
Union City	1.00%	2.10%	1.1
Walnut Creek	0.50%	1.40%	0.9
West Oakland	0.50%	0.70%	0.2

SOURCE: BART Access Evaluation System, Jan 2002

Table A-8: Population, Employment and Households Without Cars Within 1 Mile of Station

<i>Station</i>	<i>Year 2000 Population</i>	<i>Year 2000 Employment</i>	<i>Households without Cars</i>
12th Street	29,631	65,990	48%
16th Street	89,215	68,453	41%
19th Street	40,048	68,504	42%
24th Street	91,258	25,746	29%
Ashby	48,830	18,114	24%
Balboa Park	60,464	6,635	15%
Bay Fair	24,686	10,768	11%
Castro Valley	25,292	10,039	8%
Civic Center	98,167	208,696	68%
Coliseum/Oakland Airport	19,114	9,290	34%
Colma	28,344	8,462	8%
Concord	22,836	13,099	10%
Daly City	49,183	11,249	14%
Downtown Berkeley	47,824	37,539	25%
Dublin/Pleasanton	10,197	13,058	1%
El Cerrito Del Norte	23,528	6,294	10%
El Cerrito Plaza	27,417	7,140	10%
Embarcadero	60,858	268,936	63%
Fremont	20,294	11,389	6%
Fruitvale	40,113	11,307	26%
Glen Park	60,642	6,429	16%
Hayward	25,536	14,109	13%
Lafayette	5,196	2,282	5%
Lake Merritt	28,473	61,689	43%
MacArthur	40,221	22,846	30%
Montgomery	87,051	300,344	68%
North Berkeley	39,272	17,012	19%
North Concord/Martinez	6,939	2,668	6%
Orinda	3,582	805	1%
Pittsburg/Bay Point	6,965	754	10%
Pleasant Hill	17,097	9,799	5%
Powell	100,436	311,449	70%
Richmond	31,138	9,905	24%
Rockridge	31,720	8,774	18%
San Leandro	25,225	12,896	14%
South Hayward	15,249	4,209	8%
Union City	17,473	6,443	5%
Walnut Creek	14,533	19,565	8%
West Oakland	13,929	13,894	49%

SOURCE: BART Access Evaluation System, Jan 2002

Table A-9: BART and Transit-Related Goals and Policies from Regional, County and City Bicycle Plans

Regional Bicycle Plan

Objective 1: The Regional Bicycle Network

Define a comprehensive regional bikeway network.

Policy 1.1: Develop a cohesive system of regional bikeways that provide access to and among major activity centers and public transportation.

Policy 1.2: Ensure all regionally funded transportation projects consider enhancement of bicycle transportation consistent with Caltrans Deputy Directive 64.

Policy 1.3: Ensure the bikeway network serves bicyclists of a wide variety of abilities.

Policy 1.4: Encourage bicycle-friendly design on all streets and roadways through new technologies, “best practices” standards, guidelines, and innovative treatments on all new roadways and multiuse paths.

Objective 2: Multimodal Integration

Develop and enhance opportunities for bicyclists to easily access other modes of transportation

Policy 2.1: Encourage transit agencies to promote, provide, and maintain convenient and secure bike parking facilities – racks, bike lockers, in-station bike storage, and staffed bicycle parking facilities – at transit stops, stations, and terminals.

Policy 2.2: Facilitate multimodal transportation cooperation with local and regional transit agencies to ensure bicycles can be accommodated on all forms of transit and that adequate space is devoted to their storage on board whenever possible.

Policy 2.3: Improve bicycle access to transit hubs and stations by means of signage and bikeways.

Policy 2.4: Encourage bicycle-friendly development activity and support facilities, e.g., bicycle rental and repair, around transit stations.

Alameda Countywide Bicycle Plan

Goal 1: Establish a Countywide Bicycle Network

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

- Designate appropriate bicycle facilities to serve route which link major activity centers, including transit stations, schools, park and employment and shopping centers, as well as routes which serve major corridors.

Goal 2: Integrate Countywide Bicycle Network

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

- Encourage and facilitate multimodal interface by including bike parking at multimodal transfer points and by supporting bikes-on-board transit vehicles.

Goal 3: Promote Bicycle Safety and Education

Improve bicycle safety through facilities, education and enforcement.

- Develop safety programs and design guidelines for multimodal facilities that will alleviate conflicts between bicyclist and other users such as pedestrians, roller bladers, joggers, and equestrians.

Alameda County Bicycle Master Plan Update –Western Unincorporated Areas
Bicycle Plan

Network Provision and Maintenance

Goal: To create and maintain a comprehensive system of bicycle facilities in the local and subregional transportation network in order to establish a balanced multi-modal transportation system.

Policy 1.1: The County shall designate appropriate bicycle facilities to serve routes linking major activity centers, including transit stations, schools, parks and employment and shopping centers.

Encouragement

Goal: To encourage bicycling and other transportation alternatives as a means to reduce traffic congestion.

Policy 2.1: The County shall work with transit providers (e.g., AC Transit, BART) to increase accessibility on board transit vehicles to bicycle users, especially during peak commute hours and to provide secure Class I parking at stations.

San Mateo County Comprehensive Bicycle Route Plan

Objective 4.0: Facility Design

Provide high quality and safe opportunities for all people in San Mateo County to bike to work, school or play

Policy 4.0: Develop a countywide bicycle system that meets the needs of commuter and recreational users, helps reduce vehicle trips, and links residential neighborhoods with local and regional destinations.

Action 4.1: Develop a primary commuter system which provides direct routes between residential neighborhoods and regional employment centers, transit stops, and schools

Objective 5.0: Multi-modal Integration

Integrate bicycle mode into other alternative modes

Policy 5.0: Maximize multi-modal connections to the bicycle system.

Action 5.1: Ensure that the primary countywide system is integrated into existing transit stops and services in San Mateo County.

Action 5.1: Work with local and regional transit agencies to install bike lockers and racks where possible, and to maintain bike racks on buses.

Action 5.2: Work with Caltrain and BART to ensure adequate bicycle access to stations, adequate bicycle parking at stations, and adequate capacity for bicycles on the trains themselves.

City/County of San Francisco Bicycle Plan

Goal 1: Improve Facilities for Bicyclists

Objective 6: Improve access to transit modes and over bridges

City of Alameda Bicycle Plan

Policy 4.0: Develop a city-wide bicycle system which meets the needs of commuter and recreational users, helps reduce vehicle trips, and links residential neighborhoods with local and regional destinations.

Objective 5.0: Multi-Modal Integration

Integrate Bicycle Mode into other Alternative Modes

City of Albany Bicycle Plan

Goal 4: Develop a bicycle system that meets the needs of commuter and recreation users, helps reduce vehicle trips, and links residential neighborhoods with regional destinations.

Objective 4.1: Develop a commuter route system connecting residential neighborhoods and regional employment areas, multi-modal terminal, schools, and shopping areas.

Goal 5: Maximize multi-modal connections to the bicycle system

Objective 5.1: Develop bikeways that are consistent with and complement Albany's Transit First Policy.

City of Berkeley Bicycle Plan

Goal 1: Planning

Integrate the consideration of bicycle travel into City planning activities and capital improvement projects, and coordinate with other agencies to improve bicycle facilities and access within and connecting to Berkeley.

Policy 1.1: Coordinate the bikeway network plan with adjacent governmental entities, public service companies, coordinating agencies and transit agencies.

Policy 1.6: Work with transit providers to increase accessibility on board transit vehicles to bicycle users, especially during peak commute hours, and to provide secure bike parking at stations.

Goal 2: Network and Facilities

Develop a safe, convenient, and continuous network of bikeways that serves the needs of all types of bicyclists, and provide bicycle parking facilities to promote cycling.

Policy 2.1: Develop a citywide system of designated bikeways that serves both experienced and casual bicyclists. The network should serve all bicyclists' needs, especially for travel to employment centers, schools, commercial districts, transit stations, institutions, and recreational destinations.

City of Emeryville 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.

City of Hayward Bicycle Plan

Bicycle Commuting and Recreation Opportunities

Goal 2: To provide the related facilities and services necessary to allow bicycle travel to assume a significant role as a local alternative mode of transportation and recreation.

Objective 2.1: To work with transit agencies – such as BART and AC Transit – to increase their system’s accessibility to bicycle users, especially during peak hour commute times and on lines serving major bicycle destinations such as California State University at Hayward.

City of Livermore Bicycle Plan

Goal 1: Network Connectivity and Design

Develop a comprehensive bikeway and trail system as a viable alternative to the automobile for all trip purposes in order to maximize the number of daily trips made by non-motorized means for residents of all abilities.

Policy 1.8: Provide connections to the proposed system from all existing and future transit facilities, stations and terminals in Livermore.

Goal 2: Planning and Interagency Coordination

Consider bicycle, pedestrian and equestrian access in all aspects of City Planning and coordinate with other agencies to improve non-motorized access within the City of Livermore and to surrounding regional areas and facilities.

Policy 2.5: Coordinate with adjacent governmental entities, public service companies, transit agencies and any other affected agencies in the planning, design and implementation of bikeways and multi-use trails.

Goal 3: Support facilities

To provide the related facilities and services necessary to allow bicycle, pedestrian and equestrian travel to assume a significant role as a local alternative mode of transportation and recreation.

Policy 3.1: Provide connections to the proposed system from all existing and future transit facilities, stations and terminals in Livermore.

Policy 3.2: Encourage local and regional transit agencies to install bike lockers and secured bicycle parking at transit terminals.

City of Oakland Bicycle Master Plan

Policy 7: The City should support improved bicycle access to public transportation.

City of Pleasanton Circulation Element

Alternative Transportation Modes

Goal 3: To provide a multi-modal transportation system which encourages efficient use of existing and future facilities.

City of San Leandro Bicycle Plan

Goal 4.0: Develop a bicycle system that meets the needs of commuter and recreation users, helps reduce vehicle trips, and links residential neighborhoods with regional destinations.

Policy 4.1: Develop a commuter route system which connects residential neighborhoods to employment areas, multi-modal terminals, and schools.

Goal 5.0: Maximize multi-modal connections to the bicycle system.

Policy 5.1: Ensure that the bicycle system serves all multi-modal stations.

Policy 5.2: Work with local and regional transit agencies to install bike lockers at terminals and bike storage on buses and BART.

City of South San Francisco Transportation Element of the General Plan

Policy 4.3-G-1: Provide safe and direct pedestrian routes and bikeways between and through residential neighborhoods, and to transit centers.

Table A-10: Summary of BART Station Characteristics - Page 1 of 2

Station	Station Type	Bicycle Parking	Bicycle Rack Usage (1)	Locker Usage (2)	Bike Theft Rate (3)	Auto Parking Filled by 9am	Type of Trips (4)	Home-Based Trips (5)	Ridership Rate (6)	Bicycle Mode Share in AM Peak-All Trip Origins (7)	Bicycle Mode Share All Day-Home Origin Trips(8)	Drive Alone Mode Share-Am peak (9)
12th Street	Downtown	No	N/A	N/A	Low	N/A	Non-Home-Based	High	High	Low	Low	Low
16th Street	Urban	Yes	High	N/A	Low	N/A	Both	High	High	Low	High	Low
19th Street	Downtown	No	N/A	N/A	N/A	N/A	Non-Home-Based	Low	Medium	Medium	High	Low
24th Street	Urban	No	N/A	N/A	Low	N/A	Home-Based	High	High	Medium	Low	Low
Ashby	Urban	Yes	High	High	High	Yes	Home-Based	Medium	Low	High	High	Low
Balboa Park	Urban	Yes	Low	High	Low	N/A	Home-Based	High	High	Low	Low	Low
Bay Fair	Urban	Yes	Medium	Low	Medium	Yes	Home-Based	Medium	Medium	Medium	Medium	Medium
Castro Valley	Suburban	Yes	Low	High	Medium	No	Home-Based	Low	Low	Medium	High	High
Civic Center	Downtown	No	N/A	N/A	N/A	N/A	Home-Based	Medium	High	High	High	Low
Coliseum/Oakland Airport	Urban	Yes	Low	Very High	Low	Yes	Non-Home-Based	Low	Medium	Medium	Medium	Low
Colma	Urban	Yes	Low	Medium	Low	Yes	Both	High	Medium	Low	Low	Medium
Concord	Suburban	Yes	Medium	High	High	Yes	Home-Based	High	Medium	Medium	Medium	High
Daly City	Urban	Yes	Low	Low	Low	Yes	Home-Based	High	Medium	Low	High	Medium
Downtown Berkeley	Urban	Yes	N/A	High (BikeStation)	Low	N/A	Home-Based	Medium	High	High	Low	Low
Dublin/Pleasanton	Suburban	Yes	High	Very High	Medium	Yes	Home-Based	Medium	Low	Medium	Medium	High
El Cerrito Del Norte	Urban	Yes	Medium	High	Low	Yes	Home-Based	High	Medium	Low	Low	Medium
El Cerrito Plaza	Suburban	Yes	Medium	High	Medium	Yes	Home-Based	High	Low	High	High	Medium
Embarcadero	Downtown	No	N/A	N/A	Low	N/A	Home-Based	Low	High	High	High	Low
Fremont	Suburban	Yes	Low	Very High	High	Yes	Home-Based	Medium	Medium	Medium	Medium	High
Fruitvale	Urban	Yes	High	Very High	Medium	Yes	Home-Based	High	Medium	High	High	Low
Glen Park	Urban	Yes	Low	High	Low	N/A	Home-Based	High	Medium	Low	Medium	Low
Hayward	Suburban	Yes	Low	High	Medium	No	Both	Medium	Medium	High	High	Medium
Lafayette	Suburban	Yes	Low	Very High	Low	Yes	Home-Based	Low	Low	Low	Medium	High
Lake Merritt	Downtown	Yes	Low	Very High	Low	Yes	Both	Low	Low	High	High	Low
MacArthur	Urban	Yes	High	Very High	High	Yes	Home-Based	High	Medium	High	High	Low
Montgomery	Downtown	No	N/A	N/A	N/A	N/A	Non-Home-Based	Low	High	Low	Medium	Low
North Berkeley	Urban	Yes	High	High	High	Yes	Home-Based	Low	Low	High	High	Medium
North Concord/Martinez	Urban	Yes	Low	Low	N/A	No	Home-Based	Low	Low	Low	Low	High
Orinda	Suburban	Yes	Low	Very High	Low	Yes	Home-Based	Low	Low	Medium	Medium	High
Pittsburg/Bay Point	Suburban	Yes	Medium	Medium	Medium	Yes	Home-Based	Medium	Low	Low	Low	Medium
Pleasant Hill	Suburban	Yes	Medium	High	High	Yes	Home-Based	High	Medium	Medium	Medium	High
Powell	Downtown	No	N/A	N/A	N/A	N/A	Non-Home-Based	High	High	Low	High	Low
Richmond	Urban	Yes	High	Very High	Low	Yes	Home-Based	High	Medium	Medium	High	Low
Rockridge	Urban	Yes	Low	High	Medium	Yes	Home-Based	Medium	Low	High	High	Medium
San Leandro	Suburban	Yes	Low	Very High	Medium	Yes	Home-Based	Medium	Medium	Medium	Medium	Medium
South Hayward	Suburban	Yes	Low	High	Low	No	Home-Based	Low	Low	Medium	Medium	Medium
Union City	Suburban	Yes	Low	Low	Low	Yes	Home-Based	Low	Low	High	Medium	Medium
Walnut Creek	Downtown	Yes	High	High	Low	Yes	Home-Based	Medium	Medium	Medium	Medium	High
West Oakland	Urban	Yes	Low	Very High	Low	Yes	Home-Based	Medium	Low	Low	Low	High

Table A-10: Summary of BART Station Characteristics - Page 2 of 2

Station	2000 Population within 1 Mile of Station (10)	2000 Employment within 1 Mile of Station (11)	Households with No Car within 1 Mile of Station (12)	BART Property at Street Level	2-Level Station (Fare Gates Above or Below Street Level)	Transfer Station	Restrictions during peaks	Bicycle Access Growth Potential (13)	Parking Improvements Priority (14)	Stair-channel Priority (15)
12th Street	Medium	High	High	No	Yes	Yes	No bikes in station	Medium	High	High
16th Street	High	High	High	No	Yes	No	No train access	High	High	Immediate
18th Street	High	High	High	No	Yes	Yes	No bikes in station	Medium	High	High
24th Street	High	Medium	Medium	No	Yes	No	No train access	High	High	Medium
Ashby	High	Low	Medium	Yes	No	No	Peak Direction	High	Medium	Medium
Balboa Park	High	Low	Low	Yes	Yes	No	No train access	Medium	Medium	Medium
Bay Fair	Medium	Low	Low	Yes	Yes	Yes	Peak Direction	Low	Low	Medium
Castro Valley	Medium	Low	Low	Yes	No	No	Peak Direction	Low	Medium	Low
Chrv Center	High	High	High	No	Yes	No	No train access	High	High	High
Coliseum/Oakland Airport	Medium	Low	Medium	Yes	No	No	Peak Direction	Low	High	Low
Colma	Medium	Low	Low	Yes	No	No	No train access	Low	Low	Low
Concord	Medium	Low	Low	Yes	No	No	Peak Direction	Medium	Medium	Low
Daily City	High	Low	Low	Yes	No	No	No train access	Low	Low	Low
Downtown Berkeley	High	Medium	Medium	No	Yes	No	Peak Direction	High	Low	Immediate
Dublin/Pleasanton	Low	Low	Low	Yes	No	No	Peak Direction	Low	High	Low
El Cerrito Del Norte	Medium	Low	Low	Yes	No	No	Peak Direction	Medium	Medium	Low
El Cerrito Plaza	Medium	Low	Low	Yes	No	No	Peak Direction	Medium	Medium	Medium
Embarcadero	High	High	High	No	Yes	Yes	Peak Direction	High	Low	Immediate
Fremont	Medium	Low	Low	Yes	No	No	Peak Direction	Low	High	Low
Fruitvale	High	Low	Medium	Yes	No	No	Peak Direction	High	High	High
Glen Park	High	Low	Low	Yes	No	No	No train access	Low	Medium	Medium
Hayward	Medium	Low	Low	Yes	No	No	No train access	Medium	Medium	Low
Lafayette	Low	Low	Low	Yes	No	No	Peak Direction	Low	High	Low
Lake Merritt	Medium	High	High	Yes	Yes	Yes	Peak Direction	Medium	High	High
MacArthur	High	Medium	Medium	Yes	No	Yes	Peak Direction	High	High	High
Montgomery	High	High	High	No	Yes	No	No train access	High	High	Medium
North Berkeley	High	Low	Low	Yes	No	No	Peak Direction	High	Medium	Medium
North Concord/Martinez	Low	Low	Low	Yes	No	No	Peak Direction	Low	Low	Low
Orinda	Low	Low	Low	Yes	No	No	Peak Direction	Low	High	Low
Pittsburg/Bay Point	Low	Low	Low	Yes	No	No	Peak Direction	Low	Low	Medium
Pleasant Hill	Low	Low	Low	Yes	No	No	Peak Direction	Medium	Medium	Medium
Powell	High	High	High	No	Yes	No	No train access	High	High	High
Richmond	Medium	Low	Medium	Yes	No	No	Peak Direction	Medium	High	High
Rochridge	Medium	Low	Low	Yes	No	No	Peak Direction	Medium	Medium	Medium
San Leandro	Medium	Low	Low	Yes	No	No	Peak Direction	Medium	High	Low
South Hayward	Low	Low	Low	Yes	No	No	Peak Direction	Low	Medium	Low
Union City	Low	Low	Low	Yes	No	No	Peak Direction	Medium	Low	Low
Walnut Creek	Low	Low	Low	Yes	No	No	Peak Direction	Medium	Medium	Low
West Oakland	Low	Low	High	Yes	No	No	Peak Direction	Low	High	Low

NOTES

- (1) High > 50%; Medium > 30%; Low < = 30%
- (2) Very High = Waiting List > 50% of locker supply; High = Locker Rental > 75% of locker supply; Medium = Locker Rental > 50% of locker supply; Low = Locker Rental < = 50% of locker supply
- (3) High > 20 (average); Medium > 10 (average); Low < = 10 (average)
- (4) Home-Based where home-based trips > 60%; Both where home-based trips = 40%-60%; Non-Home-Based where home-based trips < 40%
- (5) Home-Based Entries/System Entries; High > 1.24%; Medium > 0.9%; Low < = 0.9%
- (6) Station Entries/System Entries; High > 3%; Medium > 2%; Low < = 2%
- (7) High > = 2%; Medium > = 1%; Low < = 1%
- (8) High > = 3%; Medium > = 1.5%; Low < = 1.5%
- (9) High > 60%; Medium > 40%; Low < 40%
- (10) High > 36,000; Medium > 18,000; Low < = 18,000
- (11) High > 43,000; Medium > 21,500; Low < = 21,500
- (12) High > 40%; Medium > 20%; Low < = 20%
- (13) Based upon station ridership, existing bicycle mode share, 2000 population and households with no car within 1 mile of station and topographic, traffic and bicycling conditions in the vicinity of station. See Table A-11 for worksheet and assumptions used.
- (14) High = No existing parking or locker usage is Very High; Medium = Locker Usage High; Low = Locker Usage-Medium to Low or Existing/In Progress BikesStation
- (15) Based upon whether or not station is a transfer station or 2-level station, has bicycle parking above or below street level and existing bicycle ridership rate. See Table A-12 for full description of worksheet and assumptions used.

Table A-11: Bicycle Access Growth Potential Worksheet - Page 1 of 3

Station	Home Based Ridership	Home Based Ridership Rating Value (1)	Station Ridership	Station Ridership Rating Value (2)	Bicycle Mode Share in AM peak	Bicycle Mode Share in AM peak Rating Value (3)	2000 Population within 1 Mile of Station	2000 Population within 1 Mile of Station Rating Value (4)	Households with No Car within 1 Mile of Station	Households with No Car within 1 Mile of Station Rating Value (5)	Topography/Traffic/Barrier Factor (6)	Bicycle Access Growth Potential Factor (7)	Bicycle Access Growth Rating
12th Street	3,956	3.97	11,120	4.77	0.80%	2.86	29,651	4.03	6,400	2.02	-4.00	13.65	Medium
16th Street	4,811	5.26	9,713	4.07	0.50%	1.79	89,215	13.26	13,929	4.40	-4.00	24.78	High
19th Street	2,082	1.15	7,096	2.78	1.50%	5.36	40,048	5.65	8,004	2.53	-4.00	13.46	Medium
24th Street	7,955	10.00	10,746	4.58	1.50%	5.36	91,258	13.58	9,493	3.00	-6.00	30.52	High
Ashby	2,755	2.16	3,833	1.16	7.50%	26.79	48,830	7.01	4,946	1.56	-4.00	34.68	High
Ballboa Park	7,634	9.52	11,504	4.96	0.50%	1.79	60,464	8.81	2,647	0.83	-20.00	5.90	Medium
Bay Fair	3,393	3.13	4,331	1.41	1.70%	6.07	24,686	3.27	1,125	0.35	-12.00	2.22	Low
Castro Valley	1,552	0.35	1,802	0.16	1.30%	4.64	25,292	3.36	712	0.22	-10.00	-1.27	Low
Civic Center	3,489	3.27	15,310	6.84	2.70%	9.64	96,167	14.65	30,712	9.72	-6.00	38.12	High
Coliseum/Oakland Airport	2,576	1.89	4,683	1.58	1.20%	4.29	19,114	2.41	1,983	0.62	-14.00	-3.21	Low
Colma	4,499	4.79	5,618	2.04	0.00%	0.00	28,344	3.83	615	0.19	-12.00	-1.14	Low
Concord	4,031	4.09	5,522	2.00	1.60%	5.71	22,856	2.98	942	0.29	-4.00	11.07	Medium
Daly City	4,789	5.23	7,004	2.73	0.50%	1.79	49,183	7.06	1,970	0.62	-18.00	-0.57	Low
Downtown Berkeley	3,089	2.67	10,755	4.59	4.60%	16.43	47,824	6.85	4,841	1.53	-6.00	26.06	High
Dublin/Pleasanton	3,119	2.71	4,288	1.39	1.90%	6.79	10,197	1.02	25	0.00	-8.00	3.91	Low
El Cerrito Del Norte	6,317	7.53	7,114	2.78	0.60%	2.14	23,528	3.09	885	0.28	-8.00	7.82	Medium
El Cerrito Plaza	3,559	3.38	3,996	1.24	2.80%	10.00	27,417	3.69	1,143	0.36	-2.00	16.67	Medium
Embarcadero	1,799	0.72	27,590	12.92	8.40%	30.00	60,858	8.87	16,497	5.22	-6.00	51.73	High
Fremont	3,146	2.75	5,078	1.78	1.00%	3.57	20,294	2.59	418	0.13	-8.00	2.82	Low
Fruitvale	5,207	5.86	6,931	2.69	4.50%	16.07	40,113	5.66	2,931	0.92	-8.00	23.21	High
Glen Park	5,497	6.30	6,790	2.62	0.90%	3.21	60,642	8.84	3,210	1.01	-20.00	1.98	Low
Hayward	2,656	2.01	4,439	1.46	2.80%	10.00	25,536	3.40	1,141	0.36	-10.00	7.23	Medium
Lafayette	2,386	1.61	2,858	0.68	0.90%	3.21	5,196	0.25	88	0.02	-6.00	-0.23	Low
Lake Merritt	2,104	1.18	4,029	1.26	5.40%	19.29	28,473	3.85	5,551	1.75	-8.00	19.33	Medium
MacArthur	3,685	3.57	5,673	2.07	3.40%	12.14	40,221	5.67	5,213	1.65	-4.00	21.10	High
Montgomery	2,456	1.71	31,802	15.00	0.50%	1.79	87,051	12.93	26,117	8.26	-6.00	33.89	High
North Berkeley	2,549	1.85	3,252	0.87	6.50%	23.21	39,272	5.53	3,360	1.06	0.00	32.53	High
North Concord/Martinez	1,319	0.00	1,486	0.00	0.50%	1.79	6,939	0.52	128	0.04	-18.00	-15.66	Low
Orinda	2,015	1.05	2,458	0.48	1.90%	6.79	3,582	0.00	15	0.00	-14.00	-5.68	Low
Pittsburg/Bay Point	3,543	3.35	3,722	1.11	0.60%	2.14	6,965	0.52	217	0.06	-14.00	-6.81	Low
Pleasant Hill	5,420	6.18	6,291	2.38	1.20%	4.29	17,097	2.09	404	0.12	-8.00	7.06	Medium
Powell	3,944	3.96	22,228	10.26	0.00%	0.00	100,436	15.00	31,609	10.00	-6.00	33.22	High
Richmond	3,802	3.74	5,030	1.75	1.60%	5.71	31,138	4.27	2,541	0.80	-6.00	10.28	Medium
Rockridge	3,052	2.61	3,884	1.19	3.20%	11.43	31,720	4.36	2,500	0.79	-6.00	14.37	Medium
San Leandro	3,177	2.80	4,309	1.40	1.60%	5.71	25,225	3.35	1,462	0.46	-6.00	7.72	Medium
South Hayward	2,116	1.20	2,693	0.60	1.30%	4.64	15,249	1.81	386	0.12	-10.00	-1.63	Low
Union City	2,409	1.64	3,433	0.96	2.10%	7.50	17,473	2.15	268	0.08	-6.00	6.34	Medium
Walnut Creek	3,321	3.02	4,856	1.67	1.40%	5.00	14,533	1.70	532	0.16	-6.00	5.54	Medium
West Oakland	3,116	2.71	3,698	1.09	0.70%	2.50	13,929	1.60	2,416	0.76	-6.00	2.66	Low

Table A-11: Bicycle Access Growth Potential Worksheet - Page 2 of 3 - Assumptions

(1)	Home-Based Ridership	Maximum of 10 points given to station based upon home-based weekday passenger entries. Source of data: BART Station Profile Study, August 1999.
(2)	Ridership Rate	Maximum of 15 points given to station based upon total weekday passenger entries. Source of data: BART Station Profile Study, August 1999.
(3)	Bicycle Mode Share in AM Peak	Maximum of 30 points given to station based upon percent bicycle mode share during AM peak period. Source of data: BART Station Access Evaluation System, 2002
(4)	2000 Population within 1 Mile of Station	Maximum of 15 points given to station based upon Year 2000 population within 1 mile of station. Source of data: BART Station Access Evaluation System, 2002.
(5)	Households with No Car within 1 Mile of Station	Maximum of 10 points given to station based upon number of households with no car available within 1 mile of station. Source of data: BART Station Access Evaluation System, 2002.
(6)	Topography/Traffic/Barrier Factor	Maximum of (-)20 points given to station based upon factors affecting bicycle travel such as surrounding topography, traffic on roadways leading to station, and impediments to bicycle travel including railroad tracks and freeway entry/exit ramps. Refer to topography worksheet for breakdown of rating. Based upon field
(7)	Bicycle Access Growth Factor	Total of points. High rating for stations with total >= 20 points; Medium rating for stations with total <20 points and >= 5 points; Low rating for stations with total > 5 points

Notes:

1. Projected population growth in station area (e.g. as a result of transit village development) is a possible future category as data become available
2. Future versions of this table may include population and household numbers for 3 mile radius of station, rather than the currently used 1 mile radius
3. Population and Household data from BART Station Access Evaluation System is based upon 1990 census. This data will be replaced with Year 2000 census data when available.

Table A-11: Bicycle Access Growth Potential Worksheet - Page 3 of 3 - Topography/Traffic/Barriers Rating Calculations

<i>Station</i>	<i>Hills leading to station</i>	<i>Hills in Vicinity of Station</i>	<i>4-6 lane Arterials with Heavy Traffic/High Speeds Leading to Station</i>	<i>Railroad Tracks in Vicinity of Station</i>	<i>Freeway Entrance/Exit in Vicinity of Station</i>	<i>Proximity to Regional Trail</i>	<i>Topography/Traffic/Barriers Rating</i>
12th Street	No	No	No	No	No	No	-4
16th Street	No	No	No	No	No	No	-4
19th Street	No	No	No	No	No	No	-4
24th Street	No	Yes	No	No	No	No	-6
Ashby	No	No	No	No	No	No	-4
Balboa Park	Yes	Yes	Yes	Yes	Yes	No	-20
Bay Fair	No	Yes	Yes	Yes	No	No	-12
Castro Valley	No	Yes	No	No	Yes	No	-10
Civic Center	No	No	No	Yes	No	No	-6
Coliseum/Oakland Airport	No	No	Yes	Yes	Yes	No	-14
Colma	No	No	Yes	No	Yes	No	-12
Concord	No	No	No	No	No	No	-4
Daly City	Yes	Yes	Yes	No	Yes	No	-18
Downtown Berkeley	No	Yes	No	No	No	No	-6
Dublin/Pleasanton	No	No	Yes	No	Yes	Yes	-8
El Cerrito Del Norte	No	No	Yes	No	Yes	Yes	-8
El Cerrito Plaza	No	Yes	No	No	No	Yes	-2
Embarcadero	No	No	No	Yes	No	No	-6
Fremont	No	No	Yes	No	No	No	-8
Fruitvale	No	Yes	No	Yes	No	No	-8
Glen Park	Yes	Yes	Yes	Yes	Yes	No	-20
Hayward	No	No	Yes	Yes	No	No	-10
Lafayette	No	Yes	No	No	No	No	-6
Lake Merritt	No	No	No	No	Yes	No	-8
MacArthur	No	No	No	No	No	No	-4
Montgomery	No	No	No	Yes	No	No	-6
North Berkeley	No	No	No	No	No	Yes	0
North Concord/Martinez	Yes	Yes	Yes	No	Yes	No	-18
Orinda	Yes	Yes	No	No	Yes	No	-14
Pittsburg/Bay Point	Yes	Yes	Yes	No	Yes	Yes	-14
Pleasant Hill	No	No	Yes	No	Yes	Yes	-8
Powell	No	No	No	Yes	No	No	-6
Richmond	No	No	No	Yes	No	No	-6
Rockridge	No	Yes	No	No	No	No	-6
San Leandro	No	No	No	Yes	No	No	-6
South Hayward	No	No	Yes	Yes	No	No	-10
Union City	No	No	No	Yes	No	No	-6
Walnut Creek	No	Yes	No	No	No	No	-6
West Oakland	No	No	No	Yes	No	No	-6

Yes = -4 points; No = 0 points

Yes = -2 points; No = 0 points

Yes = -4 points; No = 0 points

Yes = -2 points; No = 0 points

Yes = -4 points; No = 0 points

Yes = 0 points; No = -4 points

Table A-12: Worksheet for Stairchannel Priority Ranking

<i>Station</i>	<i>Transfer Station (1)</i>	<i>2-Level Station (2)</i>	<i>Stations with Bicycle Parking Above or Below Street Level (3)</i>	<i>Bicycle Ridership Rating (4)</i>	<i>Total Value</i>	<i>Ranking (5)</i>
12th Street	Yes	Yes	No	1.90	11.90	High
16th Street	No	Yes	Yes	6.93	16.93	Immediate
19th Street	Yes	Yes	No	3.00	13.00	High
24th Street	No	Yes	No	3.82	8.82	Medium
Ashby	No	No	No	9.26	9.26	Medium
Balboa Park	No	Yes	No	3.67	8.67	Medium
Bay Fair	Yes	No	No	3.26	8.26	Medium
Castro Valley	No	No	No	0.75	0.75	Low
Civic Center	No	Yes	No	6.70	11.70	High
Coliseum/Oakland Airport	No	No	No	2.47	2.47	Low
Colma	No	No	No	0.00	0.00	Low
Concord	No	No	No	3.87	3.87	Low
Daly City	No	No	No	0.00	0.00	Low
Downtown Berkeley	No	Yes	Yes	8.90	18.90	Immediate
Dublin/Pleasanton	No	No	No	3.00	3.00	Low
El Cerrito Del Norte	No	No	No	3.03	3.03	Low
El Cerrito Plaza	No	No	No	6.84	6.84	Medium
Embarcadero	Yes	Yes	Yes	6.91	21.91	Immediate
Fremont	No	No	No	3.02	3.02	Low
Fruitvale	No	No	No	10.00	10.00	High
Glen Park	No	No	No	5.28	5.28	Medium
Hayward	No	No	No	3.83	3.83	Low
Lafayette	No	No	No	2.29	2.29	Low
Lake Merritt	Yes	Yes	No	5.05	15.05	High
MacArthur	Yes	No	No	7.08	12.08	High
Montgomery	No	Yes	No	2.36	7.36	Medium
North Berkeley	No	No	No	6.12	6.12	Medium
North Concord/Martinez	No	No	No	0.63	0.63	Low
Orinda	No	No	No	1.93	1.93	Low
Pittsburg/Bay Point	No	Yes	No	1.70	6.70	Medium
Pleasant Hill	No	No	No	5.20	5.20	Medium
Powell	No	Yes	No	5.68	10.68	High
Richmond	No	Yes	Yes	5.48	15.48	High
Rockridge	No	Yes	No	4.40	9.40	Medium
San Leandro	No	No	No	3.05	3.05	Low
South Hayward	No	No	No	2.03	2.03	Low
Union City	No	No	No	2.31	2.31	Low
Walnut Creek	No	No	No	3.19	3.19	Low
West Oakland	No	No	No	1.50	1.50	Low

(1) BART Station Access Evaluation System - Yes = 5 points; No = 0 points

(2) Referring to a station where fare gates are above or below street level - Yes = 5 points; No = 0 points

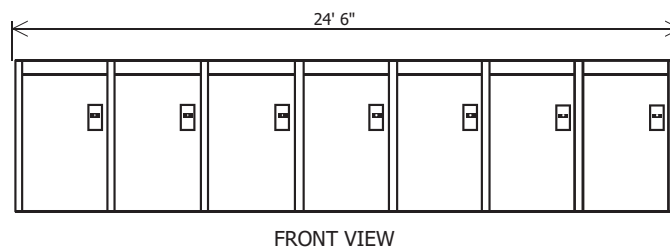
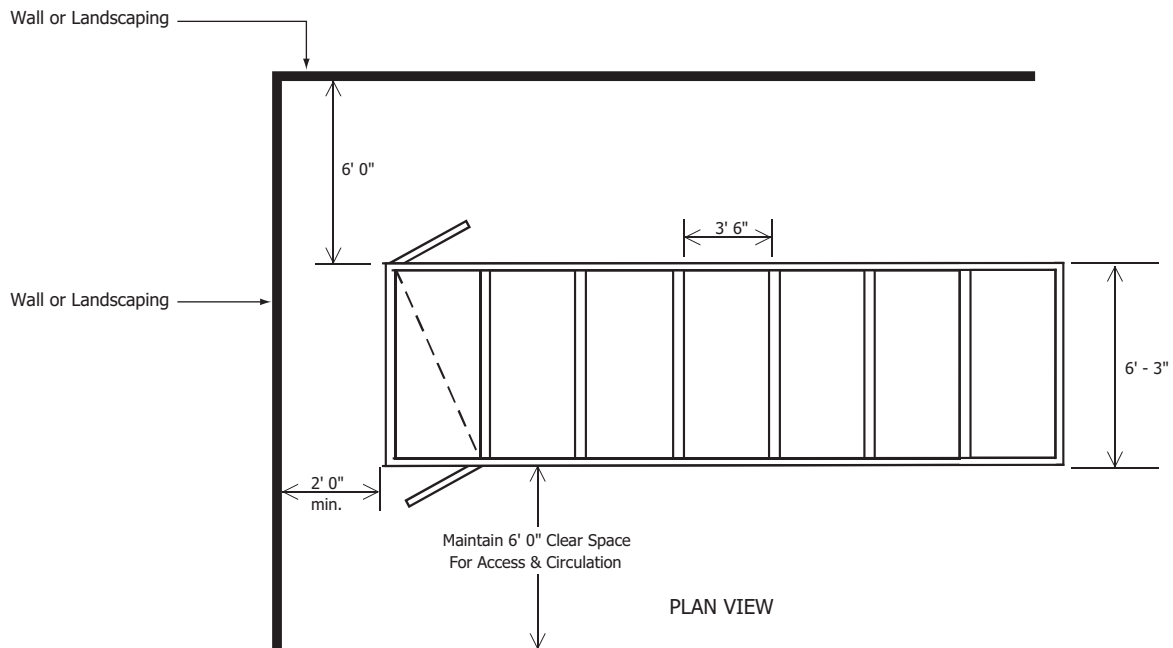
(3) Referring to a station where bicycle parking is above or below street level - Yes = 5 points; No = 0 points

(4) $((\text{Station Bicycle Ridership} - \text{Lowest System Bicycle Ridership}) / (\text{Highest System Bicycle Ridership} - \text{Lowest System Bicycle Ridership})) * 10$

(5) Immediate ≥ 16 ; High ≥ 10 ; Medium ≥ 5 ; Low < 5

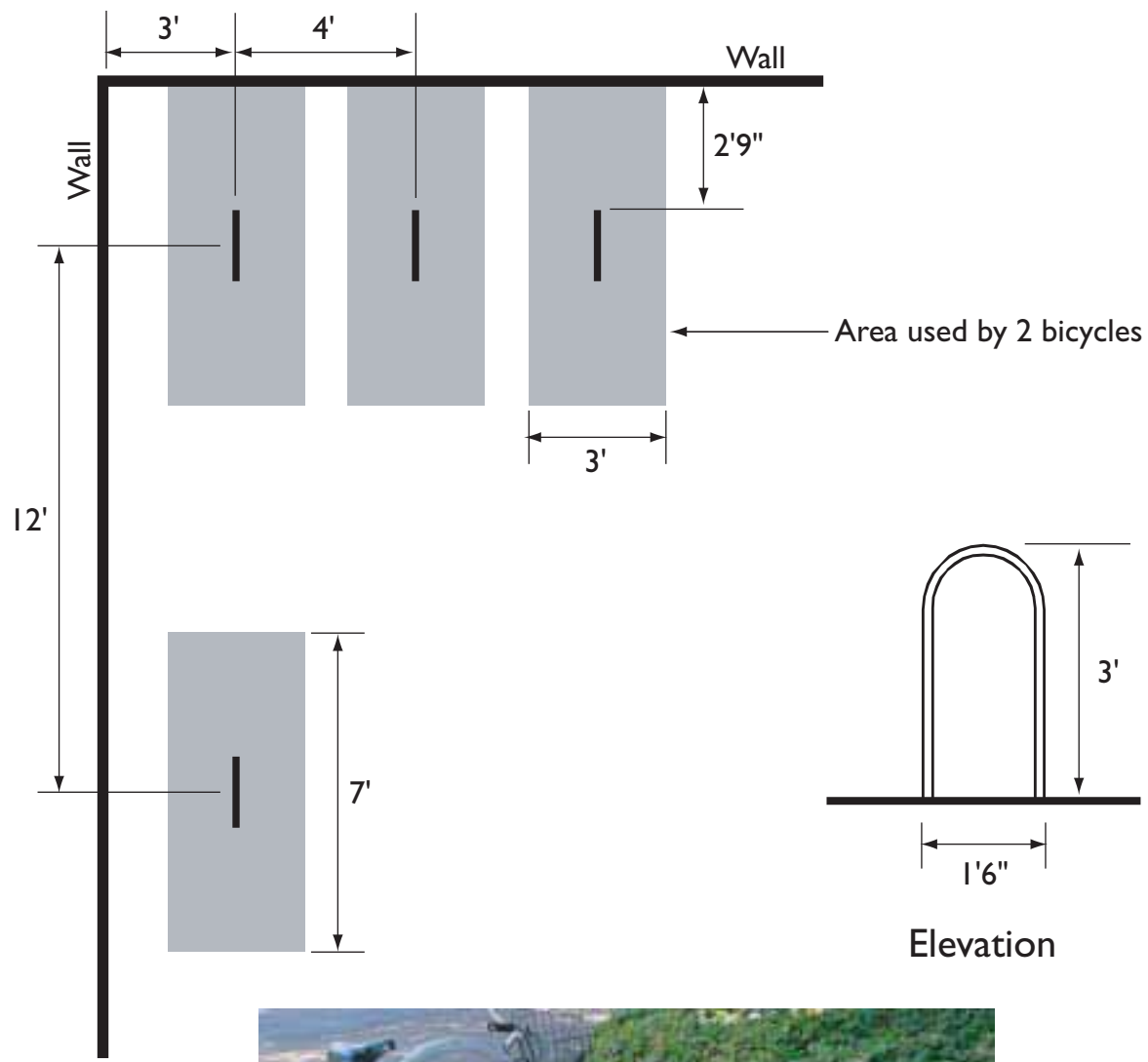
NOTE: Future refinements of this table may include ranking by actual numbers of steps and/or distance from fare gates to elevators

APPENDIX B



Note: For Reference Only - not a BART Standard

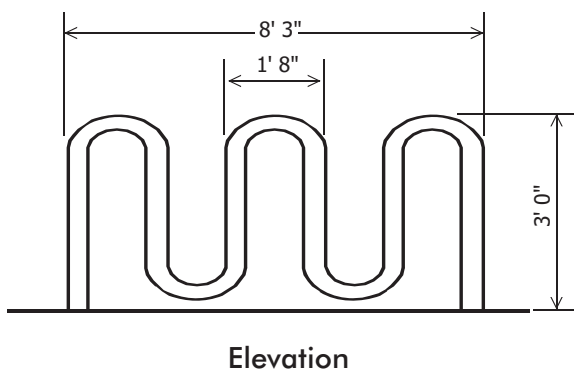
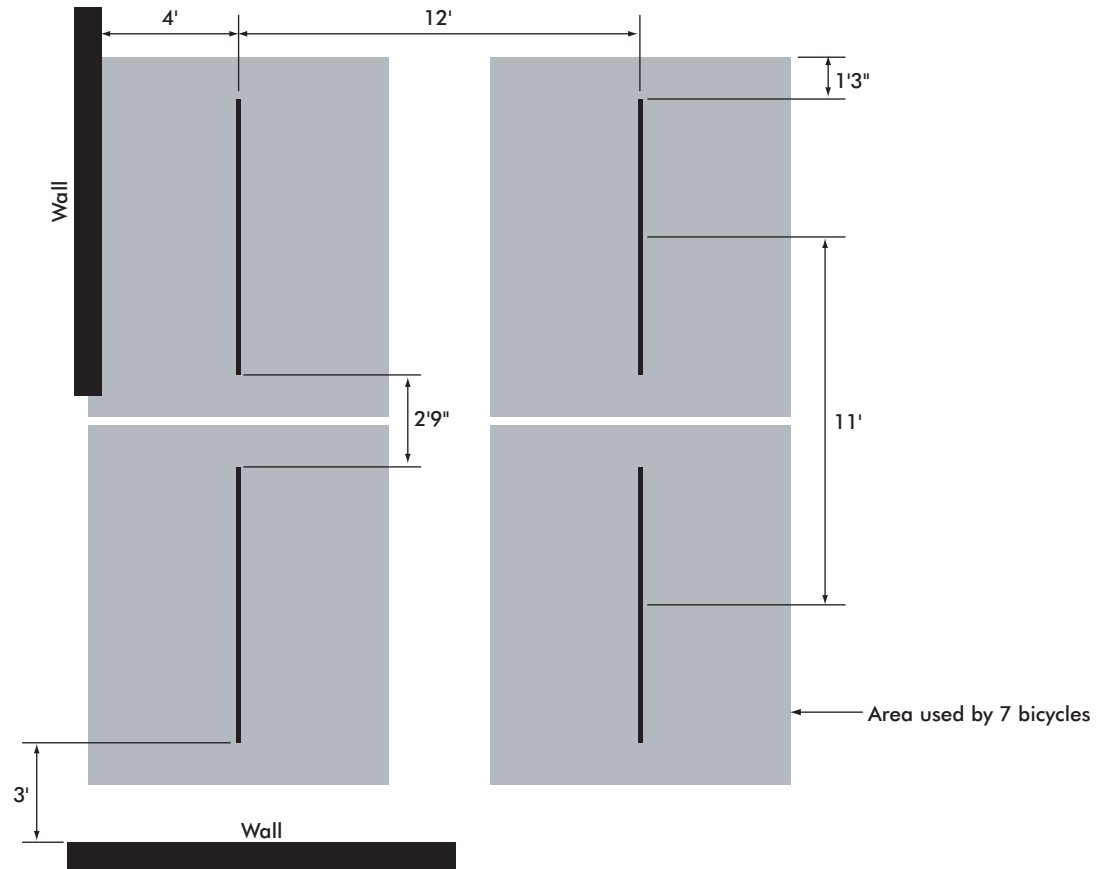
Figure B-1
PLACEMENT CRITERIA FOR BICYCLE LOCKERS



NOT TO SCALE

Note: For Reference Only - not a BART Standard

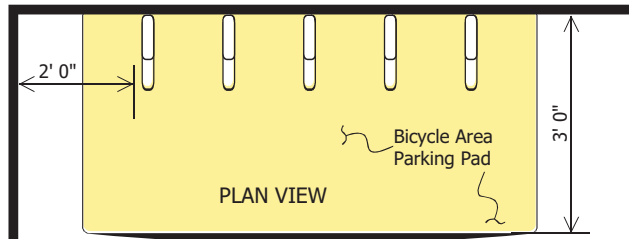
Figure B-2
PLACEMENT CRITERIA FOR INVERTED U-RACKS
BART BICYCLE ACCESS AND PARKING PLAN - VOLUME I



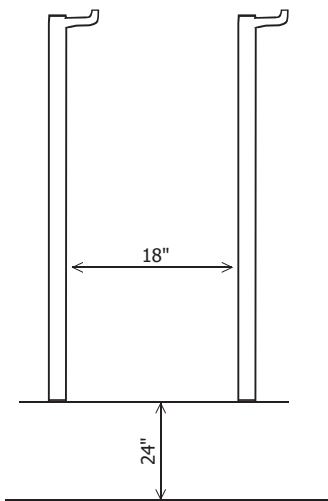
Note: For Reference Only - not a BART Standard

Figure B-3
PLACEMENT CRITERIA FOR WAVE RACKS

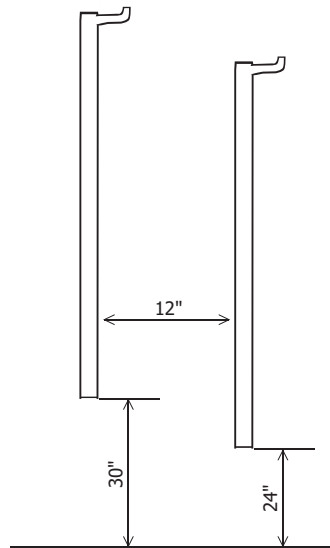
NOTE: Drawing is not to scale.



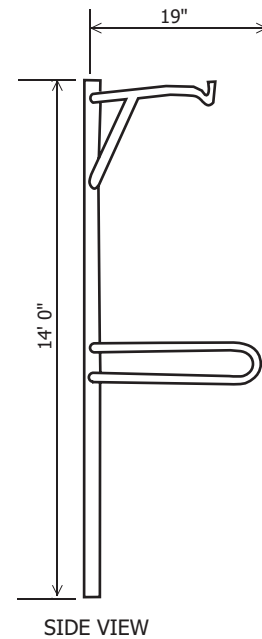
Maintain 3'0" Clear Space For Access & Circulation



ALIGNED INSTALLATION VIEW



STAGGERED INSTALLATION VIEW



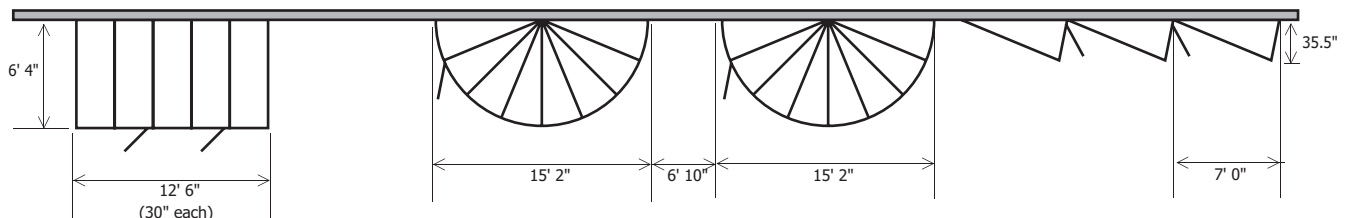
SIDE VIEW

NOTE:
Drawing is not to scale. Dimensions of rack itself are for reference only.

NOTE:
Drawing is not to scale. Dimensions of rack itself reflect full side view, and are for reference only.

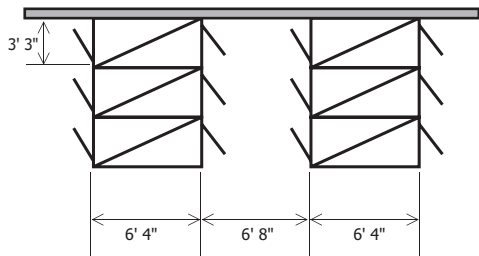
Note: For Reference Only - not a BART Standard

Figure B-4
PLACEMENT CRITERIA FOR SPACE-EFFICIENT WALL RACKS
BART BICYCLE ACCESS AND PARKING PLAN - VOLUME I

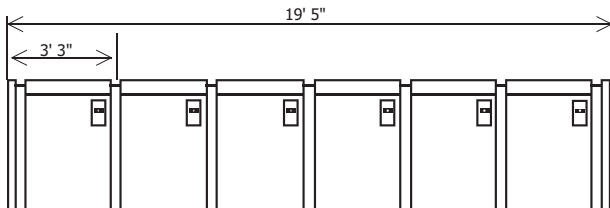
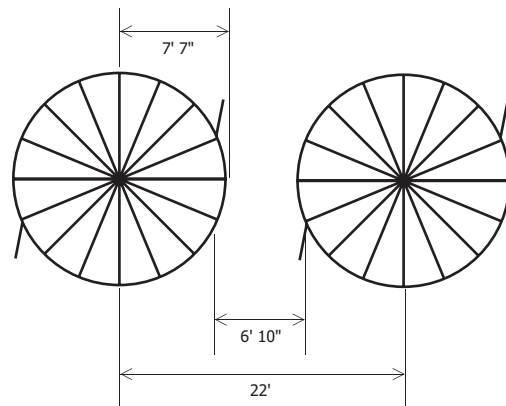


PLAN VIEW - Single Capacity

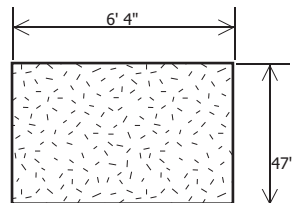
PLAN VIEWS - Single Capacity - Wedge Shaped



PLAN VIEW - Double Capacity



PROFILE VIEW



SIDE VIEW

Note: For Reference Only - not a BART Standard
SOURCE: Creative Pipe, Inc.

Figure B-5
PLACEMENT CRITERIA FOR E-LOCKERS



Bike Up Rack



Maximin Rack



MaximinX Rack

Products of Bike-Up Bicycle Parking Systems
Ontario Canada



VertiRack II



Closeup of Locking Capability

Product of the Palmer Group
San Francisco, CA

Note: For Reference Only - not a BART Standard

Figure B-6a
SAMPLES OF SPACE-EFFICIENT BICYCLE RACKS-PAGE 1 OF 2
BART BICYCLE ACCESS AND PARKING PLAN - VOLUME I



VeloMAX Rack



Stacking Rack
Product of Post Le Mond
Santa Cruz, CA

Products of Velo:Parc!
Glasgow, Scotland



Velo-S Rack



Staggered Rack
Amsterdam



WH 1



WR 1

Wall Hook Vertical Wall Rack

Wall Ramp Vertical Wall Rack

Products of Creative Pipe
Rancho Mirage, CA

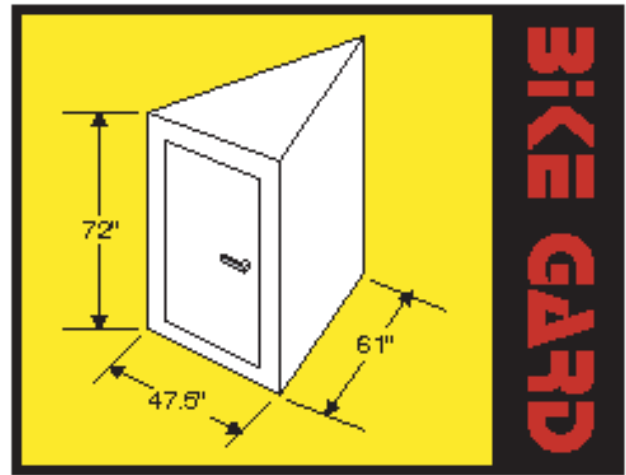
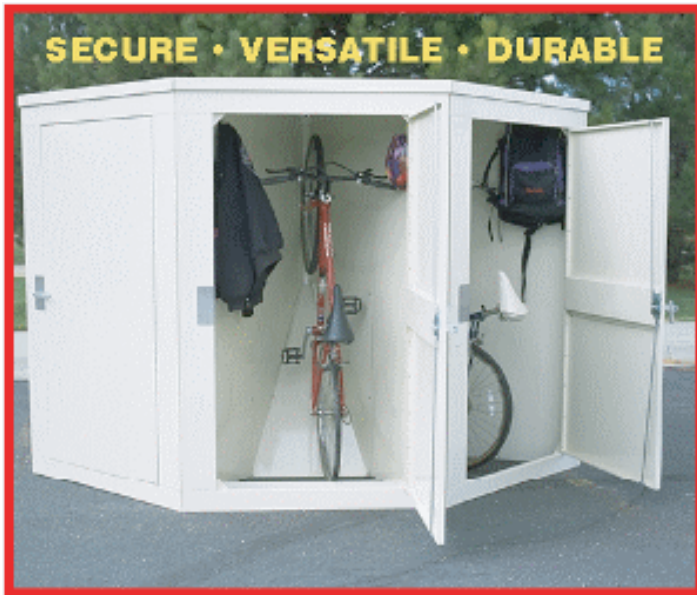


Wall Mount Rack
Bainbridge Island, WA

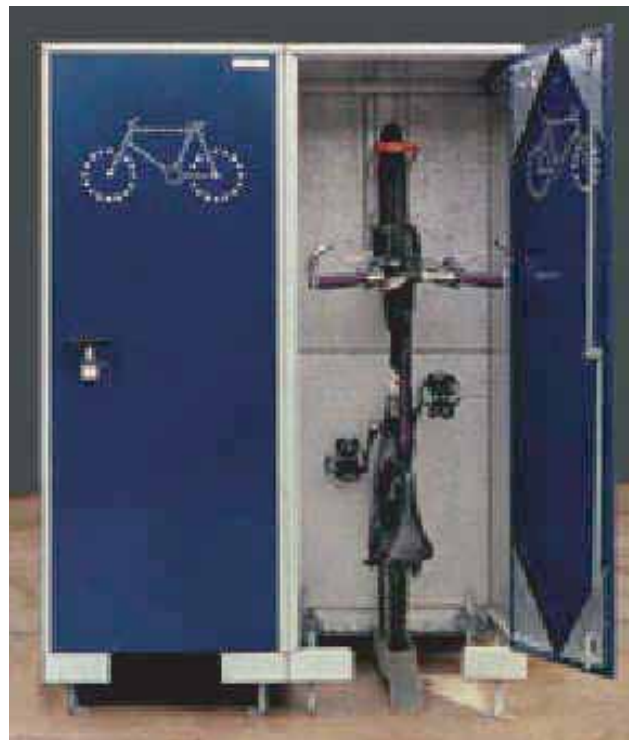
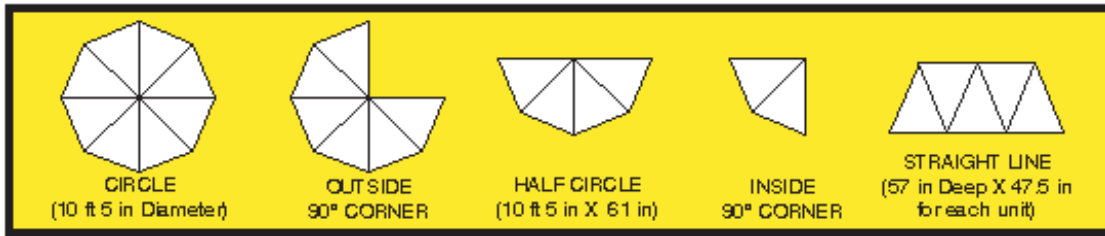
Note: For Reference Only - not a BART Standard

Figure B-6b

SAMPLES OF SPACE-EFFICIENT BICYCLE RACKS-PAGE 2 OF 2



Product of Bike Gard, Inc
Rexburg, ID



BikeAway Locker
Product of Cycle-Works, Ltd.
Hampshire, UK

Note: For Reference Only - not a BART Standard

Figure B-7a
SAMPLES OF SPACE-EFFICIENT LOCKERS-PAGE 1 OF 2
BART BICYCLE ACCESS AND PARKING PLAN -VOLUME I



Isos Cycle Locker
Product of Velo:Parc!
Glasgow, Scotland



The Bicycle Locker
Product of Insight International Corp, Ltd
Sussex, UK

eLocker Bicycle Storage Locker
Product of Creative Pipe, Inc
Rancho Mirage, CA



Note: For Reference Only - not a BART Standard

Figure B-7b
SAMPLES OF SPACE-EFFICIENT LOCKERS-PAGE 2 OF 2

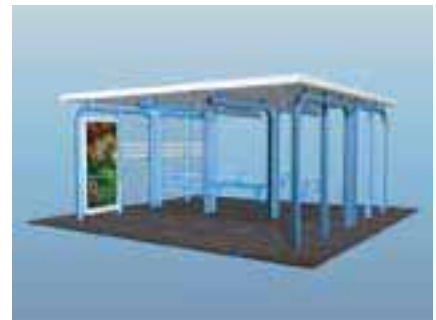


Bike Tree
Product of Bike Tree S.A.
Geneva, Switzerland



**Automated Bicycle
Parking Garage**

Products of Josta
Munster, Germany



Covered Racks with Bus Shelter



Covered Racks

Note: For Reference Only - not a BART Standard

Figure B-8
MISCELLANEOUS PARKING ALTERNATIVES
BART BICYCLE ACCESS AND PARKING PLAN - VOLUME I

This Page Intentionally Left Blank

APPENDIX C

**Table C-1
Cost and Placement Dimensions of Various Bike Parking Racks/Lockers**

Type of Bike Rack	Manufacturer	Dimensions (LxWxH) inches [Number of bikes per unit]	Placement Dimensions/1/			Cost/2/		Surface Area (sq. ft) per Bike/5/	Class of Bike Parking
			Distance btw. CL of adjacent racks (or bikes)	Distance from wall/3/		Cost of typical unit/4/	Cost per bike		
				perpendicular	parallel				
Class 1									
Bike Lockers	Cycle-Safe 616-538-0079	77x 38 x 50 [2]	3'2"	6 feet	2 feet	\$1800	\$900	22	I
	e-Locker pap@creativepipe.com sga@stevengrover.com	76 x 39 x 47 [2]	3'3"	6 feet	2 feet	tbd	tbd	22	I
Bike Lid	Plastron Products 206-455-9014	78 x 30 x 36 [1]	4'6"	2 feet	2 feet	\$640	\$640	N/A	II-hybrid /6/
Bike Bank Plus model 8001	Graber 800-783-RAKS	27 x 54 x 32.5 [2]	5'8"	28"	15"	\$700	\$350	N/A	II-hybrid /6/
The Bike Tree	The Bike Tree S.A.	12 ft dia. canopy, 16 ft high, 3.5 ft dia. Trunk [12-15]	N/A	N/A	N/A	N/A	N/A	9.5	I
Class 2									
Inverted U's	Cycle-Safe 616-538-0079	24 x 2 x 36 [2]*	24"-36" (12"-18")	24"-30"	24"	\$72-\$125	\$36-\$63	13.5-17.6	II
	BART's Specs	18 x 2 x 36 [2]	48" (24")	2'9"	36"			21.6	II
Crank Case	Palmer Group 415- 985-7128	12 x 10 x 18 [1]	36"	36"	8"	\$200	\$200	32	II/7/
Bike Rib Series II (modified wave)	Function First (602- 322-9626)	76 x 2 x 32 [8]*	(12")	24"-30"	24"	\$320	\$40	12.6	II
Bike Stall Model E (coat hanger racks)	Urban Access. (206-486-9243)	120 x 30 x 34 [12]*	(10"-12")	7 feet from center of rack	12"	\$670	\$56	16	II

	Graber - model 6807	72 x 2.5 x 34 [9]*	(12")	30"-36"	24"	\$390	\$43	N/A	II
Wave or Ribbon Rack	Palmer Group	92 x 2.5 x 33 [9]*	(16")	30"-36"	24"	\$545	\$60	N/A	II
	BART's Specs	99 x 2.5 x 36 [7]	(20")	48"	36"			19	II
Space Efficient Rack (Vertical wall mounted)	Various	14 x 2 x 19	18"	N/A	24"	N/A	N/A	11.4	II
<p>* These rack designs come in a variety of sizes. The figures in this table are based on racks with the indicated capacity.</p> <p>/1/ These dimensions are provided to insure proper installation of the various types of bike racks and lockers for maximum capacity and convenience to the user. The dimensions are not presented for comparison purposes between the racks. The average area required per bicycle has been calculated and is presented in a separate column and this number should be used for comparison purposes if desired.</p> <p>/2/ Not including installation (or assembly if necessary).</p> <p>/3/ From edge of unit closest to wall unless otherwise noted.</p> <p>/4/ Unit cost typically decreases as number of units per order increases. For example, see price range of Inverted U's.</p> <p>/5/ Assuming cluster of 8 to 12 bikes; includes required 3 foot clear space for access to bikes. For lockers, assumes two five-locker pods with 6 foot clearance between and at ends for access.</p> <p>/6/ Hybrid - these racks exhibit some of the qualities of Class I bike parking.</p> <p>/7/ This rack can secure both wheels and the frame with only a user-supplied padlock or U-Lock.</p>									

bikemck.tab

This Page Intentionally Left Blank

APPENDIX D

Table D-1: Complete List of Recommendations from Chapter 3

Recommendations - Local Access to Station

- A-1. Work with local jurisdictions to provide direct, safe and well-marked routes to/from the BART station. Ensure that these routes have bicycle lanes, if possible, or wide curb lanes at a minimum, and that all actuated traffic signals near the BART station can be activated by bicycles.
- A-2. Encourage local jurisdictions to give streets leading to BART station top priority for bicycle facilities.
- A-3. Encourage local jurisdictions to maintain streets leading to BART in good condition including good quality pavement, bicycle-safe drainage grates and upgraded railroad track crossings.
- A-4. Develop a "Bicycle to BART" signage program.
- A-5. Encourage local jurisdictions to provide signage to the BART station from adjoining streets and bikeways.
- A-6. All bicycle-related signs should be integrated with signage for other modes, as feasible, and should not interfere with pedestrian, ADA or vehicle circulation.
- A-7. Provide area maps in the station locating surrounding streets, popular destinations and existing bikeways.

Recommendations - Access to Bicycle Parking and Fare Gates

- A-8. Work with local jurisdictions to insure that actuated traffic signals at vehicle entrances to the BART station are bicycle-sensitive for all movements leading into and exiting the station and the location of bicycle-sensitive loop detectors are identified with bicycle loop detector pavement markings.
- A-9. Provide bicycle/pedestrian entrances, with minimum widths of eight (8) feet, into BART property at each intersection adjacent to BART property.
- A-10. Provide mid block bicycle/pedestrian entrances where appropriate.
- A-11. Provide safe, direct and well-marked bicycle routes through station property from station property entrances to bicycle parking and fare gates minimizing conflicts between bicyclists, pedestrians, automobiles and buses. Sidewalks shall be used as bicycle routes only when they have been designed to safely accommodate the expected volumes of bicycle and pedestrian traffic.

Recommendations - Access to Stations Platforms

- A-12. Install accessible fare gates with new gate installations and when existing fare gate arrays are upgraded.
- A-13. Keep elevators functioning and clearly marked.
- A-14. Elevators added to new stations or upgraded at existing stations should accommodate several bicycles and preferably have opposing doors for entry and exit.

- A-15. Where platform elevators are not located near the fare gates, ticket validation equipment should be provided at the elevator.
- A-16. At each station, provide well-designed stairchannels on at least one set of stairs leading from the fare gates to each platform and, if necessary, from the street to the fare gates. Give priority to stations with high bicycle use, 2-level stations, transfer stations, or stations with bicycle parking below or above street level per Stairchannel Priority rating on Table A-10 of Appendix A.
- A-17. Install signage at the top and bottom of each stairway and escalator directing cyclists to stairways with stairchannels.
- A-18. Include stairchannel locations and directions for their use on bicycle promotional materials.

Recommendations – Bicycle Parking

- B-1. Provide adequate Class 1 parking to meet existing demand plus an additional 10% for future growth. Prioritize improvements with the application of the High Parking Improvements Priority and/or Bicycle Access Growth Potential per Table A-10 of Appendix A.
- B-2. Provide adequate Class 2 parking to meet existing demand plus an additional 30% to accommodate seasonal fluctuations and future growth. Prioritize improvements with the application of the High Parking Improvements Priority and/or Bicycle Access Growth Potential per Table A-10 of Appendix A.
- B-3. Reevaluate parking supply annually and provide additional parking as needed.
- B-4. Develop a toolbox of bike parking facility types that are approved for use in the BART system. Include location and installation standards for each type.
- B-5. Evaluate location of racks where they are underutilized to determine if changes to rack location, installation of security cameras, additional lighting and/or protective coverings are needed. Make appropriate changes.
- B-6. Provide bicycle parking at stations which currently have no bicycle parking following recommended placement criteria and location guidelines. Prioritize improvements with the application of the High Parking Improvements Priority and/or Bicycle Access Growth Potential per Table A-10 of Appendix A.
- B-7. Develop demonstration project(s) for shared-use lockers. Focus on stations with very high locker usage per Table A-10 of Appendix A.
- B-8. Develop demonstrations project(s) for the most promising new types of bicycle parking, i.e. vertical lockers and racks, Bike Tree, bike enclosure, staggered racks and stacked racks.
- B-9. Develop demonstration project(s) for installation of equipment lockers. Focus on stations with high use of bicycle racks per Table A-10 of Appendix A.
- B-10. Continue and expand demonstration project for bicycle racks in the paid area.
- B-11. Evaluate bicycle parking at stations with high theft rates to determine if changes in parking type, facility location, installation of security cameras, and/or additional lighting could improve security.
- B-12. Consider including Bikestations as part of future transit village redevelopment projects on BART property especially when demand for Class 1 parking exceeds 100 spaces.

- B-13. Investigate the feasibility of providing multi-day, long-term bicycle parking for customers using BART to access Oakland and San Francisco International Airports.
- B-14. Develop and implement a maintenance program to regularly clean and maintain bicycle lockers and rack areas, including the removal of abandoned bicycles.

Recommendations – Future Station Projects and Transit Villages

- C-1. Design all projects that affect the station and surrounding areas in compliance with the criteria and recommendations included in this Plan using the Checklist for Evaluation found in Appendix F.
- C-2. Provide safe and direct bicycle access through the transit village to the BART station. Wherever possible, separate bicycle routes from those for pedestrians and motor vehicles.
- C-3. Provide bicycle access through all areas of the transit village. Avoid the designation of pedestrian-only zones which exclude bicycles.
- C-4. Design parking garages to avoid major conflicts with bicycle and pedestrian traffic at structure entrances and exits. Where bicycle routes must cross garage entrances/exits, provide additional traffic control or calming devices to alert motorists to the bicycle crossings.
- C-5. Explore opportunities for the incorporation of a Bikestation or other secure bicycle parking into transit village development.
- C-6. During periods of construction, maintain direct and safe access routes from adjoining communities to the BART station. Provide well-marked detours when normal access routes are closed.
- C-7. During periods of construction, maintain adequate parking supply to meet current demand. Insure that all temporary construction bicycle parking conforms to recommended placement criteria. Develop temporary parking guidelines and requirements to be placed in contract specifications.

Recommendations – Promotion

- D-1. Media Campaigns —Develop a media campaign using television and radio public service announcements and advertising in BART stations and on trains.
- D-2. Internet —Use the BART website (www.bart.gov) and the San Francisco Bay Area Transit Information website supported by the Metropolitan Transportation Commission (www.transitinfo.org) to promote bicycling to BART.
- D-3. Bicycle Hot Line —Use the existing BART phone center to provide a telephone Hot Line for reporting damaged or unavailable bicycle parking, missing bike route signs, abandoned/vandalized bicycles locked to racks, stolen bicycles and other bicycle-related hazards on BART property.
- D-4. "Bicycle to Your BART Station" Day - Sponsor a program to target a specific station for encouraging customers to bicycle to BART. Provide secure attendant parking for that day. This could be a roving program traveling between stations perhaps on a monthly basis. A multiple day or weeklong program may be necessary, at first, to attract the attention of BART customers. The program could also include weekend bicycle rides, co-sponsored with local bicycle groups, which would familiarize people with taking their bikes on BART, while also identifying the recreational areas that are accessible by BART.

- D-5. Informational Brochures - Publish a "BART & Bicycles" brochure, similar to the "BART & Buses" brochure, with information on BART bicycle rules, etiquette when bringing bicycles on trains, location of safe and secure bicycle parking at BART, and the location of bikeways leading to the station. Include general information about bicycles, other needed equipment for bicycle commuting, secure bicycle locking techniques and the "Bicycle Buddies" program sponsored by RIDES to match new bicycle commuters with experienced commuters who are willing to assist and escort them during their first bicycle commutes.
- D-6. Advertisements on Bicycle Parking - Use bicycle racks and lockers to advertise the "BART & Bicycles" program and provide information on how to sign up for lockers, use the bicycle racks and how to get more information on bicycle commuting.

Recommendations - Incentives

- D-7. Parking —Adequate, secure and protected long-term bicycle parking must be provided. Recommendations for suitable bicycle parking at BART stations have been discussed earlier in the previous section.
- D-8. Cash Incentives —Provide free BART tickets for customers who bicycle. This may be done in conjunction with "Bicycle to Your BART Station" Day. Institute a parking cash-out program whereby the BART customer receives reimbursements in the form of free BART rides for bicycling a certain number of days a month. Registration in this program could also make participants eligible for monthly drawings for prizes or discount coupons or credit at bike stores, restaurants or other retail businesses.
- D-9. Convenience Incentives —One of the major obstacles to bicycle commuting is the perceived inconvenience factor. "What do I do with my cycling clothing and helmet?" "How can I take a shower after my ride?" And "how do I handle a flat tire?" These concerns can be addressed by establishing programs that:
- Partner with nearby health clubs to provide bicycle parking, showers and clothing storage at their facility.
 - Provide small lockers at the BART station for storage of helmets and bicycle attachments for those parking in bicycle racks.
 - Partner with local bike shops for emergency on-call bicycle repair service or bicycle storage.

Recommendations - Support

- D-10. Support from the BART Board of Directors —Encourage Board members to speak publicly about the benefits of bicycling to BART. Ask for their participation in a program to greet bicyclists as they arrive at BART stations and distribute bicycle promotional items emblazoned with the BART logo such as t-shirts, seat covers or water bottles. Sponsor a ride for employees of local city governments and large employers with a BART Board member to demonstrate their support for bicycle commuting.
- D-11. Special Programs —Participate in regional and national events such as Bike to Work Day, Beat the Backup Day, Save the Air Days, Earth Day and Transit Week. Use this opportunity to promote bicycle commuting to BART.

- D-12. BART Employees - Incorporate education about bicycling issues into BART training for staff members who work directly with customers. Encourage BART employees to use a bicycle as part of their commute as a way to increase their understanding of bicycling issues and thereby improve customer service to bicyclists, especially by station agents and train operators.

Recommendations – Education

- D-13. Available Materials —Post local area maps in the stations locating bikeways and the nearest bicycle shops. Include a phone list of bicycle shops that can be contacted for emergency repairs. Provide local bicycle route maps, safety information, effective-cycling pamphlets, guidelines on how to securely lock bicycles, and flyers of upcoming bicycle events for customer use.
- D-14. Education Campaign - Develop a BART/bicycle commuter program to educate existing and potential bicycle commuters of the opportunities for bicycling to BART, bicycle parking available at BART, proper locking equipment and how to use it, rules for bicycles on BART and proper bicycling techniques. Target stations with High Bicycle Access Growth Potential.
- D-15. Enforcement —Once adequate bicycle parking and access routes have been installed, initiate a program to enforce restrictions on bicycles illegally parked to railings, fences and trees, and on bicycle riding in pedestrian-only zones.

APPENDIX E

Table E-1: TRANSPORTATION FUNDING SOURCES AND ELIGIBLE PROJECTS

Type Of Project	TDA Article 3	TFCA	Local County's TA ⁽³⁾ /Bicycle Fund			Bicycle Transportation Account	TEA-21 Enhancements	TEA 21 Transit Enhancements
			SF	AC	CCC			
Construction/Engineering capital project e.g. roadway widening, bike lanes, shoulder paving, restriping, bike bridge.	✓	✓		✓		✓	✓	
Bike paths, lanes and/or routes to provide reasonably direct access to activity centers	✓	✓		✓		✓	✓	
Hazard elimination or improvement e.g., substandard grates or culverts	✓			✓		✓		
Maintenance of non-motorized bikeways	✓ ⁽¹⁾			✓		✓		
Secure bicycle parking	✓ ⁽⁴⁾	✓		✓		✓	✓	✓ at transit stations
Facilitation of bicycle-transit trips	✓	✓		✓		✓		✓
Traffic control devices to improve bicycle travel				✓		✓	✓	
Adjustment of traffic-actuated signals to be bike-sensitive	✓	✓				✓	✓	
Development or update of a Bicycle Master Plan	✓ ⁽²⁾							
Bicycle Promotion Program		✓		✓				
Bicycle Safety Education Program	✓			✓			✓	

(1) Up to 5% of county's TDA Article 3 funds, 50% match required where county policy supports use of funds for this purpose.

(2) Limited to once every five years.

(3) TA=Transportation Authority managing half cent sales tax or Congestion Management Agency.

(4) At employment centers, park-and-ride lots, transit terminals, where other funds are unavailable (as of 1991).

APPENDIX F

Checklist for the Evaluation of Existing BART Stations, Future Station Projects and Transit Village Developments

Yes	No	
Local Access to Station		
<input type="checkbox"/>	<input type="checkbox"/>	There are direct, safe and well-marked routes to/from the BART station with bicycle lanes, if possible, or wide curb lanes at a minimum.
<input type="checkbox"/>	<input type="checkbox"/>	All actuated traffic signals near the BART station can be activated by bicycles.
<input type="checkbox"/>	<input type="checkbox"/>	Streets leading to BART are maintained in good condition including good quality pavement, bicycle-safe drainage grates and upgraded railroad track crossings.
<input type="checkbox"/>	<input type="checkbox"/>	Signage to the BART station from adjoining streets and bikeways is provided and is integrated with signage for other modes and ADA access, as feasible.
<input type="checkbox"/>	<input type="checkbox"/>	Area maps are available in the station locating surrounding streets, popular destinations and existing bikeways.
Access to Bicycle Parking and Fare Gates		
<input type="checkbox"/>	<input type="checkbox"/>	All actuated traffic signals at vehicle entrances to the BART station are bicycle-sensitive for all movements leading into and exiting the station and the location of bicycle-sensitive loop detectors are identified with bicycle loop detector pavement markings.
<input type="checkbox"/>	<input type="checkbox"/>	Separate bicycle/pedestrian entrances into BART property are located at each intersection adjacent to BART property.
<input type="checkbox"/>	<input type="checkbox"/>	Mid block, bicycle/pedestrian entrances are provided, where appropriate.
<input type="checkbox"/>	<input type="checkbox"/>	Safe, direct and well-marked bicycle routes are available through station/transit village property from entrances at local streets to bicycle parking areas and fare gates.
<input type="checkbox"/>	<input type="checkbox"/>	Bicycle routes through station/transit village property are separated from motor vehicles and pedestrians.
<input type="checkbox"/>	<input type="checkbox"/>	Bicycle access through station/transit village property is not restricted by pedestrian-only zones.
<input type="checkbox"/>	<input type="checkbox"/>	Entrances and exits to parking garages do not create conflicts with bicycle traffic.
<input type="checkbox"/>	<input type="checkbox"/>	During periods of construction, direct and safe access routes from adjoining communities to the BART station will be maintained. Well-marked detours will be provided when normal access routes are closed.
Access to Stations Platforms		
<input type="checkbox"/>	<input type="checkbox"/>	Accessible fare gates are available.
<input type="checkbox"/>	<input type="checkbox"/>	Elevators are functioning and their locations are clearly marked.
<input type="checkbox"/>	<input type="checkbox"/>	Elevators can accommodate several bicycles and have opposing doors for entry and exit.
<input type="checkbox"/>	<input type="checkbox"/>	Ticket validation equipment is provided at the elevator where platform elevators are not located near the fare gates.
<input type="checkbox"/>	<input type="checkbox"/>	Well-designed stairchannels are provided on at least one set of stairs leading from the fare gates to each platform and, if necessary, from the street to the fare gates.
<input type="checkbox"/>	<input type="checkbox"/>	Signage is installed at the top and bottom of each stairway and escalators directing cyclists to stairways with stairchannels.

**Checklist for the Evaluation of Existing BART Stations, Future Station Projects
and Transit Village Developments**

Yes	No	
Bicycle Parking		
<input type="checkbox"/>	<input type="checkbox"/>	Adequate Class 1 parking to meet existing demand plus an additional 10% for future growth is provided.
<input type="checkbox"/>	<input type="checkbox"/>	Lockers are placed in a well-lighted location visible to station agents and/or pedestrian traffic.
<input type="checkbox"/>	<input type="checkbox"/>	Lockers provide protection from weather for bicycles.
<input type="checkbox"/>	<input type="checkbox"/>	Adequate Class 2 parking is available to meet existing demand plus an additional 30% to accommodate seasonal fluctuations and future growth.
<input type="checkbox"/>	<input type="checkbox"/>	Landscaping, fences, or other obstructions do not obscure racks.
<input type="checkbox"/>	<input type="checkbox"/>	Racks are located within sight of the station agent, vendors, passing pedestrians or in a highly visible area with heavy foot traffic.
<input type="checkbox"/>	<input type="checkbox"/>	Bicycle racks are protected from the weather.
<input type="checkbox"/>	<input type="checkbox"/>	Ground surface of the bicycle parking area is an all-weather and drainable material such as asphalt or concrete.
<input type="checkbox"/>	<input type="checkbox"/>	Racks are located at a sufficient distance, or provided with a physical barrier, from motor vehicles to prevent damage to parked bicycles from motor vehicles.
<input type="checkbox"/>	<input type="checkbox"/>	Bicycle rack areas are well-lit.
<input type="checkbox"/>	<input type="checkbox"/>	Bicycle locker and rack areas are located outside the typical pedestrian and ADA access pathways with adequate room for bicyclists to maneuver outside the pedestrian pathway.
<input type="checkbox"/>	<input type="checkbox"/>	Security cameras are installed for bicycle locker and rack areas.
<input type="checkbox"/>	<input type="checkbox"/>	Bicycle locker and rack areas are clean and equipment is well-maintained and functioning. Abandoned bicycles are removed.
<input type="checkbox"/>	<input type="checkbox"/>	During periods of construction, adequate parking supply to meet current demand will be maintained at stations. All temporary construction bicycle parking will conform to recommended placement criteria.