LOS ANGELES COUNTYWIDE

Bicycle Policy

DOCUMENT

Metropolitan Transportation Authority

Korve Engineering

Adopted by

Los Angeles County
Metropolitan Transportation Authority

April 1994

Patti Helm, Project Manager

MTA
818 West Seventh Street
P.O. Box 194
Los Angeles, CA 90053

Prepared by

Korve Engineering

Cover art by Tim Clark

Table of Contents

I. Introduction

A. Purpose of Document

In recent years a multi-modal transportation policy and planning framework has been developed in Los Angeles County through the leadership of the Los Angeles County Metropolitan Transportation Authority (MTA) and other transportation agencies. The cornerstone of this multimodal policy is to provide reliable and effective alternatives to the single-occupant automobile for personal transportation. These alternatives include not only ride sharing, bus transit, and rail transit, but also transportation demand management, revised land use policies to minimize travel needs, and a greater emphasis on walking and bicycling.

There are currently about 175 miles of bike paths (excluding mountain bike trails) and 210 miles of bike lanes designated on MTA's Los Angeles County Bike Map. Although bicycle facilities are relatively sparse in Los Angeles County, recent statistics suggest that bicycle usage is significant and widespread. In the Los Angeles area, approximately 1% of all commute trips are made by bicycle, as compared to estimates ranging from 3% to 6.4% of commute trips made by bus.[1] Similarly, approximately 1% of all trips are made by bicycle[2] and 3.4% are made by bus.[3] When drive-alone commuters were asked in a recent survey what alternative travel modes they would consider using on a trial basis, 25% said they would consider cycling as compared to 18% who would consider taking the bus.[4]

These numbers indicate a substantial market of existing cyclists, and provide a context for evaluating the cost-effectiveness of bicycle facilities compared to other modes. They also hint at the potential that additional investment in new bicycle facilities may have in attracting new cyclists out of their cars. Other studies conducted by MTA indicate that bicycle-related Transportation Control Measures (TCMs) are among the most cost-effective measures that can be implemented, resulting in savings compared with drive-alone automobile transport. They are also among the easiest and fastest to implement.

The potential for bicycling to play a significant role in transportation has received significant attention, not only in Southern California, but across the country. Numerous cities in California and other states have developed very effective city-wide bicycle plans and networks making bicycling an integral part of the transportation philosophy of those communities. Cities in Los Angeles County are increasingly incorporating bicycle planning

[1]Commuter Transportation Services, State of the Commute, 1993, Reg. XV Database, and MTA's Travel Forecast Model, 1990.

[2]Nationwide Personal Transportation Study, (NPTS). Data covers the SCAG region.

[3]Reg. XV Database and MTA Travel Forecast Model, 1990.

[4]Commuter Transportation Services, State of the Commute, 1993.

into their overall transportation planning. Funding opportunities also exist at the County and State levels for bicycle facilities and programs. In Los Angeles County, MTA is the agency responsible for disbursement of many of those funds.

This policy document provides the official reference source for MTA policy towards bicycle planning and programming in Los Angeles County. It outlines policies with respect to bicycle planning, bicycle facility design, bicycle programs, bicycle funding, and prioritization of projects for funding by MTA.

This document defines MTA policy on bicycle planning, and explains the rationale for the development of that policy. It lays out the overall goals and objectives established for bikeway planning and funding at the regional level. It is intended to be a primary tool in the coordination and implementation of a County-wide bicycle program, and to provide for consistency of bicycle planning and facility development. It is also intended to provide a key reference source for the development of sub-area bicycle plans within the County.

This document is not a bicycle plan for the County, nor it is an exhaustive technical guide for the planning and implementation of bicycle facilities. Rather it is intended to clearly state County-wide policies and develop a consistent approach toward bicycle planning and implementation in the County, and to provide guidance to cities within the County in the planning and implementation of bicycle facilities and programs. It provides a framework for cities to understand MTA policies, MTA funding sources, criteria and methods for allocating funding and establishing priorities, and identifying MTA responsibilities and local agency/jurisdiction responsibilities for the planning, implementation and maintenance of bicycle facilities and programs. It is intended to be a resource to help cities within the County to put together their own bicycle plans, to enhance existing facilities and systems, and to apply to MTA for funding.

B. Outline of Document

This policy document is organized into five key sections that address the following:

- Bicycle Planning
- Bicycle Facility Design
- Bicycle Programs
- Bicycle Funding
- Project Prioritization

The chapter on Bikeway Planning addresses policies with respect to system planning and siting of bicycle facilities, on ridership data, on transportation demand management (TDM) strategy, on bicycle/transit linkage strategies and on the role of bicycle advisory committees.

The chapter on Bikeway Design covers bikeway standards and standards for ancillary facilities such as showers and lockers.

The chapter on Bicycle Programs addresses policies with respect to bicycle safety, bicycle facility maintenance, security, liability, and enforcement and marketing of bicycle programs and facilities.

The chapter on Bicycle Funding and Project Prioritization outlines the overall needs for funding to implement MTA policies, bicycle funding sources and policies to govern prioritization of bikeway projects.

In addressing each of these areas, the document identifies key issues and background resource information, identifies a set of overall MTA and regional objectives developed in response to the policy context, and also identifies certain policies which MTA can implement as an agency to achieve these objectives.

The appendices which are attached provide a glossary of terms, a survey of regular bicycle users, funding sources, cost factors, and other relevant background information.

C. Overview of Policies

This section provides a summary outline of key MTA policies with respect to bikeway planning, bikeway design, bikeway programs, bikeway funding, and bikeway priorities. Specific policy language and additional secondary policies are provided in the text. A discussion of the issues regarding each of these policies is provided in the appropriate chapter of the policy document.

System Planning and Siting

- MTA will require projects submitted by local jurisdictions for funding to be identified in a local or regional bicycle plan.
- Class III (bike route) projects are not eligible for Regional Bikeway funding.
- Sponsoring jurisdictions shall guarantee that bicycle facilities constructed using MTA funds will not revert to non-bicycle use for a minimum of ten years.
- MTA Bicycle Master Plans will identify a system of regionally significant bikeways. Local jurisdictions contributing to the completion of this system will receive credit under the Congestion Management Program Countywide Deficiency Plan.

Ridership Data/Data Collection

- The MTA will require that sponsors of all bikeway projects approved by MTA for funding submit before and after bicycle count data.

- The MTA will act as a regional clearinghouse for bicycle count data collected by local jurisdictions and maintain a countywide data file on bicycle usage. The MTA will establish a database containing the "vital statistics" on bikeways in the County.

- The MTA will work with regional planning agencies such as SCAG to develop travel demand forecasting procedures for bikeways, for use in system planning and project funding application evaluation.

Bicycle Facility - TDM Strategy

- The MTA will continue to assemble data from Transportation Management Organizations to establish monitoring provisions and define the linkages between bicycle travel and TDM effectiveness.

- The MTA encourages cities and employers to provide incentives for employees to bicycle to work.

- The MTA encourages jurisdictions to incorporate provisions recognizing construction of bicycle facilities as a measure in trip reduction ordinances or as mitigation for new development.

Bicycle/Transit System Linkages

- The MTA will retain the provisions for bikes on board MTA Metro Rail lines.

- The MTA will direct the Rail Construction Corporation to amend the station design criteria to include a requirement for and standards to accommodate bicycle parking at rail stations and bus transit centers, as space permits.

- The MTA will develop a staged program, as funding and space permit, to retrofit existing Metro Rail stations and bus transit centers with bicycle parking.

- The MTA will recommend to the SCRRA that similar provisions be provided on the Metrolink system.

- The MTA will work with Caltrans to provide bicycle parking facilities at all existing and/or proposed Park-and-Ride lots.

- Bicycle parking and racks for buses will remain an eligible use of discretionary funding provided by MTA in the TDM category.

- Recognizing that the pilot program on Route 130 has not been successful, MTA may discontinue this service.

- Standard bicycles are not permitted on board MTA buses. Patrons who wish to load bicycles on MTA bus racks or on board Metro Rail trains must obtain a permit from MTA.

- The locker program at Metro Rail stations will be coordinated and administered by MTA's "Cycle Express".

- Folding bicycles are permitted on board MTA buses, at the drivers' discretion, provided they are enclosed in an appropriate carrying case and conform to certain dimension requirements.

- The MTA will investigate providing bicycle lockers, racks, and showers at its new headquarters building, and will perform the installation if appropriate.

Bicycle Advisory Committees

- The MTA's Technical Advisory Committee will establish a standing Bicycle Task Force.

- The MTA will encourage local jurisdictions requesting funding from MTA for bikeway projects to have a Bicycle Advisory Committee or some defined process for coordinating existing local plans and for obtaining citizen input into the bicycle planning process.

Bikeway Design Standards

- MTA shall require that all projects constructed with Regional Bikeway funds be designed to Caltrans standards.

- MTA will make illumination of regional bike paths which are anticipated to carry significant numbers of commute or utilitarian trips an eligible use of Regional Bikeway funds.

- Bikeway landscaping as a stand-alone project will not be considered an eligible use of Regional Bikeway funds.

Bicycle Safety Programs

- The MTA will support legislation which will eliminate the present five percent regional cap on safety education funding from TDA Article 3 for Los Angeles County.

- MTA staff will research and provide recommendations to the Ad Hoc Safety Committee regarding the consolidation of bicycle safety programs and the funding of same.

Bicycle Security/Enforcement

- Installation of call boxes on Class I trails is an eligible expenditure of Regional Bikeway funds.

Bikeway Maintenance Program

- MTA will require local jurisdictions requesting regional bikeway funds to agree to implement a Pavement Management System (PMS) for Class I bikeways.

- The MTA will expect that the current level of maintenance of bike paths within the City and County of Los Angeles will be continued at the current level, using local funds.

Bicycle Marketing

- The MTA bicycle program will act as a clearinghouse for information which can be disseminated through pre-existing channels for promoting and marketing use of bicycles for utilitarian and commute trip making.

- MTA staff will coordinate with regional TMAs to assemble and disseminate information which can be used to document the effectiveness of, and increase the role of bicycling in programs designed to reduce auto trip making.

- The MTA will update the countywide bikeway map a minimum of every five years. The MTA will strongly encourage local jurisdictions to prepare a bikeway map and to update such a map as frequently.

Bicycle Funding Sources

- MTA will continue the existing practice of dividing the pot of monies earmarked for bicycle programs and administered by MTA into a local share allocated by formula and a regional share awarded though the annual Call for Projects so that bikeways can be developed at the local level while at the same time routes of regional significance can be built.

- Maintenance of bikeways is the responsibility of local jurisdictions and is not an eligible use of Regional Bikeway funds. The present TDA Article 3 guidelines, with regard to maintenance, will be retained.

Bikeway Program Priorities

The following policies will guide the prioritization of projects submitted for funding with regional discretionary funds.

- The MTA's highest priority is the remedy of significant safety deficiencies on existing routes. However, the addition of new mileage to the Countywide system is a higher priority than enhancements to the existing system.

- MTA will emphasize construction of new facilities in the near term over funding local maintenance or other bicycle programs.

- MTA will focus regional discretionary funding resources first on providing new facilities before funding enhancements or improvements to existing facilities. However, MTA may provide funding for reconstruction of facilities of regional significance which have significant safety deficiencies, or which would otherwise become unserviceable or unsafe without major renovation, or which need major reconstruction to retain the existing system mileage.

- MTA will endeavor to complete funding of partially funded bicycle facility segments before committing funding to new projects.

- MTA will attempt to program discretionary funds to pursue construction of a system of bikeways of regional significance. The selection of facility type (bike path vs. bike lane) will be a secondary consideration, taking into account available right-of-way, cost, vehicular traffic, safety and routings which are applicable to the various bicycle facility types under consideration.

- Regionally significant bikeways are defined as those which:

  - Serve activity centers which are large scale or otherwise important from a countywide perspective;

    and which

  - provide for a continuous system of bike routes which connect adjacent communities or cross jurisdictional boundaries.

- With respect to the type of bicycle facility, MTA will give priority credit to cost effective projects which can demonstrate a relationship to activity centers, employment centers, retail centers, schools, transit stations, and high density housing, in order to accommodate commute and utilitarian trips.

II. Bicycle Planning

For the purposes of the Countywide Bicycle Policy Document, bicycle planning is categorized into the following five components:

- Bicycle System Planning and Siting
- Bicycle Ridership Data
- Transportation Demand Management (TDM) Strategy
- Bicycle/Transit System Linkages
- Bicycle Advisory Committees

For each of these components, the following discussion provides background information and policy issues; identifies MTA objectives; and outlines MTA policies to achieve its objectives.

A. Bicycle System Planning and Siting

1. Background Information/Policy Issues

a. The Planning Process

As a countywide agency, MTA does not have jurisdictional control over facilities in local cities. The primary role of the MTA in bicycle planning is therefore to help coordinate the development of bicycle facilities into an effective countywide network, and to help develop consistent planning, design, and implementation principles. The Countywide Policy Document represents the "first step" by MTA in the regional planning effort and addresses regional policies affecting planning, funding and development of bikeways. MTA intends to develop Bicycle Master Plans for each of the MTA Area Teams established for the region. The Bicycle Master Plans will address specific needs, jurisdictional coordination, and projects of regional significance within each of the planning areas.

Recognizing that certain bikeway projects are multi-jurisdictional in nature and/or are of regional significance, a secondary role for MTA in bicycle planning is to act as lead agency for selected projects.

MTA considers that bicycle planning should begin at the local level with local jurisdictions being responsible for the development of citywide bicycle plans. The location and type of bikeway facilities contained in the bikeway plan should follow bikeway planning principles defined in this Policy Document, to maximize likelihood of funding by MTA. The process that is followed in the creation of a bikeway master plan should include, at a minimum, the following major elements:

- Establish Goals and Objectives
- Inventory Existing Facilities
- Analyze Unmet Needs
- Prepare Bikeway Plan

- Evaluate Funding Mechanisms
- Develop List of Projects

In addition, in order to conform as closely as possible to SB 1095, which was enacted into California law in 1993, agencies preparing a bicycle transportation plan should consider including as many of the following elements as possible:

- The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.

- A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.

- A map and description of existing and proposed bikeways.

- A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.

- A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.

- A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, rest room, and shower facilities near bicycle parking facilities.

- A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.

- A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.

- A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.

- A description of the projects proposed in the plan and a listing of their priorities for implementation.

- A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.

There are many areas where this bicycle planning process by local jurisdictions needs to be coordinated with other parts of the transportation planning process. For example, the development of a Bicycle Plan component of a city's Transportation or Circulation Element of the General Plan will need to be coordinated with SCAG and AQMD for consistency with regional transportation and air quality policies and plans. At a more localized level, specific elements of a city's Bicycle Plan can potentially be implemented by requiring development projects to implement bicycle plan components as mitigation measures.

Congestion Management Program

Cities may develop bicycle improvements in coordination with the Congestion Management Program (CMP). The MTA's CMP Countywide Deficiency Plan Toolbox of Strategies allows cities to claim 700 credits per two-directional route mile of regionally-significant Class I or Class II facility. The Deficiency Plan defines regionally-significant routes as those designated as part of the Regional Bikeway System in the applicable MTA Bicycle Master Plan. In the interim, until the Bicycle Master Plans are adopted by the MTA, regionally-significant bicycle projects will be defined as those that have received an LACTC/MTA discretionary funding award in the past. Additional CMP credits will be awarded for TDM strategies targeted toward employees, including bicycle and pedestrian facilities and bicycle allowances.[5]

Approval of Local Plans

According to state law (SB 1095), a city or county that has prepared a bicycle transportation plan may submit the plan to the county transportation commission or transportation planning agency for approval. In practice, this means that a local agency in Los Angeles County cannot apply for state money for a bicycle project, especially from the Bicycle Lane Account, unless the city has an MTA-approved bicycle master plan.

MTA acknowledges that its role in cities' planning efforts is limited, and hesitates to "approve" a bicycle master plan that has already been appropriately approved and adopted by a city. However, to assist cities in meeting state requirements, the MTA intends to adopt six MTA Area Bicycle Master Plans, which should satisfy the state's requirement for an MTA-adopted plan. In addition, the MTA Board delegates to staff the courtesy of reviewing locally-adopted bicycle master plans to provide an opinion whether the plans are in conformance with the requirements of SB 1095 and with regional planning documents,

[5]Los Angeles County Metropolitan Transportation Authority, Congestion Management Program for Los Angeles County, 1993.

including the Regional Mobility Plan (RMP), Air Quality Management Plan, CMP, and this Bicycle Policy Document.

b. System Planning and Siting Issues

Commuter/Utilization versus Recreational Usage

It is the MTA's priority to focus bicycle planning efforts on developing facilities for commuter and utilitarian users. The primary reason for this is two-fold. Firstly, the available data indicates that many regular bicycle trips are for such uses; and secondly, the reduction of work and other regular trips in automobiles will produce the greatest benefits in reducing traffic congestion and improving air quality.

Network Connectivity and Activity Center Orientation

MTA intends that coordinated bicycle planning throughout the county will lead to the provision of a comprehensive network of bicycle facilities. In particular, bikeways which abut or cross jurisdictional or community boundaries should be considered in the broader context of an Area Plan and the regional system of bikeways. At the same time, recognizing that commute and utilitarian trips are significantly shorter than recreational trips, it is also MTA's intent that the network focus on providing local access to activity centers (including major employment, retail, and entertainment centers, and transit stations). This focus is compatible with the earlier stated objective of focusing on facilities for commuter and utilitarian trips in order to maximize reduction of traffic congestion and improvements to air quality.

New Construction Versus Upgrade Existing Facilities

In the ongoing development and implementation of the countywide bicycle program, a certain balance will need to be maintained between provision of new facilities to complete and expand the network, and maintenance and possible upgrading of existing facilities to ensure they remain a safe, useable, and effective component of the transportation system.

There are currently about 175 miles of bike paths (excluding the approximately 50 miles of mountain bike trails) in Los Angeles County. (About 90 miles of these are maintained by Los Angeles County.) The Countywide bikeway map indicates some 210 miles of bike lanes of regional significance and there are additional local bike lanes not shown on this map. The total mileage of bikeways, including bike routes, has not been tabulated to date, but is higher still. Based upon possible funding levels and typical project costs, MTA anticipates potential Countywide additions of 50 miles to the bike path system, and 2,500 miles to the bike lane system (refer to Appendix B for typical cost factors).

The MTA intends to focus its funds through the Call for Projects to complete and expand the countywide bicycle network. In general, local jurisdictions should take the lead in provision of routine maintenance and minor upgrade of facilities through existing sources of funds which are available for that purpose. Existing policies for award of Regional

Bikeway funds do not require a local "match" in recognition of the fact that localities will need to maintain portions of the regional system within their respective jurisdictions.

Even with a focus on adding new bikeways to the system, facilities of regional significance which would otherwise become unserviceable or unsafe without major renovation or reconstruction should be eligible for funding by MTA if necessary to maintain a safe and functioning countywide system.

Types of Facilities

Bikeway facilities are classified into three categories:

Class I Bikeways (bike paths) are separate bicycle facilities which provide an exclusive right-of-way for bicycle travel to minimize interference from vehicular traffic. In many communities Class I Bikeways (bike paths) are considered to be primarily recreational in terms of their use. This is because bike paths are often provided in alignments in areas not served by streets and that do not serve activity centers. For example, existing bike paths in Los Angeles County are most often found along ocean fronts, in parks, on college campuses, or in utility and drainage rights-of-way.

However, opportunities exist in Los Angeles County to provide Class I bike paths that link adjacent communities, providing local access and serving major activity centers. Some of the bike paths currently planned will follow railroad right-of-way alignments.

Class II Bikeways (bike lanes) are painted lines on streets which delineate right-of-way between bicyclists and motor vehicle traffic. They are usually established along streets in corridors where bicycle demand is significant or where connections to high employment centers or other trip origin/destination can be provided. As long facility design adheres to accepted design practice, bike lanes can be the safest and most cost effective method of providing for bicycle travel in a corridor. Bike lanes are normally preferred by bicycle commuters over bike paths, in that they often provide the most direct route to destinations.

The location of bikeways is very important, especially when considering bike lanes. The direct route to activity centers is most often found on arterial and collector streets rather than local streets. Because they are provided on the existing road network, bike lanes are the facilities best situated to accommodate utilitarian trip purposes, thus offering a viable alternative to other transportation modes. Bike lanes can be used where there is inadequate right-of-way to provide a bike path.

Class III Bikeways (bike routes) are shared facilities which normally are located along lower traffic volume streets through neighborhoods to provide continuity or access to other bikeway facilities. Class III bikeways, primarily used for connection from neighborhoods to Class I or Class II bikeways, should, wherever possible, be placed on streets on which the curb lane exceeds the minimum width provided for motor vehicles.

While not preferred bicycle facilities, bike routes may be appropriate where there is no available exclusive right-of-way for a Class I facility and where there is inadequate pavement width to accommodate a Class II facility, but where it is nevertheless desired to provide continuity in the bicycle route system and for access to key generators. Class III facilities can also serve to identify the most appropriate route for bicyclists in certain areas.

Priorities for Types of Facilities

The MTA must establish priority among Class I, Class II, and Class III facilities for new construction funding and identify guidelines regard to the planning and siting of bicycle facilities.

Class III facilities are small enough in scope that local agencies can and should provide them without regional funding assistance. Although they do contribute to the bicycle network, these projects are typically of a local nature and are the least likely to provide enough incentive to convince people to change their travel mode to bicycle commuting.

Class II facilities (Bike Lanes) may be best situated to accommodate commuter/utilitarian trips and offer a viable alternative to automobile travel. Because of the lower cost and greater simplicity of operation and maintenance, Class II facilities are also the most cost-effective way to expand the bicycle network. "More bike lanes with striping on the pavement" was identified in a survey of more than 700 active bicyclists in LA County (See Appendix C) as being the most important action which could be accomplished to improve bicycle transportation in Los Angeles.

Class II facilities are relatively easy to implement compared to Class I trails. Local jurisdictions have the authority to specify design standards for roadway cross sections and can utilize local roadway funds or require such improvements to be made in conjunction with development proposals. Class I facilities, on the other hand, may require extraordinary actions by local jurisdictions because of cost, right of way requirements, and difficult design issues.

However, MTA believes that off-street bikeways are be more attractive to new users who would be less inclined to use Class II facilities, especially on heavily-traveled arterial roadways. While MTA acknowledges that the regional Class I trails that have been developed in the past were not developed primarily to attract commute and utilitarian trips that are the focus of this policy document, properly placed Class I facilities can contribute to the transportation mix by providing safe bicycle access to activity centers.

Consequently, the MTA places development of Class I and Class II facilities as equally important, and encourages development of facilities that are designed as appropriate, on a case-by-case basis, to attract significant numbers of commute and utilitarian trips.

Regional Significance

From the perspective of MTA funding, consideration for whether a proposed bikeway facility is of regional significance is a more important criteria than the type of facility per

se. Regionally significant bikeways are defined as those which serve activity centers which are large scale or otherwise important from a Countywide perspective and which provide for a continuous system of bikeways which connect adjacent communities or cross jurisdictional boundaries.

Although the emphasis of the bicycle program in the early years needs to be on the addition of route miles to the system, it is also essential that all portions of the existing system remain safe and serviceable. Therefore, highest priority needs to be given to reconstruction of damaged or potentially unsafe route segments, especially those which could render longer stretches of the system unusable. (However, reconstruction of adequately functioning existing facilities to provide enhancements should not be a priority given the need to add mileage to the system at this point in time.)

Reversion of Bicycle Facilities

Class II and Class III bicycle routes are often implemented when streets are widened or new streets are built. In certain cases, at some future time when road space is needed for additional traffic capacity, the bike lane is eliminated and reverts to on-street parking or a general traffic lane.

This clearly creates problems in maintaining a viable bicycle network and is strongly discouraged by MTA. Funding for Class II bicycle projects will require local jurisdictions to guarantee no such reversion will occur on the facility for a minimum of 10 years. In considering funding requests, MTA will give lower priority to funding requests for projects in areas where it is apparent that reversion of use has occurred.

2. Objectives

The following provides a listing of objectives which MTA will promote with regard to bicycle system planning and siting.

Planning Process Objectives

- The MTA encourages cities to adopt and maintain bicycle master plans. It is recommended that plans be updated every five years.
- Local jurisdictions are encouraged to involve the MTA in bikeway planning and should submit their Draft Bikeway Plans to the MTA for early review.
- Local jurisdictions are encouraged to refer to adopted bicycle plans when proposing developer mitigations, and implement projects as appropriate.

System Planning and Siting Objectives

- The bicycle program should focus on cost effective projects that provide access to activity centers, employment centers, retail centers, schools,

transit stations, and high density housing, in order to accommodate commute and utilitarian trips.

- MTA encourages cities to develop facilities in which signalization, turning movements and other roadway amenities give consideration to bicycle travel, and to provide local incentives to developers for provision of bicycle amenities.

- MTA encourages jurisdictions to assure that any roadway construction or reconstruction project on a route where bicycle facilities appear in an adopted plan should incorporate implementation of those facilities.

- In allocating funding, MTA will review a jurisdiction's performance with respect to reversion of bicycle facilities, and may place lower priorities on funding requests from jurisdictions with a significant history of reversion.

3. MTA Policies

The following specific policies will be adopted by MTA in order to implement those policies which directly pertain to MTA's role in planning and funding of bikeway improvements.

- MTA will require projects submitted for funding by local jurisdictions to be identified in an adopted local or regional bicycle plan which generally conforms to the policies stated in this document, and which provides an appropriate level of detail. The bicycle plan may appear either as a separate document or as a part of a General Plan or one of its elements. (In the first five years of funding under this Policy Document, this requirement will be waived if the jurisdiction is making progress towards establishment of a conforming plan.)

- MTA will select and prioritize projects to be funded with regional bikeway funds using procedures which are consistent with this Policy Document.

- Class III (bike route) projects are not eligible for Regional Bikeway funding.

- Sponsoring jurisdictions shall guarantee that bicycle facilities constructed using MTA funds will not revert to non-bicycle use for a minimum of ten years. In the event the ten-year policy is violated, jurisdictions will agree to construct a replacement facility using their own funds, with approval from MTA staff, or return the money to MTA. This will be enforced through the Memorandum of Understanding (MOU) between the jurisdiction and the MTA.

- MTA will assist local jurisdictions in the development of bicycle plans and projects and will provide technical assistance as well as comments on draft plans submitted for review. (Refer to Appendix D which summarizes the status of bikeway plans in all of the jurisdictions in Los Angeles County.)

- MTA Bicycle Master Plans will identify a system of regionally significant bikeways. Local jurisdictions contributing to the completion of this system will receive credit under the Congestion Management Program Countywide Deficiency Plan.

B. Bicycle Ridership Data/Data Collection

1. Background Information/Policy Issues

Both locally and nationwide, insufficient data exists to adequately evaluate the effectiveness of investment in bicycle facilities and programs and to focus future investments. Additional data is needed to determine the contribution of individual projects toward achieving congestion relief goals and to estimate future usage of other proposed bicycle projects and programs. In addition, transportation modeling techniques have not yet been developed that allow MTA to claim air quality benefits of individual bicycle projects toward achieving overall air quality attainment goals for the region.

In order to begin to determine ridership volumes on existing routes and to gather data that could help in the projection of future bicycle traffic, a coordinated and comprehensive bicycle counting program must be established. In order to move toward gathering this needed planning data, MTA will require basic data collection on bikeway improvement projects approved for funding by MTA. This will consist of ridership counts before and after project implementation, including 7-9 am and 4-6 pm periods on a typical weekday and 12 noon - 4 pm on a typical Sunday afternoon, at a minimum.

Unfortunately, not all data collection objectives can be achieved solely through statistics centering on funded projects. The MTA encourages additional studies to identify important characteristics of bicycle usage throughout Los Angeles County, such as seasonal, day of week, and time of day variations, as well as adult versus juvenile use.

Some bicycle data collection efforts are already underway. For example, the City of Los Angeles recently adopted a program in which any manual traffic counts that are conducted will include bicycle counts. These manual counts are, however, usually taken during morning and afternoon peak traffic periods, and not on a daily basis.

The San Diego Association of Governments (SANDAG) conducts a bicycle counting program every two years, which could be a model upon which to build a Los Angeles County Program. The SANDAG program includes over 30 "master stations" at which directional am and pm peak period bike counts are collected. In addition to the master station locations, counts are also collected where new bike facilities are under consideration or where jurisdictions have made specific requests for counts. Additional weekend counts are collected by bike clubs.

In addition to lack of information regarding ridership, a current tabulation of the mileage of Class I, Class II and Class III facilities within Los Angeles County is not available. (It is known that there are about 175 miles of designated urban bike paths, 50 miles of designated mountain bike trails and more than 210 miles of designated bike lanes, but

specific tabulations by jurisdiction and data on the mileage of Class II and III facilities has not been comprehensively assembled.) The MTA Bicycle Master Plans which will be developed in each of six geographic areas need to address this data issue.

The Los Angeles region needs to develop basic ridership statistics and forecasting data. To assist with this effort, the MTA could become a clearinghouse for bicycle counts conducted by local jurisdictions. In conjunction with the Southern California Association of Governments (SCAG) and Commuter Transportation Services (CTS), the MTA could utilize such data to assist in the development of ridership forecast data for Los Angeles County. The MTA could also bring its own expertise in TDM and TCM effectiveness to bear on the issue of bicycle travel forecasting.

The ridership data and forecasting procedures to be developed through these efforts is critical to the evaluation of proposed bicycle facilities. This will support not only the prioritization of bicycle projects, but also the multimodal evaluation of bicycle programs through efforts such as the Congestion Management Program Countywide Deficiency Plan.

MTA Survey Data

In Los Angeles County, according to the results of the National Personal Transportation Survey (NPTS) conducted in 1990, 40 percent of all bicycle trips made in the County took ten minutes or less. The 1990 NPTS results also show that almost half (47%) of all automobile trips took ten minutes or less. An additional 29 percent of auto trips took 11-20 minutes to complete. These auto trips could be a primary target for replacement by more bicycle trips.

In May of 1993, as a part of the preparation of this policy document, a survey of bicycle riders was conducted within Los Angeles County. The data sought included the following with regard to ridership data:

- Trip Type
- Trip Frequency
- Trip Time and Duration
- Trip Distance
- Weekend vs. Weekday Travel

In an effort to determine the travel patterns of existing bicycle users, the surveys were distributed through bicycling organizations, Employee Transportation Coordinators (ETCs) and by intercepting bicyclists on bicycle paths and trails. A total of 771 surveys were returned. A summary of some of the ridership findings follows, representing responses from a mix of frequent bicycle users (refer to Appendix C for a report showing survey results and the survey instrument).

- 69 percent of the respondents regularly use their bike for commute trips, while 27 percent regularly use the bicycle for shopping trips.

- 7 percent regularly use their bicycle for school trips and 78 percent regularly use their bike for recreation/fitness purposes.

- The work trip distances had a mean of 8.4 one-way miles. This is longer than the industry assumed value of five miles. School trips had a mean one-way mile value of 7.7, while shop trips were 5.3 miles. The recreation/fitness trips had a mean one-way distance of 32.0 miles.

- When considering the work trip respondents, 11 percent did not usually have an automobile available to them. 17 percent of the shop trip respondents did not usually have an auto available to them while 24 percent of the school trip respondents did not have an auto available to them.

2. Objectives

- The MTA should take the lead in establishing a countywide bicycle counting program similar to the one run by SANDAG in San Diego County, or should as a minimum serve as a regional clearinghouse for such data.

- The MTA should establish a database listing the mileage of Class I, Class II and Class III routes by jurisdiction. Such a database should ultimately be expanded to address the characteristics of each route, including usage, ancillary facilities (i.e., illumination, call boxes, or amenities), overall pavement condition and identifiable deficiencies.

- The MTA should encourage all cities in the County to include bicycle counts in their traffic counting programs and to ensure that bicycle data will be collected when traffic counts are conducted in conjunction with traffic impact analyses for new development projects.

- MTA should pursue development of workable procedures to forecast travel demand for bikeways in Los Angeles County.

3. MTA Policies

- The MTA will require that sponsors of all bikeway projects approved by MTA for funding submit bicycle count data for existing conditions, including 7-9 am and 4-6 pm periods on a typical weekday and 12 noon - 4 pm on a typical Sunday afternoon, at a minimum, as well as similar bicycle counts after the facility has been in place approximately one year.

- The MTA will act as a regional clearinghouse for bicycle count data collected by local jurisdictions and maintain a countywide data file on bicycle usage. The MTA will establish a database to track data regarding routes in the county and will seek to maintain the "vital statistics" on bikeways in the County.

- The MTA will work with regional planning agencies such as SCAG to develop travel demand forecasting procedures for bikeways, for use in system planning and project funding application evaluation.

C. Bicycle Facility - TDM Strategy

1. Background Information/Policy Issues

Transportation Demand Management (TDM) has been recognized for many years as a cost-effective approach for reducing peak hour congestion of highway facilities. In recent years, additional impetus has been given to vehicular trip reduction due to the implementation of Congestion Management Plans (CMPs), which require establishment and maintenance of service level standards for highway and transit systems, as well as through implementation of programs proposed by the Air Quality Management District (AQMD) and aimed at air quality attainment.

Local jurisdictions are therefore required to implement actions which will reduce peak period and daily motor vehicle trip generation as well as the total vehicle miles traveled on highway facilities.

Transportation Control Measures

At the regional level, the MTA has developed a Countywide Phase II TDM program describing a wide range of Transportation Control Measures (TCM's) which constitute specific actions or strategies available for consideration by local agencies to reduce reliance on the drive-alone automobile and encourage use of alternate travel modes. Included in these TCMs are four that address bicycle use and facilities:

- Accommodation of Bicyclists and Walkers through Provision of Bicycle and Pedestrian Improvements;
- Bicycle Subsidies;
- Bicycle and Pedestrian Improvements Combined with Bicycle Lockers at Transit Stations and Park and Ride Lots and Aggressive Marketing;
- Walking and Bicycle Subsidy with Parking Charge.

The primary consideration when evaluating bicycle programs for air quality and trip reduction benefits is whether they have a utilitarian or recreational focus. To attain emissions and trip reductions, bicycle programs/projects must attract people who traveled previously by motor vehicle, particularly those driving by themselves. This is significant, because it is the decrease in vehicle trips, not the increase in bicycling, which produces air quality and trip reduction benefits.

It should be noted that utilitarian trips include those trips to recreational destinations. The distinction is made between trips which would otherwise require another form of

transportation (utilitarian) and those which are taken purely for the fitness benefits or the pleasure of cycling (recreational). For example, if a trip to a recreational area requires the trip maker to strap his bicycle to the back of his car, it is a utilitarian trip. The subsequent scenic or fitness ride is recreational. Regardless of the destination, trips made by automobile create emissions and may contribute to congestion, and reduction of automobile trips is the goal of Transportation Control Measures.

In order to assess whether a program/project has a bicycle commute focus, the following factors need be assessed:

- Proximity to Worksites and Activity Centers
- Regional and Local Trip Characteristics
- Trip Reduction Ordinances and Their Requirements.

VMT Reduction Calculations

After proposed projects have been determined to be useful for work- or utilitarian-oriented bicycle commuting, further evaluation can help to determine the potential impact that a bicycle program can have on reducing vehicle trips. Techniques to quantify the effectiveness of bicycle transportation control measures (TCMs) on reducing vehicle trips, vehicle miles traveled (VMT) and air pollution have been prepared by the MTA as a part of the Transportation Demand Management Program [6]. The MTA methodology has been approved by the Southern California Association of Governments (SCAG) and is being used in the Regional Mobility Plan. In addition, the South Coast Air Quality Management District has accepted this approach to assist local jurisdictions in implementing TDM measures to meet responsibilities mandated in the Air Quality Management Plans. The methodology, which is included in the TDM Program, provides local jurisdictions with a quantifying method to estimate expected VMT reduced based on investment. The calculations are based on findings from a review of the Regulation XV database, as of September 1992, and the results of case studies and other research from around the nation.

Emission Reduction Calculations

In response to the Federal Congestion Mitigation and Air Quality (CMAQ) Program Guidelines, the Caltrans Division of Transportation Programming has developed a methodology for estimating bicycle ridership increases and emission reductions resulting from bicycle facility improvements. The Second Annual Report, dated January 31, 1994, provides information compiled by FHWA from various sources. This information is contained in Appendix F.

[6] *TDM Phase II Program, Part I-3c*, prepared by Sarah Siwek and Hasan M. Ikhrata, Los Angeles County Metropolitan Transportation Authority (MTA), January 6, 1994.

2. Objectives

- Based upon the demonstrated cost-effectiveness of bicycle-related strategies and provisions, TDM programs should include a bicycle component.
- Priority should be placed on funding bikeway improvements which are expected to provide the greatest trip reduction and air quality benefits and those which are compatible with the bicycle-related TCMs in the MTA TDM Program.
- Bicycle commuters should be given financial incentives at least equal to employee provided parking subsidies currently given to motorists.

3. MTA Policies

- MTA will provide technical assistance to cities wishing to include bicycle related Transportation Control Measures in their Trip Reduction Plans.
- The MTA will continue to assemble data from Transportation Management Organizations to establish monitoring provisions and define the linkages between bicycle travel and TDM effectiveness.
- The MTA encourages cities and employers to provide incentives for employees to bicycle to work.
- The MTA encourages jurisdictions to incorporate provisions recognizing construction of bicycle facilities as a measure in trip reduction ordinances or as mitigation for new development.

D. Bicycle/Transit System Linkages

1. Background Information/Policy Issues

Multimodal transportation planning, as its name implies, involves numerous transportation modes operating as a system. So that an effective transportation system can be provided, attention must be given to each transportation mode. More importantly, bicycle travel, when used in conjunction with transit, can reduce the need for auto access trips to transit stations that require the provision of parking facilities. Part of multimodal planning for bicycles and transit can occur through provision of bicycle facilities providing access to station areas and park and ride locations. In this context, a transit station becomes a significant activity generator that should be taken into account in the siting and prioritization of bikeways.

Other aspects of the bicycle-transit linkage involve the provision of bicycle parking at transit stations and consideration for bringing bikes on board transit vehicles. The low cost of lockers (for regular commuters) and racks (for occasional riders) makes provision of

bicycle parking an affordable investment in stations where they can be accommodated on site.

The objectives of such multimodal planning are to reduce auto access trips and parking, and to increase transit patronage.

Folding Bicycles

To ensure passenger safety, the MTA does not allow standard bicycles on board MTA buses. However, with the recent proliferation of collapsible or "folding" bicycles that fit snugly into a protective carrying case, MTA will allow patrons to carry folding bicycles on board buses, provided they are securely and completely covered and provided they do not exceed certain dimensions. In general, folding bicycles on board buses should resemble carry-on baggage and may not present an inconvenience or possible hazard to bus patrons.

Bicycle Racks on Buses

MTA buses are not equipped to carry standard bicycles. The lone exception is the Route 130 Pilot Program operating on Artesia Boulevard from Hermosa Beach to Fullerton. Bicycles are transported on exterior carrier racks located on the front bumper. This requires a permit. MTA's experience with this trial service has been mixed. When additional buses, "trippers," are added to the fleet to serve varying demand levels, or when designated vehicles are out of service due to mechanical difficulties, buses without racks may be used on Route 130, imposing delays on bicyclists. There have been incidents in which bicycles were left on racks after the bus departed from a stop, due to error by the bus driver or patron.

The Route 130 Pilot Program has not been successful. This is in part due to some operational difficulties, and in part due to lack of demand. Some locations, such as recreational areas (Lake Tahoe) or smaller metropolitan areas (Phoenix) have provided racks on all vehicles, thereby avoiding many of the problems.

In response to numerous requests for expanded bus routes equipped with bicycle racks, MTA staff is currently analyzing the efforts and successes of other operators in the nation, including Phoenix, to determine whether a new pilot program might be successful in the Los Angeles area. Factors to be considered include modern bike rack technology, cost effectiveness, maintenance and operating costs, demand estimates, passenger and vehicle safety, and maintaining existing service levels. Upon completion of the analysis, MTA staff will present its findings to the MTA Operations Committee and the Bus Operations Subcommittee. If a new, expanded bike-on-bus program appears desirable, staff will make appropriate recommendations for implementation, phasing, and funding.

Metrolink Commuter Trains

Presently, Metrolink stations do not have design requirements mandating bicycle amenities, including parking. However, some cities are installing lockers and racks at Metrolink

stations. Metrolink trains allow two bicycles per car inside the passenger compartment. Permits are required.

Park and Ride

Adequate bicycle parking at Park and Ride facilities will accommodate dual-mode trips in which commuter cyclists may transfer to or from the bus or rail system to complete their journeys. Existing lockers at Park and Ride locations are not adequately maintained and are not placed in appropriate numbers to meet varying demand at each Park and Ride site. Other jurisdictions, notably Washington Metropolitan Area Transportation Authority (WMATA) and Caltrans District 11 (San Diego), have successful bicycle parking programs in which bicycle parking facilities are moved from one location to another based on demand.

Rail Rapid Transit

Standard bicycles are allowed to board Metro Blue and Red Line trains. Permits are required. Bicycles are not allowed to board between the hours of 6-9 a.m. and 3-7 p.m. on weekdays due to safety factors such as conditions of crowding. Similar arrangements are being considered for all Metro Rail lines and line extensions. To minimize conflict between bicyclists and other patrons, rules about elevator and station access and placement or bicycles on board trains have been developed.

MTA will allow patrons to carry folding bicycles on board Metro Rail cars, provided they are securely and completely covered and provided they do not exceed certain dimensions.

Bicycle parking areas, including both lockers and racks, are currently being installed at Blue Line Park and Ride facilities, and bicycle parking facilities are included in selected Green Line station and Gateway Center area plans. Existing Red Line stations will be retrofitted with bicycle parking as well, as space permits.

Ideally, bicycle parking should be situated as close to the station portal as ride-sharing facilities. Both lockers and racks should be provided, as they serve different bicycling populations. Racks are provided free of charge and serve the needs of infrequent riders or those who are willing to risk a certain degree of exposure to theft and vandalism. Lockers are reserved spaces serving bicycle commuters and are leased to riders for three months to a year. Permits are required.

Coin key locks are expensive to purchase, have maintenance problems in outdoor sunny locations, and invite vandalism. Based on experience of other jurisdictions, notably Caltrans District 11, MTA will provide standard lockers instead of coin-key lockers.

Permit Requirements

Bus and rail patrons who wish to board MTA vehicles with their bicycles must obtain a permit from MTA in advance. Although the permit requirement may discourage occasional users and limit "spur of the moment" trips, the permits ensure that cycling patrons

understand and agree to abide by the rules that are designed to ensure the comfort and safety of passengers. Specific MTA rules and regulations pertaining to bicycles are provided to permit applicants, and appear in Appendix J. MTA bicycle permit procedures generally conform to those of other transit operators in the United States.

2. Objectives

- Preference should be given to funding bikeway projects that provide access to transit stations.

- Any existing rail or transit stations and Park and Ride facilities should have, or be retrofitted with, bicycle storage lockers and/or racks within view of personnel employed at the stations. If possible, bicycle parking facilities should be placed at least as close to the station portals or bus bays as shared auto parking facilities.

- Design of new stations should include provision for bicycle storage (refer to Section III, Design Standards, for recommended parking ratios).

- Administration of lockers at transit stations should be coordinated by MTA's Cycle Express locker permit program.

- Bicycle parking lockers should be provided at all Park and Ride lots. Caltrans District 7, who administers the program for Park and Ride lots, should be encouraged to use bicycle parking programs successful in other geographic areas as a model for building a successful bicycle parking program in District 7.

- The MTA should consider providing bicycle racks on MTA buses if it can be determined that a successful program can be developed. Considerations should include not only cost and ridership, but safety, maintenance, funding opportunities, physical handling, and the possible effects on MTA service objectives.

3. MTA Policies

- The MTA will retain the provisions for bikes on board MTA Metro Rail lines, and will adopt similar provisions for subsequent additions to the Metro Rail system.

- The MTA will direct the Rail Construction Corporation to amend the station design criteria to include a requirement for and standards to accommodate bicycle parking at rail stations and bus transit centers, as space permits. The recommended rate of bicycle parking is one space for every fifty automobile parking spaces. The minimum number of spaces at any transit station should be ten. As the demand for lockers and racks will vary at each location, the proportion of lockers to racks should be determined by demand.

- The MTA will establish a procedure by which the appropriate MTA Planning staff will review preliminary engineering plans of stations for conformity with the standards.

- The MTA will develop a staged program, as funding and space permit, to retrofit existing Metro Rail stations and bus transit centers with bicycle parking.

- The MTA will recommend to the SCRRA that similar provisions be provided on the Metrolink system.

- The MTA will work with Caltrans to provide bicycle parking facilities at all existing and/or proposed Park and Ride lots.

- Bicycle parking will remain an eligible use of discretionary funding provided by MTA in the TDM category.

- Bicycle racks for buses will remain an eligible use of discretionary funding provided by MTA in the TDM category.

- Recognizing that the pilot program on Route 130 has not been successful, MTA may discontinue this service but may offer to make existing racks available to another transit operator within the region which may be able to outfit a larger proportion of its fleet with racks.

- Standard bicycles are not permitted on board MTA buses. Patrons who wish to load bicycles on MTA bus racks or on board Metro Rail trains must obtain a permit from MTA.

- The locker program at Metro Rail stations will be coordinated and administered by MTA's "Cycle Express".

- Folding bicycles are permitted on board MTA buses, at the drivers' discretion, provided they are enclosed in an appropriate carrying case and conform to certain dimension requirements.

- The MTA will investigate providing bicycle lockers, racks, and showers at its new headquarters building, and will perform the installation if appropriate. The MTA will investigate whether a currently unused shower facility located on the 9th floor of the 818 Headquarters can be made available for the use of MTA employees.

E. Role of Bicycle Advisory Committees

1. Background Information/Policy Issues

The creation of a successful bicycle plan and program entails many components. One of the most important is input from the public. The success of a bicycle plan and program can be greatly enhanced through the participation of citizens. A specialized committee of bicycling advocates can be formed to provide expert opinion from cyclists expected to use the facilities. This committee, typically called a Bicycle Advisory Committee (BAC) can provide advice to agencies that have the ability to implement bicycle programs and policies. Citizen input will allow the plan, as developed, to be more responsive to local needs. A BAC can be delegated numerous responsibilities, including the three following primary objectives:

1.) Coordinate Existing Plans/Programs
2.) Identify and Provide Impetus for New Programs or Bikeway Projects
3.) Secure Public Input and Participation in Plan/Program Development

BAC's are usually established at the local level. For example, the City of Los Angeles BAC is one of the larger bicycle advocacy groups in the region. In this context, BACs are instrumental in supporting the planning process which begins at the local level (as described in Section III.A). Therefore, establishment of BACs locally within the region is important to support development of bicycle facilities. It should be noted that Los Angeles County does not presently have a BAC. Appendix G provides a full description of the need, purpose, composition and operation of a BAC and can be used as a guideline to the establishment of new BACs within Los Angeles County.

This Policy Document envisions the role of MTA as one of coordinating countywide bicycle planning, funding, and development of bicycle facilities of regional significance. In this context, the MTA needs to establish and implement planning and funding policies, be a clearinghouse for data and information regarding bicycle facilities, and become a repository of technical expertise available to those such as local jurisdictions and TMAs charged with planning and implementation of bicycle programs.

2. Objectives

- Local jurisdictions within the County are encouraged to form Bicycle Advisory Committees and to actively involve them in all aspects of bicycle facilities development, including having BAC members serve as "Project Monitors" for specific projects undertaken within the locality.

- MTA should form a permanent Bicycle Task Force which will provide a staff-level forum for exchange of information regarding all aspects of implementation of bikeway facilities within the region.

3. MTA Policies

- The MTA's Technical Advisory Committee will establish a standing Bicycle Task Force composed of transportation professionals from agencies, TMAs, and bicycling organizations within Los Angeles County. An effort will be made to ensure that the committee is composed in a manner to ensure adequate geographic representation and to ensure participation of active cyclists. The MTA Special Task Force for Bicycle Policy, which served in the creation of this Policy Document, will be used as the basis for the formation of this committee.

- The MTA will encourage local jurisdictions requesting funding from MTA for bikeway projects to have a Bicycle Advisory Committee or some defined process for coordinating existing local plans and programs and for obtaining citizen input into the bicycle planning process.

III. Design

A. Caltrans Bikeway Design Standards

1. Background Information/Policy Issues

This section addresses bikeway geometric design standards.

The bikeway design standards generally in use throughout California and Los Angeles County are those specified in the California Department of Transportation State Highway Design Manual (HDM). The Caltrans HDM defines bikeways as all facilities that provide primarily for bicycle travel. The term bikeway includes bicycle paths, bicycle lanes and bicycle routes. The Caltrans HDM classifies and defines these bikeways as follows:

- Class I Bikeway (Bike Path) - A right-of-way completely separated from any street or highway for bicycle travel.

- Class II Bikeway (Bike Lane) - A striped lane for one-way bike travel on a street or highway.

- Class III Bikeway (Bike Route) - A travelway shared by bicycles and motor vehicles or pedestrian traffic, designated by signs only.

Design standards attempt to provide for safe operations in the bikeway. Such standards address the space required by the cyclist, user characteristics, minimum widths, clearances, gradient, roadway curvature, design speed, parking, signing, striping treatments, surface, maintenance and drainage. The design standards contained in the HDM are applicable to all bicycle facilities constructed or reconstructed after July 1, 1993. The HDM identifies three levels of standards:

- *Mandatory Standards* -- Those elements considered most essential to achievement of overall design objectives,

- *Advisory Standards* -- Standards which are important but which allow greater flexibility in application to accommodate design constraints or to be compatible with local conditions,

- *Permissive Standards* -- Other standards which are desirable but not required for the attainment of the overall design.

In order to promote uniform practice on a statewide basis, design features or elements which deviate from the mandatory standards indicated in the HDM must be approved by the Chief, Office of Project Planning and Design, or by a local Caltrans Project Development Coordinator to which authority to grant approval has been delegated (refer to Appendix H for the address).

A brief summary of key design provisions indicated in the HDM follows (the full text of the manual should be consulted in the design of a particular facility). These provisions indicate minimum standards, and cities are encouraged to exceed these minimum guidelines when individual circumstances warrant or allow additional design features.

Class I Bikeways (Bike Paths)

- Widths - Two-way bike path minimum paved width is eight feet. Minimum paved width for one-way bike path is five feet. A minimum two foot wide graded area shall be provided adjacent to the pavement.

- Clearance to Obstruction - A minimum two-foot horizontal clearance to obstructions shall be provided adjacent to the pavement. The clear width on structures between railings shall be not less than eight feet. The vertical clearance to obstructions across the clear width of the path shall be a minimum of eight feet.

- Signing and Striping - A yellow centerline stripe may be used to separate opposing directions of travel.

- Intersections with Highways - The most favorable intersection conditions should be selected. Where motor vehicle cross traffic and bicycle traffic is heavy, grade separations are desirable. When grade separations are not feasible, assignment of right-of-way by traffic signals should be considered. Stop or yield signs for bicyclists may suffice when traffic is not heavy. When crossing an arterial street, the crossing should usually occur at the pedestrian crossing.

- Separation Between Bike Paths and Highways - Bike Paths immediately adjacent to streets and highways are not recommended. However, if a bike path is installed closer than five feet from the travelway, a physical barrier must be installed to prevent bicyclists from encroaching on the roadway.

- Bike Paths in the Medians of Highways - As a general rule, bike paths in the medians of highways are not recommended because they require movements contrary to normal rules of the road. If such movements can be avoided or designed for, then the bike paths may be considered.

- Design Speed - The minimum design speed for bike paths shall be 20 mph except on bike paths where downgrades exist that are longer than 500 feet with grades exceeding four percent (4%). For those facilities with long steep downgrades, the minimum design speed shall be 30 mph. Installation of "speed bumps" shall not be used.

- Horizontal Alignment and Superelevation - The recommended curve radii and superelevation for various design speeds are those recommended in the Caltrans HDM.

- Stopping Sight Distance - Minimum stopping sight distances for various design speeds and grades are those recommended in the Caltrans HDM.

- Length of Crest Vertical Curves - Minimum lengths of crest vertical curves are those recommended in the Caltrans HDM.

- Lateral Clearance on Horizontal Curves - Minimum lateral clearance recommendations are those recommended in the Caltrans HDM.

- Grades - The maximum grade rates should be five percent. Steeper grades can be tolerated for segments up to 500 feet in length. Sustained grades should be limited to two percent (2%).

- Structural Section - The structural section of a bike path should be designed in the same manner as a highway. Principal loads will normally be from maintenance and emergency vehicles. A minimum pavement thickness of two inches (2") of asphalt concrete is recommended. Increased pavement life can be gained by increasing the asphalt content.

- Drainage - To ensure proper drainage, the surface of a bike path should have a cross slope of two percent (2%). Sloping in one direction is the preferred practice. Bike paths constructed on the side of a hill may require a drainage ditch on the uphill side.

- Barrier Posts - When barrier posts are determined to be necessary to prevent motor vehicles from entering, care should be taken to assure that the barriers are highly visible and well marked for day and night visibility.

Class II Bikeways (Bike Lanes)

Class II Bikeways, called bike lanes, shall be one-way facilities. Two-way bike lanes are not permitted.

- Widths - Bike lane width minimums vary depending on parking conditions and curb types. Where parking is allowed and parking spaces are marked, the bike lane shall be five feet (5') wide as measured from the edge of the striped parking stalls. Where parking is permitted without parking stripes on stalls, the curb lane shall be a minimum of 11 feet (with rolled curb) and a minimum of 12 feet (with vertical curb). These dimensions allow for the parking and bike travel to occur within the minimum width. Bike lanes shall not be placed between the parking area and the curb.

The most desirable condition for bike lanes is on streets where parking is prohibited. The minimum bike lane width is four feet (with the one-foot gutter) and five feet with a two-foot gutter. Additional width for the bike lane is desirable. A typical motor vehicle lane next to a bike lane is 12 feet, but under favorable conditions, an 11 foot lane may be feasible. Bike lanes should be placed on the right hand side of one-way streets to avoid forcing bicyclists and motorists to make crossing maneuvers when turning left onto a two-way street.

- Striping and Signing - Raised barriers or raised pavement markings shall not be used to delineate bike lanes. The Caltrans HDM should be used to determine appropriate striping and signing for bikeways.

- Intersection Design - Since most auto/bicycle accidents occur at intersections, bikeway design at intersections should concentrate on minimizing motorist and bicyclist confusion. Bicycle Sensitive detectors within a bike lane should be considered at actuated signal controlled intersections.

Class III Bikeways (Bike Routes)

Class III Bikeways (bike routes) are intended to provide continuity to a bikeway system and are primarily used for connection from neighborhhods to Class I or Class II bikeways. On these facilities, bicycles share space with motor vehicles on the street. Wherever possible, bike routes should therefore be placed on streets in which the curb lane exceeds the minimum width provided for motor vehicles.

- On-Street Bike Route Criteria - Bike routes should be signed only if some of the following apply:

  - Designated routes will provide for through and direct travel in bicycle-demand corridors,

  - The routes will connect discontinuous segments of bike lanes,

  - Effort is made to adjust traffic control devices to give greater priority to bicyclists,

  - Street parking has been removed or restricted in areas of critical width,

  - Street imperfections or irregularities have been corrected,

  - Maintenance of the route will be at a higher standard than that of other comparable streets.

- Sidewalk Bikeway Criteria - The designated use of sidewalks as a Bike Route is generally considered unsatisfactory. Restrictions for sidewalk use are provided in the Caltrans Vehicle Code.

2. Objectives

The following objectives should be pursued within Los Angeles County.

- Bikeway Design Criteria should be those contained in the latest version of the California Department of Transportation HDM. Approval of nonstandard design should follow the procedures identified in the Caltrans HDM.

- Bike paths should be designed in conjunction with separately funded landscape and urban design elements.[7]

3. MTA Policies

- MTA shall require that all projects constructed with Regional Bikeway funds be designed to Caltrans standards. Applicants should follow procedures indicated in the Caltrans HDM for projects with design exceptions from mandatory standards. Agreement by the MTA to fund facilities containing documented design exceptions shall not be construed as an approval of such designs.

B. Additional Bikeway Design Elements

1. Background Information/Policy Issues

To address local conditions or concerns, some local jurisdictions have adopted enhancements to Caltrans standards. For example, cities may consider providing wider bicycle lanes than are required, or right and/or left-hand turn pockets for cyclists. In this section, some suggested design enhancements are highlighted, and recommended guidelines are provided in some areas not yet addressed in the HDM, including parking, showers, and bicycle boulevards.

Access Barriers

The staff of Los Angeles County has designed a barrier to control access to Class I bike paths. This design is included in the Department of Public Works Book of Standard Plans, available from the Los Angeles County Department of Public Works.

[7]Refer to Appendix I for a list of potential funding sources.

Striping Treatment

The City of Los Angeles has suggested to Caltrans that instead of a mandatory 200 feet of dashed bike lane lines in advance of every intersection encountered, a reduction to 96 feet should be considered to reflect the closer spacing of intersections in the urban environment. The latest version (July 1993) of the Bikeway Planning and Design chapter of the Caltrans HDM provides that this distance may range from 100 to 200 feet.

Dual Use Trails

The Caltrans HDM states that dual use of bike paths by pedestrians and bicycles is undesirable and the two should be separated wherever possible. This conflict arises along some of the bike paths provided along the beach areas in Los Angeles County and is further exacerbated by "rollerbladers". The MTA Task Force participating in the development of this document concluded that if widths of at least 14 feet can not be provided in areas where these types of uses are prevalent, then separate facilities should be provided. It is, for safety reasons, undesirable for pedestrians and "rollerbladers" to use a bike path without providing the additional width.

Class II Lanes Adjacent to On-street Parking

Where parking is permitted adjacent to Class II lanes, and parking demand is light, the City of Los Angeles recommends that a 4-inch solid parking lane line be considered to discourage motorists from using this as a travel lane if no vehicles are parked.

Safety and Security Features

Jurisdictions may consider additional features not specified in the Caltrans HDM. These features include provision of milepost markers, destination signs, and call boxes, illumination, and landscaping. However, separate standards exist for all of these features and should be followed when such features are included in a bikeway project. Provision of signage, call boxes and illumination improves the security of bike paths and policies regarding such features are included in Section IV, Part D, of this document.

Bicycle-Sensitive Loop Detectors

Bicycle travel along bike lanes on low-volume roadways can be delayed at actuated traffic signals at major cross streets where there are no provisions for cyclists to trip the signal. Bicycle-sensitive loop detectors should be provided, and are encouraged as part of local agencies' routine loop detector replacement.

Rubberized Rail Crossings

Rubberized rail crossings should be considered where cyclists are expected to cross railroad tracks. Bicycles should cross at a right angle to the tracks.

Landscaping

Landscaping is considered an amenity. For this reason, only incidental or essential landscaping should be funded from bikeway construction funds. Separate funding, such as State Environmental Enhancement and Mitigations funds, or Intermodal Surface Transportation Efficiency Act (ISTEA) Transportation Enhancement Activities (TEA) programs, recreation and park funds, or other sources should be used for projects which incorporate large amounts of landscaping.

Bike Parking

The HDM does not address bicycle parking. However, the Oregon Department of Transportation has identified standards for parking which address the basic requirements:[8]

- Bicycle parking facilities should either be lockable enclosures in which the bicycle is stored, or secure stationary racks which support the frame so the bicycle cannot be pushed or fall to one side in a manner that will damage the wheels.

- Bicycle parking spaces should be at least 6 feet long and 2.5 feet wide and overhead clearance in covered spaces should be at least 7 feet.

- A five foot aisle for bicycle maneuvering should be provided and maintained beside or between each row of bicycle parking.

- Bicycle racks or lockers should be securely anchored at the surface or a structure.

Local jurisdictions have established various levels of parking requirement for bicycles tied to the size and type of land use which is being developed:

- The City of Los Angeles requires, in Ordinance No. 167409 amending Sections 12.2 and 91.0700 of the Los angeles Municipal Code and adding Section 91.0705 to the Code that new buildings in C and M zones with floor area greater than 10,000 square feet shall provide bike parking at a rate of 2% of the car parking spaces. This requirement also applies to all buildings owned and used by the City of Los Angeles, regardless of zone.

- Los Angeles County ordinance number 93-0028M requires that bicycle parking (racks or lockers) shall be provided to accommodate four bicycles per the first 50,000 square feet of non-residential development and one bicycle

[8] Bicycle Parking Facilities, a Source Book of Designs, Oregon Department of Transportation, Transportation Development Branch, Systems Planning Section, December 1992.

per each additional 50,000 square feet of non-residential development or fraction thereof.

- Pasadena, California requires three spaces for every 200 employees.

- Irvine, California requires three bike parking spaces for every 250 employees and five spaces for every site of 400 employees or more.

Communities known for their emphasis on bicycling have more extensive requirements. The City of Davis, California, has established the following standards for new development:

Land Use	Bicycle Parking Requirement
Multi-family Residential	Two spaces per dwelling unit
Commercial	Bicycle parking equal to 30% of the required auto parking
Municipal Offices, Parks, Swimming Pools, Museums & Auditoriums	Bicycle parking equal to 30% of the required auto parking
Places of Employment	One bicycle space for every two employees during the heaviest work shift

Boulder, Colorado and Palo Alto, California also known for their bicycle programs, require a parking standard of ten percent (10%) of off-street automobile requirements. In Boulder, the requirement is reduced to five percent (5%) of the off-street automobile requirements after 50 bike spaces have been provided.

Although bike lockers provide the most secure type of parking, lockers are generally provided on a permit basis and therefore do not provide for non-recurrent trips. In order to accommodate occasional trips, racks which can be used with cable or chain locks carried by bicyclists should be provided in conjunction with lockers. Bicycle parking codes typically do not address the ratio of racks to lockers. However, automobile parking can be used as a model: Within auto parking, the proportion of stalls designated for visitors (i.e., stalls designated to accommodate occasional trips) ranges from a low of 20 percent for residential and office uses to a high of about 80 percent for retail uses. Similar proportions of the total bicycle parking supply can be allocated to racks for similar land uses, with the balance of the supply provided as lockers.

Showers

Provision of showers at work places is one element of TDM programs which include the use of bicycles and may be required in development agreements negotiated with developers. Surveys of frequent bicycle users conducted in conjunction with development

of this policy document indicated that current users do not believe provision of showers will be a major factor encouraging bicycle use. Furthermore, the mission of MTA is to provide transportation system improvements and services. For these reasons, it is not recommended that MTA fund such ancillary facilities from bikeway construction funds.

Bicycle Boulevards

Bicycle boulevards are local streets with restricted vehicle access that encourage bicycling and walking with limited conflict with automobile traffic. Innovative designs have been implemented in the cities of Berkeley and Palo Alto, and creative variations of this concept may result not only in increased bicycle activity but improved urban and neighborhood conditions.

New and Reconditioned Roadways

In addition to Caltrans HDM standards which relate to facilities provided specifically for the use of bicycles, local agencies may adopt roadway standards that will encourage bicycle use on roadways not specifically designated for bicycle travel. For example, cities may develop and adopt minimum standards for new and redeveloped streets, including those in hillside developments, that provide for wide curb lanes.

The City of Los Angeles endeavors to design its new streets and roadways to provide the maximum available curb width for cyclists. This is accomplished by moving excess vehicle lane width, median width, turning pocket width, sidewalk width, etc., to the curb lane as appropriate to provide additional safety and comfort for cyclists. The city does a similar analysis and design when streets are restriped or resurfaced.

By using this practice, the City of Los Angeles contributes to the available network of safe bicycle routes with minimal additional expenditure. Many jurisdictions in Los Angeles County may want to consider adopting policies of this nature.

2. Objectives

The following objectives should be pursued within Los Angeles County.

- Access to Class I facilities should use the design standard contained in the Los Angeles County Department of Public Works Standard Plans.
- Bicycle system maps indicating milepost locations should be prepared and such maps should be provided to emergency responders.[9]
- Bike paths intended for commuter use should include illumination in the design of the project.[9]

[9]Refer to Section IV.B, Bicycle Security/Enforcement for specific MTA policies which address these objectives.

- Bike paths should be designed in conjunction with separately funded landscape and urban design elements.[10]

- Bike paths should be designed to accommodate bicycles only and pedestrian use is discouraged; in areas where pedestrians and rollerbladers are anticipated, bike paths should be at least 14 feet wide to allow for use by each of these modes.

- Class II bikeway projects should include the provision of bicycle sensitive loop detection at actuated traffic signal locations.

- Where inadequate pavement width in rural conditions precludes installation of bike lanes, consideration should be given to provision of a wide shoulder or curb lane suitable for bicycle use.

- Local jurisdictions should prepare and implement bicycle access and parking standards for new development projects.

- MTA encourages local agencies to adopt policies or implement practices that provide maximum width on curb lanes for new and reconditioned roadways.

3. MTA Policies

- MTA will make illumination of regional bike paths which are anticipated to carry significant numbers of commute or utilitarian trips an eligible use of Regional Bikeway funds.

- MTA will make landscaping, which is an integral part of regional bike paths, up to a limit of five percent of the bike path project cost, an eligible use of Regional Bikeway funds only when it is included as a component of the bikeway's construction. Bikeway landscaping as a stand-alone project will not be considered an eligible use of Regional Bikeway funds.

- Some costs associated with implementation of regionally significant bicycle boulevards, including signage and traffic restriction devices, are eligible expenditures of Regional Bikeway funds.

[10]Refer to Appendix I for a list of potential funding sources.

IV. Programs

A. Bicycle Safety Programs

1. Background Information/Policy Issues

Safety for bicycles involves design, education, and adherence. Facilities which utilize proper design standards provide for a safe bicycling environment. MTA's primary role in bicycle safety is through funding of regional bikeways which are up to current standards for facility design.

Bicycle safety programs are generally provided to young cyclists. MTA funds the "Travis the Owl" safety program. The City of Los Angeles has provided a bicycle safety program for a number of years through TDA Article 3 funds and other funding sources. The County of Los Angeles has recently added a bicycle safety program. However, TDA regulations include a cap of 5 percent for all regional safety programs, and with the County participation in addition to full funding of the City of Los Angeles program, the 5 percent cap will become a limitation.

Bicycle safety education for children and adults, for cyclists and motorists, is a necessary component of an effective bicycle program. However, given limited funding, a tradeoff exists between enhancing safety education and providing improved bicycle facilities. The appropriate level of funding for each program activity is best decided at the local level, taking community input into consideration. MTA therefore supports elimination of the existing five (5) percent regional cap on safety education funding from TDA Article 3 in Los Angeles County, so that cities may choose as appropriate among eligible expenditures of TDA funds.

Given the current funding context for the bikeway program, cost savings may need to be realized to allow expansion of the educational programs. Savings may be achieved through consolidation of overlapping programs. The MTA Ad Hoc Committee on Safety provides an existing forum to consider such issues.

2. Objectives

- MTA and local jurisdictions should coordinate and assure the provision of bicycle safety programs and dissemination of information.

3. MTA Policies

- The MTA will support leglislation which will eliminate the present five percent regional cap on safety education funding from TDA Article 3 for Los Angeles County.

- MTA staff will research and provide recommendations to the Ad Hoc Safety Committee regarding the consolidation of bicycle safety programs and the funding of same.

- The MTA will work with the Los Angeles County TRAFFIC Committee to develop and expand its Safety Committee's policies on bicycle safety.

- The MTA will provide safety tips for bicyclists on bicycle system maps.

B. Bicycle Security/Enforcement

1. Background Information/Policy Issues

Security issues regarding bicyclists and their bicycles center upon Class I facilities, enforcement and patrol, and the availability of proper bike storage lockers and/or racks at origin and destination points. Bike paths are separate from street and sidewalk rights-of-way which are routinely patrolled by law enforcement officers in patrol cars or on foot. Points of access are limited and significant portions of the routes are isolated from the surrounding urban environment, making it difficult to put in calls for help. In addition, it is difficult for responders to locate incidents which do occur due to the lack of cross-streets, mileposts, or other identifying features. For these reasons, it is recommended that milepost markers, destination or location signs, and call boxes be installed along Class I facilities. A call box spacing of 0.5 - 1.0 miles would provide cyclists with a five minute access time and should be implemented if funding permits. In addition, bicycle route maps indicating the milepost locations should be prepared and provided to emergency responders. (Although call boxes are most often associated with highway facilities, they have been installed in a wide range of locations including park and ride lots, campuses, pedestrian malls and hiking paths.)

Similarly, illumination can improve the security of bike paths which are in use after dark. In accordance with the emphasis on commute and utilitarian trips, illumination should be provided for those paths which are expected to be used by commuters returning home after dark. Illumination on recreational paths is an amenity which should not be funded with Regional Bikeway funds.

It should be noted that the MTA does not own or operate any Class I bike paths and has no local enforcement jurisdiction. Clearly, as a transportation agency, it is in MTA's interest to support increased patrol and enforcement along bike paths and the possibility of provision of bike patrol officers merits consideration. Certain jurisdictions (the City of Inglewood for example) use bicycle patrol officers for parking enforcement. Such officers could patrol bike paths.

The provision of certain security facilities, such as bicycle lockers and racks, needs to be researched in conjunction with funding availabilities. Licensing of bikes could be one local source of funding for security programs. Private development projects should be required, wherever feasible and prudent, to provide bicycle storage facilities.

Provision of secure bicycle parking is an aspect of security which can be addressed by MTA through provision of lockers and racks at rail transit stations which it develops. (Refer to Section II, Part D, "Bicycle/Transit System Linkages" for specific policies.)

2. Objectives

- Call boxes, destination or location signs and milepost markers should be installed on Class I bikeways. Milepost locations should be indicated on bicycle route maps and such maps should be provided to dispatchers and emergency responders.

- Illumination should be provided on Class I bikeways which are suitable for commute and utilitarian trips. (Refer to Section III.A, Design Standards, for applicable policy.)

- Local jurisdictions should assign patrol officers (preferably on bikes) to bike paths. (Security patrols are not an eligible use of Regional Bikeway funds.)

- Bikeway designs and operational arrangements should provide for emergency access.

3. MTA Policies

- Installation of call boxes on Class I trails is an eleigible expenditure of Regional Bikeway funds.

- MTA will endeavor to identify additional outside funding sources for patrols on bike paths and call boxes for Class I trails. Technology, placement, standards, and response coordination for call boxes remain to be determined.

C. Bikeway Maintenance Program

1. Background Information/Policy Issues

Bicyclists agree that maintenance of bike lanes and streets signed as bike routes are very important to the safety aspects of bicycle travel. Maintenance of bike paths for purposes of providing a smooth riding surface is equally important. Problems for bicyclists are caused by uneven match of the pavement where it meets the gutter, slotted cross gutters, gratings, roadway depressions, debris caused by the sweeping action of cars, water on the pavement and deteriorated pavement.

For Class II and Class III bikeways, maintenance occurs as a part of the routine maintenance for the roadway which contains the bikeway facility. The sweeping, from curb to curb, is important in order that debris caused by autos is removed. The provision of a pavement overlay must take care to "feather" the overlay to the pavement gutter so as not to create a ridge that will be hazardous to bikeway travel. Maintenance projects, such as a pavement overlay, provide an opportunity to modify drainage grates so that the

slots are perpendicular to the roadways, not parallel. Drainage grates with slots parallel to the direction of travel create a potential problem for the cyclist, as the bicycle wheels may get caught in the grate.

No universally accepted standards currently exist for maintenance of bike paths. A survey of bike path maintenance frequencies was conducted as a part of a maintenance audit conducted in 1992 by the Los Angeles County Transportation Commission.[11] Several cities were surveyed as to maintenance type and procedures. The results of those surveys are shown on Table 1.

[11] Volume One, Analysis of Bikepath Maintenance - Costs and Service Levels, Hughes, Heiss and Associates, December 10, 1991, Revised April 6, 1992.

Table 1
Survey of Maintenance Frequencies on Bike Paths

Jurisdiction	Linear Miles	Path Sweeping	Litter Control	Surface Repair	Striping	Weeding/Landscaping
Davis, CA	24.5	By complaint as needed	12 hours per week on 12% of path	As needed	Annually	Weeding - Annually Herbicide - Annually
Duarte, CA	1.5	Weekly	Weekly	As needed	Every third year	Weeding - 4 times per yr Herbicide - 4 times per yr Tree Trim - Every 4th yr Mow/Trim - Weekly
East Bay Regional Park District (Bay Area)	110	5 to 6 times per year	Periodic	As needed	As needed	As needed
Eugene, OR	25	Monthly in summer; as needed otherwise	Weekly in summer	As needed	Every other year	Weeding in summer, Other as needed
Long Beach, CA	4	3 times in summer; 2 times per week otherwise	10 hours/ week	As needed (pathway is concrete, not asphalt)	As needed	N/A beach path
Madison, WI	20	Once a year and by complaint	As needed	Overlay - 10-20 year cycle. Other as needed	Every 2-3 years in heavy travel areas	As needed
Orange County, CA	185	Weekly	As needed	Overlay or slurry major program done every 5 years. Other as needed	Annually	Weeding - Monthly Herbicide - Annually Tree Trim - Annually
San Diego, CA	17	Six times per year and by complaint	Six times per year	Overlay - 15 year cycle. Other as needed	Annually	Weeding - 6 times per yr Herbicide - 2 times per yr Tree Trim - As needed
Seattle, WA	10	As needed	Daily	As needed	N/A	Weeding - Daily Other - As needed

Source: Volume One, Analysis of Bikepath Maintenance Costs, and Service Levels; Hughes, Heiss and Associates, December 10, 1991; Revised April 6, 1992

In previous years, MTA has funded maintenance of selected regional bike paths in Los Angeles County. In 1992, in response to concerns regarding specific costs of bike path maintenance in Los Angeles County, as well as the City of Los Angeles, MTA performed a study of maintenance procedures and costs. The results of this audit are available from MTA.

It should be recognized that, as the bikeway system approaches completion, the maintenance needs will increase and eventually exceed the investment in new facilities. At the same time, the current system should be viewed as only partially complete. For this reason, it is anticipated that, over the next ten years, the emphasis in use of regional bikeway funds will remain on construction of new facilities. After this initial phase (perhaps ten years from now), MTA will need to consider provision of significant levels of support for maintenance of the regional system. Ultimately (perhaps twenty years from now), when the system is largely complete, most of the funds will be expended in maintenance functions.

In accordance with this policy background, MTA needs to assure provision of adequate maintenance to new bikeways developed in early years using regional construction funds. This can be accomplished by requiring project proponents to implement a Pavement Management System (PMS) in conjunction with new bike paths. The PMS can be developed along the lines of such systems which are used for local roadways and would include provisions for visual inspection of bike paths on a regular basis leading to a characterization of the quality of the traveled way surface and overall condition of the facility including ancillary features such as signage, striping and structures. Commitment to perform appropriate pavement maintenance activities (such as slurry seal, spot repairs, restriping and signage replacement) in response to the visual inspection would constitute a complete PMS package.

2. Objectives

- Minimum routine maintenance standards shall be produced for bike paths. The minimum maintenance standards for bikeways will be as follows:

Task	Minimum
Sweeping	Once per week
Drainage Grate Clearance	Once per week
Surface Repair, Slurry Seal	As needed
Vegetation Control	As needed
Striping	As needed, or once per year

Signage	As needed
Storm Repair, Cleanup	As needed
Litter Pick up	Once per week
Graffiti Removal	As needed

- Class I facilities shall be developed in conjunction with a Pavement Management System (PMS) which addresses the longer-term maintenance of quality of the traveled way, as well as ancillary features of such facilities.

- It is MTA's objective to ensure that any maintenance funds awarded in the future out of discretionary Regional Bikeway funds will supplement rather than replace existing expenditures for maintenance currently made at the local level. Cities may expect that any subsequent policy revisions which enable cities to claim funds for bicycle facilities maintenance will be accompanied by a requirement for assurances of maintenance of effort.

3. MTA Policies

- MTA will require local jurisdictions requesting regional bikeway funds to agree to implement a Pavement Management System (PMS) for Class I bikeways and to perform appropriate maintenance activities identified by a visual inspection as a condition of funding new regional bikeways.

- The MTA will expect that the current level of maintenance of bike paths within the City and County of Los Angeles will be continued at the current level, using local funds. In the future, as the Countywide network is nearing completion, MTA will reconsider the regional maintenance needs and may increase the funds provided to local jurisdictions for maintenance of bike paths.

D. Bicycle Marketing

1. Background Information/Policy Issues

Marketing and promotion of alternative forms of transportation is necessary in the current personal transportation arena which is dominated by the drive-alone automobile. This fact has been recognized by MTA and Caltrans, which have established various programs to promote use of the rail and bus systems and other commute alternatives and is a specific mission of Transportation Management Agencies (TMA's) that work with employers and employees to encourage and monitor participation in Transportation Demand Management (TDM) programs aimed at reducing auto trip generation.

Promotion of bicycle travel can range from providing information to direct efforts to promote use of bicycles for commute and utilitarian purposes.

Examples of information which could be provided include:

- Benefits
  - Improved Personal Health
  - Employer Subsidies
  - Cost Savings
  - Reduced Roadway Congestion
  - Improved Air Quality
- Facilities
  - Bikeways
  - Bicycle Parking Facilities
  - Showers
- "How To" Aspects
  - Rules of Road
  - Obtaining Lockers
  - Transit Rules and Permit Requirements

MTA's primary role in the marketing of the countywide bicycle program should be in assembling useful information and materials for distribution through appropriate channels to commuters interested in cycling. These materials, including maps, posters, pamphlets, etc., can be routed through the existing network of TMA's, rideshare organizations, and transit marketing outlets.

Additional information is needed to determine the reasons people choose their commute alternatives, and MTA has a role in determining people's attitudes toward its services and programs. With an eye toward making transit and cycling more attractive as commute alternatives, MTA should seek to determine what additional features and services, including expanded hours for cyclists, parking and storage facilities, and other transit system linkages, can be added to its existing bus, rail, and highway programs to reduce users' reliance on the single-occupant vehicle. Commuter Transportation Services, AQMD, TMA's, and other organizations who routinely provide data on mode-split and commuter preferences can be enlisted to assist with this effort.

Additional marketing opportunities exist in which the MTA and local jurisdictions can promote bicycling as a fun and healthful transportation mode. Although MTA's primary focus in the bicycle program is transportation rather than recreational cycling, MTA recognizes that promoting cycling in any form will encourage new riders to join the sport. These new riders may, in turn, choose to ride their bicycles rather than drive their cars for commute and utilitarian trips. MTA may therefore assist other agencies and non-profit

organizations from time to time in sponsoring or coordinating promotional cycling events, including rides, rallies, or races.

2. Objectives

- TDM programs developed for the region should include bicycle elements which should include the following:
  - Identification of the role of bicycles in goal attainment,
  - "How to" aspects for use of bicycles for commute trips,
  - Monitoring provisions to identify the participation level of bicycle commuting.
  - Data collection techniques that will assist MTA and other agencies in identifying additional bicycle program opportunities.
- The existence of bikeways serving high-density commercial zones and other trip attractors such as colleges and universities should be publicized. This should include updating of bikeways maps on a regular basis (minimum of every five years for local jurisdictions).
- Ancillary facilities including lockers, racks, and showers should be made available to candidate bicycle users who may be interested in becoming bicycle commuters.

3. MTA Policies

- The MTA bicycle program will act as a clearinghouse for information which can be disseminated through pre-existing channels for promoting and marketing use of bicycles for utilitarian and commute trip making.
- MTA staff will coordinate with regional TMAs to assemble and disseminate information which can be used to document the effectiveness of, and increase the role of bicycling in programs designed to reduce auto tripmaking.
- The MTA will update the countywide bikeway map a minimum of every five years. The MTA will strongly encourage local jurisdictions to prepare a bikeway map and to update such map frequently.

V. Funding

A. Bicycle Funding Sources

1. Background Information/Policy Issues

Until the passage of Proposition C, the only dedicated funding source in Los Angeles County for bicycle and pedestrian facilities came from the Transportation Development Act, Article 3. This legislation, also known as SB 821, dedicates 2% of the TDA fund to construction and maintenance of bicycle and pedestrian facilities. Based on population, Los Angeles County receives approximately $3.5 to $4.5 million each year. These funds are administered by the MTA, which has adopted regional TDA Article 3 guidelines in addition to State guidelines.

Before FY 1992-93, MTA policy divided the TDA Article 3 pool into two programs: Local Apportionment (60%) and Regional Bikeway Funds (40%). Local Apportionment was allocated to the cities and County based on their populations, and could be used for local bicycle and pedestrian facility projects, including repair and maintenance of off-street bikeways. Regional Bikeway funds were allocated on a discretionary basis, to be used for construction, major reconstruction, or off-street bikeway maintenance of specific regional facilities constructed prior to FY 1986-87.

With the passage of Proposition C, additional funding became available to the Regional Bikeway Program. As a result of this additional funding, the MTA revised its TDA Article 3 policy in FY 1992-93, designating all of the TDA Article 3 money as local funding to be distributed by formula, and reserving the Proposition C earmarked funds, which come from the 25% of streets and highways component of Prop C, to serve as the funding source for the discretionary Regional Bikeway Program. The increase in TDA funding to localities has resulted in an increase in the amount of monies available for construction and maintenance at the local level and will provide more than adequate resources to maintain the existing system and newly added routes in the near term future. The change was made to allow cities more flexibility in developing local routes and programs, which will complement the regional system.

The TDA Article 3 funds, administered by the MTA, are distributed to local jurisdictions based upon a formula. These funds are intended for design and construction of bicycle and pedestrian facilities of local or regional significance, and for the maintenance and operations of both local and regional facilities. These funds are primarily used by the local jurisdictions for the design and construction of Class II, on-street bikeways, curb cuts for wheelchair access, signage of Class III, signed bike routes, and maintenance of these

facilities. Other uses include cyclist amenities and local bicycle programs. TDA Article 3 funds are an eligible local match for requests for Proposition C and ISTEA funds.[12]

The Regional Bikeway Program is administered by the MTA through the Proposition C/ISTEA Call for Projects funding process. This program is intended for capital outlays required for the design and construction of bicycle lanes and paths of regional significance. This funding is complemented by TDM funds which can provide for cyclist amenities (such as lockers and racks).

In view of recent reductions in Proposition C monies available, it is important to focus those funds on construction and maintenance of bikeways and to look to additional funding sources, either from within MTA or from other agencies, for ancillary project items such as landscaping and call boxes.

In addition to these funds administered by MTA which are earmarked for bicycle improvements, a variety of other funding sources could potentially be tapped to fund bikeway facilities or portions of bikeway projects. Appendix I presents a list of these sources which were identified by the Sacramento Area Council of Governments and other agencies.

2. Objectives

- MTA should continue to administer funding earmarked for bicycles so that separate pots of money are available at the local level and at the regional level for construction and maintenance of bikeway facilities.

- MTA should acknowledge that the increase in local monies earmarked for bicycle programs which occurred in FY 1992-93 will allow localities to assume the burden of maintenance of bikeways for the next ten years.

- The funding of ancillary facilities such as lockers, showers and racks through TDM funds separate from the regional bikeway construction funds should continue.

- MTA should encourage local jurisdictions to explore funding and implementation opportunities for bicycle facilities through the Congestion Management Program, through mitigation measures for development projects, and through pursuit of other funding sources including local tax dollars and outside sources.

[12]While MTA does not require a local match for proposed regional bikeway projects, local jurisdictions may provide a local match to elevate the priority of the proposed project.

3. MTA Policies

- MTA will continue the existing practice of dividing the pot of monies earmarked for bicycle programs and administered by MTA into a local share allocated by formula and a regional share awarded though the annual Call for Projects so that bikeways can be developed at the local level while at the same time routes of regional significance can be built.

- Maintenance of bikeways is the responsibility of local jurisdictions and is not an eligible use of Regional Bikeway funds. The present TDA Article 3 guidelines, with regard to maintenance, will be retained.

- The MTA will provide technical assistance to local jurisdictions with regard to funding applications for federal or state programs.

B. Bicycle Funding Priorities

1. Background Information/Policy Issues

The approval by the voters of Proposition C made possible consideration of an expanded bicycle program, including the opportunity to fund bikeways of regional significance. Bicycling for commute and utilitarian trips is an important new focus for the bicycle program, and MTA needs to be place an emphasis on construction of new facilities which can serve this purpose.

Within the context of development of new facilities, it is expected that emphasis will be placed on bike lanes (Class II facilities) at the local level, where such improvements can be mandated in the designated street cross sections and funded through locally controlled sources of funding such as the TDA Article 3 local share monies. Therefore, it follows that regional bikeway funding should focus on development of bicycle facilities that are of regional significance and which can serve significant numbers of commute and utilitarian trips. At the same time, data needs to be collected to determine the magnitude and ridership attracted to bicycle facilities developed with regional funds so that the success of this policy can be re-assessed after new mileage has been constructed.

The additional funding which is provided by Proposition C can be used to expand the bicycle system within the county, and at present time there is adequate funding for maintenance of existing facilities. However, as more and more routes are added to the system, the maintenance needs will increase. Therefore, the issue of prioritizing maintenance dollars out of Proposition C funding or setting aside a specified regional contribution to maintenance should be revisited some time in the future when a significant amount of mileage has been added to the present system.

The shortfall of funds within Proposition C and subsequent cuts which have been made in the funding of the bikeway program requires for the near term that MTA will need to focus its efforts on construction and maintenance of bikeways rather than become

committed to incurring on-going operational costs associated with use of bikeways such as safety programs, marketing, and other activities not directly associated with expansion of the system.

Regional Bikeway awards are intended to assist cities in implementing cost-effective bicycle system improvements, and not to supplement funding sources for roadway improvements for motor vehicles. MTA will therefore endeavor to limit reversion of bicycle facilities to general motor vehicle use. MTA's Congestion Management Program Deficiency Plan specifies that improvements receiving CMP credit must remain in operation for at least three years or CMP credit will be withdrawn. Further, no credit may be claimed for any roadway project which eliminates transit, bicycle or pedestrian facilities unless comparable replacements are provided. In addition, bicycle improvements constructed using MTA funds must remain in operation for at least ten years or MTA funding will be withdrawn.

2. Objectives

- MTA should modify the current prioritization of projects funded with regional bikeway monies to implement the policies contained in this document with respect to bikeway development.

- MTA should monitor the "vital statistics" of the bikeway program, including the uses of funds, cost of construction, cost of maintenance, and use of facilities so that funding priorities can be adjusted to reflect on-going conditions.

3. MTA Policies

MTA will update funding allocations for the bicycle program and will modify the project funding criteria to reflect the provisions of this policy document, specifically including:

Bikeway Program Priorities

The following policies will guide the prioritization of projects submitted for funding with regional discretionary funds.

- The MTA's highest priority is the remedy of significant safety deficiencies on existing routes. However, the addition of new mileage to the Countywide system is a higher priority than enhancements to the existing system.

- MTA will emphasize construction of new facilities in the near term over funding local maintenance or other bicycle programs.

- MTA will focus regional discretionary funding resources first on providing new facilities before funding enhancements or improvements to existing

facilities. However, MTA may provide funding for reconstruction of facilities of regional significance which have significant safety deficiencies, or which would otherwise become unserviceable or unsafe without major renovation, or which need major reconstruction to retain the existing system mileage.

- MTA will endeavor to complete funding of partially funded bicycle facility segments before committing funding to new projects.

- MTA will attempt to program discretionary funds to pursue construction of a system of bikeways of regional significance. The selection of facility type (bike path vs. bike lane) will be a secondary consideration, taking into account available right-of-way, cost, vehicular traffic, safety and routings which are applicable to the various bicycle facility types under consideration.

- Regionally significant bikeways are defined as those which:

  - Serve activity centers which are large scale or otherwise important from a countywide perspective;

    and which

  - provide for a continuous system of bike routes which connect adjacent communities or cross jurisdictional boundaries.

- With respect to the type of bicycle facility, MTA will give priority credit to cost effective projects which can demonstrate a relationship to activity centers, employment centers, retail centers, schools, transit stations, and high density housing, in order to accommodate commute and utilitarian trips.

Bikeway Facility Funding Requirements

In addition to having a high priority rating, MTA will place the following requirements on local jurisdictions which receive MTA discretionary funds for bikeway projects (see the appropriate section of this document for details):

- The proposed bikeway shall be designated in an adopted local or regional plan.

- Sponsoring jurisdictions shall provide assurance that bikeway proposals have been reviewed for compliance with identified standards.

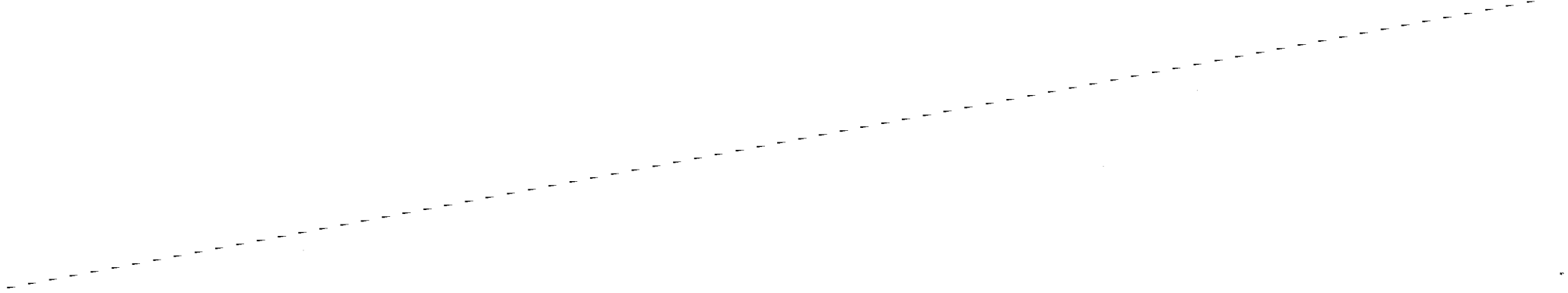
- Sponsoring jurisdictions shall agree to maintain the facility in perpetuity and to implement a Pavement Management System for bike paths.

- Sponsoring jurisdictions shall guarantee that bicycle facilities constructed using MTA funds will not revert to non-bicycle use for a minimum of ten years.

- Sponsoring jurisdictions shall provide before and after bicycle count data.

^A^Evide

VI. Appendices



Appendix A. Definition of Key Terminology

The following glossary provides a definition of key terms used in bicycle planning.

Bicycle - A vehicle having two tandem wheels, propelled solely by human power, upon which any person or persons may ride.

Bicycle Boulevards - Streets designed to limit or prohibit motor vehicle traffic, using barriers or other design elements, in order to enhance bicycle safety and enjoyment.

Bicycle Facilities - A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking facilities, bikeways and shared roadways not specifically designated for bicycle use.

AQMD - Air Quality Management District

BAC - Bicycle Advisory Committee

Bike Lane - A striped lane for one-way bike travel on a street or highway.

Bike Path - A right-of-way completely separated from any street or highway for bicycle travel.

Bike Route - A travelway shared by bicycles and motor vehicles or pedestrian traffic, designated by signs only.

Bikeway - All facilities that provide primarily for bicycle travel.

Caltrans - California Department of Transportation

Class I Bikeway - A bike path (see definition above).

Class II Bikeway - A bike lane (see definition above).

Class III Bikeway - A bike route (see definition above).

Clearance, Lateral - Width required for safe passage of a bicycle as measured in a horizontal plane.

Commuter/Utility Cyclist - An individual(s) who uses a bicycle primarily to reach a particular destination for practical purposes, such as to purchase or deliver goods and services, or to travel to and from work or school. Messengers are classified as utility cyclists.

Congestion Management Program (CMP) - A state-mandated program which requires the monitoring and mitigation of increased congestion on regional highway routes and transit systems. In conjunction with participating in the program, monies are available for local transportation programs.

Cross Section - Diagrammatic presentation of the right-of-way profile which is at right angles to the centerline at a given location.

CMP - Congestion Management Program

CTS - Commuter Transportation Services

ETC - Employee Transportation Coordinator

FHWA -Federal Highway Administration

Grade Separation - Vertical isolation of travelways through use of a structure so that traffic crosses without interference.

HDM - Highway Design Manual

Highway - A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

ISTEA - Intermodal Surface Transportation Efficiency Act

Mode Split - Percentage of trips that use a specific form of transportation. A 1% bicycle mode split indicates that 1% of trips are made by bicycle.

Motor Vehicle - A vehicle that is self-propelled or designed for self-propulsion.

MOU - Memorandum of Understanding

MTA - Los Angeles County Metropolitan Transportation Authority

NPTS - National Personal Transportation Survey

Pavement Marking - Painted or applied line(s) or legend placed on any bikeway surface for regulating, guiding or warning traffic.

Pedestrian - A person whose mode of transportation is on foot. A person "walking a bicycle" becomes a pedestrian.

PMS - Pavement Management System

Recreational Cyclist - An individual who uses a bicycle for the trip enjoyment itself. Ultimate destination may be of secondary importance.

Reversion - Process by which facilities funded and built specifically for bicycle use are removed or converted to non-bicycle or mixed use.

Right-Of-Way - The right of one vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian. Also, the strip of land over which a transportation facility is built.

RMP - Regional Mobility Plan

Roadway - The portion of the highway for vehicle use.

Rules of the Road - That portion of a motor vehicle law which contains regulations governing the operation of vehicular and pedestrian traffic.

SANDAG - San Diego Association of Governments

SCAG - Southern California Association of Governments

SCRRA - Southern California Regional Rail Authority

Shared Roadway - A type of bikeway where bicyclists and motor vehicles share the same roadway.

Shoulder - A portion of a highway contiguous to the roadway that is primarily for use by pedestrians,bicyclists, and emergency use of stopped vehicles.

Sidewalk - The portion of a highway or street designed for preferential or exclusive use by pedestrians.

Sight Distance - A measurement of the cyclist's visibility, unobstructed by traffic, along the normal path to the farthest point of the roadway surface.

TCM - Transportation Control Measure

TDA - Transportation Development Act

TDM - Transportation Demand Management

TEA - Transportation Enhancement Activities

TMA - Transportation Management Agency

TMO - Transportation Management Organization. Also known as Transportation Management Agency (TMA).

Traffic Control Devices - Signs, signals or other fixtures, whether permanent or temporary, placed on or adjacent to a travelway by authority of a public body having jurisdiction to regulate, warn or guide traffic.

Traffic Volume - The given number of vehicles that pass a given point for a given amount of time (hour, day, year).

Transportation Control Measures (TCM's) - Refers to specific actions and strategies identified or selected in programs such as air quality compliance or congestion management which are intended to reduce motor vehicle tripmaking or vehicle miles traveled within peak demand periods or on a daily basis.

Transportation Demand Management (TDM) - Generally refers to policies, programs and actions that are directed towards increasing the use of high occupancy vehicles (transit, carpooling and vanpooling) and the use of bicycling and walking. TDM also includes activities that encourage telecommuting and compressed work week schedules as an alternative to driving.

Travelway - Any way, path, road or other travel facility used by any and all forms of transportation.

Trip - Transport of a person and/or goods between two points. Each "trip" is associated with two "trip ends" which are the origin and destination of travel.

Trip Reduction - Generally synonymous with TDM (see definition above).

Vehicle - Any device in, upon or by which any person or property is or may be transported or drawn upon a public highway and includes vehicles that are self-propelled or powered by any means.

VMT - Vehicle Miles Traveled.

Appendix B. Planning Level Cost Factors

Bikeway Construction

Class I (Bike Paths):	Total project cost ranges from $200,000 to $2,000,000 per mile. For planning purposes, a cost of $1,500,000 for mile should be used, including right-of-way. Note that at $25/sf the right-of-way cost for a 12' project width would be about $1,600,000 per mile, therefore project specific information on the proposed total width and right-of-way cost should be considered wherever possible.
Class II (Bike Lanes)	For planning purposes, $35,000 per mile (for 2-way travel) should be used for project cost for stiping only. Add an additional $70,000 per mile to add paving for additional shoulder width in existing right-of-way. Note that purchase of additional right-of-way would substantially increase the project cost. For example, at $25/sft, the right-of-way for 5' wide lanes in both directions is $1,300,000 per mile.
Class III (Bike Routes)	For planning purposes, $10,000 per mile allowance for signage should be used.

Source: Korve Engineering, Los Angeles County Department of Public Works, LACMTA.

Ancillary Features

Parking	Bicycle lockers range in cost from $350 to $1,300 (per bike). For planning purposes, $750 per locker should be assumed for the cost of the locker and an equal amount for installation. Bicycle racks range in cost from $50 to $120 for simple ones requiring chains or wire ropes up to $200 - $300 for complex units with integral provisions to secure the wheels and frame. For planning purposes, $120 per bike should be assumed for the material cost and an equal amount should be added for installation. Quantity purchases may result in lower materials costs and inclusion of installation in larger projects may reduce installation costs as well.
Showers	The materials cost of a shower itself, not including the enclosed space within which the shower is constructed, is about $300. For planning purposes, an equal amount should be added for installation.

Source: Korve Engineering, Oregon Department of Transportation, LACMTA.

Appendix C. Results of 1993 Bicycle Rider Survey

INTRODUCTION

In May 1993, the Applied Management & Planning Group was contracted by Korve Engineering to conduct a survey of bicycle riders for the Los Angeles County Metropolitan Transportation Authority. The survey was designed to assist with the development of a Countywide Bicycle Policy Plan. The surveys, a double-sided page with a reply-paid panel for mailing, were distributed through bicycling organizations, Employee Transportation Coordinators (ETCs), and by intercepting bicyclists on bicycle paths and trails. A total of 771 completed surveys were returned.

Participants were asked to report what types of trips and several characteristics of the trips they usually make with their bicycles. They were also asked to rate the importance of thirty ideas for improving bicycle transportation and several demographic questions. The following section is a discussion of the major findings of the survey, followed by graphical representations of most of the questions contained in the survey. A copy of the survey instrument is attached.

MAJOR FINDINGS

Survey respondents reported using their bicycles for the purposes shown in Table 1.

Table I

Work	69%
School	7%
Shopping	27%
Recreation/Fitness	78%

A large number of respondents reported that they use their bicycles to travel to work (sixty-nine percent) and sixty-four percent of those reported that they use their bicycles to get to work between 11 and 20 times per month. Although for the purposes of vehicle trip reduction it has been recommended that employers identify employees living within five miles of their worksite as potential bicycle users, respondents to the survey ride an average of 8.4 miles to their worksite. Despite the fact that eighty-nine percent of the respondents indicated that they normally have an automobile available to them, thirty-three percent said they would use another form of ridesharing (carpool, public bus, or walking) to get to work if the trip was not made by bicycle.

More respondents indicated that they use their bicycles for shopping trips than for school trips (twenty-seven percent compared to seven percent). Seventy-eight percent of respondents use their bicycles for recreational/fitness trips and travel an average one-way distance of 32 miles. Six percent of work trips and seventeen percent of recreational/fitness trips are completed in part by car.

Of the thirty ideas provided to respondents for improving bicycle transportation, the five ideas most important to all respondents were as follows:

- More bike lanes with striping on the pavement
- Removal/repair of hazards such as potholes or grates
- More bike routes or lanes on commercial streets
- Bikeways that connect to each other for long distances
- Increase width of curb-lane to provide more space for bicycles

The following pages contain graphical representations with corresponding tables for each of the questions asked in the survey.

Figure 1 - Bicycle Trip Types

Do you use your bicycle for...	Yes	No
Work Trips	69%	31%
School Trips	7%	93%
Shopping Trips	27%	73%
Recreational/Fitness Trips	78%	22%

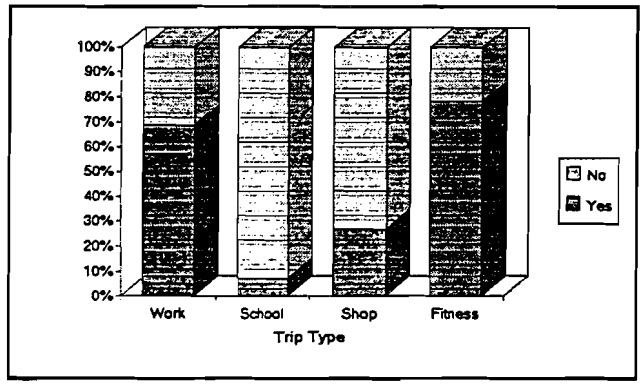


Figure 2 - Bicycle Trips Per Month

Number of Days per Month...	Work Trips	School Trips	Shop Trips	Fitness Trips
1 to 5	14%	20%	59%	36%
6 to 10	13%	31%	28%	25%
11 to 15	20%	13%	5%	13%
16 to 20	44%	27%	6%	16%
21 or more	9%	9%	2%	10%

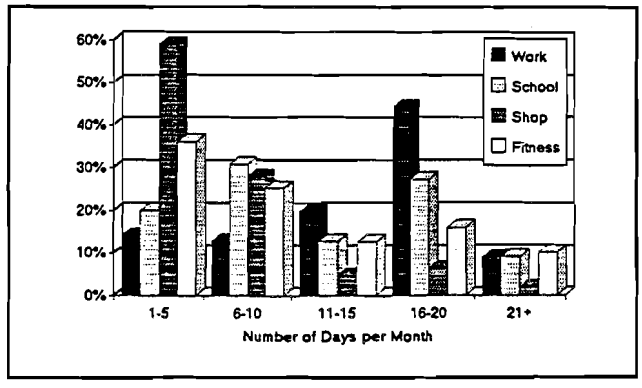


Figure 3 - Weekend versus Weekday Travel

Do you...	Weekends	Weekdays
Bike to Work mostly on...	6%	94%
Bike to School mostly on...	9%	91%
Bike to Shop mostly on...	49%	51%
Bike for Fitness mostly on...	62%	38%

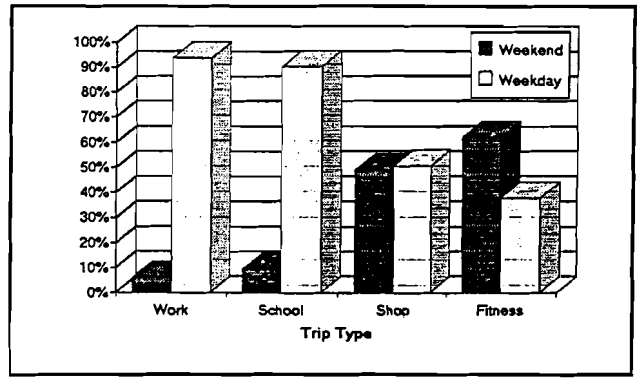


Figure 4 - Travel in One-Way Miles

How far do you go one-way in miles?	Mean One-Way Miles
Work Trips	8.4
School Trips	7.7
Shopping Trips	5.3
Recreational/Fitness Trips	32.0

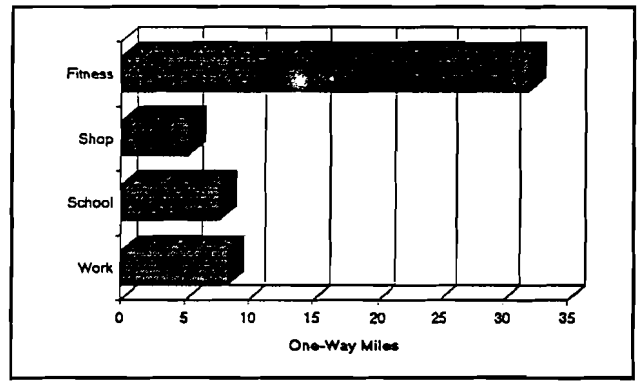
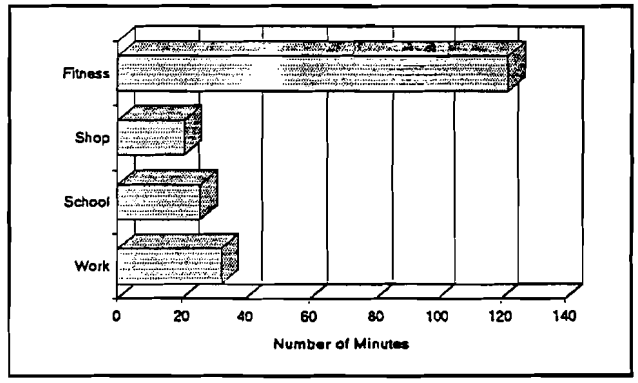


Figure 5 - Travel in Minutes

How long does it usually take you in minutes?	Mean One-Way Minutes
Work	32.5
School	25.6
Shopping	20.8
Recreational/Fitness	122.3



The following figures present the times respondents reported they usually begin their home to work and home to fitness trips. School and shopping trips are not presented here because the response rate for these two trip types were too low to report meaningful results.

Figure 6 - Home to Work Start Times

Time of Day	Percent	Time of Day	Percent
2:00am	0%	1:00pm	0%
3:00am	0%	11:00am	1%
4:00am	2%	12:00pm	1%
5:00am	9%	1:00pm	0%
6:00am	31%	2:00pm	1%
7:00am	28%	3:00pm	0%
8:00am	18%	4:00pm	1%
9:00am	5%	5:00pm	0%
10:00an	1%	6:00pm	1%
11:00am	1%	7:00pm	0%
12:00pm	1%		

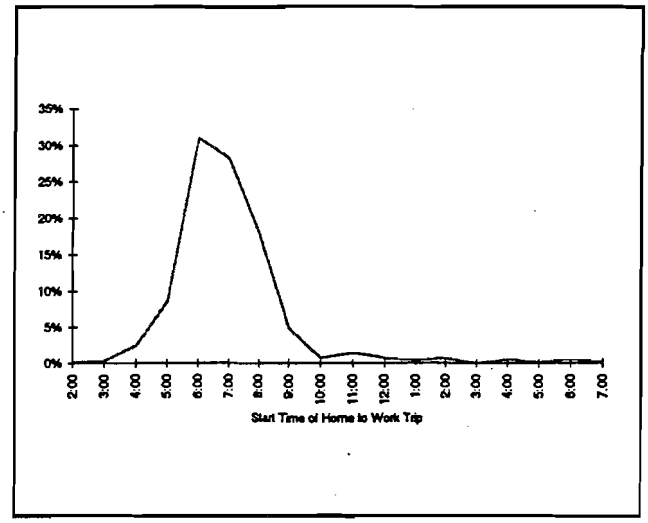


Figure 7 - Home to Fitness Start Times

Time of Day	Percent	Time of Day	Percent
2:00	0%	1:00	2%
3:00	0%	2:00	3%
4:00	0%	3:00	2%
5:00	1%	4:00	3%
6:00	5%	5:00	4%
7:00	21%	6:00	4%
8:00	22%	7:00	1%
9:00	13%	8:00	0%
10:00	10%	9:00	0%
11:00	5%	10:00	0%
12:00	2%		

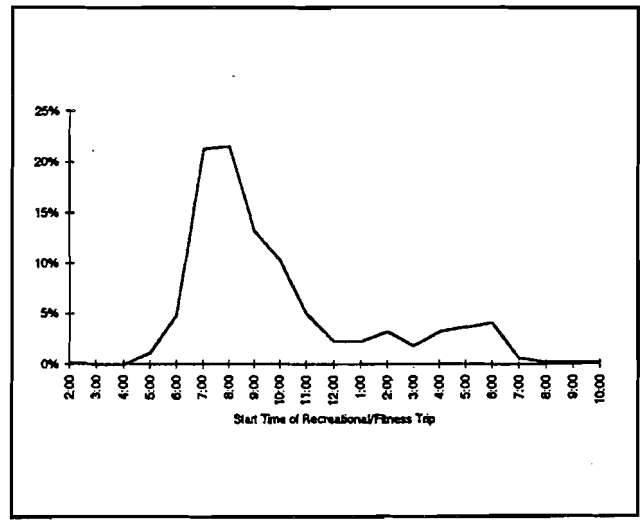


Figure 8 - Modes of Travel Used in Addition to Bicycles

When you travel by bicycle, do you also travel part of the way by...	Rail	Bus	Car
Work	1%	1%	6%
School	0%	0%	1%
Shopping	0%	0%	1%
Recreational/Fitness	1%	0%	17%

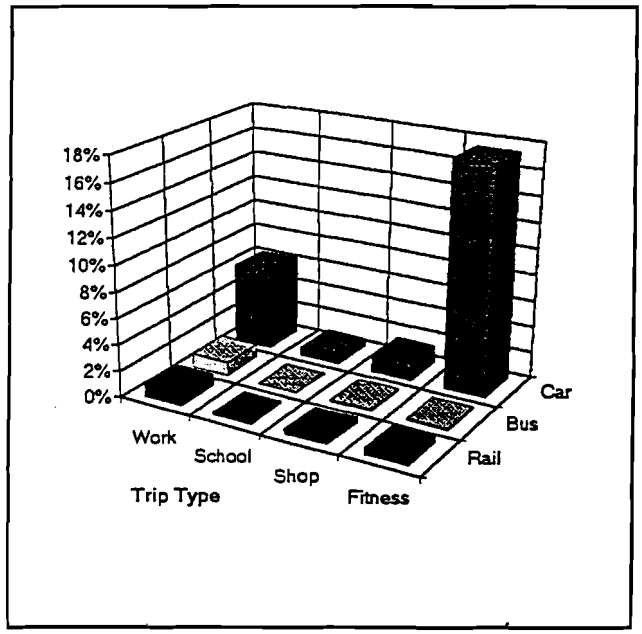


Figure 9 - Alternate Modes of Transportation Used

If you did NOT go by bicycle, how would you usually make the following trips...	Work	School	Shopping
Drive	65%	48%	68%
Rideshare	17%	15%	5%
Bus	10%	13%	7%
Rail	0%	0%	1%
Motorcycle	2%	4%	2%
Walk	6%	20%	18%
Would Not Make Trip	0%	0%	1%

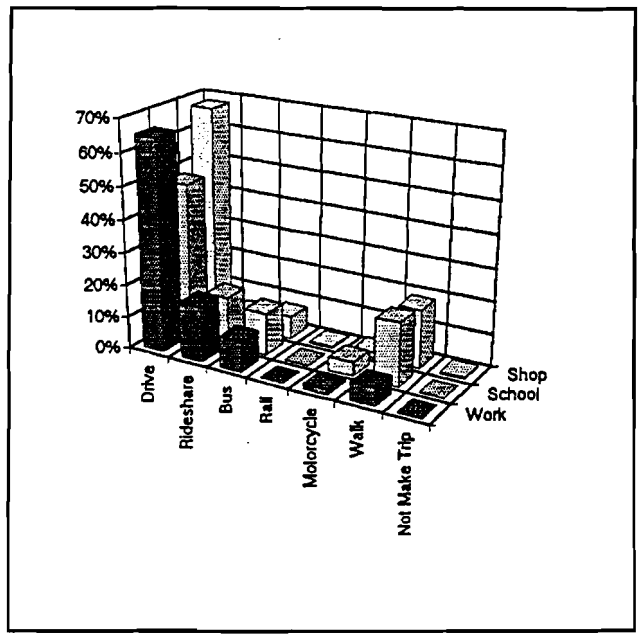


Figure 10 - Vehicle Availability

Do you usually have an automobile /vehicle available to you?	No	Yes
Work	11%	89%
School	24%	76%
Shopping	17%	83%

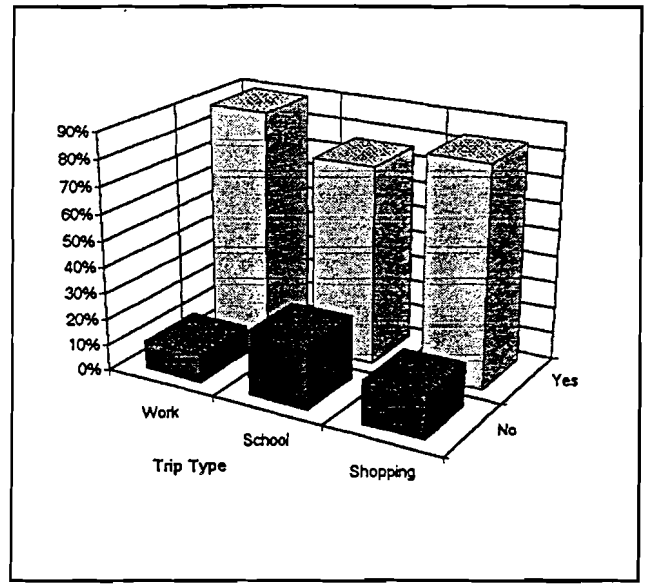


Table 2 presents the top five ideas for improving bicycle transportation that were considered to be very important by those who responded. The numbers inside the table present the rank order of the ideas by the trip purposes of the respondents. Respondents did not rank the ideas on the survey, the ranking was calculated based on the percentage of respondents who indicated that the particular idea was very important. What is notable here is that the same five ideas were most important across almost all of the trip types. The only exception was the opinion of those who make school trips, who deemed that having bicycle racks that secure more of the bicycle was more important than connected bikeways for long distances.

Table 2

Ideas Very Important for Improving Bicycle Transportation in L. A.	All Trips	Work Trips	School Trips	Shop Trips	Fitness Trips
More bike lanes with striping on the pavement	1	1	2	1	1
Removal/repair of hazards such as potholes or grates	2	3	3	3	2
More bike routes or lanes on commercial streets	3	2	1	2	3
Bikeways that connect to each other for long distances	4	5	9	4	4
Increase width of curb-lane to provide more space for bicycles	5	4	4	5	5
Bicycle racks that allow more of the bike to be secured with your lock	12	12	5	9	12

Table 3 provides the percentage of all respondents who responded "Very Important" to each of the thirty ideas presented in the survey.

Table 3

Ideas for Improving Bicycle Transportation	
More bike lanes with striping on the pavement	84.3%
Removal/repair of hazards such as potholes or grates	77.9%
More bike routes or lanes on commercial streets	75.6%
Bikeways that connect to each other for long distances	69.2%
Increase width of curb-lane to provide more space for bicycles near the curb	66.3%
Smoother pavement in the curb lane	63.7%
More bike signed routes	62.7%
Bikeways that go from residential areas to nearby commercial areas	61.7%
Wider stripes on the pavement, or more stripes to indicate bike lanes	61.4%
More bike paths that are totally separate from the street	59.8%
Sensitive pavement loop detectors that trigger traffic signals when a bike is the only vehicle there	59.5%
Bicycle racks that allow more of the bike to be secured with your lock	57.5%
A shower available at my workplace	52.1%
Better lighting on bike paths and routes	49.5%
A pothole "hotline" with reported potholes repaired in a short period of time	48.9%
Enclosed bicycle parking (lockers) available	46.2%
A locker for my clothes at my workplace	45.5%
More bicycle parking at work	42.7%
Removal of parking on city streets to provide more riding space near the curb	41.4%
Lengthening green time at major intersections to allow bicycles to clear	37.1%
More bicycle parking available at park and ride lots served by rail or bus	36.1%
More police bicycle patrols on paths	35.8%
A course on how to ride to school safely	33.8%
More bicycle parking in shopping malls	32.2%
A pamphlet or course with tips on how to bike safely	29.3%
Bike route signs which indicate route number and number of miles to destinations	27.0%
A pamphlet or materials on how to protect your bike from theft	26.9%
Bicycle racks available at major bus stops	22.5%
More bicycle parking in apartment/condo complexes	22.2%
More mountain bike trails	22.1%

Figure 11 - Age of Respondents

What is your age?

17 to 21 years	2%
21 to 30 years	23%
31 to 40 years	33%
41 to 50 years	22%
Over 50 years	20%

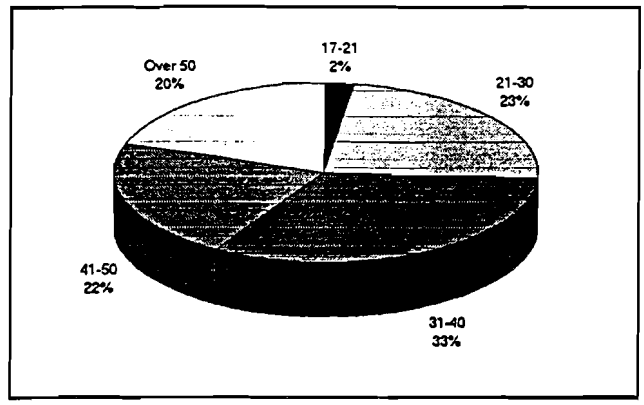


Figure 12 - Gender of Respondents

Are you...

Male	81%
Female	19%

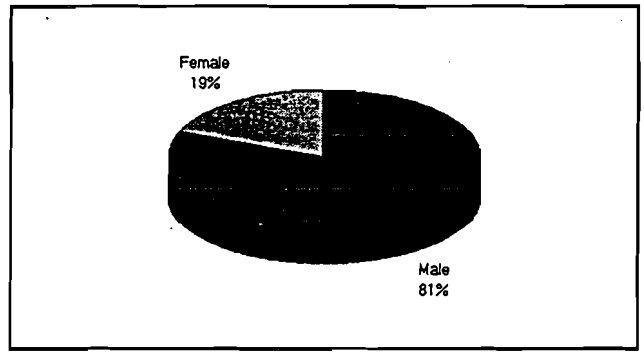
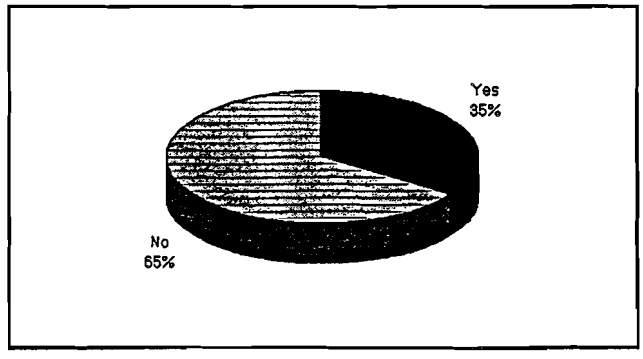


Figure 13 - Bicycle Organization Affiliation

Do you belong to a bicycling organization?

Yes	35%
No	65%



Los Angeles County Bicycle Survey

Hello! We are working on a Countywide Bicycle Policy Plan for the Los Angeles County Metropolitan Authority. WE REALLY NEED YOUR HELP. Please take a moment to tell us about the bicycle trips you make, and what you would like to see done in Los Angeles County to improve traveling by bicycle. The information you give us is confidential, and will be used for research purposes only. PLEASE FOLD THIS SURVEY AS INDICATED AND MAIL IT BACK TO US, OR GIVE YOUR SURVEY BACK TO OUR INTERVIEWER, IF THIS IS A BIKE TRAIL INTERVIEW.

Thank you again for your participation!

1. Please fill in as much information as you can about the trips you usually make BY BICYCLE. We are most interested in your BICYCLE trips from home to work, to school, to shopping, and your recreation/fitness rides (if work or school trips are not applicable, please write N/A in that line):

Purpose of Trip	How Many Days Do You Travel by Bike?	Do You Travel Mostly Weekdays or Weekends? (Check One)	How Far Do You Go One Way? (In Miles)	How Long Does It Usually Take You? (In Minutes)	What Time Do You Usually Begin Your Trip?	What Time Do You Usually Begin Your Return Trip?	When you travel by bike, do you also travel part of the way by: (check one)
Work	☐ Days/Wk ☐ Days/Mo	☐ Weekends ☐ Weekdays	☐ Miles	☐ Minutes	__:__ AM/PM	__:__ AM/PM	Rail ☐ Bus ☐ Car ☐
School	☐ Days/Wk ☐ Days/Mo	☐ Weekends ☐ Weekdays	☐ Miles	☐ Minutes	__:__ AM/PM	__:__ AM/PM	Rail ☐ Bus ☐ Car ☐
Shopping	☐ Days/Wk ☐ Days/Mo	☐ Weekends ☐ Weekdays	☐ Miles	☐ Minutes	__:__ AM/PM	__:__ AM/PM	Rail ☐ Bus ☐ Car ☐
Recreation/ Fitness	☐ Days/Wk ☐ Days/Mo	☐ Weekends ☐ Weekdays	☐ Miles	☐ Minutes	__:__ AM/PM	__:__ AM/PM	Rail ☐ Bus ☐ Car ☐

2. If you did NOT go by bicycle, how would you usually make the following trips (CHECK ONE BOX FOR YOUR WORK TRIPS, YOUR SCHOOL TRIPS, AND YOUR SHOPPING TRIPS ONLY -- RECREATIONAL TRIPS ARE NOT INCLUDED IN THIS QUESTION):

	Drive	Share A Ride	Take the Bus	Take Rail	Ride A Motorcycle	Walk	Would Not Make the Trip	Not Applicable
Work	☐	☐	☐	☐	☐	☐	☐	☐
School	☐	☐	☐	☐	☐	☐	☐	☐
Shopping	☐	☐	☐	☐	☐	☐	☐	☐

Do you usually have an automobile/vehicle available to you? No ☐ Yes ☐

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 70525 LOS ANGELES, CA

POSTAGE WILL BE PAID BY ADDRESSEE

Los Angeles County Metropolitan Transportation Authority
c/o Applied Management & Planning Group
12300 Wilshire Boulevard, Suite 430
Los Angeles, CA 90025-9656

METRO

3. Please check the appropriate box to indicate whether you think the ideas below are very important, somewhat important, or not important for improving bicycle transportation in Los Angeles County.

Ideas for Improving Bicycle Transportation	Very Important	Somewhat Important	Not Important
1. More moutain bike trails	☐	☐	☐
2. More bike lanes with striping on the pavement	☐	☐	☐
3. More bike signed routes	☐	☐	☐
4. More bike routes or lanes on commercial streets	☐	☐	☐
5. More bike paths that are totally separate from the street	☐	☐	☐
6. Bikeways that connect to each other for long distances	☐	☐	☐
7. Bikeways that go from residential areas to nearby commerical areas	☐	☐	☐
8. A locker for *my* clothes at *my* workplace	☐	☐	☐
9. A shower available at *my* workplace	☐	☐	☐
10. Better lighting on bike paths and routes	☐	☐	☐
11. More bicycle parking available at park and ride lots served by rail or bus	☐	☐	☐
12. More bicycle parking in:			
a. shopping malls	☐	☐	☐
b. work	☐	☐	☐
c. apartment/condo complexes	☐	☐	☐
13. Enclosed bicycle parking (lockers) available	☐	☐	☐
14. Bicycle racks available at major bus stops	☐	☐	☐
15. Bicycle racks that allow more of the bike to be secured with your lock	☐	☐	☐
16. Sensitive pavement loop detectors that trigger traffic signals when a bike is the only vehicle there	☐	☐	☐
17. Lengthening green time at major intersections to allow bicycles to clear	☐	☐	☐
18. Wider stripes on the pavement, or more stripes to indicate bike lanes	☐	☐	☐
19. Removal of parking on city streets to provide more riding space near the curb	☐	☐	☐
20. Increase width of curb-lane to provide more space for bicycles near the curb	☐	☐	☐
21. Removal/repair of hazards such as pothoies or grates	☐	☐	☐
22. Smoother pavement in the curb lane	☐	☐	☐
23. A pamphlet or course with tips on how to bike safely	☐	☐	☐
24. A pamphlet or materials on how to protect your bike from theft	☐	☐	☐
25. A course on how to ride to school safely	☐	☐	☐
26. Bike route signs which indicate route number and number of miles to destinations	☐	☐	☐
27. More police bicycle patrols on paths	☐	☐	☐
28. A pothole "hotline" with reported potholes repaired in a short period of time	☐	☐	☐

4. Please tell us about yourself:

What is your age?

Under 12 ☐ 12-16 ☐ 17-21 ☐ 21-30 ☐
31-40 ☐ 41-50 ☐ Over 50 ☐

Are you: ☐ Male ☐ Female

Do you belong to a bicycling organization?

☐ Yes ☐ No

What is Your Home Zip Code?: _____

What is Your Work Zip Code?: _____

5. Please tell us about anything else that might help you take more trips by bicycle instead of using your car:

_____

_____

_____

_____

_____

Please return by May 17, 1993.

Appendix D. Status of Bicycle Plans for County of Los Angeles

Agency	Contact	Status of Bicycle Plan
Agoura Hills	Vince Mastrosimone Director of Public Works (818) 597-7314	Bikeway Plan, adopted as part of the Circulation Element of the General Plan, adopted 1993.
Alhambra	Chris Montan Management Asst/ Transportation (818) 570-3207	No existing bicycle plan.
Arcadia	David Feinberg Administrative Assistant (818) 574-5400	Part of Recreation Element of the city's General Plan.
Artesia	Alicia Ley Assistant to City Manager (310) 865-6262 Ext. 53	No existing bicycle plan.
Avalon	Dick Gosselin Captial Improvements Director (310) 510-0220	No existing bicycle plan.
Azusa	Naser Abbaszadeh City Engineer (818) 334-5125	Transportation Element of the city's General Plan.
Baldwin Park	Sid Mousavi City Engineer (818) 960-4011	No existing bicycle plan.
Bell	Annette S. Peretz Director of Development Services (213) 588-6211, ext. 213.	Circulation Element of General Plan Adopted 4/87.
Bellflower	Rich Pierce Director of Parks and Recreation (310) 804-1424 ext. 208	No existing bicycle plan.
Bell Gardens	Carmen Morales City Planner (310) 806-4507	No existing bicycle master plan. General Plan currently being modified. Will contain a transportation element.
Beverly Hills	Audrey Arlington Senior Planner (310) 285-1123	The Open Space Element of the General Plan, adopted 2/77, contains a Bikeway Plan. Circulation Element adopted 9/77.
Bradbury	Keene Wilson Interim City Manager (8181) 358-3218	No existing bicycle plan.

Agency	Contact	Status of Bicycle Plan
Burbank	Bill Lundgren Manager, Transportation Planning (818) 953-4323	Bikeways Master Plan Adopted 3/93.
Calabasas	Jim Biega Deputy Traffic Engineer (805) 653-6597	No existing bicycle plan.
Carson	George Schultz Director, Engineering Services (310) 830-7600	Bicycle Master Plan adopted 1979. Circulation element of General Plan, adopted 1979, includes bicycle component and bicycle route map.
Cerritos	Emely Merina Reher Administrative Assistant (310) 860-0311 ext. 268	No existing bicycle plan. A map of existing routes is available.
Claremont	Mark Christoffels City Engineer (909) 399-5474	Circulation Element of the city's General Plan.
Commerce	Sam Johnson Director of Public Works (213) 722-4805 ext. 2234	No existing bicycle plan.
Compton	John Johnson Assistant City Manager (310) 605-5500	No existing bicycle plan.
Covina	Hal Ledford City Planner (818) 858-7231	Bicycle Master Plan.
Cudahy	Jack M. Joseph City Manager (213) 773-5143	No existing bicycle plan.
Culver City	Joan Kassan Intergovernmental Relations Officer (310) 202-5787	Circulation Element of the city's General Plan is under revision. Will include a bicycle route map and text. Expected completion 1994.
Diamond Bar	Tseday Aberra Administrative Analyst (909) 396-5671	No existing bicycle plan.
Downey	Eric Zandvliet Assistant Traffic Engineer (310) 904-7108	No existing bicycle plan.
Duarte	Dona Mitzel Parks and Recreation Director (818) 357-7931	No existing bicycle plan.

Agency	Contact	Status of Bicycle Plan
El Monte	David Waterman Asst. Director, Parks and Rec. (818) 580-2200	No existing bicycle plan.
El Segundo	Bellur Devaraj City Engineer (213) 322-4670	Circulation element of the General Plan, adopted 1992, includes bicycle component and bicycle route map.
Gardena	Gail Doi Grants Administrator (310) 217-9508	Circulation element of the General Plan adopted 1975, includes bicycle component and bicycle route map.
Glendale	Jano Baghdanian City Traffic Engineer (818) 548-3960	No existing bicycle plan.
Glendora	Mark Esposito Traffic Engineering Technician (818) 914-8257	No existing bicycle plan.
Hawaiian Gardens	Paul Hogan Asst. to the City Administrator (310) 420-2641	No existing bicycle plan. The city is currently developing its General Plan that will include a plan encompassing all recreational and bikeway projects. A Bicycle Master Plan will not be in place for an estimated two years.
Hawthorne	Charles Herbertson City Engineer (310) 970-7902	No existing bicycle plan.
Hermosa Beach	Any Amirari Public Works Director (310) 376-6984	Circulation Element of the General Plan, adopted 3/90, includes bicycle component and route map.
Hidden Hills	Cherie Paglia City Clerk (818) 888-9281	No existing bicycle plan.
Huntington Park	Donald L. Jeffers Chief Administative Officer (213) 582-6161	No existing bicycle master plan due to limited opportunities for bike lanes.
Industry	Chris Rope City Manager (818) 333-2211	No existing bicycle plan.
Inglewood	Amit Kothari Associate Engineer (310) 412-5301	Circulation Element of General Plan, adopted 1992, includes bicycle component and route map.
Irwindale	Carlos Alvarado City Engineer (818) 962-3381	No existing bicycle plan.

Agency	Contact	Status of Bicycle Plan
La Canada-Flintridge	Fullmer Chapman Director of Public Works (818) 790-8880	No existing bicycle plan.
La Habra Heights	Noelia Chapa Finance Director (310) 694-6302	No existing bicycle plan.
Lakewood	Charles Ebner Director, Community Development (310) 866-9771	Bikeway Plan, adopted 2/90.
La Mirada	Rick Patton Finance Director (310) 943-0131	No existing bicycle plan.
Lancaster	Tim Bochum Transportation Engineer (805) 723-6048	Draft Comprehensive Bicycle Plan dated January, 1992.
La Puente	Ted Abo Director of Finance (818) 330-4511	No existing bicycle plan.
La Verne	Arlene Andrew Associate Planner (909) 596-8706	Bicycle Master Plan.
Lawndale	Mike Kapanpour Acting Public Works Director (310) 973-4321	No existing bicycle plan.
Lomita	Gary Irwin Assistant City Administrator (310) 325-7110	No existing bicycle plan.
Long Beach	Tim Lee Associate City Engineer (310) 590-6173	Citywide Bikeway System, adopted 12/91, includes bicycle route map.
Los Angeles City	Irwin Chodash Transportation Engineer (213) 485-4277	Bicycle Plan, adopted 7/77, is part of the Circulation Element of the city's General Plan. Consists of a route map.
Los Angeles County	Howard Gong Programs Development Division (818) 458-3940	Plan of Bikeways, a sub-element of the Transportation Element of the Los Angeles County General Plan, adopted 9/75, amended 6/76.
Lynwood	Emilio Murga Director of Public Works (310) 603-0220 ext. 295	No existing bicycle plan.

Agency	Contact	Status of Bicycle Plan
Malibu	David Carmany City Manager (310) 456-2489	No existing bicycle plan.
Manhattan Beach	Maxine Woerner (310) 545-5621	No existing bicycle plan.
Maywood	Michael Williams Finance Director/Treasurer (213) 562-5000	No existing bicycle plan.
Monrovia	Dan Iwata Parks/Environmental Services Mgr. (818) 359-3231	Bicycle Master Plan.
Montebello	Transit Planning	No existing bicycle plan.
Monterey Park	Denise Bates (818) 307-1255	No existing bicycle plan.
Norwalk	Randall Hillman (310) 929-8677 ext. 324	No existing bicycle plan.
Palmdale	Tom Horne Traffic/Transportation Engineer (805) 267-5100	Master Plan of Bikeways adopted 12/81. City has a map of existing bikeways dated 3/93 and three phase maps for the city's bikeway plan.
Palos Verdes Estates	Aron Baker Associate Engineer (310) 378-0383	No existing bicycle plan.
Paramount	Richard Leahy Deputy City Manager (310) 220-2022	No existing bicycle plan.
Pasadena	Min der Day Principal Engineer (818) 405-4304	The Plan to Make Pasadena Bicycle-Friendly, Adopted 5/91. See also General Plan.
Pico Rivera	Randy Rassi Finance Director (310) 942-2000	No existing bicycle plan.
Pomona	(714) 620-2353	No existing bicycle plan.
Rancho Palos Verdes	Trent Pulliam Public Works Director (310) 541-6500	Conceptual Trail Plan that incorporates discussion of a bikeway plan.
Redondo Beach	John Mate Traffic Engineer (310) 372-1171	Circulation Element of the city's General Plan, adopted 1992, includes bicycle component and route map.

Agency	Contact	Status of Bicycle Plan
Rolling Hills	Lola Ungar Director, Planning (310) 377-1521	Circulation Element of the city's General Plan, adopted 6/90, includes bicycle component and route map.
Rolling Hills Estates	Sam Wise Assistant City Manager (310) 377-1577	Transportation Element of the city's General Plan, adopted 11/92. City also has a map of bicycle routes.
Rosemead	Adel Freij Deputy City Engineer (818) 288-6671	No existing bicycle plan.
San Dimas	Ken Duran Assistant City Manager (909) 599-6713	Bicycle component of the city's Trail Plan.
San Fernando	Jerry Wedding City Engineer (818) 898-1225	Draft Master Plan developed. Being scheduled for adoption
San Gabriel	John Nowak Deputy City Administrator (818) 308-2802	No existing bicycle plan.
San Marino	Debbie Bell Assistant City Manager (818) 300-0700	No existing bicycle plan.
Santa Clarita	Joseph M. Inch Trails Coordinator (805) 286-4000	Bicycle Master Plan Study currently underway.
Santa Fe Springs	Don Huhall Finance Director (310) 868-0511	No existing bicycle plan.
Santa Monica	Paul Casey Transportation Planner (310) 458-8585	Draft Bicycle Master Plan, Revised 7/92. EIR underway.
Sierra Madre	Kev Tcharkhoutian City Engineer (818) 355-7135	No existing bicycle plan.
Signal Hill	John Kennedy Public Works Department (310) 989-7356	No existing bicycle plan.
South El Monte	Raul T. Romero City Manager (818) 579-6540	No existing bicycle plan.

Agency	Contact	Status of Bicycle Plan
South Gate	Patricia Barrett Assistant Transit Planner (213) 563-9529	Bicycle policies addressed in the city's General Plan, adopted 11/86 and in a TDM ordinance adopted 5/93. Additional policies under consideration for a proposed Air Quality Element. City has a map of existing bikeways. Also a Bike Trail Plan, adopted 1976.
South Pasadena	Jim Van Winckle Public Works Director (818) 799-9101	Study underway. No existing bicycle plan.
Temple City	John Hyatt Public Works Director (818) 285-2171	No existing bicycle plan.
Torrance	Helene Buchman Transportation Planner (310) 618-2851	Circulation Element of the city's General Plan, adopted 10/92, and route map included.
Vernon	Bruce Malkenhorst Finance Director (213) 583-8811	No existing bicycle plan.
Walnut	Robert Stanley Senior Planner (909) 595-7543	Environmental Resources Element of the City's General Plan includes section on trails.
West Covina	David Nelson Transportation Engineer (818) 814-8413	Transportation Element of the city's General Plan.
West Hollywood	Lucy Dyke Transportation Department (310) 854-7452	No existing bicycle plan.
Westlake Village	Mark Wessel Traffic Engineer (805) 653-6597	Circulation Element of the city's General Plan, adopted 1990, includes a bikeway plan.
Whittier	Joe Dyer (310) 945-8201	Bicycle Master Plan adopted 1983.
Caltrans	Khasrow Kamali Public Transportation Branch (213) 897-0234	No existing bicycle plan.

Appendix E. Estimates of TCM Effectiveness for Bicycles

This section provides specific examples showing how the trip reduction, air quality benefit and cost-effectiveness of bicycle-related TCMs can be computed using countywide data. Jurisdictions may contact MTA TDM staff to obtain project-specific data to apply in local assessments.

Two of the most significant equations are those which identify the total vehicle daily trip reduction level and the total daily vehicle miles traveled reduction, which are as follows:

1) Total daily vehicle trips reduced (TVTR) = TCBVT x ERI x PNR x PEA

Where:	TCBVT =	Total daily commute baseline vehicle trips
	ERI =	Estimated increase in ridership assigned to each TCM
	PNR =	Percent of new riders who were formerly driving Single Occupant Vehicles
	PEA =	Percent of employees affected

2) Total daily vehicle miles traveled reduced (TVMTR) = TVTR x ACTL

Where:	TVTR =	Total daily vehicle trips reduced (from above)
	ACTL =	Average commute trip length

In the examples which follow, these equations have been evaluated for three typical TCM's involving bicycle improvements.

ACCOMMODATION OF BICYCLISTS AND WALKERS (bicycle and pedestrian improvements):

TVTR:	ERI =	A range of 1% (ordinary program) - 2% (aggressive program)
	TCBVT =	6,655,681 daily trips
	PNR =	74.2%
	PEA =	8.8%

Resulting in a range of 4,345 to 8,691 daily vehicle trips

TVMTR:	TVTR =	A range of 4,345 (ordinary program) - 8,691 (aggressive program)
	ACTL =	3 miles

Resulting in a range of 13,038 to 26,073 daily vehicle miles of travel

BICYCLING SUBSIDIES:

Assumptions:

	Subsidy =	$1.00 per trip per day
	Out-of-pocket cost =	$5.00 per day, auto trip
	Elasticity =	A range of 0.1 (ordinary program) - 0.2 (aggressive program)
TVTR:	ERI =	A range of 2% (ordinary program) - 4% (aggressive program)
	TCBVT =	6,655,681 daily trips
	PNR =	74.2%
	PEA =	8.8%

Resulting in a range of 8,691 to 17,383 daily vehicle trips

TVMTR:	TVTR =	A range of 8,691 (ordinary program) - 17,383 (aggressive program)
	ACTL =	3 miles

Resulting in a range of 26,073 to 52,149 daily vehicle miles of travel

BICYCLE AND PEDESTRIAN IMPROVEMENTS PACKAGE (in concert with bicycle racks and lockers at park-and ride lots and at major transit stations and aggressive marketing for bicycling and walking):

TVTR:	ERI =	A range of 2.5% (ordinary program) - 3.8% (aggressive program)
	TCBVT =	6,655,681 daily trips
	PNR =	74.2%
	PEA =	8.8%

Resulting in a range of 10,865 to 16,514 daily vehicle trips

TVMTR:	TVTR =	A range of 10,865 (ordinary program) - 16,514 (aggressive program)
	ACTL =	3 miles

Resulting in a range of 32,585 to 49,542 daily vehicle miles of travel

AIR QUALITY BENEFITS

To calculate air quality benefits, the following factors have been applied to the previously-indicated VMT reductions resulting from the bicycling TCMs.

Pollutants:	0.035 pounds per mile[13]
Carbon Dioxide:	0.95 pounds per mile[14]
Fuel Use:	20.1 miles per gallon[8]
User Cost:	21.7 cents per mile[8]

ACCOMMODATION OF BICYCLISTS AND WALKERS (bicycle and pedestrian improvements):

13,038 to 26,075 daily vehicle miles traveled reduced

Pollutants:	456 to 913 pounds
Carbon Dioxide:	12,386 to 24,771 pounds
Fuel Use:	262,064 to 524,108 gallons
User Cost:	$5,437 to $10,873

BICYCLING SUBSIDIES ($1 per trip per day):

26,073 to 52,149 daily vehicle miles traveled reduced

Pollutants:	913 to 1,825 pounds
Carbon Dioxide:	24,769 to 49,542
Fuel Use:	524,067 to 1,048,195
User Cost:	$10,872 to $21,746

BICYCLE AND PEDESTRIAN IMPROVEMENTS PACKAGE

32,585 to 49,542 daily vehicle miles traveled

Pollutants:	1,140 to 1,734 pounds
Carbon Dioxide:	30,955 to 47,065 pounds
Fuel Use:	654,959 to 995,794 gallons
User Cost:	$13,588 to $20,659

[13] Per Caltrans, Division of New Technology, Materials & Research, 1991-1992

[14] Per Southern California Automobile Club, 1993 and FHWA Highway Performance Measuring System (HPMS), 1990.

COST EFFECTIVENESS

Bicycle related TCMs are among the most cost-effective measures which can be applied, according to studies by MTA. In order to compute the net cost-effectiveness of TCMs, the total cost per trip, including capitalization of the vehicle and travelway, operations and maintenance costs (whether incurred by the public sector or the individual), fuel cost, parking cost and commute time cost[15] have all been assessed for drive-alone auto trips and for each alternative mode including carpool, bus and rail as well as bicycling and walking. This analysis demonstrates that the drive-alone commute cost is between $10.73 to $16.72 per trip.

Similar computations for bicycle-related TCMs indicate that in all cases there is a net surplus (indicating a reduced total cost to the individual and society) for trips shifted to the bicycle mode. The results of these analyses, consisting of the estimated cost per trip as well as the net benefit per trip diverted from the drive alone mode, are shown below:

ACCOMMODATION OF BICYCLISTS AND WALKERS (bicycle and pedestrian improvements):

Cost: $0.78 to $7.00
Net Benefit: $9.95 to $9.72

BICYCLING SUBSIDIES ($1 per trip per day):

Cost: $8.62 to $15.45
Net Benefit: $2.11 to $1.27

BICYCLE AND PEDESTRIAN IMPROVEMENTS PACKAGE

Cost: $7.23 to $10.72
Net Benefit: $3.50 to $6.00

[15]Valued at $5.39 per hour, based upon 50 percent of the average manufacturing wage rate.

SUMMARY

The table below summarizes the effectiveness of bicycle-related TCMs using regional data.

TCM Measure:	Bicycle & Pedestrian Impvts.	Bicycling Subsidy	Bicycle & Pedestrian Impvts. Package
Trip Reduction Benefits			
Total Vehicle Trips Reduced (Daily)	4,350 - 8,700	8,700 - 17,400	10,900 - 16,500
Total Vehicle Miles Reduced (Daily)	13,000 - 26,000	26,100 - 52,200	32,600 - 49,500
Air Quality Benefits			
Pollutants Reduced (Pounds)	450 - 900	900 - 1,850	1,140 - 1,750
Carbon Dioxide Reduced (Pounds)	12,400 - 24,800	24,800 - 49,500	31,000 - 47,000
Fuel Use Reduced (Gallons)	262,000 - 524,100	524,100 - 1,048,200	655,000 - 995,800
User Costs Reduced (Dollars)	5,450 - 10,900	10,900 - 21,750	13,600 - 20,700
Cost Effectiveness			
Cost per Trip Diverted	$ 0.78 - $7.00	$ 8.62 - $ 15.45	$ 7.23 - $ 10.72
Net Benefit per Trip Diverted	$ 9.95 - $ 9.72	$ 2.11 - $ 1.27	$ 3.50 - $ 6.00

Appendix F. Emission Reduction Calculations[16]

To calculate emission reductions resulting from bicycle projects, Caltrans suggests that agencies "determine the number of auto trips replaced by bicycle trips by assuming a 0.5% mode shift from auto to bicycle. Also, estimate auto-related VMT replaced. The air quality benefit equals the number of auto trips replaced multiplied by the average auto trip emission factor plus the auto related VMT replaced multiplied by the VMT emission factor".

Average Auto Emission Factors[17]
Statewide Fleet -- Year 1993

	ROG	NOx	CO	OM
Trip End Factor (grams/trip)	4.31	2.46	58.25	NA
VMT Factor	0.85	0.9	7.62	0.10[18]

"An alternate method is to estimate expected reductions in auto trips if the entire bike system were completed. Estimate the associated emissions. Determine the portion of the system that represents the project, and take that portion of percent of the total emissions benefits as benefits of the project".

[16]Second Annual Report, Congestion Mitigation and Air Quality Improvement Program, for California, 1992-93 Federal Fiscal Year, California Department of Transportation, Division of Transportation Programming, Sacramento, CA January 31, 1994.

[17]Based on EMFAC7F, estimated fleet emission factors for light duty passenger, light duty trucks, and motorcycles.

[18]Prepared by Caltrans/Air Resources Board. For questions call Alan Avila, Caltrans Division of Transportation Programming, (916) 654-2686.

Appendix G. Establishment of a Bicycle Advisory Committee

Need

The need for a Bicycle Advisory Committee (BAC) is as follows:

Comprehensive Effort - The comprehensive effort needed to develop and implement bicycle plans and programs requires a special group committed to the activity.

Coordination - The development and implementation of a bicycle plan and program requires coordination and a high degree of teamwork.

Implementation Group - A BAC can play a pivotal role in the implementation phases through monitoring and overseeing success of the plan and programs.

Citizen Involvement - The success of the bicycle endeavors is greatly enhanced by the specialized citizen involvement brought forth by a BAC.

Proven Success - BACs have proven to be successful operating bodies.

Purpose

A BAC has three primary purposes, as follows:

1.) To ensure that a bicycle plan responsive to the needs of the constituency is developed and maintained.

2.) To recommend policies and advise appropriate agencies of opportunities that will improve the bicycling environment.

3.) To advocate the implementation of programs for purposes of accomplishing the adopted bicycle plan.

Since the BAC will be required to influence policy and executive processes, the BAC should be an independent committee created by the multimodal transportation planning and policy agency.

Composition

Large committees can be cumbersome in terms of decision-making and administration. It can also be difficult to gain involvement and input from all members if the BAC is too large. Conversely, a small committee can result in inadequate community representation and an overburdening of work on too few individuals.

Committee size of eight to twelve members is suggested as a reasonable committee size. The committee, in order to provide elements needed to function effectively, should contain

individuals who are knowledgeable about cycling, professional and technical government staff members and other respected community members.

Selection of Members

Potential BAC members, in order to provide effective representation, should have the following key attributes:

- well known and respected in the community
- experience in working with small groups
- willing to be an active participant

These attributes will allow members who have a high degree of credibility with the government agencies and with the community. This is important in that the BAC will be advising government jurisdictions and soliciting community support for plans and programs. The members should be hand picked with input gathered from various bicycle and community organizations.

Membership Appointment

Staff should screen the potential applicants list and recommend members to the Board of Supervisors or City Council. The members should be formally appointed by the Board or Council.

Bikeway Coordinators within the area or locality for which the bicycle activities are taking place should be committee members. Many of the organizational tasks will fall to the Bikeway Coordinator or government bike staff. The coordinator could be the committee chairperson or the BAC could select a chairperson.

It is advisable to stagger BAC appointments in order to ensure committee continuity. It may also be advisable to have stringent meetings attendance policies, which has proven to increase the level of participation in the BAC.

Committee Operation

The chairperson should be someone familiar with small group management. Activities of the BAC will vary depending upon needs. Regular meetings will need to be held to formulate program development and implementation. Assignment of duties to BAC members will be necessary from time to time.

Citizen Participation

Public support must be generated to provide successful plans and programs. The citizen members and bicyclists will be the important persons upon which this support will be garnered.

Appendix H. Mailing Addresses and Contacts

To obtain free copies of the MTA's Los Angeles County Bike Map, phone (213) 244-6539.

To obtain the current price and copies of *Bikeway Planning and Design* (*Highway Design Manual, Chapter 1000*) write to:

State of California
Department of Transportation
Central Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento CA 95815

To obtain information concerning the contents of the Bikeway Planning and Design Manual write to:

State of California
Department of Transportation
Chief, Office of Project Planning and Design
650 Howe Avenue, Suite 400
Sacramento CA 95825

To obtain current Transportation Development Act Statutes and California Code of Regulations, write to:

Public Transportation Branch
State of California
Department of Transportation
120 South Spring Street
Los Angeles, CA 90012-3606

To obtain the Second Annual Report for Congestion Mitigation and Air Quality Improvement Program, write to:

State of California
Department of Transportation
Division of Transportation Programming
1120 N Street
Sacramento, CA 95814

For more information regarding the MTA bicycle program, or to obtain MTA TDA Article 3 guidelines, write to:

MTA
818 West 7th Street
P.O. Box 194
Los Angeles, CA 90053

Phone numbers and contacts are provided on the following Area Team contact list.

LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY
AREA TEAM BICYCLE CONTACTS

CENTRAL AREA TEAM

Area Director:
JIM DE LA LOZA

Contact:
Walt Davis
(213) 244-6177

City of Los Angeles

SAN GABRIEL VALLEY AREA TEAM

Area Director:
STEVE LANTZ

Contact:
Art Cueto
(213) 244-6586

Alhambra
Arcadia
Azusa
Baldwin Park
Bradbury
Claremont
Covina
Diamond Bar
Duarte
El Monte
Glendora
Industry
Irwindale
La Puente
La Verne
Monrovia
Montebello
Monterey Park
Pasadena
Pomona
Rosemead
San Dimas
San Gabriel
San Marino
Sierra Madre
S. El Monte
S. Pasadena
Temple City
Walnut
West Covina

SOUTHEAST AREA TEAM

Area Director:
BOB CASHIN

Contact:
Samantha Mock
(213) 244-6276

Artesia
Avalon
Bell
Bell Gardens
Bellflower
Cerritos
Commerce
Compton
Cudahy
Downey
Hawaiian Gardens
Huntington Park
La Habra Heights
La Mirada
Lakewood
Long Beach
Lynwood
Maywood
Norwalk
Paramount
Pico Rivera
Santa Fe Springs
Signal Hill
South Gate
Vernon
Whittier
County of Los Angeles

SOUTH BAY AREA TEAM

Area Director:
KAREN HEIT

Contact:
Sue Perry
(213) 244-6241

Carson
El Segunds
Gardena
Hawthorne
Hermosa Beach
Inglewood
Lawndale
Lomita
Manhattan Beach
Palos Verdes Estates
Rancho Palos Verdes
Redondo Beach
Rolling Hills
Rolling Hills Estates
Torrance

WESTSIDE AREA TEAM

Area Director:
CAROL INGE

Contact:
Patti Helm
(213) 244-6780

Beverly Hills
Culver City
Malibu
Santa Monica
West Hollywood

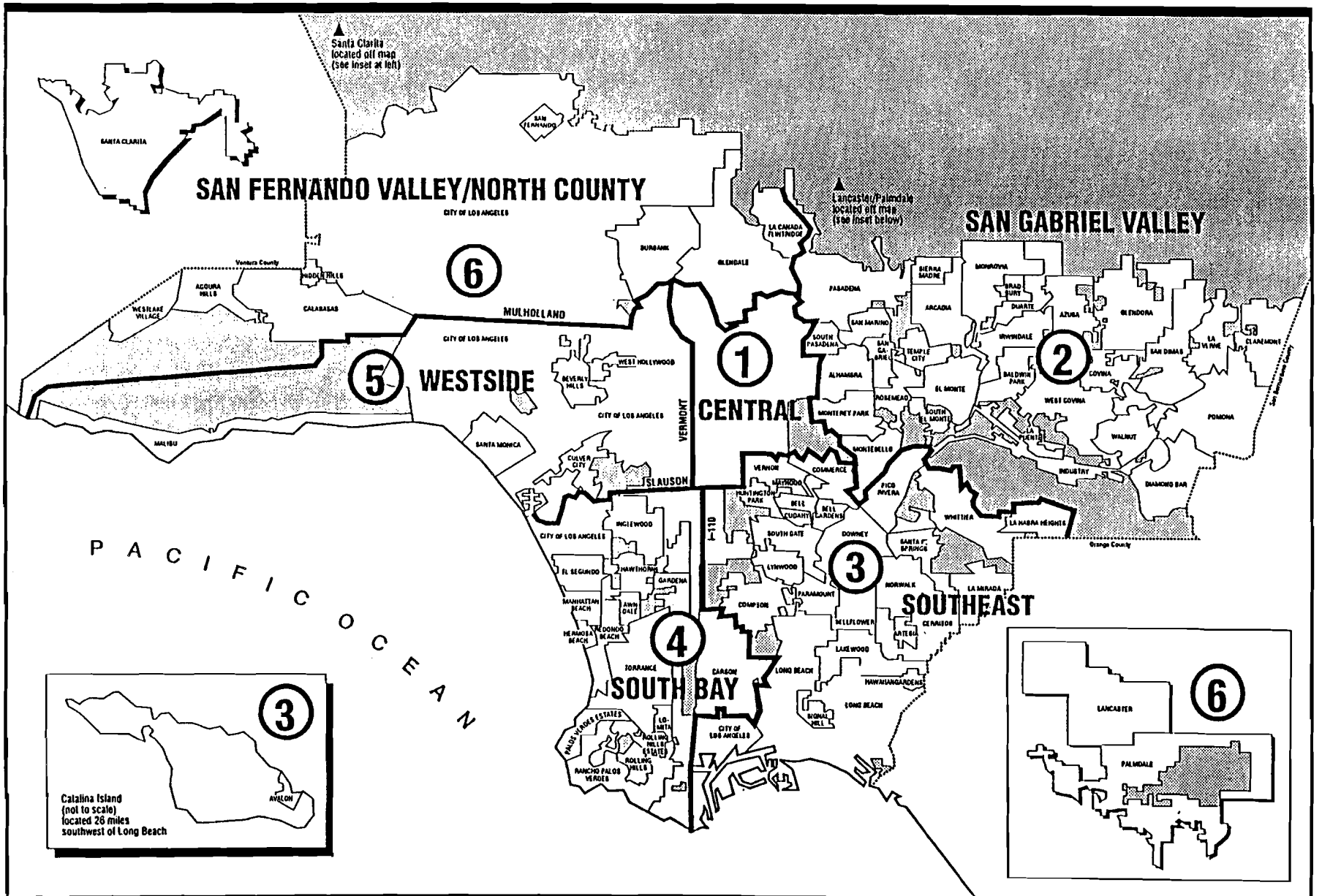
SAN FERNANDO VALLEY/ NORTH COUNTY AREA TEAM

Area Director:
RENEE BERLIN

Contact:
Peter de Haan
(213) 244-6733

Agoura Hills
Burbank
Calabasas
Glendale
Hidden Hills
La Canada-Flintridge
Lancaster
Palmdale
San Fernando
Santa Clarita
Westlake Village

LOS ANGELES COUNTY
Area Team Boundaries



A5-016.8-93

Appendix I. List of Potential Bikeway Funding Sources

Source: *Funding Working Paper for Bicycle and Pedestrian Related Projects,* Sacramento Area Council of Governments, February 1993, and Los Angeles County MTA.

Potential Funding Sources -- Local

Program	Administering Agency	Comments
TDA Article 3	MTA	Funds are passed through MTA to local jurisdictions based upon formula. Funds are earmarked for bicycle and pedestrian facilities.
Proposition C Discretionary Funds	MTA	Program from which Regional Bikeway funds currently come.
Proposition C Local Return	Local Agencies	Amount distributed to jurisdictions by formula. Bikeway projects are eligible.
Proposition A Neighborhood Parks Proposition of 1992 Discretionary Funds	LA County Regional Park and Open Space District	For projects which can be factually identified as important recreational and park purposes.
Proposition A Neighborhood Parks Proposition of 1992 Local Return	Local Agencies	Amount distributed to jurisdictions by formula.
AB2766 Vehicle Registration Funds	SCAQMD	Competitive program for projects that benefit air quality.
Proposition A Transit Local Return	Local Agencies	Limited projects directly related to transit may qualify.
Developer Fees	Local Agencies	Can be general or project-specific.
Bicycle License Fees	Local Agencies	At the discretion of local jurisdictions.

Potential Funding Sources -- State

Program	Administering Agency	Comments
Environmental Enhancement and Mitigation Program	State Resources Agency	Projects first prioritized by MTA, then submitted to CTC for approval Funds can be used for landscaping.
Flexible Congestion Relief (FCR)	California State Transportation Commission (CTC)	Projects first prioritized by MTA, then submitted to CTC for approval These funds not typically used for bikeway projects.
Habitat Conservation Fund Grant Program	State of California Department of Parks and Recreation	Applicable to trails and programs that attract recreationists to park and wildlife areas.
Kapiloff Land Bank Funds	State Lands Commission	Acquisition of land for public access trails.
Land and Water Conservation Program	State of California Department of Parks and Recreation	Pedestrian and bicycle trails.
Mello-Roos Community Facilities District Act of 1982	Local Jurisdictions	Special assessment district.
Petroleum Violation Escrow Account	State Energy Commission	For energy enhancing projects. Apply to state legislators.
State and Local Transportation Program	Caltrans	A partial reimbursement program for locally funded projects.
State Gas Tax	Local Jurisdictions	Amount distributed to jurisdictios by formula.
Prop 111	Local Jurisdictions	Amount distributed to jurisdictions by formula.
Bicycle Lane Account	Caltrans	Only $360,000 available annually statewide.

Potential Funding Sources -- Federal

Program	Administering Agency	Comments
Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991		
ISTEA Congestion Mitigation and Air Quality (CMAQ) Improvement Program	MTA	Not typically used for bicycle projects.
ISTEA Surface Transportation Program (STP) Regional Funds	MTA	Not typically used for bicycle projects.
ISTEA Surface Transportation Program (STP) Local Funds	Local Agencies	Bicycle projects are eligible.
ISTEA Transportation Enhancement Activities (TEA) Program	California Transportation Commission (CTC)	Projects in the County are prioritized by MTA before they are submitted to the state for consideration.
ISTEA Scenic Byways Program Funds	Caltrans	Program not currently funded.
ISTEA National Recreational Trails Fund	California Resources Agency, Department of Parks and Recreation	Property acquisition for trails, urban trail linkages, maintenance of existing trails, trail facilities development.
National Highway Safety Act	California Office of Traffic Safety (OTS)	Safety studies and improvements.
Recreation and Public Purposes Act	Federal Bureau of Land Management	Provides for turnover of federal land for bicycle and pedestrian paths for minimal fee.
Section 3 Mass Transit Capital Grants	Federal Transit Administration (FTA)	Not typically used for bicycle projects.
Section 9 Mass Transit Formula Grants	Federal Transit Administration (FTA)	Not typically used for bicycle projects.
Surplus Real Estate Program	General Services Administration	Transfer of surplus property through donation, can be used for bikeways.

Appendix J. MTA Permit Application and Rules

Staple photo here. Do not glue.

Full-face photo only.

CYCLE EXPRESS

2382

PERMIT APPLICATION

Please print or type (FILL-OUT ALL SECTIONS)

NAME: _____
Last First M.I.

ADDRESS: _____
Street

CITY: _____ ZIP CODE: _____

DAYTIME PHONE: (_____)_____ DATE OF BIRTH: _____/_____/_____

I have read the RULES AND REGULATIONS and RELEASE OF LIABILITY AND INDEMNIFICATION pertaining to bicycles on the MTA bus and rail lines and agree to abide by them.

_____ _____/_____/_____
Signature of Applicant Today's Date

NOTE: If applicant is under 18 years of age, signature of parent or guardian is required.

_____ _____/_____/_____
Signature of Parent or Guardian Today's Date

YOUR CYCLE EXPRESS PERMIT WILL BE MAILED WITHIN 5 WORKING DAYS.

FOR OFFICE USE ONLY

DATE STAMP BELOW

PAYMENT RECEIVED BY: _____
Badge #

CUSTOMER CENTER: _____

PERMIT #: _____ - ISSUED ON: _____/_____/_____

DISTRIBUTION: Original to Customer Relations; Yellow Copy to Applicant

RELEASE OF LIABILITY AND INDEMNIFICATION

RELEASE:

In consideration of the permission granted to me to bring my bicycle onto an MTA rail car or attach it to a bus rack on an MTA bus, while riding the MTA-operated transit system as a passenger, I hereby release the MTA, its directors, officers, representatives, agents and employees from any and all liability for injury of any kind to me or my bicycle or other property I may have with me, incurred by reason of any act or omission, either by any third party, or by the MTA, its directors, officers, representatives, agents or employees, and connected with the presence of my bicycle on MTA-operated property. I waive all claims of injury to myself or damage to my bicycle and other property arising out of the Cycle Express program.

INDEMNIFICATION:

I further agree to indemnify and hold harmless, the MTA, its directors, officers, representatives, agents and employees from all costs, damage or expenses, direct or indirect, for injury to other persons and their property, incurred by reason of any act or failure to act on my part or by reason of any act or omission, either by any third party or by the MTA, its directors, officers, representatives, agents or employees, and connected with the presence of my bicycle on MTA property. I recognize that this provision makes me personally liable for injuries to MTA patrons, employees and damage to property arising by reason of my bicycle's presence on MTA trains or buses or in the stations.

I expressly agree that the foregoing release, waiver, and indemnity agreement is intended to be as broad and inclusive as is permitted by the law of the State of California and if any portion thereof is held invalid, it is agreed that the balance shall, notwithstanding, continue in full legal force and effect.

I HAVE READ THE FOREGOING RELEASE OF LIABILITY FOR NEGLIGENCE AND THE AGREEMENT TO INDEMNIFY AND HOLD HARMLESS, AND FULLY UNDERSTAND THE SIGNIFICANCE OF BOTH. I AGREE TO BE BOUND BY THE PROVISIONS OF BOTH IN RETURN FOR MTA GRANTING ME PERMISSION TO BRING MY BICYCLE ON ITS RAIL LINES OR ATTACH IT TO BUSES WHILE RIDING AS A PASSENGER.

CYCLE EXPRESS APPLICATION INSTRUCTIONS

Cycle Express permit applications may be obtained from any MTA Customer Center, or by calling (213) 972-7000 or by writing to: MTA Customer Relations, 425 South Main Street, Los Angeles, CA 90013-1393, ATTN: BIKE PERMIT PROCESSING UNIT

TO APPLY AT A CUSTOMER CENTER:

1. Submit the completed application. The signature of your parent or guardian is required if you are under 18 years of age.
2. Submit a current 1" x 1-1/4" full-face photo.
3. Pay the $6 application fee (non-refundable)
4. Present a personal I.D. or any document which shows proof of age.

TO APPLY BY MAIL:

Send the completed application along with your 1" x 1-1/4" photo, $6 application fee (check or money order accepted), and a copy of your personal I.D. or any document which shows your age, to the address above.

FOR MORE INFORMATION, PLEASE CALL (213) 972-7000
REPLACEMENT FEE FOR LOST, STOLEN, OR DESTROYED CYCLE EXPRESS PERMIT IS $6.

RULES AND REGULATIONS PERTAINING TO BICYCLES (Effective 01/01/94)

GENERAL

1. The permit fee shall be $6.00 for the calendar year January 1, 1994 through December 31, 1994. In addition to this permit, the bicycle boarder must pay the required fare for each trip taken.

2. A permit must be shown to any operator, fare inspector, or police or security officer who requests to see it. Failure to do so will be treated as failure to produce proof of fare payment.

3. Failure to the obey rules and regulations may result in the revocation of the bicycle permit and may further restrict further issuance of future permits. Security officers and line personnel have the right to revoke permits. (Revocation may be appealed.)

4. Permit will be issued to those who sign a release of liability and indemnification. (If the applicant is under 18 years of age, the signature of parent or guardian is required.)

5. Permits will be issued to applicants under the age of 14, but anyone under the age of 14 boarding with a bicycle must be accompanied by an adult.

6. Only bicycles that do not exceed 80 inches in their longest dimension and 48 inches in their next longest dimension are allowed to board a rail vehicle or be attached to a bicycle rack on buses. No motor-powered bikes are allowed.

7. Bicycles must be kept clean and fee of dirt and grease at all times.

8. MTA may alter, at any time, the conditions of the permit, including cancellation of bicycle access to some, or all stations, on any, or all rail lines, cancellation of bicycle access to some, or all bus lines, as well as cancellation of access for specified hours of service.

9. Regarding any questions pertaining to the carrying of bicycles on MTA vehicles under this program, passengers may call (213) 972-7000 or write to MTA Customer Relations as shown on the permit application.

BUSES

1. From January 1 through December 31, 1994, bicyclists may transport their bicycles on front-mounted bicycle racks attached to buses assigned to Line 130 at any time such buses are in operation. Boardings will be by permit only. **Bicycles on Line 130 is a demonstration program and is subject to cancellation at any time.**

2. Two bicycles can be attached onto the rack on the front of each bus. Space is on a first-come basis. **Bicycles are NOT allowed inside the bus.**

3. For safety reasons, the operator cannot leave the bus to assist the cyclist in loading and unloading the bicycle.

4. As the bus approaches, the cyclist must show the operator his/her permit while informing the operator that the bicycle rack will be in use. The cyclist should load the bicycle quickly while other passengers are boarding.

5. When the bus approaches the cyclist's stop, the operator should be informed that the bicycle will be removed. The cyclist should unload the bicycle quickly, move away from the bus and let the operator know when it is safe to pull the bus away.

6. Bicycles to be mounted on the bicycle rack at the discretion of the bus operator.

7. Before endeavoring to mount a bicycle, cyclists must familiarize themselves with the detailed bicycle mounting instruction sheet.

8. The following types of bicycles are prohibited from being attached to the bicycle rack: (1) bicycles with solid wheels or bicycles with unusual protruding devices which make it unsafe for mounting on the bicycle rack, whether they be unusual handle bars, baby seats, or saddle baskets; and (2) bicycles, commonly known as Ladies Bicycles (step through bicycles), which do not have a top tube that connects to the top of the seat tube of the bicycle. Also see General Rule No. 6 as to the type of bicycles that may be attached to the bicycle rack.

RAIL VEHICLES

1. From January 1 through December 31, 1994, bicycles will be allowed on the Blue/Red Line during the following hours:

   WEEKDAYS: First Trains to 6 a.m.
   9 a.m. - 3 p.m.
   7 p.m. - Close of Service

   WEEKENDS: All Operating Hours

   Weekend hours apply during the following Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

   No bicycles are allowed between 6 a.m. - 9 a.m. and 3 p.m. - 7 p.m. during weekdays. Bicyclists who have boarded before 6 a.m. or 3 p.m. and are still on board after that time may complete their trip except under conditions identified in Rule 6 below.

2. Bicyclists must access the platform via inclines, stairs or elevators. **Under no circumstances are escalators to be used.** Only 2 bicycles (each no longer than 80 inches) are allowed on the elevator at a time. Elderly and disabled patrons have first priority for the use of station elevators. Bicyclists and non-cyclists must not share an elevator.

3. Bicyclists shall not ride their bicycles on station platforms or on the stairs or inclines leading to the platform.

4. Bicyclists shall board and alight through the rear doors of the first and last cars. No more than two bicycles per car are allowed on board. Cyclists must wait until exiting patrons have cleared the doorway. If the designated area (as specified below) is fully occupied, cyclists on the platform must wait for the next available train.

5. a. Blue Line: Bicycles shall be placed next to the wall of the rear driver's cab. (See Blue Line diagram below.)

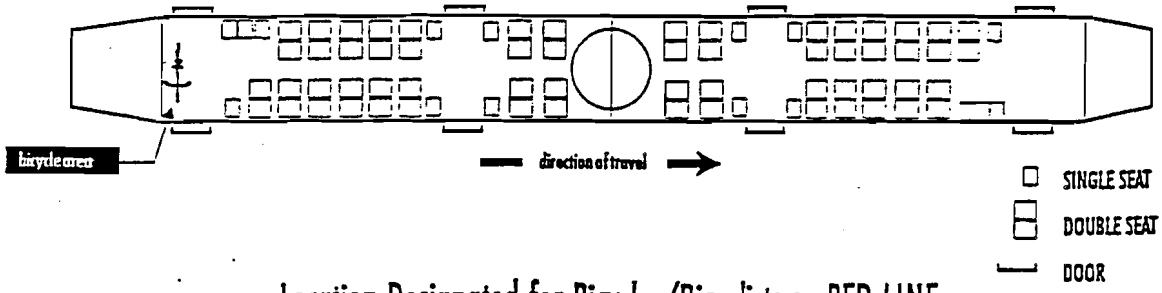
   b. Red Line: Bicycles shall be placed next to the rear doorway farthest from the station platform. (See Red Line diagram below.)

6. No bicycle shall replace or inconvenience a passenger. If the car becomes crowded, the bicyclist must leave the car and wait for a subsequent train. If asked to leave by any MTA employee or a police officer, the cyclist must do so immediately.

7. While on board, a cyclist must hold onto the bike. The kickstand must always be up.

8. **Failure to obey the rules and regulations may result in the revocation of the bicycle permit and issuance of a 640 PC citation. Fine for a 640 PC citation may be up to $250.**

Location Designated for Bicycles/Bicyclists on BLUE LINE



Location Designated for Bicycles/Bicyclists on RED LINE