Bicycle Parking
A Plan for the Los Angeles County Metropolitan Transportation Authority

June 2003

Prepared By: Matthew T. Benjamin
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EXECUTIVE SUMMARY

Bicycle parking provides benefits to individuals, the transportation system, and the community. Bicycle parking at MTA transit stations creates destinations or transfer points for cyclists, expands catchment areas, increases total (auto + bike) parking capacity, and provides a flexible alternative to feeder buses or taking bikes aboard transit vehicles. An MTA survey shows that different types of bicycle parking (i.e. bicycle racks and lockers) serve different markets. Bicycle racks are free and tend to attract younger, more frequent users. Bicycle lockers attract customers who are willing to pay for secure parking. Most said they would not leave their bicycles in racks. They also had significantly higher incomes than rack users and were almost twice as likely to own a car. Providing different bicycle parking products will attract a wider range of customers by providing bike-transit options to both the transit dependent and automobile drivers.

MTA currently provides bicycle racks and lockers at 35 of 50 Metro Rail stations. Bicycle racks are “unpaid”—free to the public. Approximately 220 of 478 bike racks (at 34 stations) are occupied during weekday working hours. Many cyclists park their bikes on “non-racks” such as fencing, railings, signposts, lampposts and small trees. Solving problems with rack location, conditions, quality and consistency will increase rack usage. Bicycle lockers are “paid”—currently requiring a key deposit and rental charge. MTA currently has 195 bicycle lockers at 23 Metro Rail stations with 60 of the lockers currently rented. The management of the Bicycle Locker Program has been particularly problematic. Having various styles and models of lockers complicates maintenance. Inadequate signage and marketing have also contributed to the low occupancy of bike lockers. These and other issues need to be addressed in order to improve and expand bicycle parking at MTA transit stations. Twenty-four new stations will be added by 2005 with the opening of the Pasadena Gold Line and the San Fernando Valley Metro Rapidway projects. Other future projects such as the Wilshire Bus Rapid Transit (BRT), Eastside Gold Line Extension, and Exposition Light Rail Transit (LRT) will continue to add stations (and bike parking demand) well into the future. This Bicycle Parking Plan will provide recommendations to improve existing bicycle parking and ensure the quality of the program into the future.

RECOMMENDATIONS

Equipment

- Adopt inverted-U and multiple-U racks as the standard for future purchases.
- Replace all claw and wheel racks with inverted-U and multiple-U racks. Inverted-U racks should be used at most locations since they are less expensive per space. Multiple-U racks should be used for large installations in order to save on labor costs accrued during installation.
- Allow wave racks to remain in place at stations where they currently exist. As demand increases at these stations, add inverted-U or multiple-U racks.
- Install bicycle racks as close as possible to station entrance to reduce non-rack use. At Park and Ride lots, the furthest bicycle rack from the station entrance should be at least as close as the nearest non-handicapped car parking space.
- Locate bicycle racks under cover whenever possible.
Executive Summary

- Require that all bicycle lockers be constructed of perforated sheet metal or similarly transparent material. This will allow security and law enforcement officials to monitor the contents of bicycle lockers.

- Initiate a Request for Proposals (RFP) to replace existing lockers with a secure bicycle parking system that allows for both reserved and shared-use bicycle parking.

- Create a countywide network of attended bicycle parking facilities at Metro Rail and Rapidway stations—especially end-of-line and other facilities with high demand for bicycle parking.

- Study the feasibility of using space-efficient solutions such as unattended bicycle cages or the Bike Tree® at stations with limited space. If used, these facilities must use the same access media as other MTA-owned paid bicycle parking.

**Management**

- Manage bicycle rack procurement, installation and maintenance in-house.

- Conduct a quarterly inventory of bicycle parking facilities to evaluate usage, equipment conditions, and maintain awareness of any other issues associated with MTA bicycle parking.

- Work with law enforcement to increase security at stations with bicycle parking.

- Include installation and management in RFP for new bicycle parking facilities. A single contractor will be responsible for the purchase, installation, and management of all paid bicycle parking. This consolidates responsibility for the program and strengthens incentives for developing a manageable product.

**Marketing**

- Increase marketing of all bicycle parking.

- Add bike-parking symbols to all Metro Rail and Metro Rapidway maps.

- Increase awareness of using bikes and transit for social and recreational purposes, especially on weekends.

- Market bicycle facilities directly to students of trade schools, colleges, and universities served by Metro Rail and Metro Rapidway lines.

- Target households and businesses between ½ and 3½ miles from Metro Rail and Rapidway stations.

- Use the Long Beach Bikestation® and future attended bicycle parking facilities as vendors of MTA transit passes and as outlets for all bike-related marketing materials.

- Include bike-parking information in all Bike to Work Day promotional materials.
Executive Summary

- Use Bike to Work Day registration database as a tool for direct marketing of bicycle facilities.
- Place marketing materials on Metro Rail and Rapidway lines, and bus lines that feed Metro Rail or Rapidway stations.
- Focus on the fact that bicycle racks are free and portray cycling to transit as a convenient (flexible) and money-saving option.
- Develop literature and graphics on how best to secure bicycles to inverted-U and multi-U racks.
- Market paid bicycle parking directly to Metro Rail and Rapidway Park and Ride users—especially at lots with early fill times.
- Focus on convenience of bicycle parking (i.e. proximity to station entrance), the possibility of a guaranteed space, and the personal health and environmental benefits of cycling.

IMPLEMENTATION

The next steps require a phased implementation of the bicycle parking network. The following chart provides a summary of each phase. Phase I includes the replacement of substandard bicycle racks at Blue, Green and Red Line stations and the initial installation of bicycle racks at Gold Line stations. Phase II will produce an implementation plan for a network of Bikestations® at four to five sites in Los Angeles County focusing on existing and future Metro Rail stations. Phase III is a Request for Proposals (RFP) for the replacement of existing bicycle lockers with either new lockers or other secure bicycle parking such as attended bicycle parking or unattended bike cages. The RFP will also require installation and management. Phase IV is the ongoing expansion of all bicycle parking as determined by both demand and the addition of new Metro Rail and Rapidway stations.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>Schedule</th>
<th>Estimated Cost</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Bicycle Rack Installation &amp; Replacement</td>
<td>May - Sept 2003</td>
<td>$14,000</td>
<td>FY 2003 Office Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(in progress)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Bikestation Implementation Study</td>
<td>June 2003 - May 2004</td>
<td>$213,800</td>
<td>Caltrans Planning Grant</td>
</tr>
<tr>
<td>III</td>
<td>Bicycle Locker Replacement and Program Management</td>
<td>To be determined</td>
<td>$300,000 - $500,000</td>
<td>To be determined</td>
</tr>
<tr>
<td>IV</td>
<td>Bicycle Parking Program Expansion</td>
<td>Ongoing</td>
<td>$20,000 - $50,000/yr</td>
<td>Bicycle Parking Budget</td>
</tr>
</tbody>
</table>

The management and marketing of the bicycle-parking program will require cooperation between various MTA departments and the contractor selected to manage paid bicycle parking. Aggressive marketing of should not begin until the bicycle-parking network is in place. Further research should evaluate possibilities for expanding the network beyond Metro Rail and Rapidway stations to other areas such as major bus stops, Metrolink stations, and activity centers throughout Los Angeles County. MTA should also reevaluate the possibility of integrating bicycle parking with the Universal Fare Card. This would allow MTA customers to access paid bicycle parking with the same 'smart card' used to board a bus or Metro Rail.
CHAPTER 1 – INTRODUCTION

Every transport system has three elements: vehicles, rights of way, and terminal capacity. Rail transport, for example, has trains, tracks, and stations. Sea transport has ships, oceans, and seaports. Air transport has planes, the sky, and airports. Automobile transport has cars, roads, and parking spaces.

--Donald Shoup, The High Cost of Free Parking (forthcoming)

Bicycle transportation also requires vehicles, rights of way, and terminal capacity. These elements exist in the form of bicycles, safe roads or bikeways, and bicycle parking. This report is about bicycle parking in Los Angeles County—especially at transit stations of the Los Angeles County Metropolitan Transportation Authority (MTA)—and how to provide a quality system that benefits the individual user, the transit agency, and the community.

Providing quality bicycle parking at transit stations can enhance bicycle transportation in general, the transit system, and the transportation network as a whole. It creates destinations or transfer points for cyclists. Without bicycle parking, a network of bikeways will only be viable for circulation (i.e. recreation) and not for utilitarian uses that can replace auto trips. Bicycle parking at transit stations also provides an alternative to taking bikes aboard trains. Bike racks on buses provide only two spaces per vehicle and a full rack can mean waiting up to an hour for the next bus. While it is essential to allow bikes on rail and buses, space is limited and the transportation agency needs to provide cyclists with safe options for leaving their bikes at the transit station (or even bus stop). Taking a bike onto the transit vehicle is simply not convenient for those with nowhere to store their bikes at their final destinations.

Bicycle parking enhances the transit system by expanding catchment areas, increasing total (auto + bike) parking capacity, relieving overcrowding on feeder bus service, providing an alternative to taking bikes aboard crowded rail vehicles. Catchment areas of transit are expanded by serving those who live beyond typical walking distance and those who cannot conveniently access bus service to the station. Bicyclists will typically ride up to four miles to get to a transit station. A recent survey shows that only around one percent of MTA customers use bicycles to link to transit, mostly by taking bicycles on buses or trains. Improving bicycle parking facilities and providing more information about the benefits of using bikes with transit can help to increase this percentage.

Table 1-1: Bike-Transit Use

<table>
<thead>
<tr>
<th>Weekday Daily Boardings</th>
<th>Linked by Bicycle</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Bus</td>
<td>1,119,189</td>
</tr>
<tr>
<td>Blue Line</td>
<td>61,475</td>
</tr>
<tr>
<td>Green Line</td>
<td>29,325</td>
</tr>
<tr>
<td>Red Line</td>
<td>124,100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,334,089</strong></td>
</tr>
</tbody>
</table>

Sources: MTA Ridership Statistics, September 2001  
MTA Bus and Rail On-Board Surveys, 2001
Since the average speed of bicycle travel is comparable to that of local buses for short distances, some customers who would otherwise board a crowded feeder bus may choose to ride their bicycles to the transit station. Someone cycling to a station does not have to worry about delays, overcrowded conditions, or missed transfers associated with taking feeder bus service to major transit stations. Others work irregular hours or are far from local bus stops. As able-bodied transit riders switch from feeder buses to bicycles, their bus seats become available for others.

Use of bicycle parking is high at suburban stations with large park and ride facilities. A large number of bike locker renters have cars but choose to ride their bicycles to stations even though car parking is provided. Bicycle parking only takes up a fraction of the area required by auto parking and providing quality bicycle parking facilities can greatly increase the overall parking capacity of a transit station by attracting new riders or those who would otherwise drive to the station. Currently, a total of 10,284 free auto parking spaces are available to Metro Rail customers. Encouraging people to drive to transit may reduce vehicle miles traveled (VMT) and increase transit ridership, but it is unlikely to bring any significant improvement in air quality since most auto emissions are released during the cold start of the automobile. Encouraging people to drive to transit may simply transfer congestion from major freeway corridors to surface streets around transit stations that are less capable of accommodating it. The subsidy for each bike parked in a free bike rack space is far below that of someone taking a feeder bus to and from a transit station or a driver occupying a free car parking space that requires 15 times more space and is up to 400 times more expensive.

A bicycle-parking network enhances the transportation system as a whole by adding viability to an underused mode. A bicycle transportation system with adequate parking provides door-to-door service comparable to that of an automobile. At the same time it provides both personal health and environmental benefits that people also find important. In a survey of utilitarian cyclists with secure bicycle parking, the second most popular “primary” reason for using bicycle transportation was convenience. In a society in which convenience often drives our transportation choices, making bicycling as convenient and safe as possible will attract new users and free up capacity on other modes.

Bicycle parking also carries with it some very practical benefits. It is inexpensive, uses little space, is easily marketable, and acts as a visual reminder of bicycling as a transportation option.

**Inexpensive** – Bike parking costs approximately $50 per space for racks, and $950 per space for lockers. This is significantly less than auto parking which costs up to $11,000 per space for surface parking and $25,000 per space for parking garages. Bicycle parking projects can also be implemented more easily than more expensive bikeway projects that are often opposed by local interests and complicated by conditions of limited road space and demand for on-street parking.

**Uses little space** – As a rule of thumb, one auto parking space can be converted to about six bicycle parking spaces.

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1 See survey results in Chapter 5.
2 A typical bicycle rack space takes up about 20 sq. ft. including accessways and costs about $35. A typical car parking space takes up about 300 sq. ft. and costs up to $11,000 for above-ground parking. The cost of subterranean parking is significantly higher.
3 See survey results in Chapter 5.
Chapter 1  Introduction

Easily marketable – In order to maximize the benefit of getting people to ride their bicycles to transit station and park them there, specific groups must be targeted. Brochures and advertising can be placed inside overcrowded feeder buses to entice people to ride to the stations they serve. The windshields of cars parked in overcrowded park and ride lots can be decorated with fliers advertising available bicycle parking products and preaching the virtues of pedaling—rather than driving—to the train station.

Visual reminder – Bike parking that is located in a safe and convenient place (near lighting and entrances) serves as a positive reminder that bicycling is a transportation option. Likewise, if bike parking is unattractive, unsafe or inconvenient, it may act as a visual deterrent.

The following chapters will provide background information, analysis and recommendations for improving bicycle parking at transit stations. Chapter 2 provides a summary of existing MTA plans and policies dealing with bicycle parking. Chapter 3 evaluates different kinds of bicycle parking equipment and makes recommendations for improving the facilities at MTA transit stations. Chapter 4 provides evaluates and recommends bicycle parking management options. Chapter 5 provides marketing recommendations based on the results of user surveys and other marketing leads. Chapter 6 explains how the recommended improvements should be implemented.
CHAPTER 2 – MTA BICYCLE PARKING PLANS AND POLICIES

Bicycle parking is mentioned in several plans, policy documents, and studies produced by MTA and/or its consultants. What follows is a brief history of MTA policies regarding bicycles as seen through these documents.

LOS ANGELES COUNTYWIDE BICYCLE POLICY DOCUMENT (1994)

The Los Angeles Countywide Bicycle Policy Document (1994) identified the following issues regarding bicycle parking.

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 and racks makes provision of bicycle parking an affordable investment in stations where they can be accommodated on site.

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. 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 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.

- Bicycle parking lockers should be provided at all Park and Ride lots.

- The following is a list of selected bicycle parking policies of the Bicycle Policy Document.

- The MTA will 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. There should be one bicycle parking space for every fifty automobile parking spaces, with a minimum of ten bicycle parking spaces at any transit station. The proportion of lockers to racks and the addition of lockers and racks should be determined by demand.

- 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.

Between 1995 and 1997, MTA completed six sub-regional Bicycle Master Plans:

- Central Area Bicycle Master Plan (1997)
- San Fernando Valley/North County Area Regional Bicycle Master Plan Report (1995)
- San Gabriel Valley Bikeway Master Plan (1995)
- Southeast Area Bicycle Master Plan (1995)
- Westside Area Bikeway Master Plan (1995)

These six sub-regional plans propose the creation of a total of 1,771 miles of bikeways. Bicycle parking, however, received relatively little attention in these plans. In most cases, the above plans merely used inventories of existing facilities and excerpts from the 1994 Bicycle Policy Document. According to the San Fernando Valley/North County plan, “The primary conclusion drawn from the detailed field surveys is that there is much room for improvement in bicycle facility connections to activity centers as well as improvements in the provision and utilization of bicycle parking facilities.” A later section states that many activity centers do not have adequate bicycle support facilities including logically placed, convenient bicycle parking.

The San Gabriel Valley plan had the most detailed bicycle parking analysis and cited bicycle parking (and security) as the most important type of bicycle “support facilities”. It also provided a table of Recommended Bicycle Parking Standards, which provided valuable information on quantity, costs, operation and design of bicycle parking facilities. However, there was no mention of bicycle parking in any of the 27 recommendations outlined in the Cost Analysis and Implementation section of the report or in the subsection regarding “support facilities”.

2001 LONG RANGE TRANSPORTATION PLAN FOR LOS ANGELES COUNTY (LRTP)

Section 5 of the plan is dedicated to Non-Motorized Transportation, which is divided into two categories: Bikeways and Pedestrian Improvements. The Constrained Plan scenario—which proposes an average of $10 million per year for bicycle facilities—includes the following recommendations for bicycle parking:

- Encourage bike racks and lockers at major destination centers.
- Work with cities to add provisions to zoning ordinances to require bike lockers or racks and bike lanes as a component of all new development or redevelopment.
- Provide or increase bike parking at Metro Rail stations, transit centers and major bus park-and-ride lots as demand warrants.
- Increase MTA bicycle education and marketing efforts and fund such efforts by others.
The Strategic Plan scenario—which proposes an average of $20 million per year for bicycle facilities—makes some additional suggestions relevant to bicycle parking:

- Allocation of MTA sources of funds, other than TEA funding, to the bikeway category for the lower-cost projects, such as, bike lanes and parking, in order to expand eligibility and simplify the process of obtaining funds.

- Provide planning and coordination assistance to cities.

- Develop improved methodology for data collection on bike usage and forecasting.

A more detailed plan is needed to provide adequate bicycle parking facilities. This plan was developed to help meet this need. It is intended to supplement—not replace—existing plans and policies. Elements of this document will be incorporated into the forthcoming Los Angeles County Bicycle Master Plan.
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CHAPTER 3 - BICYCLE PARKING AT MTA TRANSIT STATIONS

MTA currently provides bicycle parking at 35 of 50 Metro Rail stations on the Blue, Green and Red Lines. The Long Beach Bikestation® serves four stations at the southern terminus of Blue Line. The Pasadena Gold Line and the San Fernando Metro Rapidway will add 12 new stations each when they open in 2003 and 2005, respectively. Plans are currently being made for the installation of bicycle parking at these stations, where space is available. Bicycle parking is also planned for all other future rail and busway projects.

Exhibit 3-1: Metro Rail System
This report focuses on improvements to existing facilities at Blue, Green and Red Line stations. The types of bicycle parking facilities provided at and around existing Metro Rail stations include bicycle racks, bicycle lockers, and bicycle parking stations. Exhibit 3-2 gives the current inventory of bicycle parking facilities at Metro Rail Stations.

### Exhibit 3-2: Current Inventory (as of June 2003)

<table>
<thead>
<tr>
<th>STATION (North to South)</th>
<th>Rack Spaces</th>
<th>Locker Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pico</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>San Pedro</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Washington</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vernon</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sluson</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Florence</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Firestone</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>110th Street / Kenneth Hahn</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Imperial / Wilmington / Rosa Parks</td>
<td>36</td>
<td>8</td>
</tr>
<tr>
<td>Compton</td>
<td>14</td>
<td>-</td>
</tr>
<tr>
<td>Artesia</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Del Amo*</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Wardlow*</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Pacific Coast Highway</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Anaheim</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5th Street**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1st Street**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transit Mall**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pacific**</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STATION (West to East)</th>
<th>Rack Spaces</th>
<th>Locker Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine*</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>El Segundo*</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Mariposa/Nash</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Aviation</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>Hawthorne</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Crenshaw</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Vermont</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Lakewood*</td>
<td>36</td>
<td>8</td>
</tr>
<tr>
<td>Norwalk*</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Total Green Line</td>
<td>126</td>
<td>37</td>
</tr>
<tr>
<td>Total Blue Line</td>
<td>116</td>
<td>70</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>STATION (North to South)</th>
<th>Rack Spaces</th>
<th>Locker Spaces</th>
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</thead>
<tbody>
<tr>
<td>North Hollywood*</td>
<td>68</td>
<td>10</td>
</tr>
<tr>
<td>Hollywood / Highland</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hollywood / Vine</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>Hollywood / Western</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Vermont / Sunset</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Vermont / Santa Monica / LACC</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Vermont / Beverly</td>
<td>14</td>
<td>-</td>
</tr>
<tr>
<td>Wilshire / Western*</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Wilshire / Normandie</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wilshire / Vermont*</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Westlake / MacArthur Park</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>7th Street / Metro Center</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pershing Square*</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Civic Center / Tom Bradley</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Total Red Line</td>
<td>236</td>
<td>88</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STATION (West to East)</th>
<th>Rack Spaces</th>
<th>Locker Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Station / Gateway Transit Center*</td>
<td>26</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STATION (West to East)</th>
<th>Rack Spaces</th>
<th>Locker Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total All Lines</td>
<td>478</td>
<td>195</td>
</tr>
<tr>
<td>Total Bike Parking Spaces</td>
<td>673</td>
<td></td>
</tr>
</tbody>
</table>

*Locker total includes two pilot program lockers.
**Served by the Long Beach Bikestation®.

The two major factors determining the amount of bicycle parking at each station are space and demand. The amount of space at a given station rarely changes, however, demand does change over time and the amount of bicycle parking can be adjusted accordingly. For example, at stations with park and ride lots bicycle parking can be easily adjusted by installing bicycle parking in car parking spaces. However, at some stations there is no space on MTA property available for bicycle parking. Any bicycle parking would have to be installed on city sidewalks near station entrances.

### RECOMMENDATIONS

MTA needs a quality bicycle-parking network. This requires a delicate balance between standardization and customization. MTA should offer a variety of bicycle parking products that are designed to meet the needs of its customers and adapted to the unique physical environment at each Metro Rail station. Each station should have both free and paid bicycle parking. Bicycle parking should be located as close as possible to station entrances, avoiding locations that invite thieves (i.e. behind walls or landscaping) or otherwise threaten the security of the station. All bicycle racks should be durable, require little maintenance, and accept U-locks, chains and cable locks. Bicycle lockers and all other paid bicycle parking facilities should be chosen based on their appropriateness for each site, but operate using the same access media. This will allow customers to move seamlessly throughout the system and simplify the management process.
Exhibit 3-3: Types of Bicycle Parking

**UNPAID**
- **Racks**
  - Inverted-U
  - Multi-U
  - Wave
  - Wheel
  - Claw
- **Non-Racks**
  - Fencing
  - Railing
  - Sign Posts
  - Lamp Posts
  - Small Trees

**PAID ($)**
- **Lockers**
  - Reserved
  - Shared-Use
    - Mechanical
    - Electronic
  - Bikestation®
- **Attended**
  - Bike Tree™
- **Other**
  - Bike Cages
Unpaid Bicycle Parking

- Adopt inverted-U and multiple-U racks as the standard for future purchases.

- Replace all claw and wheel racks with inverted-U and multiple-U racks. Inverted-U racks should be used at most locations since they are less expensive per space. Multiple-U racks should be used for large installations in order to save on labor costs accrued during installation.

- Allow wave racks to remain in place at stations where they currently exist. As demand increases at these stations, add inverted-U or multiple-U racks.

- Install bicycle racks as close as possible to station entrance to reduce probability of non-rack use. The furthest bicycle rack from the station entrance should be at least as close as the nearest non-handicapped car parking space.

- Locate bicycle racks under cover whenever possible.

Paid Bicycle Parking

- Require that all bicycle lockers be constructed of perforated sheet metal or similarly transparent material. This will allow security and law enforcement officials to monitor the contents of bicycle lockers.

- Initiate a Request for Proposals (RFP) to replace existing lockers with a secure bicycle parking system that allows for both reserved and shared-use bicycle parking.

- Create a countywide network of attended bicycle parking facilities at Metro Rail and Rapidway stations—especially end-of-line and other facilities with high demand for bicycle parking.

- Study the feasibility of using space-efficient solutions such as unattended bicycle cages or the Bike Tree® at stations with limited space. If used, these facilities must use the same access media as other MTA-owned paid bicycle parking.
BICYCLE RACKS

Bicycle racks are the most common and inexpensive form of bicycle parking. Racks are popular because of their simplicity and efficiency. From the perspective of the transit agency, the outstanding characteristic of bicycle racks in general is their cost effectiveness in comparison to car parking and other types of bicycle parking. The cost-effectiveness of racks is due not only to their low unit cost, but also to the relatively small amount of space they occupy. For example, MTA installed 16 bicycle parking spaces in two car parking spaces at its main office building.

Bicycle racks also have some disadvantages vis a vis other types of bicycle parking (i.e. bicycle lockers and bicycle parking stations). For example, bikes parked in racks are not protected from the sun and rain unless they are located indoors or in a covered location. Also, even the best bicycle racks do not protect against component theft and few offer safe storage for other bike related items such as cycling shoes, helmets, lighting and other accessories.

Existing Conditions

MTA currently has 478 bike racks installed at 34 Metro Rail stations. Approximately 220 of these racks are occupied during weekday working hours. Rack usage varies slightly according to the line. The Red and Green Lines average about 80 parked bikes each, and the Blue Line averages about 60 bicycles parked in racks on any given weekday. A much greater variation is observed when comparing individual stations. Anywhere from zero to 50 bicycles can be found at any given station with bicycle parking facilities. The stations with the highest demand for bicycle racks are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Station</th>
<th>Avg. Rack Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North Hollywood</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>Norwalk</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>Lakewood</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>Imperial / Wilmington</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Compton</td>
<td>10</td>
</tr>
</tbody>
</table>

*Average demand was calculated using three weekday bike counts.

Various different types of bicycle racks are currently in place at Metro Rail stations. The following section will categorize MTA bicycle racks into five categories: (1) Inverted-U, (2) Multiple-U, (3) Wave, (4) Wheel, and (5) Claw. Each rack type used by MTA will be placed within one of these five categories and evaluated for effectiveness on a variety of levels. The following are characteristics of an appropriate bicycle rack that will be used for evaluation:

---

4 As of June 2003
1. **Secure wheels and frame** – A bicycle rack should be designed in a way that allows the user to lock both wheels and the frame directly to the rack without removing a wheel. Some racks allow for only one part of the bicycle to be secured directly to the rack, forcing the cyclist to secure the other parts of the bicycle by extending cables or chains to them. This is inadequate since most cables and chains can be easily cut.

2. **Support Bicycle**– The bicycle rack should support the frame of the bicycle to prevent it from falling or being pushed over in a manner that could cause damage to the bicycle. The wheels of bicycles are highly susceptible to damage of this type.

3. **Durable** – The bicycle rack should be durable and difficult to vandalize. Generally, racks with simpler designs hold up better to the harsh conditions of weather and vandalism. Racks with movable parts generally do not hold up as well. Mildew and ultraviolet ray resistant thermoplastic powder coating should be used. Stainless steel is an appropriate—but more costly—substitute.

4. **Lock-Friendly** – U-locks, chains and cable locks are the most common locking devices used by cyclists. An appropriate bicycle rack should support all three of these lock types.

5. **Monopoly-Free** – Some models of bike racks allow users to effectively monopolize a bicycle rack by leaving it locked shut after the bicycle has been removed. This is called ‘empty locking’ and it creates serious problems for other cyclists who will not be able to use the racks. It adds to the maintenance costs since someone has to go around cutting locks off empty racks so that they can be used. Many cyclists like to leave their locks secured to the rack after removing their bicycles. This prevents them from having to constantly carry it back and forth between home and the bicycle parking area. An appropriate bicycle racks should allow users to leave their locks attached without excluding others.

6. **Cost (per space)** - Cost is also an important factor and a cost range will be given for each type of rack. Since ‘inexpensive’ is a subjective term that is difficult to define, an approximate cost or cost range will be given for each type of rack.\(^5\)

It is also important that racks be secured to a concrete surface. Racks can be secured to the surface by either embedding the racks into concrete or mounting them to it. Racks that are not either embedded in or mounted to a concrete surface are not appropriate for Metro Rail stations since they can be too easily relocated or removed by the general public. Since all of the racks evaluated below are secured to a concrete surface, it is not necessary to compare them using these criteria. Exhibit 3-3 is a summary of the evaluation of each rack based on the six criteria listed above. A more detailed analysis of each rack type will follow.

---

\(^5\) All cost estimates are for hardware only and assume that bicycle racks are surface mounted because a) racks are generally installed after concrete pads have been laid, and b) surface mounted racks are easier to relocate and replace. The cost estimates were derived from quotes or prices received by MTA.
Chapter 3   Bicycle Parking at MTA Transit Stations

Exhibit 3-3: Summary Evaluation of Bicycle Racks

<table>
<thead>
<tr>
<th></th>
<th>Inverted-U</th>
<th>Multiple-U</th>
<th>Wave</th>
<th>Wheel</th>
<th>Claw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure wheels and frame</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Support bicycle</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durable</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lock-Friendly</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Monopoly-Free</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Cost (per space)</td>
<td>$30-50</td>
<td>$60-70</td>
<td>$30-50</td>
<td>$50-65</td>
<td>$100+</td>
</tr>
<tr>
<td>Recommended</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following analysis provides more detailed descriptions as well as some additional positive and negative characteristics particular to each rack type.

INVERTED-U RACKS (Recommended)

The inverted-U rack is the only rack specifically recommended by the Association of Bicycle and Pedestrian Professionals. Its design is both simple and durable. Each rack provides parking for two bicycles. Inverted-U racks are commonly used along sidewalks since they take up little space. The inverted-U is the preferred rack for many cities around the country including Los Angeles. MTA has recently installed 20 inverted-U racks (40 spaces) at five Metro Rail stations and will be installing more in the future.

Cost: $30 to $50 per space

Advantages

1. The frame and both wheels can be locked directly to the rack without removing a wheel.

2. Inverted-U racks support the frame of the bicycle.

3. Inverted-U racks have proven to be durable and corrosion-free.

4. High security U-locks, chains and cable locks are compatible with this rack.

5. Users can leave their locks on the racks if they choose without preventing others from using the rack.
6. Inverted-U racks can be installed in a variety of groupings based on the demand for bicycle parking and available space at a particular location.

7. Due to their simple design, inverted-U racks require relatively little space for storage. This allows the agency to keep a small stockpile of racks for expedited deployment when necessary.

8. Inverted-U racks are easy to use. Since they have already been installed at over 2,000 locations by the City of Los Angeles, many area cyclists are already familiar with this rack and how it is used.

Disadvantages
Both of the disadvantages of this type of rack can be easily mitigated.

1. Large installations can be labor intensive since each rack is secured to the pavement using at least four—and as many as eight—bolts. Racks that provide multiple spaces on a single unit can be easier for large installations (see description of multiple-U racks below).

2. High-quality pipe cutters can be used to cut quickly through the round tubing commonly used to manufacture inverted-U racks. This problem can be easily remedied by specifying square tubing. Specifying that an anchored cable or chain be run through racks with round tubing is also effective—but significantly more expensive.
MULTIPLE-U RACKS (Recommended)

Multiple-U racks are essentially clusters of inverted-U racks with a common base. They come in a variety of designs and are best for locations requiring large amounts of bicycle parking. MTA currently has a total of 80 multiple-U spaces at six Metro rail stations.

Cost: $60 to $70 per space

Advantages
Multiple-U racks share many of the advantages of inverted-U racks.

1. Multiple-U racks support the frame of the bicycle.
2. Users can lock the frame and both wheels directly to the rack without removing a wheel.
3. Multiple-U racks have proven to be durable and corrosion-free.\(^6\)
4. High security U-locks, chains and cable locks are compatible with this rack.
5. Users can leave locks on the racks if they choose without preventing others from using the rack.
6. High capacity makes them appropriate for large installations.

Disadvantages

1. High-quality pipe cutters can be used to cut quickly through the round tubing commonly used to manufacture multiple-U racks. This problem can be easily remedied by specifying square tubing. Specifying that an anchored cable or chain be run through racks with round tubing is also effective—but significantly more expensive.
2. User may tend—at first—to underestimate the capacity of multiple-U racks, especially if there is less than 24" between each “U”. MTA’s experience has been that over time users become comfortable with the multiple-U and eventually fill them to capacity.

\(^6\) Ibid.
WAVE RACKS (Not Recommended)

Wave racks are less desirable than inverted-U racks. They are similar in appearance to the inverted-U or multi-U rack, but designed in a linear fashion. This design does not provide sufficient support to the frame of the bicycle.

![Wave Racks](image1.png)  
Hollywood / Highland – Red Line (Owned by Developer)  
Santa Monica / Vermont – Red Line

Cost: $40 to $50 per space

Advantages

1. Multiple-U racks have proven to be durable and corrosion-free.\(^7\)

2. High security U-locks, chains and cable locks are compatible with this rack.

3. Users can leave locks attached to racks without preventing others from using the rack.

4. High capacity makes them appropriate for large installations.

Disadvantages

1. Both wheels and the frame cannot be secured directly to the rack without removing a wheel. The rear wheel can be secured directly only if bike is parked parallel to rack in a way that reduces its capacity (See picture below.)

2. Wave racks do not support the frame of the bicycle (if used as intended).

3. The capacity claimed by manufacturers of wave racks is generally higher than what users are comfortable with. Users will often consider racks to be full before they have reached their stated capacity, and begin occupying alternative sites such as small trees, fencing or handrails.

4. Wave racks are often used in a way that reduces their capacity. The photo to the right shows one bicycle occupying four spaces. This has not been a serious problem since demand is low at stations using this rack.

\(^7\) Ibid.
Chapter 3  Bicycle Parking at MTA Transit Stations

WHEEL RACKS (Not Recommended)

Wheel racks stabilize the bicycle by its front wheel and are also known as “wheel-bender” racks for the damage they can do to bicycles. The only MTA facility with wheel racks is the Red Line station in North Hollywood. These racks are well used, due mostly to the high demand at North Hollywood station. Wheel racks have few advantages—if any—vis a vis other types of racks.

Cost: $50 to $65 per space

Advantages

1. Wheel racks are durable.

2. Wheel racks support U-locks, chains and cables. However, using only a U-lock is often insufficient.

3. Users can leave locks on the racks if they choose without preventing others from using the rack.

Disadvantages

1. Only one wheel (and sometimes the frame) can be secured to wheel racks. The second wheel can only be secured using a chain or cable, both of which are vulnerable to bolt cutters.

2. Because they support the wheel rather than the frame, wheel racks can damage the wheels of bicycles. This could be problematic in terms of MTA liability. However, whether or not MTA is actually liable, it is clearly not advisable for MTA to encourage patrons to use a product that could damage their personal property.

3. Wheel rack users often return to find only the wheel of their bicycle (see photos below.)

The above photos were taken at the University of Southern California campus. These racks are not owned by MTA.
CLAW RACKS (Not Recommended)

Claw racks are the most complex type of bicycle rack on the market. They consist of two main parts that work on a hinge and can be locked shut with a standard padlock. Below are three different models of claw racks available at Metro Rail stations, and a total of 318 claw rack spaces exist in the system.

![Grabber Bike Safe](image)

![Rack III](image)

![Rack III^ – Stainless Steel](image)

**Avalon – Green Line**

**Willow – Blue Line**

**Vermont / Sunset – Red Line**

**Cost:** over $100 per space

**Advantages**

The main advantages of claw racks are as follows:

1. Claw racks support the frame of the bicycle.

2. Both wheels and the frame can be secured to the rack and this can be done using a single lock without removing the wheel (Grabber product supports U-locks).

3. Some models have small storage compartments for equipment and vulnerable accessories.

**Disadvantages**

Claw racks present a number of problems in terms of durability, maintenance, and security.

1. Claw racks are made up of several pieces and moving parts that compromise their durability. In fact, these racks are rather easily damaged by both vandalism and normal wear and tear. Rust is a serious problem with older models. Newer stainless steel models do not rust and appear to be more durable overall. However, stainless steel does not address other problems stated below.

![Broken Arm](image)

**Broken Arm**

**Artesia – Blue Line**

![General Decay](image)

**General Decay**

**Pershing Square – Red Line**
2. Rack III model does not support U-locks. Heavy-duty cables or chains are incompatible with both the Rack III and Graber products.

3. Locking system allows users to disable and monopolize racks by leaving their locks on them even when they are not in use (‘empty locking’). This is unfair to other users. It also creates more work for maintenance crews since they have to go around cutting old locks off empty racks.

4. Racks can be rendered insecure in two ways: a) eyelets through which a patron’s lock is inserted can be broken; or b) lock can be accessed and cut by snipping through the protective steel cage around the lock. At Slauson station on the Blue Line, three of the six claw racks had broken eyelets. These racks have since been replaced with inverted-U racks.

5. Multiple unrounded edges and heavy oxidation can present a significant danger to claw rack users and anyone else at the station.

NON-RACKS

A “non-rack” is anything that can be used as bicycle parking, but is not intended as such. Some common examples of non-racks include:

- Fencing
- Handrails
- Lamp Posts
- Sign Posts
- Public Artwork
- Small Trees
- Site Furniture
- Small Trees

Lakewood - Green Line
Universal City – Red Line
Compton – Blue Line
Chapter 3
Bicycle Parking at MTA Transit Stations

Bike counts at Metro Rail stations show that over 50 bikes can be found parked in non-racks during weekday business hours. Non-racks are sometimes used because there are no bike racks available at the station or because all provided racks are occupied. However, non-racks are most commonly used at sites with ample amounts of bicycle parking. This occurs for a variety of reasons. At Metro Rail stations, cyclists often choose non-racks because the official racks:

1. are located too far from station entrance;
2. are located in an area of low visibility that invites thieves (i.e. behind a wall or surrounded by landscaping);
3. do not provide adequate security (for example, fencing is generally more secure than a wheel rack since both wheels and the frame can be locked to it);
4. do not accept U-locks
5. have been disabled by other users leaving their locks on them when not in use (empty locking); or
6. because the official racks are broken or otherwise unfunctional.

Fencing is the most commonly used non-rack for three reasons. First, fencing is common at stations throughout the Metro Rail system. Second, in many cases fencing is more conveniently located than racks. Third, fencing has some characteristics of a high quality rack (i.e. both wheels and the frame to be locked to it). Hand rails, lampposts, signposts and small trees are used as non-racks to a significantly lesser degree. The prolific use of non-racks and its advantages over some forms of official bike parking begs the following question: Why not simply encourage cyclists to use non-racks where they exist, thus saving the money and space consumed in the purchase and installation of official racks? This is a pertinent question, especially in the current context of shrinking budgets. However, there are several good reasons for installing official bicycle racks, even where non-racks appear to be doing the job. First, a quality bicycle rack is more secure than any of the commonly used non-racks. Second, official bicycle racks can be
space and consolidates it near the station entrance. Non-racks users are scavenge for parking all around the station. Third, some potential users may feel discouraged from using non-racks due to concerns about the legality of doing so. Fourth, non-rack use may be unsafe in some situations and could negatively affect access and egress. Bikes parked to handrails or near emergency exits, for example, could disrupt the flow of human traffic in and out of the station.

**BICYCLE LOCKERS**

Bicycle lockers provide significantly greater protection than bicycle racks. The advantages of bicycle lockers over bicycle racks include: protection from weather (sun and rain), protection from component theft, and safe storage for other bike related items (helmet, special clothes or shoes). The combined advantages of bicycle lockers attract users who would not consider using racks and may not otherwise ride bicycles to transit stations. Disadvantages of bicycle lockers include their relatively high cost, high maintenance, and cumbersome management process. Since lockers take up more space than other bike-parking options, they are not well suited for stations with a very high demand for bicycle parking. Also, lockers that are completely enclosed have been considered a threat to the security of the station. Most of these disadvantages can be mitigated using a locker that combines an appropriate design with technology that simplifies management.

**Existing Conditions**

MTA currently has 195 bicycle lockers at 23 Metro Rail stations with 60 of the lockers currently rented. Locker usage varies according to the line. The number of rented lockers is 33 on the Red Line, 14 on the Blue Line, 13 on the Green Line, and one at the West L.A. Transit Center. The stations with the highest number of rented lockers are:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Station</th>
<th>Rented Lockers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gateway / Union Station</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Wardlow</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>El Segundo</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Universal</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Willow</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: MTA Bike Locker Renter Database (Color indicates line.)

Demand for bicycle lockers is likely much higher than suggested by current use for a variety of reasons. A lack of marketing is probably one of the most significant factors. Other factors include management inefficiencies, and the suspension of new rentals for security reasons. Inadequate staffing and a lack of internal coordination has also been an issue. Currently rented lockers are each reserved to a particular user and operate with mechanical locks and keys. The current system creates inefficiencies of space and is difficult to manage.

Structurally, bicycle lockers are far more complex than bicycle racks in that they consist of various parts and can be made from a variety of materials. The most common locker materials are steel,
Structurally, bicycle lockers are far more complex than bicycle racks in that they consist of various parts and can be made from a variety of materials. The most common locker materials are steel, fiberglass, plastic, and wood. Lockers have walls, doors, dividers, handles, hinges, locks, etc. Numerous types of locks and locking systems exist. A complete bicycle locker is just one of myriad combinations of materials, parts, and locking systems. In this section, only the types of lockers currently owned by MTA will be discussed. While bike locker management will be discussed in greater detail in Chapter 4, it is inseparable from the discussion of the locker itself since the type of locker you choose greatly impacts the management of the program. In fact the type of management system is the most noteworthy characteristic for discussing types of lockers. For this reason, I will divide the types of lockers into two main categories: Reserved Lockers and Shared Use Lockers. MTA currently has 179 lockers for reserved use. A total of 26 electronic shared use lockers are also in place as part of a pilot project to test this technology.

RESERVED LOCKERS

Reserved lockers are currently rented for terms of 3, 6, or 12 months. Each locker is assigned to a single person by way of a rental agreement. Once a locker has been assigned, it cannot be rented to anyone else until the locker has been vacated and the key returned. MTA currently uses three different models of reserved lockers using three different materials. All lockers use mechanical locks with traditional user keys.

Each material and locking system has its advantages and disadvantages in terms of cost and durability. The best way to evaluate the appropriateness of an assigned locker system is by examining the advantages and disadvantages to both the user and the transit agency.

From the user's perspective, the main advantage to the user is that reserved lockers provide a guaranteed parking space. Once the key is issued, the renter has exclusive access to a personal bicycle storage space for as long as he or she wishes. For the transit agency, however, the management process is very cumbersome and most transit agencies are ill equipped for managing the rental of bicycle lockers. Transit agencies are generally equipped to make one-time sales of transit passes or tokens, not to distribute and manage keys that have to be recycled through different users.

Reserved lockers also present problems in terms of overall efficiency and equity of access. For example, a reserved locker can only serve one person for the duration of the rental agreement. Reserved lockers often sit empty since many renters use them infrequently. If all lockers at a station have been rented, no one else can have access to them—even if they are not being used.
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SHARED-USE LOCKERS

MTA purchased 26 bicycle lockers for a pilot program to test the feasibility of shared-use lockers. There are two main styles of shared-use bike lockers. A shared use locker functions much like a bicycle rack or car parking where lockers are available on a first-come, first-served basis. Low-tech and high-tech versions of shared use lockers exist. With the low-tech version, the user or transit agency provides a lock that can be used on any available locker. Unfortunately, with this system, users tend to monopolize lockers by leaving their locks on them even when empty (“empty locking”). MTA’s pilot program uses an electronic locking system in which renters are issued an electronic key that communicates user information with the lock. Once a locker has been occupied and the lock engaged by a user, only that same user can access the locker to retrieve the bicycle. After the bicycle has been retrieved, the locker becomes available to other users.

Exhibits 3-4 and 3-5 compare reserved and shared-use lockers from the perspectives of both the user and the transit agency.

Exhibit 3-4: User Perspective

<table>
<thead>
<tr>
<th></th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserved</td>
<td>Renters have 24/7 access to a guaranteed parking space.</td>
<td>Access to only one locker at one station.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Occasional user pays the same as frequent user.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If assigned locker is damaged, customer must wait for reassignment.</td>
</tr>
<tr>
<td>Shared Use</td>
<td>Access to any unoccupied locker at any station.</td>
<td>No guarantee that a locker will always be available.</td>
</tr>
<tr>
<td></td>
<td>Flexible pricing. Occasional users don't have to pay the same price as frequent users.</td>
<td>Inefficient use of lockers (i.e. long-term storage) can be penalized.</td>
</tr>
</tbody>
</table>

Exhibit 3-5: Agency Perspective

<table>
<thead>
<tr>
<th></th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserved</td>
<td>None</td>
<td>Assigned lockers often sit unoccupied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cumbersome management and record-keeping.</td>
</tr>
<tr>
<td>Shared Use</td>
<td>More efficient use of space means lower capital costs.</td>
<td>Lack of a guaranteed locker space may deter some customers from cycling to station.</td>
</tr>
<tr>
<td></td>
<td>Simpler management process means lower operating costs.</td>
<td></td>
</tr>
</tbody>
</table>
LOCKING SYSTEMS (Mechanical and Electronic)

Mechanical locking systems are generally static and inflexible. Once a user has the key to a locker, he or she has exclusive access until the key is returned or the lock cylinder is changed. Electronic locking systems are more flexible. For example, an electronic key can be programmed to expire when a user’s rental agreement terminates. Electronic locks can be programmed to function on either a reserved or shared-use basis, and different levels of access can be granted to different users based on factors such as time of day or location.

Cost: $700 to $1,000 per space

There is no significant cost difference between reserved and shared-use lockers. The cost difference between mechanical and electronic locking systems is minimal.

SECURITY CONCERNS

The existing lockers have been used for storage of non bike-related items and even used as shelters to sleep in. Security and law enforcement officials want bicycle lockers that can be seen into without opening a door so that they can inspect them more easily. This will discourage renters from using them for unintended purposes. Current customers have expressed concern about people being able to see inside the lockers. They feel that this will compromise the security of their bicycles. MTA must select a model that will satisfy the security concerns of both the user and law enforcement.

ATTENDED BICYCLE PARKING

Attended bicycle parking facilities can offer secure bicycle parking as well as wide range of other amenities for cyclists. They are ideal at locations with a high demand for secure bicycle parking. The Bikestation® concept is one example of this type of facility and is currently operating in Long Beach, Berkeley, Palo Alto, and Seattle. The Long Beach Bikestation® at the southern terminus of the Blue Line serves MTA customers and others who travel to or from downtown Long Beach. Services offered to members include:

- Free valet bicycle parking for up to 150 bicycles
- Changing room and restroom
- Bicycle repairs and accessories
- Bike, electric bike, and electric scooter rentals.
- Bike/Transit Information
- City of Long Beach Bike Licenses
- Overnight Bicycle Storage
- Patio Café
- Free air for tires
- Electronic Bike Lockers for after-hours access
- Electric car sharing program

Blue Line – Transit Mall (Long Beach Bikestation®)
Exhibit 3-6: Bike-Transit Activity around Long Beach Bikestation® (Compared with Rest of County)

Created By: Matthew Benjamin
Sources: LACMTA, Cycle Express Database, 2002
U.S. Census Bureau, 2000
Besides offering high security bike parking along with the services mentioned above, the Long Beach Bikestation® generates significant bicycle activity around the transit mall in downtown Long Beach. A spatial analysis of the Cycle Express program provides evidence of this (see map on previous page).\(^{10}\) It shows that the highest density of bike-on-rail permit holders is located in downtown Long Beach.\(^{11}\) The benefits of this type of facility are clearly greater than that of bike lockers or racks. The capital and operating costs are higher than other facilities. In some cases the Bikestation Coalition will manage their own facilities using revenues to cover operating costs. Unattended facilities have a lower operating cost, but without the presence of a knowledgeable human being, a key benefit is lost.

Attended bicycle parking facilities such as these also have the potential to serve as MTA’s primary outlet into the cycling community. The possibility of developing a network of Bikestations® around Los Angeles County is currently being studied using funding from a Caltrans Transportation Planning Grant. MTA should support the creation of a network of bicycle stations that can act as MTA’s primary outlet into the cycling community. Attended bicycle-parking facilities should also sell transit passes, since this will bring even non-cyclists to the facility and make them aware of MTA’s bicycle programs.

**OTHER OPTIONS**

The Bike Tree® is a solar electro-mechanical piece of urban furniture that lifts a bike up to a height of 4.9 meters using a smart card technology so that only the owner can get it back down. A primary advantage of this system is that it provides secure bicycle parking using very little space. It also operates on a wireless network and uses solar power. MTA does not currently employ this technology, but it is being considered for use at Metro Gold Line stations with limited space.

**Somewhere in Europe**

**Cost:** $500 to $625 per space

---

\(^{10}\) The Cycle-Express program provided the permits required for taking bikes aboard MTA trains. Permits were available through Long Beach Bikestation® and MTA Customer Service.

\(^{11}\) Downtown Long Beach had the highest densities of cycle-express permit holders even though population densities were just as high or higher elsewhere in the county.
Unattended bicycle-parking cages are another secure bicycle-parking option. They provide a higher level of security than regular bicycle racks since only members have access. Once inside, members secure their bicycles to a rack with their own personal lock. Security can be further enhanced with closed-circuit cameras, and accurate record keeping of all activity. Below is an example of an unattended bicycle-parking cage. These facilities are generally customized to make the best use of available space. Multi-level designs can provide more bike parking spaces per unit of floor space.

Cost: $1,500 to $2,000 per space
CHAPTER 4 – MANAGEMENT OF BICYCLE PARKING

The key element of a bicycle-parking network is the balance between standardization and customization. This applies to both equipment and management. The type of management required for bicycle parking facilities depends largely on whether the bicycle parking facilities open and available to everyone for free, or whether it requires special access privileges and/or payment. Since MTA’s policy has been to provide free bicycle racks and paid bicycle lockers at transit stations, bicycle-parking facilities will be categorized as either ‘unpaid’ or ‘paid’.

Unpaid bicycle parking--such as bicycle racks--is simple in design and easy to manage. The most functional and manageable bicycle rack designs have changed little over the years and are not likely to change in the near future. MTA has already learned a lot about bicycle racks through day-to-day management and has determined which designs are most appropriate. For these reasons, bicycle racks should follow a standard design. This consistency will improve recognition of bicycle racks and ensure that users can use the same locking equipment and methods wherever they go. The configuration of bicycle racks at each station can be customized to fit in the available space. Since bicycle racks are available to everyone without the need for a special access card or key, they do not need to fall under the same centralized management as paid bicycle parking facilities. The main problem with unpaid bicycle parking is theft. Providing good quality equipment and adequate security where bike parking is located can alleviate this problem.

Paid bicycle parking such as lockers, attended facilities, or other secure bicycle parking is more complex in both infrastructure and management. The design of paid bicycle parking facilities needs to be customized to balance demand for parking with space constraints at each station. Since the type of equipment may vary from station to station, signage and other branding elements must be standardized and easily recognizable. Payment methods must be standardized as well in a way that allows users to have convenient access to all facilities without having to carry more than one form of access media (i.e. more than one key). Pricing can vary according to the type of facility and demand at the location, and free bicycle racks will also be available at all stations with paid bicycle parking. Demand for paid bicycle parking may be the most important factor in determining what type of equipment is used. For example, bicycle lockers are ideal for stations where only a few paid bicycle parking spaces are needed, while bicycle cages, or attended bicycle parking facilities are more appropriate for stations with high demand.

The key to creating a paid bicycle parking system that works is in providing centralized management. MTA has had some experience with managing paid bicycle parking through the bicycle locker program. The management process for this program has proven to be something for which MTA—or large transit providers in general—are ill equipped. The main problem with paid bicycle parking is the complex record keeping and maintenance. Part of the difficulty is due to the fact that the locker manufacturers are generally not responsible for the day-to-day management of their products. Because of this, they may not be aware of the challenges associated with managing paid bicycle parking. Also, most bicycle parking manufacturers have not considered how their products might be integrated and managed with other types of bicycle parking. Since a single type of paid bicycle parking will not be ideal for every site, MTA must find a way to use various products (i.e. lockers, paid access bike cages, attended bicycle parking facilities, etc.) on a user-friendly centralized management system. The best way to do this is by finding a contractor that is willing to
purchase, install, and manage all paid bicycle-parking facilities at MTA facilities. The contractor will be selected through a competitive bidding process in which various contractors will submit proposals to be evaluated on criteria established by MTA. The ongoing management contract will be periodically evaluated by MTA for quality assurance. Allowing the contractor to retain the fee charged for paid bicycle parking, would create an incentive for good service.

The availability high quality unpaid and paid bicycle parking will attract a wide range of bicyclists to transit and may even attract those who would otherwise not use a bicycle for utilitarian purposes. The provision of good free bicycle racks will ensure that paid bicycle-parking facilities offer much more than just safe place to park your bike and will force the paid parking contractor to cater to the needs of cyclists in order to be successful. The possibility of a guaranteed space, protection from weather, access to rentals, and other amenities will add to the attractiveness of paid bicycle parking facilities.

RECOMMENDATIONS

Unpaid Bicycle Parking

- Manage bicycle rack program in-house.

- Conduct an on-site quarterly inventory of bicycle parking facilities to evaluate usage, equipment conditions, and maintain awareness of any other issues associated with MTA bicycle parking.

- Work with law enforcement to increase security at stations with bicycle parking.

Paid Bicycle Parking

- Include installation and management in RFP for new bicycle parking facilities. A single contractor will be responsible for the purchase, installation, and management of all paid bicycle parking. This consolidates responsibility for the program and strengthens incentives for developing a manageable product.

UNPAID BICYCLE PARKING

Bicycle racks require relatively little attention after installation, especially when the appropriate type of rack is used (see Ch. 3, Exhibit 3-3). Many bicycle rack users prefer to leave their locking devices attached to the rack at all times instead of carrying it with them. If the racks recommended in this plan are used, this will not present a problem since it does not exclude others from using the rack. Since bike racks are free and available to everyone, there is no payment collection or record keeping required. A quarterly inventory of all bicycle racks will provide enough information to add racks when needed, replace damaged racks, remove abandoned bicycles, and address any other issues that might arise.
Bicycle Theft

A key issue with bicycle racks is bicycle theft. The same characteristics that make the bicycle such a convenient, efficient and flexible form of transportation also make them vulnerable. Since bicycles are easy to use, lightweight, and able to go just about anywhere, they are perfect targets for thieves. Likewise, the fact that bicycle racks are so accessible to cyclists, also means they are accessible to thieves. Some locking equipment is easily cut, allowing a thief to take off with the entire bicycle. Even when a bicycle’s frame is secured to a rack with the highest-quality locking equipment, its components such as seats and wheels are vulnerable. MTA bicycle rack users who responded to a recent survey expressed frustration with the lack of security at Metro Rail stations. Most of the complaints came from users at the North Hollywood Red Line station and the Lakewood Green Line station. These two stations rank first and third for bicycle usage, respectively. Exhibit 4-1 shows the number of reported bicycle thefts at Metro Rail stations in 2002 as well as the average (weekday) rack demand. The theft rank is determined by number of reported thefts and the theft to demand ratio.

Exhibit 4-1: Bicycle Theft

<table>
<thead>
<tr>
<th>Theft Rank</th>
<th>Demand Rank</th>
<th>Station</th>
<th>Annual Reported Thefts</th>
<th>Avg. Rack Demand</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>Lakewood</td>
<td>11</td>
<td>22</td>
<td>0.500</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>North Hollywood</td>
<td>11</td>
<td>48</td>
<td>0.229</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>Imperial / Wilmington</td>
<td>9</td>
<td>17</td>
<td>0.529</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>Long Beach</td>
<td>4</td>
<td>6</td>
<td>0.667</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>Universal</td>
<td>3</td>
<td>6</td>
<td>0.500</td>
</tr>
</tbody>
</table>

LASD Statistics for Blue and Green Lines (2002)  
(color indicates line)

Rack users who responded to the survey also cited theft of components such as seats and wheels as a major problem. Since component theft and a large portion of bicycle thefts go unreported, the above statistics most likely understate the problem. MTA must improve station security in order to mitigate the risk of bicycle theft. Increasing security presence and training guards to better deal with bicycle theft are only partial solutions. MTA must also educate rack users on locking equipment and how best to secure bicycles and components (see Ch. 5).

12 A study by Transportation Alternatives reports that between 75 and 90 percent of bicycle thefts in New York City are unreported. See www.transalt.org/blueprint/chapter11/
PAID BICYCLE PARKING

Paid bicycle parking management is more complex because of the type of equipment as well as distribution and record keeping mechanisms. For example, there is currently no official set of standard specifications for MTA bike lockers. The result is a system with three different kinds of lockers, two different lock types, and four different master key codes. These circumstances—especially the lack of a universal master key—make routine maintenance such as changing locks, cleaning inside lockers, and minor repairs very difficult. If all lockers and locks were of the same type and on a single master key, routine maintenance would be simplified. Nonetheless, the burden of changing locks and keeping track of user and master keys would remain. A lost master key would still require that every lock in the system be changed and that new keys be sent to every user in order to ensure the security of the system. Only an electronic locking system where a lost master key can be remotely disabled can solve this problem.

Exhibit 4-1 lists the tasks and subtasks associated with the existing assigned bike locker program.

Exhibit 4-1: Task List for Current Bike Locker Program

<table>
<thead>
<tr>
<th>Task 1: Policy and Planning Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ordering new lockers</td>
</tr>
<tr>
<td>• Placement of new lockers</td>
</tr>
<tr>
<td>• Inventory of facilities</td>
</tr>
<tr>
<td>• Locker Replacement or Relocation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task 2: First-Time Renters</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inquiries</td>
</tr>
<tr>
<td>- Initial request to MTA</td>
</tr>
<tr>
<td>- Spanish-speaking customers</td>
</tr>
<tr>
<td>- Checks Availability (Database)</td>
</tr>
<tr>
<td>• Process Application</td>
</tr>
<tr>
<td>- In person</td>
</tr>
<tr>
<td>- By phone</td>
</tr>
<tr>
<td>- Internet</td>
</tr>
<tr>
<td>- Distribute copies</td>
</tr>
<tr>
<td>• Payment</td>
</tr>
<tr>
<td>- Receive</td>
</tr>
<tr>
<td>- Deposit</td>
</tr>
<tr>
<td>• Add renter to database</td>
</tr>
<tr>
<td>• Key Distribution</td>
</tr>
<tr>
<td>- In person</td>
</tr>
<tr>
<td>- By Mail</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task 3: Renewals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Notify renters- Send notice with renewal form</td>
</tr>
<tr>
<td>• Process renewals</td>
</tr>
<tr>
<td>- In-person</td>
</tr>
<tr>
<td>- By mail</td>
</tr>
<tr>
<td>- Deposit check</td>
</tr>
<tr>
<td>- Distribute copies of renewal form</td>
</tr>
<tr>
<td>- Update database</td>
</tr>
</tbody>
</table>
Chapter 4  Management of Bicycle Parking

Task 4: Customer Does Not Renew and Returns Key

- Receive key
  - In person
  - By mail
- Make sure key is properly stored
- Update database
  - Note that locker is now available
  - Note date key was received
- Return key deposit
  - Contact Vendor Services: Add renter to one-time refund list
  - Complete Check Request
  - Attach copy of rental agreement and receipt of deposit
  - Cut check

Task 5: Customer Does Not Renew and Does Not Return Key

- Send follow-up letter with deadline
- Monitor deadlines
- Change lock
  - Initiate request to change lock
  - Prepare work order
  - Send work order
  - Distribute new keys and cores
  - Change lock
- Update database with new key number and locker availability

Task 6: Current Renters Call With a Problem or Question

- Receive call
- Follow up call

Task 7: Renter Using Locker For Unauthorized Purpose

- Issue warning by phone and/or letter with deadline for compliance
- Follow up to determine if renter is in compliance
- If renter not in compliance, send letter of termination of contract
- Request that lock be changed
- Update database with new key number and locker availability

Task 8: Locker Maintenance

- Locker inspection & cleaning
- Remove unauthorized contents
- Service locks

Problems with management of the bike locker program led several of the departments involved to request that MTA study the possibility of hiring a contractor to handle the day-to-day management of the program. The biggest problem with managing the program in-house is that the numerous tasks are spread out across a variety of departments. The tasks associated with bike locker management are not the core responsibilities of these departments and tend to be low priorities. In order to get a better understanding of how a bike locker program should be handled, MTA conducted a survey of other transit providers and MPO’s that provide bicycle lockers (Appendix A). MTA found that most agencies manage their bike locker programs in-house. The agencies that have hired contractors to manage their programs have had success, but many of the problems associated with a bike locker
program are more associated with the limitations of the equipment than where the program is managed. New technologies are becoming available that make bike lockers and other bike parking programs easier to manage. Organizations like the Bikestation Coalition are already specialized in managing bicycle parking facilities.

A manageable network of bicycle parking facilities requires a system where patrons deal with only one entity with a variety of products and locations. Ideally, all equipment should be operated using a single access media. Currently this is not the case. For example, someone who wants a bicycle locker must contact MTA, or LADOT or any municipality with bike lockers at a Metrolink station. Access to the Long Beach Bikestation® is handled by the Bikestation Coalition. Each individual locker has an individual key and if that key is lost, the lock must be replaced. If someone moves and wants to trade their locker on the Blue Line for a locker at a Metrolink station they must return their key and terminate their contract with MTA and solicit a new key and locker from another agency. If someone rents a locker at one station, but needs secure bicycle parking at another station just for one day, they cannot do so without signing a contract for at least 3 months. These management inefficiencies hurt the customer and can be reconciled using electronic locking technology that combines both reserved and shared use lockers. Reserved lockers should cost significantly more and make up only a small portion of all bicycle lockers. Shared use lockers are more efficient and easy to manage since they eliminate the need for keeping track of who is assigned to which locker. In order to ensure that any future bike locker system is manageable, MTA should request both lockers and management in the same proposal. Priority should be given to proposals that integrate bike locker management with the management of other secure bicycle parking facilities. Proposals should emphasize the flexibility of the access media used and the possibilities for integrating bike lockers management with the management of Bikestations® and Bike Trees in the future.

Management Alternatives

Manage existing lockers ‘in-house’ (NOT RECOMMENDED)
MTA could continue to manage the bike locker program using existing bike lockers. The management process would have to be better coordinated between the five departments involved. Tasks would have to be specifically delegated to each department and paperwork and procedures would have to be standardized. Since there is no current system in place for processing renewals, one would have to be established. This would likely include the purchase of database software designed for this purpose. Lockers would continue to be inefficiently used. Misuse would continue to go largely unnoticed since there would be no way to see into lockers without opening them. MTA security does not approve of existing locker design because there is no way to view contents without opening the locker.

Hire contractor to manage existing lockers (NOT RECOMMENDED)
MTA could pay a contractor to manage the existing locker system. Given the complexities of managing the existing equipment, this would be expensive. Problems with inefficiency, misuse, and security would not be resolved.

Purchase new lockers and manage them ‘in-house’ (NOT RECOMMENDED)
MTA could purchase new lockers that meet security requirements. The lockers would use electronic locking mechanisms that allow for both reserved and shared use. Management would be simplified, but a management system would have to be designed from scratch.
MTA Planning initiated a proposal for integrating access to bicycle lockers with the Universal Fare System (UFS). MTA customers would simply purchase access to bicycle lockers from any customer service center and use their transit pass (smart card) as a bike locker key (See Appendix B). It was determined that this would be more costly than other options, due to the high cost of card readers. It was also apparent that since bike locker revenue would be insignificant in comparison to the fare revenues generated by UFS, the program would remain a low-priority project.

**Purchase new lockers to be managed under contract (RECOMMENDED)**

Bicycle locker equipment, installation, and management under a two-year renewable contract should be solicited under a single proposal. Bike locker vendors have not traditionally been responsible for the management of their products and the result has been lockers that may be user-friendly, but cumbersome to manage and maintain. Tying bike locker equipment to bike locker management will provide strong incentives for manufacturers to upgrade and replace their product if necessary to simplify the management process. By having the contractor install lockers as well, MTA will avoid liability for damage done to equipment during installation. There will be incentives to provide good service that do not currently exist under ‘in-house’ management. The bike locker program will be the primary responsibility of the contractor—not a low-priority project, as it currently exists under ‘in-house’ control.

The selected proposal will strongly emphasize the ability to integrate the management of the proposed bicycle locker system with attended bicycle parking and other secure bike parking facilities that may be in the future plans of MTA. On a quarterly basis, the contractor will provide MTA with all information necessary to evaluate program effectiveness and plan for the installation of new facilities. MTA staff will also independently evaluate all paid facilities as part of the quarterly inventory mentioned above. This will consist mainly of usage counts that will be used for demand management (i.e. to justify a price increase or the purchase of additional equipment). The contractor will include proposals for pricing and how to fund expansion of facilities. (See Appendix C for a description of different pricing alternatives.) MTA will make all final decisions regarding pricing and the purchase and location of new facilities.

**Attended Bicycle Parking**

Attended bicycle parking facilities are not currently managed by MTA. Attended facilities generally require an ongoing operating subsidy, but provide the benefit of serving as sales and information centers for bike or transit-related products and information. The Bikestation Coalition is currently studying the feasibility of implementing Bikestations® at a variety of sites including the North Hollywood Red Line station, Norwalk Green Line station, the Sierra Madre and/or Del Mar Gold line stations, a site in downtown Santa Monica and possibly Culver City. If built, these facilities will be an integral part of MTA’s bicycle parking network.

**Other Options**

Bike Trees™ and unattended bicycle cages are generally operated using an electronic access media on a centralized management system. If MTA selects a proposal incorporating this product, it should operate using the same access media as other paid bicycle parking facilities.
CHAPTER 5 – MARKETING BICYCLE PARKING

A marketing strategy for bicycle parking should take into account the potential users of each bicycle-parking product. Chapter 3 explained the three different types of bicycle parking currently available at MTA transit stations: bicycle racks, bicycle lockers and Bikestations. The quantity of each type of bicycle parking at any given station is determined largely by site-specific factors such as available space and the security around station (perceived and real). It is also important to realize that different types of bicycle parking serve different markets. For example, bicycle racks serve customers who want to park for free; are willing to leave their bicycles in the sun or rain (unless the racks are in a covered area); and will risk having components stolen. Bicycle lockers and Bikestations serve customers who are willing to pay for a higher level of protection from the weather and theft. In order to better understand who uses each type of bicycle parking, MTA conducted surveys of bicycle rack and locker users. In addition to demographic and personal information such as age, gender, income and occupation, the surveys also provided MTA with other valuable information about the origins and destinations of users; how far they are willing to ride; why they use a bicycle for all or part of their trip; their opinions about the bicycle parking currently provided; and how MTA bicycle parking can be improved.

The survey results show that the vast majority of both rack and lockers users are male (work) commuters who enjoy the convenience of riding a bike to transit. Bicycle rack users are younger, use bike parking more frequently, and see cycling more as a way to save money. Bicycle locker users are willing to ride greater distances, tend to cycle more for health reasons and personal enjoyment, are slightly more likely to be female, are almost twice as likely to own a car, and have higher household incomes. Bicycle racks users frequently cited the need for better security at stations, while bike lockers users were more concerned about improving the cleanliness around stations.

RECOMMENDATIONS

The following are recommendations based on survey findings and an analysis of the areas in which a shift to bicycle transportation can be beneficial to the transit system (by freeing space on feeder buses and in park and ride lots) and the community (reducing auto emissions and traffic congestion around stations). This is not intended to be a complete marketing strategy.

General

- Increase marketing of all bicycle parking.
- Add bike-parking symbols to all Metro Rail and Metro Rapidway maps.
- Increase awareness of using bikes and transit for social and recreational purposes, especially on weekends.
- Market bicycle facilities directly to students of trade schools, colleges, and universities served by Metro Rail and Metro Rapidway lines.
- Target households and businesses between ½ and 3½ miles from Metro Rail and Rapidway stations.
Chapter 5  Marketing Bicycle Parking

- Use the Long Beach Bikestation® and future attended bicycle parking facilities as vendors of MTA transit passes and as outlets for all bike-related marketing materials.
- Include bike-parking information in all Bike to Work Day promotional materials.
- Use Bike to Work Day registration database as a tool for direct marketing of bicycle facilities.

**Unpaid Bicycle Parking**

- Place marketing materials on Metro Rail and Rapidway lines, and bus lines that feed Metro Rail or Rapidway stations.
- Focus on the fact that bicycle racks are free and portray cycling to transit as a convenient (flexible) and money-saving option.
- Develop literature and graphics on how best to secure bicycles to inverted-U and multi-U racks.

**Paid Bicycle Parking**

- Market paid bicycle parking facilities directly to Park and Ride users—especially at lots with early fill times.
- Focus on convenience of bicycle parking (i.e. proximity to station entrance), the possibility of a guaranteed space, and the personal health and environmental benefits of cycling.

**SURVEY RESULTS**

The Bicycle Rack User Survey was attached to bicycles parked at Metro Rails stations during weekday business hours. An English and Spanish version was left on each bicycle along with a complimentary MTA pen. The response rate was about 20%. Twenty-three percent responded using the Spanish version of the survey. The Bicycle Locker User Survey was mailed to current renters of bicycle lockers and targeted three different groups of locker users: (1) MTA non-employee bike locker renters, (2) MTA employee bike locker renters, and (3) the renters of lockers owned by the City of Los Angeles Department of Transportation (LADOT). LADOT locker users were included in the survey to increase the sample size and cover a greater portion of the county. A total of 57 locker user surveys were returned. The response rate was 60%. Only one of 57 respondents used the Spanish version of the survey. The two surveys differed slightly. The locker user survey included additional questions. See Appendix D for detailed results and copies of each survey instrument.

**How long is the total "biked" portion of your commute (one way)? ________ miles**

Average and median calculations show that bicycle locker users tend to ride about one mile farther than rack users.

<table>
<thead>
<tr>
<th>Distance to / from station</th>
<th>Racks</th>
<th>Lockers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>2.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Median</td>
<td>2.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>
This suggests that providing bicycle lockers expands potential catchment areas one mile beyond that of bicycle racks. Bike-only commuters for whom the bicycle locker is at the final destination, will ride even farther. (See Appendix D)

**Describe your final destination.**

Most bicycle rack and locker users are riding their bikes as part of a work trip.

<table>
<thead>
<tr>
<th>Final Destination</th>
<th>Racks</th>
<th>Lockers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>88.6%</td>
<td>92.0%</td>
</tr>
<tr>
<td>School / Class</td>
<td>5.7%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Social / Recreation</td>
<td>2.9%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Shopping</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Medical / Dental</td>
<td>2.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Childcare</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

The potential for using bicycle lockers as part of school or recreational trips is largely unrealized. As the Metro Rail and busway system expands in the near future with connections to Old Town Pasadena (Gold Line), Valley and Pierce Colleges (San Fernando Busway), and USC (Exposition LRT), the possibilities for capturing non-work trips will be expanded. Bicycle parking could be marketed directly to students at the schools served by rail lines and busways. Weekend-only access to paid bicycle parking could be offered at reduced prices to encourage recreational use when occupancy is low.

**Why do you travel by bicycle?**

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13 Since there were no weekend surveys distributed, it is possible that the results understate recreational use. Also respondents will tend to report their most common destination, which is more likely to be work related than recreational.
Respondents could choose any applicable reasons. The most common responses of racks users were 'convenience', 'save money', and 'health reasons', respectively. Locker users cited 'health reasons', 'personal enjoyment', and 'social/environmental concerns'.

**What is your primary reason for traveling by bicycle?**

Respondents could choose only one answer to this question.

The most common response in the 'other' category had to do with inadequate bus service to station. Both rack and locker users cited this as a reason.

**Age and Gender**

Females are underrepresented in both groups. Bicycle rack users tend to be younger.

<table>
<thead>
<tr>
<th>Age and Gender</th>
<th>Racks</th>
<th>Lockers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age</td>
<td>40</td>
<td>47</td>
</tr>
<tr>
<td>Percent Female</td>
<td>9%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Improving safety at stations may increase female participation in bike-transit activity. More research should be conducted to better understand this phenomenon.
How often do you use bike parking?

Rack users use bicycle parking more often. This could be related to the fact that they are also more transit dependent. (See car ownership data below.)

<table>
<thead>
<tr>
<th>How often do you use bike parking?</th>
<th>Racks</th>
<th>Lockers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- days per week</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

The frequency of locker use may even be overstated in the survey. Locker inspections and anecdotal evidence suggest that bike lockers spend the vast majority of their time unoccupied. A shared-use system in which any unoccupied locker is available could greatly increase the efficiency of the system as a whole.

Do you have a car?

Locker renters are almost twice as likely to have a car.

<table>
<thead>
<tr>
<th>Car Ownership</th>
<th>Racks</th>
<th>Lockers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own car</td>
<td>51%</td>
<td>89%</td>
</tr>
</tbody>
</table>

This suggests that providing bicycle lockers or other secure bicycle parking is more likely to lead to a reduction in Vehicle Miles Traveled (VMT). Free car parking is available at most stations with bike lockers, indicating a willingness to pay for secure bike parking even when free car parking is available.

What was the total family income in 2002, before taxes of all persons in your household?
The household income of the typical locker user is higher than that of the typical rack user. Seventy-five percent of locker users who responded to this question have household incomes of over $50,000 per year. More than three-quarters of rack users have annual household incomes of less than $50,000. This is further evidence that different bicycle parking products serve different markets.

**If a bicycle locker was not available, would you consider using bicycle racks?**

Most locker users (82%) said they would not consider using bicycle racks. This response—combined with the fact that most locker renters (89%) own cars—indicates the importance of providing secure bicycle parking in order to prevent or replace automobile trips.

**Please give us your opinion of the Bike Locker Program?**

The following results only include the responses of non-employee MTA bike locker renters.

The results show that renters feel that lockers are too hard to rent. The fact that this sentiment is coming from those who were actually able to rent the lockers should cause some concern, and suggests that the low occupancy rate is not due to lack of demand. Renters are also concerned about the cleanliness around lockers. The rental price received the highest marks, suggesting that a price increase may be justified if other aspects of the program are improved.

**Origin and Destination Data**

Rack and locker users were asked to provide the address (or nearest intersection) of their origin (home) and final destination. The following maps show the origins and destinations of respondents as well as information on population density, income and poverty.
Exhibit 5-1: Origins and Destinations (Distance from Station)

LEGEND

Created By: Matthew T. Benjamin
Sources: LACMTA, Bicycle Parking User Surveys 2003
U.S. Census Bureau, 2000
Chapter 5  Marketing Bicycle Parking

Exhibit 5-2: Origins and Destinations (Population Density)
Chapter 5  Marketing Bicycle Parking

Exhibit 5-3: Origins and Destinations (Income per Capita)

LEGEND

<table>
<thead>
<tr>
<th>ORIGINS-DESTINATIONS</th>
<th>INCOME PER CAPITA</th>
</tr>
</thead>
<tbody>
<tr>
<td>HACKER, ORIGIN</td>
<td>Less than $15,000</td>
</tr>
<tr>
<td>HACKER, DESTINATION</td>
<td>$15,000 - $25,000</td>
</tr>
<tr>
<td>LOCKER, ORIGIN</td>
<td>$25,000 - $45,000</td>
</tr>
<tr>
<td>LOCKER, DESTINATION</td>
<td>More than $45,000</td>
</tr>
</tbody>
</table>

Created By: Matthew T. Benjamin
Sources: LACMTA, Bicycle Parking User Surveys 2003
U.S. Census Bureau, 2000
MARKETING LEADS

Park and Ride Users

Driving to transit does not lead to significant improvements in air quality and may simply divert traffic from freeways to lower-capacity surface streets. Also, many Park and Ride lots are full during regular commute hours, making it impossible for some to park and take transit. Bicycle parking takes up much less space than auto parking. A large bicycle rack installation can yield up to 10 bicycles per auto space. By encouraging those who drive to transit to try cycling, the overall parking capacity (auto + bike) will be expanded and car parking spaces will become available for those previously unable to get a space. As bicycle parking expands and consumes car parking spaces, the number of people driving to transit will decrease, but the total number of park and ride users will increase.

MTA should market bicycle parking directly to those who are currently using automobile parking at MTA transit stations. The location of bicycle parking is key. By installing bike parking in prominent locations where the furthest bicycle parking space is closer to the entrance than the closest non-handicapped auto parking space, park and ride users will be constantly reminded of the convenience of bicycling to the transit station. The bicycle lockers should be accompanied with signage informing potential customers on how to rent a locker. Marketing materials could be left on all automobiles in Park and Ride lots several times a year.

Bikestation Coalition

The Long Beach Bikestation® and all future attended bicycle parking facilities should be used as outlets for all MTA information regarding bicycling in Los Angeles County. The Long Beach facility has proven to be very effective in generating bicycle activity. Both its name and its prominent location (in downtown Long Beach at the terminus of the Blue Line) make it an obvious destination for those seeking bicycle information. The sale of transit passes at the Long Beach Bikestation® may increase MTA customer awareness of bicycling to transit as an option.

Bike to Work Day

Information about bicycle parking including phone numbers for locker rentals and Bikestation® membership should be included as part of the annual Bike to Work Day event. By getting people to take part in the bike locker program or become Bikestation® members could result in greater long term use of the bike-transit option. Also, the list of registered participants in Bike to Work Day could be used for direct mailings of marketing materials for the bicycle parking program and other information regarding MTA bicycle policies.

Los Angeles County Bicycle Coalition (LACBC)

The LACBC is a member-based non-profit bicycle advocacy organization. One of their major campaigns is educating the public on cycling issues through their newsletter, web page and special events. LACBC’s Bicycle Resource Guide has published information regarding MTA bicycle parking in
the past and its members are a captive market. Their experience in bicycle education could be helpful in educating the public on how to properly lock bicycles to racks.

Further Action

MTA’s Marketing department should play a key role in the further development of a marketing strategy for bicycle parking and all other bicycle programs and facilities.
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CHAPTER 6 – IMPLEMENTING BICYCLE PARKING IMPROVEMENTS

Future bicycle parking at MTA transit stations should balance standardization and customization. MTA bike-transit customers should be able to park their bicycles safely and conveniently at any Metro Rail or busway station. All bicycle racks should be of similar design. All secure (paid) bicycle parking should be available through a single vendor with a variety of locations.

The next steps require a phased implementation of the bicycle parking network. The following chart provides a summary of each phase.

Exhibit 6-1: Implementation Summary

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
<th>Schedule</th>
<th>Estimated Cost</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Bicycle Rack Installation &amp; Replacement</td>
<td>May - Sept 2003</td>
<td>$14,000</td>
<td>FY 2003 Office Budget</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(in progress)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Bikestation Implementation Study</td>
<td>June 2003 - May</td>
<td>$213,800</td>
<td>Caltrans Planning Grant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Bicycle Locker Replacement and Program Management</td>
<td>To be determined</td>
<td>$300,000 - $500,000</td>
<td>To be determined</td>
</tr>
<tr>
<td>IV</td>
<td>Bicycle Parking Program Expansion</td>
<td>Ongoing</td>
<td>$20,000 - $50,000/yr</td>
<td>Bicycle Parking Budget</td>
</tr>
</tbody>
</table>

PHASE I: BICYCLE RACK INSTALLATION AND REPLACEMENT (MAY – SEPT 2003)

All future bicycle racks should be either the inverted-U or multi-U racks. All other racks should be removed (except for the limited number of ‘wave’ racks) and replaced with racks meeting the specifications in Exhibit 6-2.

The estimates assume some increase in the number of people parking bicycles at stations as a result of equipment improvements, increased marketing, and the completion of bicycle projects countywide that will take place during the lifespan of these bicycle racks.

Total Estimated Cost: $16,500  These numbers do not include installation costs or rent value of land. The funding source for these racks is the Fiscal Year 2003 Bicycle Parking Budget.

Bicycle racks will also be purchased for Metro Gold Line stations at an estimated cost of $2,500.
Exhibit 6-2: Bicycle Rack Equipment Specifications

<table>
<thead>
<tr>
<th>Item 1. Inverted-U Bicycle Racks</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) <strong>Capacity</strong> – 2 bicycles</td>
</tr>
<tr>
<td>b) <strong>Rack Dimensions</strong> - 36” high and 30” long.</td>
</tr>
<tr>
<td>c) <strong>Construction</strong> – a single piece of 2” x 2” x .188” wall square tubing.</td>
</tr>
<tr>
<td>d) <strong>Color</strong> – Black or unpainted stainless steel.</td>
</tr>
<tr>
<td>e) <strong>Coating</strong> – Long wearing, mildew and ultraviolet ray resistant thermoplastic powder coating. Liquid paint, polyester powder coating, or PVC is unacceptable. Stainless steel is the only acceptable substitute.</td>
</tr>
<tr>
<td>f) <strong>Base plate</strong> – Two round surface flanges per rack, constructed to receive mounting hardware in three places located in equidistant locations on the foot of the rack.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item 2. Multi-U Bicycle Racks</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) <strong>Capacity</strong> – 8 bicycles</td>
</tr>
<tr>
<td>b) <strong>Rack Dimensions</strong> – 36” high and 30” long (for each “U”). There should be 30” separating each “U”, making the rack approximately 120” wide.</td>
</tr>
<tr>
<td>c) <strong>Construction</strong> – a single piece of 2” x 2” x .188” wall square tubing.</td>
</tr>
<tr>
<td>d) <strong>Color</strong> – Black or unpainted stainless steel.</td>
</tr>
<tr>
<td>e) <strong>Coating</strong> – Long wearing, mildew and ultraviolet ray resistant thermoplastic powder coating. Liquid paint, polyester powder coating, or PVC is unacceptable. Stainless steel is the only acceptable substitute.</td>
</tr>
<tr>
<td>f) <strong>Base plates</strong> – Two round surface flanges per rack, constructed to receive mounting hardware in three places located in equidistant locations on the foot of the rack.</td>
</tr>
<tr>
<td>g) <strong>Additional</strong> - The multi-U rack must function as a series of four inverted-U racks installed 30” apart. The only differences being that a) the multi-U rack is constructed of one piece of square tubing instead of four and b) that it has two flanged surface mounts instead of eight.</td>
</tr>
</tbody>
</table>

**PHASE II – LOS ANGELES COUNTY BIKESTATION CLEAN TRANSIT IMPLEMENTATION PLAN (JUNE 2003 – MAY 2004)**

Lay the groundwork for development of a network of Bikestation clean transit centers along MTA transit lines throughout the County. These multi-modal facilities will improve bicycle/transit linkages and provide alternative transportation options.

The project will create a model and develop implementation plans for Bikestation Clean Transit centers along Los Angeles County transit corridors. The sites to be studied include the North Hollywood Red Line station, the Del Mar or Sierra Madre Gold Line station, the Norwalk Metro Green Line station and an Exposition Light Rail stations in downtown Santa Monica and possibly Culver City. The total project cost is $213,800 to be funded by a $171,000 Caltrans Planning Grant and in-kind contributions.
PHASE III – BICYCLE LOCKER REPLACEMENT AND PROGRAM MANAGEMENT (SCHEDULE PENDING)

MTA staff will prepare a Request for Proposals (RFP) for the purchase, installation, and management of bicycle lockers and/or other secure bicycle parking options throughout the Metro Rail system. The proposal should provide at least as many secure bicycle parking spaces as are currently offered at each station, approximately 250 secure bicycle parking spaces at 38 stations on the Blue, Green, Gold and Red lines. The estimated cost is between $300,000 and $500,000. This estimate is based on a fixed cost of between $3,000 and $5,000 per station and a variable cost of between $750 and $1,200 per space. The selected proposal will provide an integrated bicycle-parking network that allows users the option of reserved or shared-use parking. It will also provide users with access to secure bicycle parking throughout the Metro Rail system. Operating costs should be minimal during the initial implementation and eventually be covered—primarily or entirely—by operating revenues or outside funding.

PHASE IV – BICYCLE PARKING PROGRAM EXPANSION (ONGOING)

Add bicycle parking as demand increases and new transit projects are completed such as San Fernando Rapidway and Exposition Light Rail projects. Funding for bicycle parking is included in construction costs of both the San Fernando Rapidway and the Exposition Light Rail projects. Funding for additional bicycle racks should come from the Westside Area Team’s bicycle parking budget. MTA Planning should be involved in the procurement and installation of all bicycle-parking facilities.

FURTHER ACTIONS AND RESEARCH

The management and marketing recommendations will require cooperation between various MTA departments as well as the contractor selected to provide and manage paid bicycle parking facilities. Aggressive marketing of bicycle parking facilities should not begin until the bicycle-parking network is in place. Further research should include an evaluation of the actions taken under this plan and study the possibilities for expanding the bicycle-parking network beyond Metro Rail and Rapidway stations to other areas such as Metrolink stations, major bus stops, and major activity centers throughout Los Angeles County.
APPENDICES
APPENDIX A: COMPARISON OF OTHER AGENCIES

In order to find out how other bike locker programs are managed, MTA Planning surveyed 8 metropolitan area transit providers and/or MPOs:

- Bay Area Rapid Transit (BART)
- Dallas Area Rapid Transit (DART)
- Denver-RTD
- Portland Tri-Met
- Washington Metropolitan Area Transit Authority (WMATA)
- Miami Urbanized Area MPO
- San Diego Association of Governments (SANDAG)

Five of the eight other agencies administer their bike locker programs in-house. These agencies include BART, DART, Denver-RTD, WMATA and the Miami Urbanized Area MPO. (The Miami MPO shares administrative responsibilities with the local transit agency, Miami-Dade Transit.)

Agencies whose bike locker programs are run in part by contractors include Portland’s Tri-Met, SANDAG, and LADOT. Tri-Met contracts most of the administrative duties to a local bicycle transportation advocacy group. SANDAG has contracted out administrative duties to a private contractor (RideLink) as part of a larger contract that includes SANDAG’s Ride Share and Guaranteed Ride Home programs. LADOT’s bike locker program is managed in part by the LACBC under the supervision of the LADOT Bike Locker Coordinator.

LACMTA’s bike locker program is small relative to those in metropolitan areas of similar size. Currently LACMTA has 175 locker spaces at 23 locations. Of the agencies surveyed, only DART has fewer bike locker spaces (81 spaces at 21 locations). The agencies with larger locker programs include WMATA (1,200 at 48 locations), BART (820 at 30 locations), SANDAG (628 at 54 locations), Denver-RTD (512 at 43 locations), Miami-Dade Transit (320 at 12 locations), and Tri-Met (244 at 28 locations).

Four of the eight other agencies surveyed have recently published bicycle-parking plans. These agencies include BART (2002), Miami-Dade (2002), Denver-RTD (2001), and Tri-Met (2000). SANDAG and WMATA have not yet responded to inquiries about bike parking plans.

LACMTA’s current occupancy rate is 37%. More successful agencies include Denver-RTD (95%), BART (94%), Tri-Met (79%), SANDAG (75%) and WMATA (50%). Less successful programs include DART (20%) and Miami-Dade (16%).

**Dallas Area Rapid Transit (DART)**

DART’s bike locker program is administered in-house under the lead of its Sales Department. The Sales Department handles all of the customer service aspects of the program (registration and fee collection, key distribution, renewals, and waiting list). The lockers are currently installed and serviced by their Maintenance Department. DART previously tried subcontracting the installation of new lockers to a subcontractor as part of a larger contract primarily including landscape maintenance, but with poor results.
DART currently has 81 lockers with about 16 rented (20%) and 4 people on a waiting list to receive lockers. The lockers used are standard keyed locker boxes. Renters pay $45 per year plus a $15 key deposit.

DART does not currently have an official Bicycle Parking Plan.

**Denver Regional Transportation District (RTD)**

The Denver RTD’s bike locker program is managed in-house under the lead of the Planning and Development Department (includes Engineering). Planning and Development is also responsible for other bike-related issues (i.e. bike racks, policy development). RTD’s Customer Service Department handles registration and fee collection, key distribution, renewals, and maintaining the waiting list. The lockers are serviced by the Facilities Maintenance Department.

The RTD currently has 512 lockers at 43 locations that include both on-demand lockers using RTD-issued padlocks and standard reserved lockers. Of the approximately 250 standard reserved lockers, 238 are rented (95%). RTD reports that 60% of the approximately 260 on-demand lockers are in use at any given time. This is the equivalent of a standard reserved locker occupancy rate of over 100%. Advertising and marketing is done through the RTD website and its “Bike-n-Ride” brochure. Renters pay $25 for a six-month rental (no key deposit).

Denver RTD’s bike locker program is guided by its “RTD Bike-n-Ride Strategic Plan” (2001).

**Los Angeles Department of Transportation (LADOT)**

LADOT bike lockers are managed by the Los Angeles County Bicycle Coalition (LACBC) under the lead of the Supervising Transportation Planner at LADOT’s Bureau of Transit Programs. LADOT handles the procurement, installation and maintenance of the lockers. LACBC is responsible for customer service and marketing.

LADOT currently has approximately 150 lockers at 7 Park and Ride locations in the San Fernando Valley with approximately 113 (75%) rented and no waiting list. Marketing includes mention of the program on the LACBC website. Lockers are free with a $10 key deposit.

LADOT does not currently have a bike parking plan.

**Miami-Dade Transit (MDT) / Miami Urbanized Area MPO**

The bike lockers at MDT Metrorail stations are managed in-house under the lead of the MPO’s Bicycle/Pedestrian Coordinator. In a coordinated effort, the MPO purchases the lockers and installs them at MDT stations. Customer Service and Marketing functions are shared while maintenance is the responsibility of MDT.

Miami-Dade Transit currently has 320 lockers at 12 locations with 50 (16%) rented and 5 people on a waiting list. Lockers are all standard keyed lockers, but electronic and on-demand lockers are being considered in accordance with their recent Bicycle Parking Plan. Marketing includes mention of the program on the Miami-Dade Transit website. Lockers are $70 per year with a $10 refundable key deposit.
Future enhancements to Miami-Dade’s bike locker program will be guided by their “Miami-Dade Bicycle Parking Plan” (2002).

**Portland Tri-Met**

Portland Tri-Met’s bike locker program is primarily administered through a contractor—the Bicycle Transportation Alliance (BTA) under the lead of the Capital Programs Department. The BTA handles all customer service and marketing responsibilities as well as light maintenance (re-keying). Capital Programs is responsible for the procurement and installation of bike lockers. Tri-Met’s Facilities Maintenance handles any heavy maintenance of lockers (major repairs, replacement).

Tri-Met currently has 244 lockers at 28 locations with 192 (79%) rented and 29 people on a waiting list. Lockers include both traditional keyed lockers and on-demand lockers. Marketing includes brochures and channel cards in MAX trains. Lockers are free with a $50 refundable key deposit. Renters are required to respond to correspondence and surveys in order to renew rental agreements.


**San Diego Association of Governments (SANDAG)**

SANDAG’s bike locker program is administered as part of a larger contract with Ride Link. A database for bike locker management was created by SANDAG for Ride Link. SANDAG is responsible for policy and funding. Ride Link handles or subcontracts all other responsibilities. Cleaning and maintenance was previously subcontracted to the California Conservation Corps.

SANDAG currently has 628 lockers at 54 locations of which 468 are rented with 67 people on the waiting list. The lockers used include standard reserved lockers, on-demand ‘bike shells’, and electronic lockers. Marketing includes signage on each locker with the Ride Link bike locker rental telephone number (231-BIKE). Lockers are free with a $25 refundable key deposit. Renters must return yearly renewal forms in order to keep using their lockers.

SANDAG has not yet responded as to whether or not they have a bicycle parking plan.

**San Francisco Bay Area Rapid Transit (BART)**

BART’s bike locker program is administrated in-house under the lead of the Bicycle Program Administrator of the Customer Access/Budget Planning Department. In addition to being the lead department for the bike locker program, Customer Access also handles other bike-related issues (i.e. bike racks, bikes on rail). BART’s Customer Services Department handles registration and fee collection, key distribution, invoicing and maintaining the waiting list. These responsibilities are all carried out at the main customer service center. The Facilities Maintenance Department handles service orders, and the Locksmith manages non-customer keys and changes locks.

BART currently has 820 lockers at 30 stations with 774 rented and 327 customers on their waiting list. The lockers used include standard reserved lockers and newer electronic lockers. Advertising and marketing is limited to their website and the All About BART brochure. There is currently no signage on their lockers with a phone number. Renters pay a $25 key deposit plus $25 a year.
Volume 1 of BART’s Bicycle Access and Parking Plan was recently completed (August 2002). Volume 2 of this plan will include specific plans for each station. Various ideas for improving bicycle access to stations are mentioned including bike channels along stairways, electronic bike lockers, and centralized bike parking areas/plazas at some stations.

**Washington Metropolitan Area Transit Authority (WMATA)**

WMATA’s bike locker program is administered in-house by their Communications Department. The Customer Service Department forwards repair requests to the Maintenance Department, who then services the lockers.

WMATA currently has 1,200 lockers at 48 stations with approximately 600 rented (50%) and no waiting list. The lockers used are standard keyed lockers. Advertising and marketing includes brochures and announcements on the WMATA website. Renters pay $70 per year plus a $10 key deposit.

WMATA has not yet responded as to whether or not they have a bicycle parking plan.

**Los Angeles County Metropolitan Transportation Authority (LACMTA)**

LACMTA’s bike locker program is currently administered under the lead of the Planning Department (TDI). Customer and Vendor Services handles initial rental applications and key distribution. All other service calls go directly to the Bikeway Planning intern who then fills out whatever paperwork necessary (i.e. Check Requests, Maintenance Requests) to handle the situation. The Facilities Maintenance Department handles the maintenance and cleaning of lockers. Accounting cuts checks for refunds. Despite the division of tasks among departments, the program is currently dysfunctional since there is no system of procedures set up for coordinating between departments.

Both the Accounting Department and Customer/Vendor Relations have expressed that their responsibilities for the program are too cumbersome and time consuming, and that they would prefer to have these responsibilities handed over to a private contractor. Planning would like to have its responsibilities limited to demand management (directing new installations and relocation) and data collection.

LACMTA currently has 175 lockers at 23 stations with 65 rented (37%) and 7 people on a waiting list. The lockers used are standard keyed lockers. Renters pay $25 per year with a $25 key deposit. Bike lockers are not currently being marketed. A Pilot Program featuring 26 electronic on-demand lockers at 13 stations is scheduled to begin this fall.

MTA does not have a currently have an official Bicycle Parking Plan.
### TABLE 1: SURVEY DATA

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor</td>
<td>N/A</td>
<td>N/A</td>
<td>LACBC (Bike Coalition)</td>
<td>N/A</td>
<td>Bicycle Trans. Alliance</td>
<td>RideLink</td>
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<td>Procurement/Installation</td>
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<td>In-house</td>
<td>In-house</td>
<td>In-house</td>
<td>In-house</td>
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</tr>
<tr>
<td>Customer Service</td>
<td>In-house</td>
<td>In-house</td>
<td>In-house</td>
<td>Contractor</td>
<td>In-house</td>
<td>Contractor</td>
</tr>
<tr>
<td>Marketing</td>
<td>In-house</td>
<td>In-house</td>
<td>In-house</td>
<td>Contractor</td>
<td>In-house</td>
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<td>Maintenance</td>
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<td>In-house</td>
<td>In-house (MDT)</td>
<td>Both</td>
<td>Contractor</td>
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<tr>
<td>Bike Parking Plan</td>
<td>?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Statistics

<table>
<thead>
<tr>
<th>Locations</th>
<th>48</th>
<th>21</th>
<th>43</th>
<th>7</th>
<th>12</th>
<th>28</th>
<th>54</th>
<th>30</th>
<th>23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lockers</td>
<td>1,200</td>
<td>81</td>
<td>512</td>
<td>150</td>
<td>320</td>
<td>244</td>
<td>628</td>
<td>820</td>
<td>175</td>
</tr>
<tr>
<td>Renters</td>
<td>600</td>
<td>16</td>
<td>240</td>
<td>113</td>
<td>50</td>
<td>192</td>
<td>468</td>
<td>774</td>
<td>65</td>
</tr>
<tr>
<td>Waiting List</td>
<td>0</td>
<td>4</td>
<td>?</td>
<td>?</td>
<td>5</td>
<td>29</td>
<td>67</td>
<td>327</td>
<td>7</td>
</tr>
<tr>
<td>Occupancy Rate</td>
<td>50%</td>
<td>20%</td>
<td>95%*</td>
<td>75%</td>
<td>16%</td>
<td>79%</td>
<td>75%</td>
<td>94%</td>
<td>37%</td>
</tr>
<tr>
<td>Key Deposit</td>
<td>$10</td>
<td>$15</td>
<td>$0</td>
<td>$10</td>
<td>$10</td>
<td>$50</td>
<td>$25</td>
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<tr>
<td>Rental Fee (year)</td>
<td>$70</td>
<td>$45</td>
<td>$40</td>
<td>free</td>
<td>$70</td>
<td>free</td>
<td>free</td>
<td>$25</td>
<td>$25</td>
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</tbody>
</table>

### Type of Lockers

<table>
<thead>
<tr>
<th>Standard Keyed</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Demand*</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Electronic Locks</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Note:**
* RTD uses both standard and on-demand lockers. The number of renters (238) only covers the 250 standard lockers. Therefore the occupancy rate of 95% (238/250) is also based only on the standard lockers. RTD reports that 60% of the on-demand lockers are in use at any given time. This is indicative of a standard occupancy rate of over 100%.
APPENDIX B: UFS-BIKE LOCKER INTEGRATION

THE CONCEPT OF UFS-BIKE LOCKER INTEGRATION

Integrating bike lockers with the Universal Fare System is essentially adapting the locks on bike lockers so that they accept the Universal Fare Card as a key. If this concept is developed, a customer’s transit pass will also give them access to secure bicycle parking.

THE BENEFITS OF UFS-BIKE LOCKER INTEGRATION

The benefits of bicycle transportation in general are well known as is the possibility of expanding the catchment areas along transit lines by promoting cycling to transit stations. Currently, transit and transportation agencies around the country are actively promoting cycling to transit stations by equipping them with bike parking. The LACMTA presently has a bike parking program that includes racks and/or lockers at most Metro Rail stations.

MTA’s Bike Locker Program was recently found to be substandard when compared to its peers in the categories of size (# of lockers), breadth of reach (# of stations), and depth of reach (occupancy rates). With the introduction of the Universal Fare System the MTA has an opportunity to reinvent its Bike Locker Program, making it an example for the rest of the country. By using new technology in conjunction with the UFS, the MTA can provide significant benefits including:

1. increased mobility for MTA customers
2. enhanced security at MTA facilities
3. greater capacity in less space
4. an expanded distribution network
5. a less cumbersome administrative process

Increased mobility for MTA customers
Currently, when you rent a bike locker you get access to a given locker at a given station that cannot be changed without changing your rental agreement—a process that can take up to a week. This means that the multi-modal customer who wants to use a bike locker is limited to a single entry point (station) into the Metro Rail network. As the Metro Rail network expands, more people will be living within bicycling distance of more than one rail line and more than one station. Electronic locking technology will allow a bike locker renter to access any unoccupied locker in the system with a single key. This will allow our customers to more easily adapt and maintain mobility options as their travel patterns change.

Enhanced security at MTA facilities
The proposed lockers will enhance security in through innovations in both the locker itself and the lock technology. The lockers will be constructed of perforated sheet metal (or similarly transparent material) that will allow all security and law enforcement personnel to visually inspect each locker without the need for a master key. The transparent nature of the lockers will also deter the use of lockers for the storage of

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1 See Appendix A, Table 1: Survey Data
unauthorized items. The lock technology gives authorized officials the ability to open any locker at any time with a master key and to download a variety of information from the lock (date/time/duration of use, key number, etc.) This information can be useful in determining ownership of contents in the case of a lost key or provide information for investigating any incidents where a locker has been used to store contraband.

Greater capacity in less space
Electronic locking systems allow for lockers to be used ‘on-demand’ or on a first-come, first-serve basis. By making lockers available on-demand, a single locker can be accessed by multiple users over time. Currently, our 175 lockers give us capacity for no more than 175 users. However, locker renters are not necessarily using their lockers at all times. Some users have reported using their lockers as little as once a month or less. With an on-demand system, others would be able to access these lockers every other day of the month. At stations where space is limited, this could have a considerable positive impact by expanding service to significantly more customers.

An expanded distribution network
All of the aforementioned benefits can be achieved without UFS integration by simply shifting to a perforated sheet metal locker with an electronic locking system. However, the major benefit that the UFS provides is an expanded distribution network. Currently, bike locker keys are only distributed from the Customer Service Center at Gateway Plaza. If the Universal Fare Card is adapted to provide access to bike lockers, key distribution will expand to include any location where the Universal Fare Card is sold. This will have the effect of making bike lockers more accessible to the general public. It will also make the Universal Fare System more truly ‘Universal’. Since these projects are being developed concurrently, it makes sense to study the possibility of integration.

A less cumbersome administrative process
The current administrative process for the bike locker program is cumbersome and operates at a very high cost per customer served. Both the Accounting and Customer and Vendor Relations departments recommended that the program be contracted out because of the financial and administrative burdens it has caused in these departments. This is due largely to the fact that there hasn’t been a satisfactory system in place for managing the program. This problem can be remedied by incorporating the Bike Locker Program into the development of the UFS. The technology itself will take away much of the burden of the current program. Keys will expire electronically, removing the need for charging and returning key deposits. Also, locks will not need to be changed when keys are lost or when renters do not return them at the end of their contract. If a master key is lost, locks can be programmed to reject and deactivate that key if someone tries to use it rather than changing the locks on every locker and distributing new keys to every renter.
APPENDIX C: PRICING MECHANISMS FOR BICYCLE LOCKERS

This plan recommends providing both reserved and shared-use lockers. For efficiency and fairness, only a small portion of locker at any given site should be reserved. Access to reserved lockers should be more expensive than access to shared-use lockers. Reserved lockers should be rented at a fixed monthly or yearly price. Shared-use lockers can be rented using a variety of pricing mechanisms. Three options are described below including a fixed monthly or yearly price, a per-use point system, and a per-use debit system.

Fixed Monthly or Yearly Price
Renters are currently charged $25 per year with a one-time $25 key deposit for a reserved bicycle locker. At just over two dollars per month, this is a very low price. In the Bike Locker User Survey, MTA customers gave ‘rental price’ the highest average marks of any service category (4.8 out of 5). This indicates that the cost of reserved lockers could be raised, especially if shared use access is offered at a lower price. A flat monthly or yearly fee can be used for both reserved and shared use lockers, but the reserved price should be based on the return that could be made if the locker were rented on a shared-use system. For example, if a shared lockers serve an average of three renters each, a reserved locker should cost three times as much as shared-use access.

Per-Use Point System
A point system can allow discounts for buying points in bulk while discouraging inefficient use of those points at the same time. The electronic keys can be programmed to expire after a given time period, or programmed to run on a point system that discourages users from long-term use or monopolization through "empty locking". With the point system, a user buys a key with a given number of points and uses them to pay for the locker on a per-use basis. It is similar to deducting money, but allows for discounts for those who buy larger amounts of points. The rate at which points are deducted depends on the duration of each use. Exhibits C-1 and C-2 illustrate how a point system can work to discourage inefficient use of bike lockers.

Per-Use Debit System
Charging customers for each use on a debit system will be easier for the customer to understand than a point system, and can still discourage long-term storage. Like a point system, a debit system can charge a flat daily or hourly rate that increases after certain amount of time has elapsed. For example, renters can be charged 50 cents for the first 24 hours, 75 cents for each day after that up to one week, and a dollar a day for each day beyond the first week. Prices can vary by station according to demand and be displayed on or near the lockers using signage or liquid crystal display (LCD) screens.
The point system outlined above provides discounts for frequent users. Buying points in bulk would not be rational for the infrequent user because the points that go unused after one year will expire. Having the key expire also minimizes the risk of a customer losing points due to damage caused by extensive wear and tear on an old key. Also, if prices are changed all customers will be on the new pricing system within a year. The main idea of a point system is to keep the cost of bicycle parking low for frequent users without making it so inexpensive that it is used inefficiently. The point system makes a distinction between frequent users (i.e. those who park and un-park their bikes every day) and long-term users (i.e. people who put their bicycle in a locker and leave it there for a week). This can be done with progressive pricing where the user is charged one point for the first day, two points for the second day, three points for the third day, etc. The frequent user will be charged one point per day for the week—seven points total. The person leaving her or his bike in the locker for seven consecutive days will be charged 28 points \((1+2+3+4+5+6+7=28)\). Exhibit 4-4 shows how many points are charged for consecutive storage periods of up to three weeks.
# Exhibit C-2: Point System - Points Per Use

**How many points will I be charged each time I use my locker?**

<table>
<thead>
<tr>
<th>If you leave your bike in a locker for:</th>
<th>...you will be charged</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 20 minutes</td>
<td>0 points</td>
</tr>
<tr>
<td>21 min - 24 hrs</td>
<td>1 point</td>
</tr>
<tr>
<td>25 - 48 hrs</td>
<td>3 points</td>
</tr>
<tr>
<td>49 - 73 hrs</td>
<td>6 points</td>
</tr>
<tr>
<td>73 - 96 hrs</td>
<td>10 points</td>
</tr>
<tr>
<td>97 - 120 hrs</td>
<td>15 points</td>
</tr>
<tr>
<td>121 - 144 hrs</td>
<td>21 points</td>
</tr>
<tr>
<td>145 - 168 hrs</td>
<td>28 points</td>
</tr>
<tr>
<td>169 - 192 hrs</td>
<td>36 points</td>
</tr>
<tr>
<td>193 - 216 hrs</td>
<td>45 points</td>
</tr>
<tr>
<td>217 - 240 hrs</td>
<td>55 points</td>
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<tr>
<td>217 - 240 hrs</td>
<td>66 points</td>
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<tr>
<td>217 - 240 hrs</td>
<td>78 points</td>
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<tr>
<td>217 - 240 hrs</td>
<td>91 points</td>
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<td>217 - 240 hrs</td>
<td>105 points</td>
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<td>217 - 240 hrs</td>
<td>120 points</td>
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<td>217 - 240 hrs</td>
<td>136 points</td>
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<tr>
<td>217 - 240 hrs</td>
<td>153 points</td>
</tr>
<tr>
<td>217 - 240 hrs</td>
<td>171 points</td>
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<tr>
<td>217 - 240 hrs</td>
<td>190 points</td>
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<tr>
<td>217 - 240 hrs</td>
<td>210 points</td>
</tr>
<tr>
<td>217 - 240 hrs</td>
<td>231 points</td>
</tr>
</tbody>
</table>

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THE PRICING SYSTEM DESCRIBED IN EXHIBITS C-1 AND C-2 ARE PURELY HYPOTHETICAL!
Pricing Recommendation
Since this is a publicly funded transportation program, pricing mechanisms should be used to maximize the benefit to the public and the transportation system (i.e. getting as many people as possible to ride their bikes to transit) and not as a tool for simply maximizing profits. Prices should initially be set by MTA and be allowed to fluctuate based on clear criteria established to balance supply and demand at each site. A per-use debit system would provide the best balance between user-friendliness and incentives for efficiency. However, contractors responding to the RFP should include a pricing proposal for reserved and shared-use lockers that will work best with their system.
APPENDIX D: USER SURVEYS

Bicycle Rack User Survey

The Rack User Survey was attached to bicycles parked at Metro Rails stations during weekday business hours. An English and Spanish version was left on each bicycle along with a complimentary MTA pen. The response rate was 19% (35 of 189). Of all respondents, 74% used the English version of the survey and 26% used the Spanish version.

How long is the total “biked” portion of your commute (one way)? (n=35)

<table>
<thead>
<tr>
<th>miles</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg.</td>
<td>2.5</td>
</tr>
<tr>
<td>Median</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Describe your final destination. (n=35)

Work was the most common destination of respondents, with all other destinations making up only 12% of responses. ‘Shopping’, ‘childcare’, and ‘other’ were not destinations for anyone.

Use of the bike-transit connection for school/class is largely unrealized. Bicycle parking could be directly marketed to students of educational institutions served directly by Metro Rail or Rapidway projects. If surveys had been left on bicycles during weekend hours, we may have seen a higher percentage of social/recreational trips.
Why do you travel by bicycle? (n=35)

Respondents marked as many reasons as applied. Convenience, saving money, and health reasons were the most commonly cited factors.

'Other' entries included:
- "Bus 154 doesn't pass at night."
- "Because you have not provided nearly enough parking for cars. I'd drive if I could ever find a parking spot."

Two respondents marked 'other' without stating the reason.
What is your primary reason for traveling by bicycle? (n=35)

- Convenience: 18%
- Save Money: 28%
- Health Reasons: 21%
- Social / Envir Concerns: 12%
- Other: 18%
- Personal Enjoyment: 3%

'Other' entries included:
- "I leave work late and there is no bus service."
- "No car"
- "Insufficient parking"

Two respondents marked 'other' without stating the reason.

Gender (n=34)

- Female: 3 (9%)
- Male: 31 (91%)

Age (n=29)

- Avg. Age: 40

How often do you use a bike rack at this station (avg.)? (n=35)

- 5 Days/Wk.

Do you have a car? (n=35)

- Yes: 51%
- No: 49%
What is your occupation?  (n=28)

<table>
<thead>
<tr>
<th>Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Assistant</td>
</tr>
<tr>
<td>Attorney</td>
</tr>
<tr>
<td>Between Jobs</td>
</tr>
<tr>
<td>Broker</td>
</tr>
<tr>
<td>Communications</td>
</tr>
<tr>
<td>Cook</td>
</tr>
<tr>
<td>Computer Programmer</td>
</tr>
<tr>
<td>Customer Service</td>
</tr>
<tr>
<td>Dishwasher</td>
</tr>
<tr>
<td>Electronic Technician</td>
</tr>
<tr>
<td>Engineer</td>
</tr>
<tr>
<td>Health Care</td>
</tr>
<tr>
<td>Librarian</td>
</tr>
<tr>
<td>Machine Operator</td>
</tr>
<tr>
<td>Mail Handler</td>
</tr>
<tr>
<td>Maintenance (2)</td>
</tr>
<tr>
<td>Mechanic</td>
</tr>
<tr>
<td>Movie Extra</td>
</tr>
<tr>
<td>Musician</td>
</tr>
<tr>
<td>Real Estate</td>
</tr>
<tr>
<td>Retired</td>
</tr>
<tr>
<td>Security</td>
</tr>
<tr>
<td>Stock Clerk</td>
</tr>
<tr>
<td>Student</td>
</tr>
<tr>
<td>Supervisor</td>
</tr>
<tr>
<td>Telemarketing</td>
</tr>
<tr>
<td>Telephone Technician</td>
</tr>
<tr>
<td>Tailor</td>
</tr>
</tbody>
</table>

What was the total family income in 2001, before taxes, of all persons in your household?  (n=33)

- less than $25K: 52%
- $25K - $50K: 27%
- $50K or more: 21%

Comments / Suggestions:

Security
- "Riding a bike in this area is not easy. My locked bike was stolen from the [North Hollywood] station, and I was struck by a car and injured while riding to the station 2 weeks ago."
- "We need 24-hour full-time security! My bike was stolen from a rack [at North Hollywood]. I've heard many others were also. Cops do nothing about it."
- "More security around bike racks [at Lakewood station]."
- "I'd like there to be more security because I've had two seats stolen [at Norwalk station]." - Spanish
- "More security please. Two weeks ago somebody stole the seat of my bike [at Lakewood station]."
- "More security. I've had two bikes, a seat and a wheel stolen [from North Hollywood station]. (Four separate thefts.)" - Spanish
- "This is the second bike. Somebody stole my first bike in bike parking at Del Amo station. I bought that for $89.99."
- "Terrible security at these stations – bicycles are constantly vandalized, parts stolen, etc. GET CAMERAS." [From a rack user at Sunset / Vermont station.]
Quantity of Parking
- "I'd like there to be more boxes [lockers] to put bicycles inside at the Red Line stations at Vine and Highland."
- "Additional bike rack needed at Aviation station!"
- "More bike racks are needed, not lockers [at Universal City station]."
- "Insufficient auto parking [at North Hollywood station]."

Other
- "The [claw] bike rack that used to be at Wardlow station was better than the [multi-U] one now because it secured the wheels with frame."
- "I don't like locked [claw] racks with no bicycle." - Norwalk
- "I take the metro from my house to [Imperial] station and then I ride my bike to work." - Spanish
- "Thank you for the parking area. What shall I do if I lose my padlock key?" - Aviation station. Referring to padlocks on claw racks.
- "The bike racks at the subway stations are very convenient – nice to have them in a highly visible area." – North Hollywood
- "Please send information regarding how much you charge [for bike locker] by week, month and year." – North Hollywood, Spanish
- “Encourage bike riders. Sometimes I can take the bike on the train." – North Hollywood
**HELP US TO SERVE YOU BETTER**

**Bike Parking User Survey**
Please take a few minutes to complete and mail this survey.

**HOME ADDRESS**
Street Address
(or nearest cross streets)

City Zip Code

**FINAL DESTINATION ADDRESS**
Street Address
(or nearest cross streets)

City Zip Code

**How long is the total "biked" portion of your commute?**
(one way) _______ miles

**Describe your final destination, NOT YOUR HOME.** (Check only one)
- Work
- School/Class
- Social/Recreation
- Shopping
- Medical/Dental
- Childcare
- Other:

**Why do you travel by bicycle?** (Check all that apply)
- Convenience
- Save Money
- Health Reasons
- Personal Enjoyment

---

**What is your PRIMARY reason for traveling by bicycle?** (Check only one)
- Convenience
- Save Money
- Health Reasons
- Personal Enjoyment
- Social/Environmental Concerns
- Other:

**How often do you use a bike rack at this station?** _______ days per week

**Do you have a car?** Yes No

**What is your OCCUPATION?**

**What was the TOTAL FAMILY INCOME in 2002, before taxes, of all persons in your household?** (Check only one)
- Under $5,000
- $5,000-$9,999
- $10,000-$14,999
- $15,000-$19,999
- $20,000-$24,999
- $25,000-$29,999
- $30,000-$39,999
- $40,000-$49,999
- $50,000 or more

**Comments/Suggestions:**

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Thank you. All information will be kept strictly confidential.

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**AYÚDENOS A SERVIRLE MEJOR**

**Encuesta a los Usuarios de Estacionamiento para Bicicletas**
Por favor, tome un momento para completar y enviar esta encuesta.

**DIRECCIÓN DEL Hogar**
Dirección de Calle
(o las calles más cercanas)

Ciudad Código Postal

**¿Cuál es la distancia que Ud. recorre en bicicleta?**
(solo un número) _______ millas

**¿Cuál es su destino final? No siendo su casa.** (Marque solo una opción)
- Trabajo
- Escuela/Clases
- Cita médica/dentista
- Compras
- Social/Recreo
- Guardería
- Otro:

**DIRECCIÓN DE DESTINO FINAL**
Dirección de Calle
(o las calles más cercanas)

Ciudad Código Postal

**¿Por qué viaja Ud. en bicicleta?** (Puede marcar más de una opción)
- Conveniencia
- Ahorrar dinero
- Mantener la salud

---

**¿Que lea la razón PRINCIPAL por la cual Ud. viaja en bicicleta?** (Marque solo una opción)
- Conveniencia
- Ahorrar dinero
- Mantener la salud
- Por su placer
- Preocupaciones ambientales
- Otro:

**Es Ud:**
- Mujer
- Hombre

Edad:

**¿Cuánto a menudo usa Ud. este estacionamiento para bicicletas?** _______ días por semana

**Tiene Ud. un auto?**
- Sí
- No

**¿Qué es su PROFESIÓN?**

**¿En TOTAL, cuál fue el INGRESO FAMILIAR TOTAL antes de pagar impuestos en el año 2002 de todas las personas en su hogar?** (Marque solo una opción)
- Menos de $2,000
- $2,000-$4,999
- $5,000-$7,999
- $10,000-$14,999
- $15,000-$19,999
- $20,000-$24,999
- $25,000-$29,999
- $30,000-$39,999
- $40,000-$49,999
- $50,000 o más

**Observaciones/Sugerencias:**

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Gracias. Toda la información será estrictamente confidencial.
Bicycle Locker User Surveys

The Bike Locker User Survey targeted three different groups of locker users: (1) MTA non-employee bike locker renters, (2) MTA employee bike locker renters, and (3) the renters of lockers owned by the City of Los Angeles Department of Transportation (LADOT). A total of 57 surveys were completed: 28 from MTA non-employee renters, 9 from MTA employee renters, and 20 from LADOT renters. The response rate for MTA bike locker surveys was 60%. The main reason for including LADOT locker users in the survey was to increase the sample size. Both LADOT and MTA lockers are installed at transit connections such as rail stations and park and ride lots. The major distinction between the groups is the price they pay for bike lockers. The first group agrees to pay $25 per year plus a one-time $25 security deposit. The second group agrees to pay $6 per year and no key deposit. The third group pays a $10 deposit with no annual fee. Slight differences in income between LADOT and MTA renters suggests that lower prices may attract lower income users. However, the majority of all survey groups had household incomes of $50,000 or more. Another difference had to do with the nature and length of their “biked” commute (see below). In most cases, these three groups will be combined.

The survey was distributed by mail in English and Spanish. About 50% of MTA non-employee renters responded to the survey (28 of 57). About 70% of MTA employee renters responded. MTA does not have information on the response rate of the LADOT bike locker surveys. Only one respondent (2%) used the Spanish version of the survey.

Describe the “biked” portion of your commute.

1. I ride a bicycle from home to this locker and take a train or bus.
2. I ride a bicycle from home to this locker and (walk/drive/ride in a car) to my final destination. This generally means that the locker is at or near the user's final destination.
3. I take a train or bus to this locker and ride a bicycle to my final destination.
4. I (walk/drive/ride in a car) to this locker and ride a bicycle to my final destination.
5. Other:______________________________________________________________

There were a total of 57 responses to this question and they produced some notable distinctions between the three survey groups. The majority of MTA (non-employee) renters ride a bicycle from home to the station and take transit. For most MTA employees their locker is at their final destination (Gateway Plaza - MTA Headquarters). Most LADOT renters use their bikes for the final leg of their trips between the transit station and their final destination. Overall, however there is a general balance (about 40% each) between those who use their bikes to travel to the transit station and those who ride a bike from the transit station to their final destination.
The market for bicycle lockers thus includes both residents and employees around a transit station. The MTA employee sample suggests that as station areas are developed (like Gateway Plaza at the terminus of the Red Line), the stations become final destinations and may draw additional bike locker users who do not intend to transfer to public transit.

**How long is the total “biked” portion of your commute (one way – in miles)?**

The 55 responses to this question produced an average distance of 4.3 miles and a median distance of 3.0 miles between the bicycle locker and the origin or destination of the renter. For MTA employees these numbers were significantly higher with an average of 7.2 and a median of 5.0 miles.

<table>
<thead>
<tr>
<th>Answer</th>
<th>MTA</th>
<th>MTA Emp.</th>
<th>LADOT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
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<tr>
<td>1</td>
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</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td></td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

**Describe your final destination. (n=57)**

At 93%, work was by far the most common destination for respondents. The remaining 7% of destinations were equally divided between “school/class” and “social/recreation”.

The potential for using bicycle lockers as part of school or recreational trips is largely unrealized. As the Metro Rail and busway system expands in the near future with connections to Old Town Pasadena (Gold Line), Valley and Pierce Colleges (San Fernando Busway), and USC (Exposition LRT), the possibilities for
capturing non-work trips will be expanded. A more efficient and flexible on-demand locker system could be marketed directly to students at the schools served by rail lines and busways. Weekend-only access at reduced prices could also be offered to encourage recreational use on days when occupancy is low.

**Why do you travel by bicycle? (n=57)**

The responses to this question give MTA an idea of what should be emphasized in marketing the bicycle locker program.

"Other" entries include:
- "Faster than walking"
- "Avoid freeway stop-and-go traffic"
- "Metro 210 unreliability on Saturday mornings"
- "Avoid traffic"
- "Don't like being in car"
- "Time saved"
- "Because bus service from my home to the Red Line is virtually non-existent"
What is your primary reason for traveling by bicycle? (n=57)

The most common primary reasons for traveling by bicycle were health reasons, convenience, and personal enjoyment. While social and environmental concerns were an important contributing factor, they were much less significant as the primary factor in the decision to travel by bicycle. This makes sense when considering that the social and environmental benefits of a single individual using clean transportation are quite small and externalized, while health benefits, convenience and personal enjoyment are all internalized and consumed almost entirely by the individual. Saving money was the least common primary reasons for traveling by bicycle. Since most of the respondents enjoy total household incomes of over $50,000 per year, any savings generated from bicycle transportation would be small relatively to monthly income.

“Other” entries included:
- “Metro 210 unreliability on Saturday mornings"
- “Avoid traffic”
- “To have bike with me at work so I can use it to [go to] lunch”
- “Because bus service from my home to the Red Line is virtually non-existent”

<table>
<thead>
<tr>
<th>Gender (n=57)</th>
<th>Age (n=53)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Avg</td>
</tr>
<tr>
<td>11%</td>
<td>47</td>
</tr>
<tr>
<td>Male</td>
<td>Median</td>
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<tr>
<td>89%</td>
<td>48</td>
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</table>
How often do you use this bike locker? (n=57)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 4 days/wk</td>
<td>39%</td>
</tr>
<tr>
<td>1 - 2 days/wk</td>
<td>16%</td>
</tr>
<tr>
<td>5+ days/wk</td>
<td>33%</td>
</tr>
<tr>
<td>&lt;1/week</td>
<td>7%</td>
</tr>
<tr>
<td>&lt;1/month</td>
<td>5%</td>
</tr>
</tbody>
</table>

Only a third of respondents use their locker five or more days per week. Locker inspections and anecdotal evidence also suggest that bike lockers spend much of their time unoccupied. A shared-use system in which any unoccupied locker becomes available could greatly increase the efficiency of the system as a whole. Such a system would also be fairer for several reasons. Currently, once all lockers are assigned, anyone else wanting to rent a locker must wait until lockers are added or otherwise become available. Even if a locker is rarely used, the renter continues to have exclusive access to it as long as she or he desires and at a below-market price. Under conditions of limited space, adding lockers may not be an option. However, since a guaranteed space is a key benefit and since most renters would not consider using racks (see below), measures should be taken to minimize the chance of renters being left without a locker. If locker supply is sufficiently responsive to demand, this risk could be significantly mitigated. Also, a limited number of assigned lockers could also be provided at an appropriate price.

If this locker was not available, would you consider using bike racks? (n=56)

Most bike locker renters (82%) said they would not consider using bicycle racks if a locker was not available. Peak hour restrictions for taking bikes on rail at most Metro Rail stations mean that current renters would have little opportunity for traveling by bicycle without the existence of bike lockers. This also suggests that there is significant demand for a guaranteed secure parking space at Metro Rail stations.

Do you have a car? (n=56)

Eighty-nine percent of respondents said they have a car. This suggests that auto trips are being replaced through the provision of bike lockers. Free car parking is also available at most stations with bike lockers, indicating a willingness to pay for secure bike parking even when free car parking is available.

The fact that locker spaces are currently reserved while auto spaces are not, could be used to bolster the argument that a limited number of reserved bike lockers should continue to be offered at an appropriate price (in addition to less expensive shared-use access to lockers).
What is your occupation?  (n=55)

The 55 answers to this open-ended question produced a list of 34 different occupations—most of them professional. Engineers (8), managers (5), planners (4), artists (3) and educators (3) are the most common occupations among bike locker renters who responded to the survey.

- Accountant
- Administrator
- Artist (3)
- Attorney
- Biologist
- Educator (3)
- Engineer (8)
- Executive
- Exercise Physiologist
- Financial Analyst
- Government (2)
- Health
- Mailman
- Maintenance
- Manager (5)
- Manufacturing
- Marine Terminal Operator
- Mechanic
- Oral Surgeon
- Painter
- Planner (4)
- Plant Operator
- Project Manager
- Retired (2)
- Schedule Maker
- Scientist
- Security (2)
- Student
- Welder

What was the total family income in 2001, before taxes, of all persons in your household?  (n=50)

Most respondents had a total family income of more than $50,000 per year. For LADOT renters, this number was slightly lower and for MTA renters it was slightly higher. The discrepancy can be explained (at least partially) by the fact that LADOT lockers are free.
Please give us your opinion of the bike locker program? (n=28)

Survey respondents were asked to rate the bicycle locker program in seven areas using a numeric scale of 1 to 5. Only MTA non-employee responses were included in this analysis, because the LADOT program is managed separately and MTA employees pay a reduced price for lockers. Customers gave the lowest marks in the “easy to rent” category. As a bike locker renter for one year, I was frequently asked how lockers could be rented by passersby as I parked or unparked my bicycle. Many said they had seen the lockers but didn’t know what they were. Increasing the amount of signage, information, and marketing as well as developing an appropriate management system for bike lockers will make them easier to rent and increase the number of renters. Cleanliness around lockers is an issue that should be easier to resolve. Broken glass and public urination appear to be among the biggest problems. Cleaning around lockers should be a normal part of station maintenance, and frequency of cleaning should be increased at “problem” stations such as Pershing Square and Universal City.

The highest marks were in the “rental price” category. Bike lockers currently cost about two dollars a month. Several complained about not being able to pay for renewals. Payment problems should be resolved with the implementation of a new management system. It appears that the price could be justifiably increased if the quality of service and cleanliness improve, and especially if MTA begins charging for automobile parking.
Comments / Suggestions (MTA respondents only)

The comments made by MTA locker renters indicate three major issues that need to be addressed in any future bicycle locker program.

Customer Service
- “Exasperating to navigate phone tree re: info about renting locker.”
- “No one knowledgeable about program.”
- “Renewal program is non-existent.”
- “I rode my bike to the [Wilshire]/Vermont station one day and my rental locker was gone! I got no notice and when I went to complain, I was met with complete indifference!”
- “I have called but no one has sent me a rent renewal!”
- “Still have not been contacted for 3rd year renewal…”

Cleanliness
- “Often find broken glass around lockers – bad for tires = flats!”
- “Horrible stench of urine [at Pershing Square] all the time.”
- “There is a huge problem of public urination behind and on the lockers [at Universal City]. It reeks of urine.”

Physical Infrastructure
- “Old metal lockers were better [than fiberglass lockers].”
- “The entry into the Green Line parking lot at Norwalk is quite dangerous. A bicycle entrance at the south end would be ideal…”

Other
- “I usually bike all the way to and from work. I only use the locker and train when I work late or if I am [too] tired to bike. But the locker is a huge backup convenience for me. Thanks!”
- “I would like to add that anything the MTA could do to extend the subway along Wilshire would be greatly appreciated. My biked commute takes quite a long time and the Rapid buses are subject to the same slow traffic conditions as all the other vehicles on that street.”
BICYCLE LOCKER USER SURVEY
Bike Locker User Survey
Help Us to Serve You Better

Please complete this survey and return in the enclosed self-addressed stamped envelope. If you have more than one locker please complete a separate survey for each locker.

1 STATION name for this particular locker: _______________________________

2 Describe the “biked” portion of your commute. (Check only one)
   □ I ride a bicycle from home to this locker and take a train or bus.
   □ I ride a bicycle from home to this locker and (walk/drive/ride in a car) to my final destination.
   □ I take a train or bus to this locker and ride a bicycle to my final destination.
   □ I (walk/drive/ride in a car) to this locker and ride a bicycle to my final destination.
   □ Other: ___________________________________________

3 How long is the total “biked” portion of your commute (One Way)? ______ miles

4 FINAL DESTINATION ADDRESS
   If you have more than one final destination, please list only your most common destination.
   Street Address ____________________________________________
   (or nearest cross streets)
   City __________________________ Zip Code ______________________
   (optional)

5 Describe your final destination. (Please check only one)
   For the purposes of this survey, YOUR HOME is NOT considered a FINAL DESTINATION.
   □ Work    □ School/Class    □ Social/Recreation
   □ Shopping    □ Medical/Dental    □ Childcare    □ Other: ______________________

6 Why do you travel by bicycle? (Check all that apply)
   □ Convenience    □ Save Money    □ Health Reasons    □ Personal Enjoyment
   □ Social/Environmental Concerns    □ Other: ______________________

7 What is your PRIMARY reason for traveling by bicycle? (Check only one)
   □ Convenience    □ Save Money    □ Health Reasons    □ Personal Enjoyment
   □ Social/Environmental Concerns    □ Other: ______________________

8 Gender: □ Female    □ Male    Age ______

9 How often do you use this bike locker?
   □ 5 or more days/wk    □ 3-4 days/wk    □ 1-2 days/wk
   □ Less than once/wk    □ Less than once/month

10 During what time of day do you USUALLY use your bike locker?
   (Check all that apply)
   □ Early Mornings (4:00 AM – 8:00 AM)    □ Mornings (8:00 AM – 12 Noon)
   □ Afternoons (12:00 Noon – 4:00 PM)    □ Late Afternoon/Evening (5:00 PM – 9:00 PM)
   □ Night (8:00 PM – 12 Midnight)    □ Late Night (12 Midnight – 4:00 AM)

11 If this bike locker was not available, would you consider using BIKE RACKS at this Metro Rail station?
   □ Yes    □ No

12 Do you have a car? □ Yes    □ No

13 What is your OCCUPATION? _______________________

14 What was the TOTAL FAMILY INCOME in 2001, before taxes, of all persons in your household? (Check only one)
   □ Under $7,500    □ $7,500-$14,999    □ $15,000-$24,999
   □ $25,000-$34,999    □ $35,000-$49,999    □ $50,000 or more

15 Please give us your opinion of the Bike Locker Program.
   very poor  poor  fair  good  very good
   Easy to Rent  1  2  3  4  5
   Location (Convenience)  1  2  3  4  5
   Location (Safety)  1  2  3  4  5
   Rental Price  1  2  3  4  5
   Quality of Lockers  1  2  3  4  5
   Cleanliness around Locker  1  2  3  4  5
   Overall Service  1  2  3  4  5

Thank you / All information will be kept strictly confidential

Survey # _____________
Encuesta a los Usuarios de Cajones de Seguridad para Bicicletas
Ayúdenos a servirle mejor

Por favor, complete esta encuesta y envíe la en el sobre que viene incluido (no necesita estampilla) Si Ud. Tiene más que un cajón para bicicletas, por favor complete una encuesta para cada uno.

1 Nombre del ESTACION DE METRO donde se ubica su cajón de seguridad para bicicletas:_____________________________

2 Describa su viaje. (Marque solo una opción)
   ☐ Voy en bicicleta desde mi casa al estación de Metro y después tomo un tren o bus.
   ☐ Voy en bicicleta desde mi casa al estación de Metro y voy caminando o en auto a mi destino final.
   ☐ Tomo un tren o bus hasta este estación y después voy en bicicleta a mi destino final.
   ☐ Yo voy caminando o en auto hasta este estación y después voy en bicicleta a mi destino final.
   ☐ Otro:________________________________________________________________

3 ¿Cuál es la distancia que Ud. recorre en bicicleta? (solamente de ida) _______ MILLAS

4 ¿Cuál es su destino de ida? (Marque solo una opción)
   ☐ Trabajo
   ☐ Escuela/Clases
   ☐ Cita médica/dentista
   ☐ Compras
   ☐ Social/Recreación
   ☐ Guardería
   ☐ Otro:____________________________________

5 DIRRECCION DEL DESTINO FINAL
Dirección___________________________________________________________
Ciudad_________________________________Código Postal_____________________

6 ¿Por qué viaja Ud. en bicicleta? (Puede marcar más de una opción)
   ☐ Conveniencia  ☐ Ahorrar dinero  ☐ Mantener el salud  ☐ Disfrute personal
   ☐ Motivos ambientales  ☐ Otro:________________________________________

7 ¿Diga la razón PRINCIPAL por la cual Ud. viaja en bicicleta? (Marque solo una opción)
   ☐ Conveniencia  ☐ Ahorrar dinero  ☐ Mantener el salud  ☐ Disfrute personal
   ☐ Motivos ambientales  ☐ Otro:________________________________________

8 Es Ud.: ☐ Mujer ☐ Hombre

9 Edad ______

10 ¿Cuán a menudo usa Ud. su cajón de seguridad para bicicletas?
   ☐ 5 días o más por semana  ☐ 3-4 días por semana  ☐ 1-2 días por semana
   ☐ Menos que un día por semana  ☐ Menos que un día por mes

11 ¿Entre cuales horas usa Ud. su cajón de seguridad para bicicletas USUALMENTE? (Check all that apply)
   ☐ 4:00 AM – 8:00 AM  ☐ 8:00 AM – 12 mediodía
   ☐ 12:00 Noon – 4:00 PM  ☐ 5:00 PM – 9:00 PM
   ☐ 8:00 PM – 12 medianoche  ☐ 12 medianoche – 4:00 AM

12 Si un cajón de seguridad para bicicletas no fuera disponible, ¿usará Ud. las BARRAS DE SEGURIDAD para bicicletas gratuitas que están ubicados en esta estación de metro?  ☐ Sí ☐ No

13 ¿Tiene Ud. un auto?  ☐ Sí ☐ No

14 ¿Cuál es su OCCUPACION?____________________________________

15 ¿En TOTAL, cuál fue el INGRESO FAMILIAR antes de pagar impuestos en el año 2001 de todas las personas en su hogar? (Marque solo una opción)
   ☐ Menos de $7,500  ☐ $7,500-$14,999  ☐ $15,000-$24,999
   ☐ $25,000-$34,999  ☐ $35,000-$49,999  ☐ $50,000 or más

16 ¿Cuál es su opinión del Programa de Cajones de Seguridad para Bicicletas?

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<thead>
<tr>
<th></th>
<th>(muy mal)</th>
<th>(mal)</th>
<th>(mediocre)</th>
<th>(bueno)</th>
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<tr>
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</table>

Gracias / Toda la información será estrictamente confidencial

Survey #___________________