
Bicycle Parking Plan For Miami-Dade Transit

Prepared for the Miami-Dade Metropolitan Planning Organization



Prepared by:

Christopher A. Hagelin, Project Manager

CENTER FOR URBAN TRANSPORTATION RESEARCH



ACKNOWLEDGMENTS

We would like to thank the following for their active participation in this project:

David Henderson
Jae Manzella
Mario Garcia

Miami-Dade Metropolitan Planning Organization
Miami-Dade Metropolitan Planning Organization
Miami-Dade Transit

DISCLAIMER

The opinions, findings and conclusions expressed in this publication are those of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the views or policies of the Miami-Dade Metropolitan Planning Organization or Miami-Dade Transit. This report does not constitute a standard, specification or regulation.

.

Table of Contents

List of Tables	iii
Executive Summary	1
I. Project Objective and Process	8
II. Literature and Product Review	11
III. Research Findings	25
IV. Plan and Management Review	38
V. Project Recommendations	40
Bicycle Parking Plan for MDT CD-ROM	Back cover
Electronic version of Final Report	
Summary Chart of Recommendations	
Photo Log of MDT Bicycle Facilities	
MPO Presentation Powerpoint	
Survey Flyer	
Survey Instrument	

List of Tables and Figures

E.S	Bicycle Parking Plan Recommendations Summary Chart	6
E.S.	Bicycle Parking Rack Types	7
Fig. 2.1	Inverted U Rack	15
Fig. 2.2	Rolling Rack	15
Fig. 2.3	Traditional “wheel-bender” Rack	15
3.1	Bicycle Counts	25
3.2	Current Bicycle Conditions	26
3.3	Ethnicity	30
3.4	Age	30
3.5	Income	30
3.6	Sex	30
3.7	Days/Week Combining Bicycling and Transit	31
3.8	Days/Week Bicycle Taken Aboard Metrorail	31
3.9	Days/Week using Bikes-on-Bus Program	31
3.10	Mode When Not Bicycling	32
3.11	Reasons for Bicycling and Parking at Stations	32
3.12	Destination	32
3.13	Reasons for Feeling Unsafe Bicycling to Stations	32
3.14	Where Bicycling	33
3.15	Stations most used	33
3.16	Usual Parking Method	33
3.17	Locker Rental	34
3.18	Stolen/Vandalized Bicycles	34
3.19	Ease of Parking	34
3.20	Security of Parking	34
3.21	Overall Rating of Parking	34
3.22	Perceptions of Parking Needs	35
3.23	Having Covered Parking	35
3.24	Having Free Lockers	35
3.25	Having Lockers for Rent	35
3.26	Having Parking Visible by Staff	36
3.27	Having Short and Long-Term Parking	36
3.28	Having Repair Shop at Station	36
3.29	Visible Preference Survey	36

Bicycle Parking Plan for Miami-Dade Transit

Executive Summary

Project Objective and Process

The purpose of the Bicycle Parking Plan for Miami-Dade Transit is to develop recommendations for new and improved bicycle parking facilities at Metrorail stations, park-and-ride lots and other transit hubs. The Miami-Dade Metropolitan Planning Organization (MPO) hired the Center for Urban Transportation Research (CUTR) of the University of South Florida to conduct the study. In order to develop recommendations for new and improved bicycle parking facilities, the research was divided into several tasks. The first task was to conduct a review of five communities/transit agencies that have recently developed bicycle parking plans and/or integrated bicycles with transit using innovative methods. The five peers included: Portland, OR/Tri-Met; San Francisco/Bay Area Rapid Transit (BART); Atlanta/Metropolitan Atlanta Rapid Transit Authority (MARTA); Long Beach, CA/Metropolitan Transportation Authority-Long Beach Transit; and New Jersey Transit. The first task also included a review of ten bicycle parking products/concepts in order to provide information on the types of parking devices available and estimated costs.

The second task focused on an assessment of current conditions at all Metrorail and selected Metrobus hubs, and the creation of a digital photo log of the bicycle parking facilities already in place. The photo log is available on CD ROM included with Final Report. The next set of tasks involved developing and conducting a survey of bicyclists that use Miami-Dade Metrorail and Metrobus to identify their perceptions of current conditions and improvement needs. This set of tasks involved the design and distribution of a flyer announcing the survey, the development of the survey instrument, and implementation. All information was provided in English, Spanish and Haitian Creole. More extensive and in-depth interviews were conducted with bicyclists based on their willingness to participate. The data collected from the survey and interviews were analyzed to develop an understanding of the needs, wants and experiences of bicyclists that currently use the bus and rail systems.

Following the survey, the bicycle locker management system was reviewed in reference to management systems developed by other transit agencies, and plans for new transit hubs in the Cities of Homestead and Miami Beach were also examined to provide bicycle parking recommendations.

The project's final report is designed to provide recommendations for types, amounts and locations of bicycle parking needed and Metrorail and Metrobus hubs, estimated costs and potential funding sources, guidance for inclusion of bike parking in planned transit hubs, and a management plan for the administration and promotion of bicycle parking facilities.

Research Results

Peers Communities/Agencies

The review of peer communities/transit agencies was used to develop the survey instrument and identify innovative ideas to be considered for the Miami-Dade Transit bicycle parking plan. The City of Portland, in conjunction with Tri-Met, has developed one of the premier long-range bicycle plans in the country, which includes a separate section on bicycle parking policies. BART of the San Francisco area has recently upgraded their bicycle parking facilities and improved their bike locker management system. Along with BART, Long Beach/MTA has integrated the *Bikestation*® concept into their transit system. A *Bikestation*® is essentially a guarded valet parking facility for bicyclists, which generally also includes repair facilities and other services. Atlanta/MARTA is generally recognized as the first rail transit system to allow full, 24-hour bicycle access to the system. Currently, bicycles are restricted during peak hours on the Miami-Dade Metrorail, which represents a barrier to some bicycle commuters, according to the survey. New

Jersey Transit has made a considerable effort to reduce bicycle theft and improve bicycle parking facilities through the provision of secure bicycle lockers at their transit stations.

Bicycle Parking Products

Ten bicycle parking products, plus the *Bikestation*® concept, were examined to determine the range of facilities available and cost estimates. The products reviewed included: *American Bicycle Security Company's* Model 302 and Model 301V lockers, *Cycle-Safe's* Pro Park bicycle locker and Inverted U rack, *Dero's* Rolling Rack and Hoop Rack, *Madrax's* Heavy Duty Winder Rack, *Creative Pipe's* CS Series and eLockers, and Thunderbolt rack, and *Bike-Up's* Maximin Vertical rack and Ring Rack. The Association of Pedestrian and Bicycle Professionals recommends the "inverted U" type bike racks. A range of estimated costs based on product price and bicycle parking needs was developed from the information collected.

According to an FTA General System Review, it was recommended that all transit agencies remove bike lockers from premises due to security reasons. Despite this recommendation, many transit agencies are still using and installing bicycle lockers, such as New Jersey Transit. There are a number of methods to deal with security issues other than eliminating bicycle lockers. For example, American Bicycle Security Company manufactures a security view window of perforated steel that provides maximum visibility with minimal weather exposure. Master keys can also allow transit security personnel to check the contents of bicycle lockers when necessary. Intelligent Key Dispensing Kiosks can also be used to track who is using bicycle lockers through scan cards and PINs, and allow only pre-qualified individuals use of lockers. The *Bikestation*® concept is another alternative for long-term parking.

The *Bikestation*® concept, essentially valet parking for bicycles, may be best suited for planned rail and/or bus transit facilities so that they can be incorporated into the design from the onset. However, the *Bikestation*® concept is only viable for stations with significant bicycle ridership. Based on the three *Bikestations* currently open, operating expenses range from \$30,000 to \$110,000 per year based on the storage of 75-100 bicycles per day. The Bikestation Coalition is a 501(c)3 organization that helps transit agencies develop, and maintain the facility.

Bicycle Count and Current Conditions

The number of bicycles found at Metrorail stations and selected Metrobus transit hubs ranged from 121 to 127. According to Miami-Dade MPO records, there were 53 bicycle locker renters at the onset of the project. Currently, there are 246 lockers located at the 21 Metrorail stations. However, 135 lockers (55%) are reported by the MPO to be damaged, of which 92 (37%) are deemed to be not rentable. Furthermore, 14 lockers had already been removed prior to the project. The majority of these lockers were installed in 1986, with some additional lockers added in the mid-1990s. Many of the lockers are located out of the sight of transit security making them attractive to thieves and homeless individuals who occupy some of them.

In regard to the 21 Metrorail stations, 6 stations do not have any bicycle racks. Of the 15 stations that have racks, 8 do not have sufficient rack space to meet the bicycle parking demand, as indicated by the amount of bicycle chained to fences, trees and lampposts. There are primarily three different styles of racks found at the stations, which include "wheel-bender" fence racks, inverted U racks, and rolling racks. (See Page 6 for pictures of rack types) Many of the "wheel-bender" racks are significantly damaged. In regard to the 10 Metrobus transit hubs selected for assessment, only one station, the SW 152 Street Busway, has a bicycle rack present and none had bicycle lockers available for patrons. Only two bicycles were observed at the transit hubs.

Bicycle Survey Results

CUTR conducted 72 surveys of bicyclists, with 15 bicyclists also participating in individual interviews as well. 79% of respondents combine bicycling and transit 4 days or more per week, and 73% are commuting to work. Over 40% also take their bicycles aboard the Metrorail at least one day per week, and 18% also use the bikes-on-bus program. Over half of respondents live within 2 miles of a transit station. The primary reasons for combining bicycling and transit are to save money, for exercise, and close proximity of their residences to transit stations. A third of respondents also reported that they do not have access to automobile. In terms of ethnicity, 52% of respondents were white/non-Hispanic, 22% were Hispanic, and 17% were either African-American or African-Caribbean. Over half of respondents were over the age of 40 and with 35% earning less than \$20,000 per year and 21% earning \$70,000 or

more. Overall, 82% indicated that more bicycle parking is needed, and 81% feel that better, more secure bicycle parking is needed. In terms of the most desirable characteristics of bicycle parking:

- 76% stated that having bicycle parking visible to MDT security guards is important to very important
- 72% stated that having covered bicycle parking is important or very important
- 71% stated that having a combination of short term (racks) and long term (lockers) parking at each station was important to very important

Bicycle Locker Management and Future Transit Hub Review

The best ways to improve bicycle locker management are by investing in a more durable and secure bicycle locker and placing them within view of transit security personnel posts. The current bicycle locker has proven to be vulnerable to damage from the elements and insecure. It is also recommended that supervision and surveillance of bicycle parking facilities, both racks and lockers, should be an explicit part of the responsibilities of security personnel. Another way of improving bike locker security is to place lockers within the station when space allows, so that access to the lockers is limited to transit patrons.

When half of lockers are damaged, it is difficult to maintain current renters and attract new ones. In fact, all five respondents who had previously rented a locker stopped renting after their bicycle was stolen or vandalized. The present cost of locker rental is \$25 for three months, \$45 for 6 months and \$70 for one year. However, 40% of survey respondents who currently rent a locker stated they would pay more for better and more secure bicycle lockers (over half of current locker renters responding to the survey earn more than \$70,000 per year). There are also intelligent key-dispensing kiosks and locker-use tracking devices available that could streamline locker management and provide a new source of funding through Intelligent Transportation Systems (ITS) programs.

The Urban Transit Village Park and Ride Facility has the potential to incorporate the *Bikestation*® concept. There is already a bicycle rest area containing bicycle racks and locker and a compressed air pump in the facility plans. It is recommended that planners contact the Bikestation Coalition or examine the possibility of a joint development venture with a bicycle shop to develop and maintain a bikestation-type facility. If a bikestation-type facility is deemed not feasible, all racks and lockers should be placed within view of security, well lit, and with appropriate signage directing bicyclists to facilities. Due to the prevalence of bicycling in Miami Beach, its Intermodal Facility is another possible location for a bikestation-type facility. Since this second site is only in the Feasibility stage, it is possible to include parking facilities into the design so that they are located in a secure, possibly restricted area.

Project Recommendations

Bicycle Parking Recommendations (see Table on page 6 for details)

The recommendations focus on a significant increase in and improvement of quality of short-term bicycle parking (racks) and a reduction in the number of, but improvement in the quality of long-term bicycle parking facilities (lockers). Specifically, the recommendations are to:

- ❖ Remove all current lockers, except at Dadeland North, and replace with new lockers:
 - Invest in high quality lockers that allow security personnel to view the contents of the locker but do not compromise the security of the bicyclist's property, such as perforated metal sheeting on locker door or walls, or viewing skylights.
 - Consider investing in intelligent key, scan card or PIN technology to streamline locker management and provide a secondary layer of security.
 - When feasible locate lockers within view of transit security personnel posts and under cover.
 - When space allows place lockers within the rail station so that access is limited to patrons.

- Recommended locker storage capacity is 190 bicycles. Since most lockers are designed with 2 separate bicycle compartments, this means 95 lockers are needed for the 21 existing Metrorail stations.
 - Placing lockers at Metrobus hubs is optional, since there does not seem to be any significant demand. However, the addition of high-quality and secure lockers could potentially generate demand. Some of the hubs included in the research are simply allocated parking spaces at strip mall-type commercial centers. The Metrobus hubs most conducive to having bicycle lockers are Harris Field, Miami-Dade Community College South Campus, and Metrobus Downtown.
- ❖ Remove all *wheel bender* racks, and replace with new inverted U racks.
- The *inverted U* racks at Brickell, Coconut Grove, Dadeland North, Dadeland South, Douglas Road, and South Miami can stay. The two *rolling* racks at Tri-Rail can stay.
 - When feasible locate all racks within view of transit security personnel posts and under cover. When racks cannot be located under existing roof structures, covered shelters can be built to protect bicycles from the weather.
 - When space allows place racks within the rail station so that access is limited to patrons.
 - At transit hubs and park and ride lots, convert a car parking space near the transit shelters to bicycle parking area.
- ❖ In general:
- Minor station modifications should be considered to improve visibility by security personnel and patrons. For example, the wall and berm structure around the lockers at the Coconut Grove station should be demolished to create an open plaza and improve visibility of facilities.
 - Eliminate the Bike and Ride permitting process in order to eliminate the public's access to transit
 - Investigate the liberalization of Metrorail Bike and Ride hours to allow bicyclists to take their bicycles aboard even during peak commute hours. In addition, it is recommended that patrons bringing bicycles aboard have access to all train cars (not only the last car) to mitigate the impact of liberalizing the peak hour commute restrictions.
 - In order to measure and evaluate the impact of policy changes and bicycle parking plan implementations, Miami-Dade Transit should regular track bicycle usage on Metrorail and Metrobus. Statistics found in this report could serve as benchmarks for future evaluations. This data should be reported in the Transit Development Plan (TDP) and monthly transit statistics reports.
 - A protocol needs to be developed to remove any bicycles abandoned at rail stations and left to rust on the bicycle racks. Warning notes can be attached to bicycles stating they will be impounded after a determined amount of days. Such bicycles can be donated to charity organizations. Security personnel should be responsible for monitoring bicycle racks and responding to the requests of bicycle patrons that report abandoned bicycles.

Estimated Cost and Funding Sources

The estimated cost of the bicycle parking improvements outlined above and shown in the chart on page 5, ranges significantly based on the particular bicycle rack and locker product used. The cost of a high quality, secure locker ranges from approximately \$1000 to \$2000 dollars. Since most lockers have two separate compartments, and therefore store two bicycles, the cost per bicycle ranges from \$500 to \$1000. As a result, the cost to meet the recommended locker capacity, including 10% for shipping, ranges from approximately \$115,500 to \$210,000. The recommended inverted U locks can range from \$40 to \$100. Cost also changes based on whether or not the racks are bolt into a concrete pad or imbedded into the pad. The cost to meet the recommended rack capacity, including

10% for shipping, ranges from approximately \$6,500 to \$15,000. As a result, combination of both short term parking (bicycle racks) and long term parking (bicycle lockers) ranges from \$122,000 to \$225,000. This cost does not include installation or removal of old racks and lockers. In terms of installation, most rack can be installed by bolting them onto a concrete pad, or by anchoring them within the concrete. The racks that are bolted in are generally more expensive, but have lower installation costs in terms of labor. Racks anchored within the concrete are more secure.

The primary funding sources include FHWA Enhancement Funds, Congestion and Air Quality (CMAQ) funds, and FTA Transit Enhancement Funds. All three of these major funding sources specifically reference bicycle parking improvements as acceptable projects.

Bicycle Parking Policy, Administrative and Promotional Recommendations

Within the appropriate documents, such as the County's Comprehensive Plan and MPO's Long Range Transportation Plans, specific language regarding bicycle parking at Metrorail and Metrobus stations should be included. Such language should include the incorporation of both short and long term bicycle parking at all current and future Metrorail stations and major Metrobus transit stations. A standard amount of short and long term bicycle parking capacity should be established so that their inclusion in station design is standardized. When feasible, bicycle parking should be placed under cover and within sight of transit security personnel posts.

The administration of the bicycle parking facilities may remain on the control of the MPO Bicycle and Pedestrian Coordinator or moved to the transit agency in order to centralize all operations. Maintenance of the bicycle parking facilities should remain the responsibility of the transit agency, and transit security personnel should be responsible for the surveillance of racks and lockers. Appropriate signage will serve to promote the integration of bicycling and transit. Signage at Metrorail stations is needed to guide bicycle-commuting patron to parking and instructions on the process to rent a locker. Metrorail cars should have signage that instructs patrons bringing their bicycles on board where to store the bicycle while on the train. Furthermore, the policy of restricting access to bicycles on Metrorail during peak commuting hours should be re-evaluated in order to determine whether or not the hours of restriction could be decreased or eliminated through modifications to train-car seating design to provide more efficient use of space.

It is also recommended that Miami-Dade Transit should eliminate the permit requirements for the Bike and Ride program as it restricts the public's access to transit. Information on the Bike and Ride Program rules and restrictions should be incorporated into the signage and markings at each station in addition to its current presence on the agency's website.

Further promotion of integrating bicycling and transit can be accomplished through coordinated efforts with South Florida Commuter Services, the regional Commuter Assistance Program for the Miami-Dade area. South Florida Commuter Services provide assistance to commuters who are seeking an alternative to driving alone and work with employers to develop alternative commute programs and encourage the use of Commuter Choice tax benefits under IRS Section 132(f). South Florida Commuter Services already has a database of commuters who have sought information on alternative modes and work with a network of businesses that are interested in providing commute benefits to their employees.

Lastly, in order to measure and evaluate the impact of policy changes and bicycle parking plan implementations, Miami-Dade Transit should regular track bicycle usage on Metrorail and Metrobus. Statistics found in this report could serve as benchmarks for future evaluations. This data should be reported in the Transit Development Plan (TDP) and monthly transit statistics reports. Other counties in Florida, such as Hillsborough and Broward, already collect data on bikes-on-bus usage. Such information would also be a valuable addition to the National Transit Database.

BICYCLE PARKING PLAN FOR MIAMI-DADE SUMMARY CHART

Miami Dade Transit Bicycle Parking Plan: Bicycle Parking Needs and Recommendations								
Station/Park and Ride Lot	Average Bicycle Count	Bike Racks Present	Bicycle Lockers Available	Bicycle Lockers Rented	Lockers Damaged/ Not Rentable	Comments	Recommended Short Term Parking Needs (rack capacity) ¹	Recommended Long Term Parking Needs (locker capacity) ²
Attapattah	7	1	12	0	11/9	Insufficient rack capacity; damaged <i>wheel-bender</i> rack	12	6
Brickell	7	1	0	NA	NA	Insufficient rack capacity; inverted U rack	10	4
Brownsville	1	0	12	0	6/0	No rack	10	6
Civic Center	0	0	0	NA	NA	No rack; no lockers, some space limitations	4	4
Coconut Grove	13	2	28	12	18/15	Insufficient rack capacity; 2 inverted U racks	12	20
Culmer	0	0	0	NA	NA	No rack; no lockers	4	4
Dadeland North	11	1	2	2	0/0	Insufficient rack capacity; Lockers do not need replacement, but more lockers are needed	16	8
Dadeland South	12	2	18	9	8/6	Insufficient rack capacity; 1 inverted U rack; 1 <i>wheel-bender</i> rack	16	16
Douglas Road	6	2	18	2	14/0	2 inverted U racks	16	10
Dr. MLK, Jr.	2	1	0	NA	NA	1 <i>wheel bender</i> rack	10	6
Earlington Heights	4	1	24	2	24/20	1 "rail" rack	10	10
Gov't Center	2	1	0	NA	NA	1 <i>wheel bender</i> rack	10	10
Hialeah	11	1	44	1	20/20	Insufficient rack capacity; 1 <i>wheel-bender</i> rack	20	10
Northside	3	0	20	0	7/4	No rack	10	10
Okeechobee	10	1	10	7	2/2	Insufficient rack capacity; 1 <i>wheel-bender</i> rack	20	16
Overtown/Arena	3	0	0	NA	NA	No racks, no lockers	10	4
Santa Clara	2	1	10	3	5/0	1 <i>wheel bender</i> rack	10	10
South Miami	12	3	36	8	10/6	Insufficient rack capacity; 2 damaged <i>wheel-bender</i> racks; 1 inverted U rack	16	16
Tri-Rail	4	2	0	NA	NA	Rolling Racks are sufficient and in good shape	No extra needed	4
University	8	1	10	1	10/5	Insufficient rack capacity; 1 <i>wheel-bender</i> rack	20	6
Vizcaya	3	0	12	6	6/5	No rack	10	10
Golden Glades	1	0	0	NA	NA	No rack	4	0
Hammocks T.C.	0	0	0	NA	NA	No rack	4	0
SW 152 Busway	0	1	0	NA	NA	1 <i>wheel-bender</i> rack	4	0
MDCC S. Campus	0	0	0	NA	NA	No rack	4	(2)
Coral Reef	0	0	0	NA	NA	No rack	4	0
Cutler Ridge	0	0	0	NA	NA	No rack	4	0
Harris Field	0	0	0	NA	NA	No rack	4	(2)
Metrobus D'town	1	0	0	NA	NA	No rack	4	(4)
72 St. and 88 Ave.	0	0	0	NA	NA	No rack	4	0
Sunset Strip	0	0	0	NA	NA	No rack	4	0
TOTALS	124	22	246	53 (22%)	135(55%)/ 92(37%)	6 Metrorail stations w/o racks, 8 with insufficient space for bicycles; 37% of lockers not rentable	280	190/(198)

¹ Assuming the inverted U racks at Brickell, Coconut Grove, Dadeland North, Dadeland South, Douglas Road, and South Miami and the rolling rack at Tri-Rail stay in place.

² Bicycle lockers at transit hubs are optional additions, as bicycle counts did not show any significant demand. Racks should be made available at all transit hubs.

Bicycle Parking Rack Types

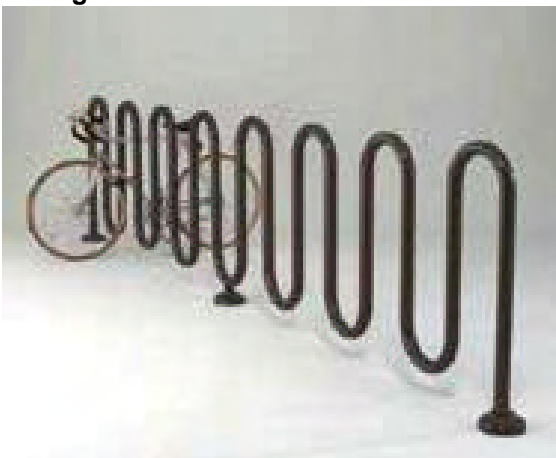
“Wheel Bender” Fence Rack



Inverted U Rack



Rolling Rack



Project Objective

Develop recommendations for new and improved bicycle parking facilities at Metrorail stations, park-and-ride lots and other transit hubs.

Secure parking is often identified as critical to increasing the number of people who bicycle to work or school. Transit ridership can be increased at a low cost by eliminating barriers and providing bike parking at rail stations, park and ride lots and other transit hubs. Miami-Dade Transit (MDT) has recognized the connection between bicycle parking and transit service for many years. Bicycle parking facilities (bike racks and bike lockers) have been provided at Metrorail stations since the system was opened in 1986. New racks have been added as needed over time and new lockers installed at the Dadeland South and University stations when station modifications required relocation of old equipment. Lockers are now provided at 14 of the 21 Metrorail stations and bikes can be seen parked at racks or informally on signs, trees or light fixtures at virtually all stations. Bike lockers are available for rent for periods of three months, six months and one year at the MPO office at the Stephen P. Clark Center. Renewals are processed by mail. Currently 53 individual rent bicycle lockers at Metrorail Stations.

Station	No. of Lockers
Dadeland South	18
Dadeland North	2
South Miami	36
University	10
Douglas Road	18
Coconut Grove	28
Vizcaya	12
Santa Clara	10
Allapattah	12
Earlington Heights	24
Brownsville	12
Northside	20
Hialeah	44
Okeechobee	10
TOTAL	246

After many years of use, however, problems have become apparent with the existing system according to the MPO. First, some of the existing racks and lockers are past their useful lives. Time, use and vandalism have taken their toll on equipment that, in some cases, is more than fifteen years old. Second, the supply of bike parking is inadequate at some stations and there is an excess supply at others. Third, administrative and maintenance procedures need to be reviewed for adequacy. Also, the need for bike parking has never been evaluated at the existing park and ride lots (Golden Glades Interchange, Hammocks Town Center (SW 153 Ave/SW 104 St), SW 152 St Busway Station, MDCC South Campus, Coral Reef Park & Ride (SW 117 Ave/SW 152 St), and the Cutler Ridge Busway Station). Plans for new transit hubs (at the new Palmetto Metrorail Station, West Dade, Omni, Flagler Marketplace, Miami Beach, Golden Glades, West Kendall, and Northeast locations) make it necessary to develop guidance for adding new bike parking when new transit facilities are developed

New types of bike racks and lockers are more secure, require less maintenance and are easier to use than the equipment currently in use. The purchase and installation of racks and lockers are now eligible for federal funding through the TEA-21 legislation. Innovative funding schemes have also been tried in other cities where advertising space is incorporated into bike parking to generate revenue in excess of maintenance costs.

Research Process

Scope of Work

Task 1: Literature Review

A literature review will be conducted to examine up to five (5) bicycle parking plans developed by other MPOs and/or transit agencies. The purpose will be to identify methodologies used for data collection and analysis.

The literature review will also investigate alternative products and funding options for bicycle parking. Up to ten (10) products available for bicycle parking including alternative rack designs and locker types will be reviewed. Funding options for new bicycle parking at transit stations will be reviewed and summarized.

Task 2: Flyer Design

Develop a multilingual (English, Spanish and Haitian Creole) information flyer and distribute it to bikes parked at all Metrorail stations and park and ride lots (Golden Glades Interchange, Hammocks Town Center (SW 153 Ave/SW 104 St), SW 152 St Busway Station, MDCC South Campus, Coral Reef Park & Ride (SW 117 Ave/SW 152 St), and the Cutler Ridge Busway Station). Distribution of flyer will take place just prior to survey implementation.

Task 3: Survey and Interview Guide Design

Develop a multilingual (English, Spanish and Haitian Creole) survey to be distributed to bicyclists at Metrorail stations and park and ride lots. The purpose of the survey will be to gather data on the use of bicycle parking and bicyclists' perceptions of needed improvements.

An interview guide will also be developed in order to provide more in-depth qualitative data. The questions of the interview guide will probe deeper into bicyclists' needs and perceptions of necessary improvements.

Task 4: Bicycle Count and Bicycle Facility Inventory

Count the number of bikes parked at all Metrorail stations and park and ride lots on at least three days of good weather. Bicycle Counts will aid in setting expectations for the number of possible survey returns.

Inventory the number and condition of existing bike parking facilities (racks and lockers) at all Metrorail stations and Park and Ride lots. Each locker and rack will be assigned a number based on location. Develop a digital photo log and place on a CD ROM.

Task 5: Implementation: Distribute Survey and Conduct Interviews

Step 1: Prior to implementation, the fliers will be distributed to all stations and park and ride locations.

Step 2a: CUTR researchers will distribute surveys at stations and park-n-ride lots over 9 days to as many bicyclists that are willing to participate. The nine days in the field will be divided into three 3-day field sessions over the five weeks reserved for the task. Surveys will be able to be returned through two methods: 1) mailed in postage-paid enveloped provided with survey or 2) placed in drop boxes located at each station and park and

ride lot. Incentives will be provided to maximize survey return rate. The survey will also be mailed to the 55 current bicycle locker renters.

Step 2b: The desired number of completed field surveys is 200. If 100 surveys have not been received by the end of the second 3-day session, the surveys will also be mailed to individuals on the MPO Bicycle Advisory Committee mailing list and local bicycle clubs, and placed at area bicycle stores in order to maximize return rate.

Step 3: CUTR researchers will conduct individual in-depth interviews over the same nine days of surveying. The number of completed interviews will be based solely on the willingness of bicyclists to participate, and the qualitative data will be used to compliment and add to the survey data.

Task 6: Data Analysis

Survey and interview data will be analyzed to determine the current use of bicycle parking and the perception of need for improvements. Bicycle counts and inventory will be used to estimate the demand for bicycle parking for each station and park and ride lot.

Task 7: Review of MDT Plans

Plans for new transit hubs at the new Palmetto Metrorail Station, West Dade, Omni, Flagler Marketplace, Miami Beach, Golden Glades, West Kendall, and Northeast locations will be reviewed in order to make recommendations for the inclusion of bike parking.

Task 8: Review of Bike Locker Management Process

Review the bike locker management processes used by the MPO, compare to up to five (5) similar programs, and recommend improvements including promotion of the bike and ride program.

Task 9: Final Report

Develop a draft and final plan for bike parking at all Metrorail stations and park and ride facilities. The plan should include:

1. Recommendations for the types, amounts, and locations of bike parking needed at existing Metrorail and park and ride facilities;
2. A financial element that describes the cost to implement the recommendations; and a funding strategy to pay for the recommendations;
3. Guidance for the inclusion of bike parking in planned transit hubs; and
4. A management plan with recommendations for the administration and promotion of bike parking facilities.

Peer Communities/Agencies

Portland, OR/Tri-Met

The City of Portland, OR is widely considered to have developed one of the most comprehensive bicycle plan and made considered efforts to integrate bicycling and transit. The City's Office of Transportation has developed specific Bicycle Parking Facilities Guidelines. The City's new bicycle parking code requires both short and long-term parking for most land uses, and emphasizes that businesses that provide bicycle parking are demonstrating that they value customers who bicycle. The City's bicycle parking guidelines, which can be found at <http://www.trans.ci.portland.or.us/bicycles/parkguide.htm>, include:

1. Planning for Installation of Bicycle Parking: Section provides information on the city department to contact when considering installing bicycle parking, and briefly discusses the two primary characteristics of effective parking, secure rack and good location.
2. Selecting a Location, for both short and long-term bicycle parking: Locations should be convenient enough to encourage cycling, secure enough to reasonably safeguard against bicycle theft. For new developments with multiple building, short-term parking must be distributed to serve all main entrances. If more than 10 short-term spaces are required (based on either parking spaces or square footage and land-use category), 50% must be covered. Short-term parking should also be located in a visible and prominent location with high pedestrian activity. Long-term parking must be located with 750 feet of the site and 50% must be covered. In order to meet the required security guidelines, one of the following elements must be met in regard to long-term parking:
 - a. Parking in a locked room or area enclosed by a fence with a locked gate
 - b. Parking in view or within 100 feet of an attendant or security guard
 - c. Parking is in an area monitored by a security camera, or
 - d. In a location that is visible from employee work areas.
3. Rack Selection and Installation: Racks must allow the frame and one wheel to be locked to the rack. All racks (and lockers) must be securely anchored to pavement.
4. Spacing and Site Standards: Each bicycle must be accessible without having to move another bicycle. An aisle of at least 5 feet wide behind all bicycle parking must be present to allow space to maneuver bicycles in and out of parking spaces. The guidelines also suggest staggering racks 17 inches from center to allow easier parking.
5. Covered Bicycle Parking: For many land-use categories, 50% of bicycle parking must be covered. The cover must be permanent and be at least 7 feet above the floor or ground.
6. Bicycle Parking Signs: Signs must be posted at the main building entrance indicating the location of bicycle parking.

7. Minimum Required Bicycle Parking Spaces: The minimum bicycle parking spaces are dependent on the use category, square footage and the number of car parking spaces.

In order to smooth the integration of bicycle and transit, Portland's Tri-Met transit agency has also eliminated their bicycle permits programs for all MAX trains and buses.¹ Tri-Met also allows folding bicycles onto all their buses.

San Francisco, CA/BART

BART of the San Francisco Bay Area has made significant efforts to attract bicyclists to their transit system. For example, they have established a BART Bicycle Advisory Task Force to review proposed policies, discuss any problems and complaints about bicycles on BART, present recommendations to BART's Board of Directors, and act as a liaison between BART and the bicycling community. The Task Forces has worked on adding and upgrading BART's bicycle parking, and assisted in the promotion of new bicycle programs. The Task Force has also developed specific Bikes on BART Rules, which are available at: <http://www.bart.gov/guide/bikes/bikeRules.asp>.

As with Portland's Tri-Met, BART has discontinued their bicycle permit program. In order to promote BART's new attitude on bicycling, a recent promotion included giving away two folding bicycles to current patrons. However, BART does limit access to bicyclists between the weekday hours of 7:05am to 8:50am and 4:25pm to 6:45pm.

BART provides bicycle lockers at many of their transit stations. The cost for a year rental is only \$30. BART is not responsible for any theft or damage and reserves the right to inspect the contents of a locker anytime and without prior consent.

BART has also established a Bikestation® at their Downtown Berkeley Station in order to provide free bicycle valet parking to their patrons. The Bikestation® concept is discussed in detail in following section on Bicycle Parking Products.

Atlanta, GA/MARTA

Metropolitan Atlanta's MARTA is one of the few rail transit systems to allow unlimited access for bicycles. Most rail systems, such as BART, restrict access between morning and evening peak hours. However, MARTA does ask their bicycling patrons to be mindful of other passengers and not to board full trains and to exercise caution when using the rail system.

Unlike, Miami-Dade's Metrorail, bicycles are allowed on all train cars and not regulated to only the last car. This strategy spreads out bicyclists and enables faster boarding and exiting of the train by patrons with bicycles. While on the train, bicyclists must keep bicycles out of the aisles and away from doors. Patrons taking bicycles on MARTA are also asked to use elevators and not escalators when entering and exiting stations.

Long Beach, CA/MTA-Long Beach Transit

In 1996, the City of Long Beach opened the first Bikestation® in the United States. It is a freestanding structure at the First Street Transit Mall, a nexus of light rail, buses, and local shuttles. It is also connected to more than 30 miles of dedicated bicycle paths along the shoreline and rivers. The facility services includes:

- Free valet bicycle parking for up to 150 bicycles
- Bike repairs

¹ <http://www.tri-met.org/bikesontm.htm>

- Bike rental
- Changing room and restrooms, and
- Patio café

The Bikestation also is authorized to issue all bicycle permits required to use rail and bus services. Bicycles can also be stored overnight for a charge of \$3 per night.

The facilities is owned and operated by the City of Long Beach and its Redevelopment Agency with assistance from the Bikestation Coalition. The facility is also home to the Clean Mobility Center that features its car-sharing program, City Wheels.

New Jersey Transit

New Jersey Transit developed their “Bike Aboard” Program in 1992, which allowed patrons to carry bicycles on trains. In 2000, they began their bikes-on-bus program, “Rack n’ Roll.” In order to accommodate the growing number of bicycling patrons, they have installed over 1600 short and 375 long-term bike parking spaces at their 46 rail stations. Bicycle racks are located at 90% of their train stations. New Jersey Transit also has installed bicycle lockers at several park and ride lots.

Bicycle locker rental is administered locally by Transportation Management Associations (TMAs), which are organizations that provide assistance to employers and commuters looking for alternatives to driving alone to work. There are nine TMAs operating in the region served by New Jersey Transit. Their website contains links to all the TMAs for patrons wishing to rent a locker.

Unlike MARTA, New Jersey Transit does place some restrictions on bicycles use:

- Off-peak travel periods:
 - Standard frame bicycles may be carried on-board during off-peak hours (weekdays from 9:30 a.m. to 4:00 p.m. and 7:00 p.m. to 5:00 a.m.), and all day Saturday and Sunday.
- Peak travel periods:
 - Standard frame bicycles are only permitted on outbound trains (originating from Newark, New York, or Hoboken) scheduled to depart a cyclist's boarding station between 5:00 a.m. and 9:30 a.m., Monday through Friday.
 - Standard frame bicycles are only permitted on inbound trains (going to Newark, New York, or Hoboken) scheduled to depart a cyclist's boarding station between 4:00 p.m. and 7:00 p.m., Monday through Friday.

Collapsible bicycles are allowed on at all times. Cyclists are asked to board the train car at a door with an international symbol of accessibility. Bicycles must be kept in the accessible area. Only two bicycles can be accommodated at a time per accessible car. Currently 40 percent of the NJ TRANSIT rail car fleet is accessible. If space is not available, cyclists must wait for the next available train. If a person with a disability requests the accessible space, cyclists must detrain and wait for the next available train.

Tiedowns are recommended and bicycles should be secured through the handles located in accessible areas in the manner depicted on the diagram at that location. The cyclist must hold and steady a bicycle that is not secured by *tiedowns*. The kickstand of the bicycle must remain up at all times.

Bicycle Parking Products

Bicycle Parking Classes

In order to attract bicyclists to “park and ride” transit, both short and long-term parking should be made available. In general, there are three classes of bicycle parking:

Class I: Class I bicycle parking facilities include lockers, storage rooms, or enclosed/attended areas. The target user is a cyclist seeking secure, long-term parking on a regular basis. When selecting a bicycle locker, it is important to select a locker that is constructed from fiberglass or sheet metal and avoid plywood or compressed board. The locking system should provide ceiling to floor locking with a vertical bar system. T-handles that pop out once the key is turned provide improved security.

Class II: The bicycle parking devices of Class II are similar to bicycle racks but allow both wheels and the frame to be locked for improved security.

Class III: This class includes bicycle racks of all shapes and sizes. Bicycle racks are meant for short-term parking. There are many styles of bicycle racks, some more effective and secure than others.

Bicycle Lockers and Security

There is a wide range of bicycle locker products on the market. Since the events of September 11th, security is a major issue for transit agencies. It is easy enough to see that bicycle lockers have a potential for being used as a storage facility for dangerous chemicals or explosives or ground zero of a terrorist attack. Many of the bicycle locker manufacturers have responded to this concern developing ways to provide security to both the general public and the bicyclist's property.

Bicycle locker manufacturers have introduced perforated sheet metal into their designs to provide security personnel the ability to see the contents of the locker without having to open it. Others have incorporated skylights or viewing windows to serve the same function. Master key systems can also allow transit security personnel to check the contents of bicycle lockers when necessary. Intelligent key-dispensing kiosks can also be used to track who is using bicycle lockers through scan cards or PINs. In order to receive a scan card or PIN, a potential locker user would go through an application process that could include a criminal background check. The *Bikestation*® concept is another alternative for long-term parking that can reduce security risks by eliminating lockers all together. The valet bicycle parking concept is further explained below.

The level of security of bicycle lockers varies considerably. The design of some locker doors lends itself to being pried open. The type of construction to look for is one in which door flanges are set into the locker frame. When the door flange is nested in a continuous groove on three sides of the door, prying becomes virtually impossible. It is also recommended to look for locking systems that provide more than one point of contact. The best locking systems consist of a vertical bar that runs the full length of the door and secures at the top and bottom of the locker frame. It is also important to avoid bicycle lockers constructed out of pressed board as they are susceptible to damage from the sun and rain.

Bicycle Racks

According to the Association of Pedestrian and Bicycle Professionals, the inverted U rack is the preferred short-term bicycle parking device (see Figure 1). The inverted U rack provides two points of contact to keep the bicycle stable while parked. Rolling Racks are similar to inverted U racks, but only provide one point of contact for securing the bicycle (see Figure 2). However, they are frequently used due to their aesthetic qualities. As with most bicycle racks, rolling racks and inverted U racks are designed to be either mounted

onto existing concrete, or anchored within concrete. It is recommended that the traditional “wheel-bender” or fence rack be avoided due to their tendency to damage wheels (see Figure 3). It is also recommended that bicycle racks be located underneath cover to avoid damage from inclement weather. Racks can either be placed under existing roof structures or under shelters especially built to cover bicycle parking racks.

Figure 2.1: Inverted U rack



Figure 2.2: Rolling Rack



Figure 2.3: Traditional “wheel-bender” rack



Bicycle Lockers

American Bicycle Security Company: Model 302 Bicycle Parking Locker



Name: Model 302
Company: American Bicycle Security Company
Address: PO Box 7359
Ventura, CA 93006
Phone: 800-245-3723
Website: www.ameribike.com

Comments: 2 doors, 2 bike capacity, molded one-piece fiberglass composite. Medeco Master keyed stainless steel T-handle with 3 keys per lock each keyed differently. Number plates on all doors. Stainless steel vents. Safety-View security windows in door.

Price: \$1,150 (based on purchase of 30 or more units)
Price per bicycle stored= \$575 per bicycle

Shipping: Approximately \$135 per unit

American Bicycle Security Company: Model 301V Bicycle Parking Locker



Name: 301V
Company: American Bicycle Security Company
Address: PO Box 7359
Ventura, CA 93006
Phone: 800-245-3723
Website: www.ameribike.com

Comments: 1 door, 1 bicycle capacity, molded one-piece fiberglass composite. Medeco Master keyed stainless steel T-handle with 3 keys per lock each keyed differently. Number plates on all doors. Stainless steel vents. Safety-View security windows in door. Vertical placement of bicycle in locker means less space is required and the wedge shape allows lockers to be placed in circles, half-cycles on walls and around the corners of walls.

Price: \$809 (based on purchase of 40 or more units)
Price per bicycle: \$809

Shipping: Approximately \$110 per unit

Both American Bicycle Security Company bicycle lockers offer high quality and improved security. They have been selected by a wide-range of private corporations, universities, and public transit agencies. Private corporations using their bicycle lockers include INTEL, Coca-Cola, Sony, Hughes Aircraft, and Wal-Mart. Universities that have selected their product include Yale, Georgia Tech, and Penn State. Transit agencies using American Bicycle Security Company lockers are Denver RTD, LA Metro Transit, and Tri-Met.

In response to security concerns, they have developed the Safety-View security-viewing window for their locker doors. The Safety-View window is constructed of 16-gauge perforated steel, powder-coated black for maximum visibility. The perforated hole size was chosen to allow maximum visibility with minimal weather exposure to the bicycle. At the time of report publication, a picture of the Safety-View window was unavailable.

They have also developed a swipe-card key-dispensing kiosk that can be used to streamline locker management. Qualified applicants are provided with a swipe card that can be used to get a locker key from a key-dispensing kiosk. By using this system, transit agencies can know who used a locker and when, thus providing another layer of security.

Cycle-Safe: ProPark Cycle Locker



University of Minnesota



Name: ProPark
Company: Cycle-Safe
Address: 478 Arrowhead SE
 Grand Rapids, MI 49546
Phone: 888-950-6531
Website: www.cycle-safe.com

Comments: 2 door, 2 bicycle capacity; Medeco Master keyed stainless steel T-handle with 3 keys per lock each keyed differently. Advertising panels are available. Data recorders can be installed to track how and when lockers are used. Security viewing skylights are another option available.

Price: Due to the way the lockers are constructed, cost depends on how many lockers are used in a single row. For example, a row of three lockers with a 6 bicycle capacity is \$6,144 or \$1,024 per bicycle, and a row of ten lockers, with a 20 bicycle capacity is \$17,337 or \$886.85 per bicycle

Shipping: Approximately 8-10% of cost

Cycle-Safe lockers cost more but provide excellent quality and high security. According to the City of San Francisco Bicycle Program Manager, none of their 100+ Cycle-Safe lockers have been broken into. Many private corporations, universities, and public transit agencies have chosen their lockers. Their transit agency clients include, King County Metro, New Jersey Transit, Southeastern Pennsylvania Transit Authority (SEPTA), and Washington Metro. Universities that have chosen Cycle-Safe include University of Minnesota, Ball State University and University of Washington. Private corporation clients include Siemens Corporations and IBM. The Cycle-Safe website offers a number of testimonials and case studies highlighting their security and quality.

Cycle-Safe has also responded to growing security concerns and now offers security viewing skylights to allow full disclosure of locker contents. They have also designed a data tracking system that records who uses a locker and when it is open and closed using a swipe-card system. The data tracking system also provides valuable information that can be used to determine bicycle locker demand and the needs.

Creative Pipe: CS2-C Bicycle Locker



Name: CS2-C
Company: Creative Pipe
Address: PO Box 2458
Rancho Mirage, CA 92270
Phone: 800-644-8467
Website: www.creativepipe.com

Comments: 2 doors, 2 bike capacity, perforated steel sheet for security, Medeco or Chicago locks on T-handles, 180 colors, graffiti resistant finish

Price: \$1350 per unit minus discounts for volume

Price per bicycle stored= \$675 per bicycle

Shipping: Approximately 10-15% of purchase cost

Creative Pipe: eLocker



Name: eLocker
Company: Creative Pipe
Address: PO Box 2458
Rancho Mirage, CA 92270
Phone: 800-644-8467
Website: www.creativepipe.com

Comments: 1 door, 1 bike capacity or 2 doors, 2 bike capacity, perforated steel sheet for security, internal security cable, usage tracking through Digilock lock technology, pop-out T-handles

Price: Starting at \$1800 per unit up to \$2500 with all electronic tracking devices and scanning and PIN technology (minus discounts for volume)

Price per bicycle stored= from \$900 to \$1250 per bicycle

Shipping: Approximately 10-15% of purchase cost



Creative Pipe bicycle lockers incorporate both visibility of locker contents without compromising the bicycle's security. Perforated steel sheeting, which provides high transparency for security personnel can be included on all CS Series lockers. The 1 door, 1 bike lockers can also be placed in circles and around corners to make more efficient use of limited spaces. A stackable locker is also used to make to maximize parking capacity.

Creative Pipe claims that their new eLocker™ is the “only bicycle locker specifically designed to embrace modern technology” by including all micro-electronics can offer. Such custom features include usage tracking, centralized control of lock mechanisms, sensors that indicate an open locker, and pay for parking options.

The central component is the Digilock system developed by Security People, Inc. (SPI).² The Digilock system can be set up to accommodate pay for parking on a per use or time-used basis, using currency, credit cards, PINs or iButton keys (unique keys for each user). If desired, it can be set up so that after a designated time period a master key must be used to open the lock so that abandonment and long-term storage are deterred. If a locker is set as an “on-demand” locker and left empty in an attempt to “reserve it”, once the master key is used to open it, the user's PIN or key will be unable to open any locker.

MARTA of the Atlanta selected Creative Pipe lockers due to their dual high security and virtual transparency. A residual benefit of the perforated steel is that patrons can see the bicycles inside making the function of the lockers obvious and encourage their use.

BikeLid Systems: BikeLid



Name: BikeLid
Company: BikeLid Systems
Address: 322 West 57th Street
New York, NY 10019
Phone: 212-245-6623
Website: www.bikelid.com

During the course of the study, BikeLid Systems went out of business, despite offering a high quality and secure bicycle parking system. Since the BikeLid was offered as a choice in the visual preference section of the survey, it was left in this section of the report.

² For more information go to: www.securitypeople.com

Bicycle Racks

Cycle-Safe: Inverted U Rack



Name: Inverted U
Company: Cycle-Safe
Address: 478 Arrowhead SE
Grand Rapids, MI 49546
Phone: 888-950-6531
Website: www.cycle-safe.com

Comments: Inverted U rack, can be mounted or anchored, tubular design, heavy plastic coating to protect bicycle from scratches and the rack from the elements

Price: \$95 per unit

Bicycle capacity: 2 bicycles per unit

Price per bicycle: \$47.50

Shipping: Approximately 10% of purchase cost

Dero: Rolling Rack



Name: Rolling Rack
Company: Dero
Address: 1429 Washington Ave. South
Minneapolis, MN
Phone: 888-337-6729
Website: www.dero.com

Comments: Five humps, galvanized tubing, mounted or anchored

Price: \$430 per unit minus discounts for volume

Bicycle Capacity: 11 bicycles per unit

Price per bicycle: \$39

Shipping: Approximately 10% of purchase cost

Dero: Hoop Rack



Name: Hoop Rack
Company: Dero
Address: 1429 Washington Ave. South
Minneapolis, MN
Phone: 888-337-6729
Website: www.dero.com

Comments: Inverted U rack, galvanized tubing,
mounted or anchored

Price: \$58 for anchored, \$75 for mounted, 25%
discount for orders over 200 units

Bicycle Capacity: 2 bicycles per unit

Price per bicycle: \$29 (anchored) \$37.50
(mounted)

Shipping: Approximately 10% of purchase cost

Madrax: Heavy Duty Winder Bicycle Rack



Name: Heavy Duty Winder
Company: Madrax
Address: 2210 Pinehurst Dr.
Middleton, WI 53562
Phone: 800-448-7931
Website: www.madrax.com

Comments: 13 Hump galvanized or plastic coated
finish

Price: \$589 per unit (15% discount for prompt
payment and volume)

Bicycle Capacity: 15 bicycle per unit

Price per bicycle: \$39

Shipping: Approximately 10% of purchase cost

Creative Pipe: Thunderbolt Bicycle Rack



Name: Thunderbolt
Company: Creative Pipe
Address: PO Box 2458
 Rancho Mirage, CA 92270
Phone: 800-644-8467
Website: www.creativepipe.com

Comments: 13 hump galvanized tubing, anchored or mounted

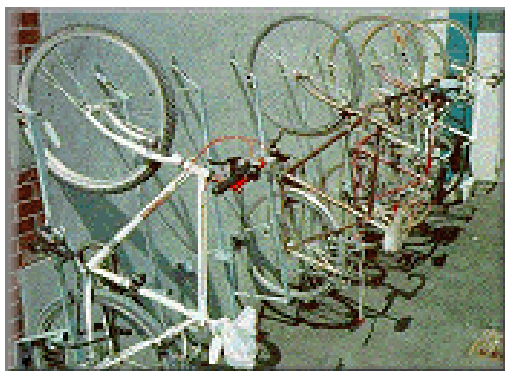
Price: \$480 per unit for volume of 25 units

Bicycle Capacity: 15 bicycle capacity per unit

Price per bicycle: \$32

Shipping: Approximately \$725 for 25 units

Bike-Up: Maximin Vertical Bicycle Rack



Name: Maximin Vertical
Company: Bike-Up
Phone: 800-661-3506
Website: www.bikeup.com

Comments: Vertical mounting for limited space areas. Can be sold individually or in a rack of ten

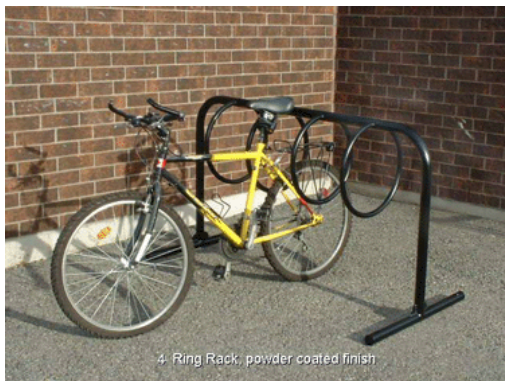
Price: \$100 per 1 or \$1000 for ten (10-15% discounts for volume)

Bicycle Capacity: 1 or 10 bicycles per unit

Price per bicycle: \$100

Shipping: Approximately 10-15%

Bike-Up: Ring Rack Bicycle Rack



Name: Ring Rack
Company: Bike-Up
Phone: 800-661-3506
Website: www.bikeup.com

Comments: Unique design supports top of bike to prevent falling, allows for frame and wheel to be locked together to rack

Price: \$270 per 6 or \$350 for 9 (10-15% discounts for volume)

Bicycle Capacity: 6 or 9 bicycle capacity

Price per bicycle: \$45 or 6 Rings, \$40 for 9 Ring

Shipping: Approximately 10-15%



Bikestations are attended bike-transit centers that offer secure, valet bicycle parking and other amenities to encourage the use of bicycles as a transportation mode. Currently three facilities are in operation in California: Long Beach, Palo Alto, and Berkeley; and several communities across the country are in various stages of planning and implementation.

The Bikestation concept is only viable for stations with significant bicycle ridership. Based on the three Bikestations currently open, operating expenses range from \$30,000 to \$110,000 per year based on the storage of 75-100 bicycles per day. However, it is possible to partner with non-profit organizations and corporate sponsors to lower this cost.

The Bikestation Coalition is an IRS 501(c)3 tax-exempt organization that seeks to improve the quality of life in urban communities through the development of bike-transit centers and related infrastructure. The organization also provides information and resources to a national network of independent facilities. The creation of a network of facilities, with the same name and organizational mission, will create familiarity with the public by assuring consistency of services and amenities among facilities. The public will know that a Bikestation, wherever located, provides secure bicycle parking and other reliable amenities.

As a transit-oriented land-use development strategy, a Bikestation can help to increase bicycle trips. Increased bicycle trips significantly reduce vehicle emissions and relieve vehicle congestion, freeing up valuable parking for those who must drive. Bicycling also saves time and money, and promotes a healthier lifestyle. In fact, studies have shown that bike-friendly communities that provide appropriate facilities like bike parking and bike lanes are considered more desirable, livable places to live and work.

Current Bikestation Coalition projects include:

- Clean Mobility Center at BikeStation Long Beach
- Embarcadero BART Bike-Transit Facility (opening 2002)
- King County Metro Bikestation Development Plan

- Puget Sound Bikestation Development Plan
- Bikestation Denver (opening 2003)
- Feasibility Studies for Bikestations in Cambridge, MA; Fort Collins, CO; and Pittsburgh, PA
- 4th Street CALTRAIN Bike-Transit Facility (opening 2003)
- Fruitvale BART Bikestation (opening 2003)
- Power Pedals Program (electric bicycle-sharing program at existing bikestations)

Figure 4: Bikestation Long Beach



Figure 5: Attendant valet parking bicycle



Bicycle Counts

Three bicycle counts were conducted for this project in order to estimate the number of bicyclists that use the bicycle parking facilities at Metrorail stations and transit park and ride lots. The counts were conducted on three separate days over the course of four weeks. The counts were highly consistent, overall and in terms of each station (see Table 3.1). The average number of bicycle parked at Metrorail and selected Metrobus stations is 124. Currently, there are 53 locker renters, so due to the consistency of the counts, it is fairly safe to assume that there are approximately 170 to 180 regular patrons that integrate bicycling and transit.

Table 3.1. Bicycle Counts

Station or Park and Ride Lot	Count 1	Count 2	Count 3	Average Count
Attapattah	6	7	7	7
Brickell	7	6	7	7
Brownsville	1	1	2	1
Civic Center	0	0	0	0
Coconut Grove	14	13	13	13
Culmer	0	0	0	0
Dadeland North	11	10	11	11
Dadeland South	13	12	11	12
Douglas Road	7	4	5	6
Dr. Martin Luther King Jr.	1	2	2	2
Earlington Heights	4	4	5	4
Government Center	2	3	2	2
Hialeah	10	11	11	11
Northside	3	3	4	3
Okeechobee	10	10	11	10
Overtown/Arena	3	3	4	3
Santa Clara	2	1	1	2
South Miami	11	12	12	12
Tri-Rail	4	5	4	4
University	9	6	8	8
Vizcaya	5	2	3	3
Golden Glades	0	0	1	1
Hammocks Town Center	0	0	0	0
SW 152 Busway	0	0	0	0
MDCC South Campus	0	0	0	0
Coral Reef Park and Ride	0	0	0	0
Cutler Ridge Busway	0	0	0	0
Harris Field	0	0	0	0
Metrobus Downtown	0	0	1	1
72 St. and 88 Ave.	0	0	0	0
Sunset Strip	0	0	0	0
TOTALS	127	121	125	124

Current conditions

According to Miami-Dade MPO records, there were 53 bicycle locker renters at the onset of the project. Currently, there are 246 lockers located at the 21 Metrorail stations. However, 135 lockers (55%) are reported by the MPO to be damaged, of which 92 (37%) are deemed to be not rentable. Furthermore, 14 lockers had already been removed prior to the project. The majority of these lockers were installed in 1986, with some additional lockers added in the mid-1990s. Many of the lockers are located out of the sight of transit security making them attractive to thieves and homeless individuals who occupy some of them.

In regard to the 21 Metrorail stations, 6 stations do not have any bicycle racks. Of the 15 stations that have racks, 8 do not have sufficient rack space to meet the bicycle parking demand, as indicated by the amount of bicycle chained to fences, trees and lampposts. There are primarily three different styles of racks found at the stations, which include “wheel-bender” fence racks, inverted U racks, and rolling racks. (See Page 6 for pictures of rack types) Many of the “wheel-bender” racks are significantly damaged. In regard to the 10 Metrobus transit hubs selected for assessment, only one station, the SW 152 Street Busway, has a bicycle rack present and none had bicycle lockers available for patrons. Only two bicycles were observed at the transit hubs. Table 3.2 provides details on current bicycle parking conditions.

Table 3.2: Current Bicycle Parking Conditions

Station or Park and Ride Lot	Racks Present	Lockers Available	Lockers Rented	Lockers Damaged (Non-rentable)	Comments
Attapattah	1	12	0	11 (9)	Insufficient rack space; damaged wheel-bender rack
Brickell	1	0	NA	NA	Insufficient rack space; inverted U rack
Brownsville	0	12	0	6 (0)	No rack
Civic Center	0	0	NA	NA	No rack, no lockers
Coconut Grove	2	28	12	18 (15)	Insufficient rack space; 2 inverted U racks
Culmer	0	0	NA	NA	No rack, no lockers
Dadeland North	1	2	2	0 (0)	Insufficient rack space; Lockers in good shape
Dadeland South	2	18	9	8 (6)	Insufficient rack space; 1 inverted U; 1 wheel-bender
Douglas Road	2	18	2	14 (0)	2 inverted U racks
Dr. Martin Luther King Jr.	1	0	NA	NA	1 wheel-bender rack
Earlington Heights	1	24	2	24 (20)	1 “rail” rack
Government Center	1	0	NA	NA	1 wheel-bender rack
Hialeah	1	44	1	20 (20)	Insufficient rack space; 1 wheel-bender rack
Northside	0	20	0	7 (4)	No rack
Okeechobee	1	10	7	2 (2)	Insufficient rack space; 1 wheel-bender rack
Overtown/Arena	0	0	NA	NA	No rack, no lockers
Santa Clara	1	10	3	5 (0)	1 wheel-bender rack
South Miami	3	36	8	10 (6)	Insufficient rack space; 1 inverted U; 2 wheel-bender
Tri-Rail	2	0	NA	NA	Rolling racks are in good shape
University	1	10	1	10 (5)	Insufficient rack space; 1 wheel-bender rack
Vizcaya	0	12	6	6 (5)	No rack
Golden Glades	0	0	NA	NA	No rack
Hammocks Town Center	0	0	NA	NA	No rack
SW 152 Busway	1	0	NA	NA	1 wheel-bender rack
MDCC South Campus	0	0	NA	NA	No rack
Coral Reef	0	0	NA	NA	No rack
Cutler Ridge Busway	0	0	NA	NA	No rack
Harris Field	0	0	NA	NA	No rack
Metrobus Downtown	0	0	NA	NA	No rack
72 St. and 88 Ave.	0	0	NA	NA	No rack
Sunset Strip	0	0	NA	NA	No rack
TOTALS	22	246	53	135 (92)	Insufficient rack space, damaged racks, missing racks

Photo Log

The complete photo log is available on a CD Rom included with this report. In the sections, selected photo have been included to illustrate specific issues.



Many of the lockers, such as this locker at Earlington Heights Station, show extensive damage. Investing in a higher quality locker is the solution to locker maintenance problems as well as theft and vandalism.

Higher quality lockers will cost more, but their durability and lifespan will counter initial cost.

It is highly recommended that lockers constructed out of fiberglass laminate over wood be avoided. It is best to select lockers constructed of sheet metal or composite plastics.



The wall around these lockers at the Coconut Grove station creates an insecure place for bicycle parking.

Security personnel are unable to effectively monitor the use of the lockers, making such areas attractive to homeless individuals who "live" out of some lockers.

In some cases, minor station modifications can be implemented to improve visibility of lockers by both patrons and security personnel.



Security guards at the Northside Station stated that it was difficult to monitor the lockers since that are located far away and hidden by shrubs.

In order to provide secure bicycle parking and promote the integration of bicycle and transit, it is important to place lockers in a location in which security personnel can monitor them.

If possible, it would be beneficial to place lockers within the confines of the stations so that only transit patrons can have access to them.



Even though a rack is present at Allapattah Station, bicyclists choose to lock their bicycle to the chain.

This demonstrates that many bicyclists prefer not to use the traditional wheel-bender or fence-type bicycle racks.

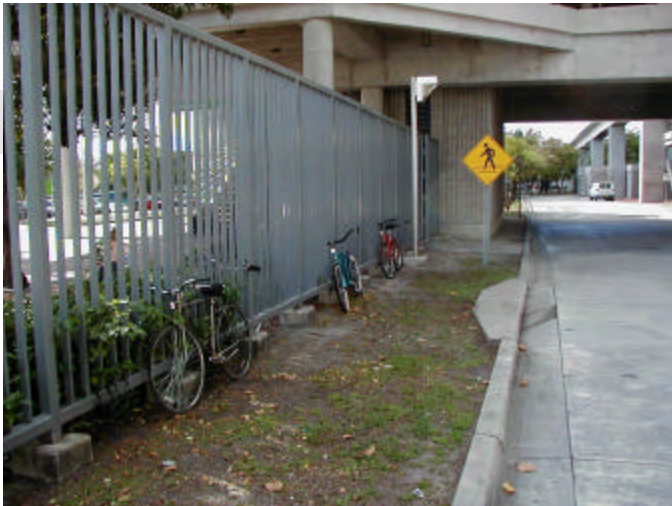
The way in which the fence-type rack holds the front wheel becomes a problem when a bicycle falls on to an adjacent bicycle twisting the front rim.



At Hialeah Station, bicycle rack space is limited forcing many bicycle-transit users to lock their bicycle to sign posts and trees.

One survey interviewee at this station stated “not having enough bicycle racks was like saying my business is not important to you.”

The bicyclists also stated that he chooses to bicycle because it saves him money and it is good for the environment, and he hopes to be “rewarded” with some new racks.



At Okeechobee Station, bicyclists choose to use this fence instead of using the damaged wheel-bender locker on the other side.

An interviewee at this station stated that the bicycle rack is also hidden from the view of security guards because of the shrubs.



Earlington Heights is home to one of the least attractive and most ineffective bicycle racks in the Metrorail system.

A bicyclist interviewed at this station, felt that the poor conditions of the bicycle parking, both the rack and lockers, is because the area is "poor and overlooked."



At the South Miami Station, half of the wheel-bender rack is missing. According to security guards, the rack used to be located out of their sight and thieves have figured out have to rip out the vertical bars in order to steal the bicycles.

Security guards stated that since the racks have been placed very close to their post, they have not heard of vandalism or theft reports from bicyclists that use this station.

Survey of Bicyclists

Demographics

Tables 3.3 to 3.6 show the demographic characteristics of bicycle-transit users who responded to the survey. In terms of ethnicity, the sample is fairly representative of the Miami-Dade region. Almost half of survey respondents were 40-59 years of age and almost 85% were male. The most interesting demographic characteristic is income. Approximately 35% of respondents earned under \$20,000 and over half earned under \$30,000. However, over 20% stated that they earned over \$70,000. It is not surprising that the lower-income respondents also reported the need to save money and lack of a car as reasons for bicycling to transit stations, while higher income individuals cited exercise and environment as their reasons.

Table 3.3 Ethnicity	Number	Percentage
White, Non-Hispanic	36	50.0%
Hispanic	15	20.8%
African-American	8	11.1%
African-Caribbean	4	5.6%
Asian	2	2.8%
Native American	2	2.8%
Other	2	2.8%
Did not answer	3	4.2%
Totals	72	100.0%

Table 3.4 Age	Number	Percentage
16-19	1	1.4%
20-29	16	22.2%
30-39	13	18.1%
40-59	32	44.4%
60+	6	8.3%
Did not answer	4	5.6%
Totals	72	100.0%

Table 3.5 Income	Number	Percentage
Under \$10,000	6	8.3%
\$10,000-19,999	19	26.4%
\$20,000-29,999	13	18.1%
\$30,000-39,999	3	4.2%
\$40,000-49,999	4	5.6%
\$50,000-59,999	2	2.8%
\$60,000-69,999	2	2.8%
\$70,000 or more	15	20.8%
Did not answer	8	11.1%
Totals	72	100.0%

Table 3.6 Sex	Number	Percentage
Male	61	84.7%
Female	8	11.1%
Did not answer	3	4.2%
Totals	72	100.0%

Commuting Characteristics

In terms of their bicycle commute, 79% of respondents stated that they bicycle to a transit station 4 days or more per week (Table 3.7). Together with the consistent bicycle counts, this data seems to suggest that there is a core group of regular bicyclists using the system. 75% of the respondents commute 3 miles or less to the stations they use with an average one-way commute time of 15-20 minutes. This data reinforces the idea that by integrating bicycling, transit agencies can significantly increase their service area.

Over half of the respondents prefer to park their bicycles at Metrorail stations, rather than take them aboard (Table 3.8). Over 25%, however, do take their bicycles on the train 4 to 7 days a week. Only 6 of the 72 respondents did not know that bicycles were allowed on the trains. 75% of respondents have never used the bikes-on-bus program (Table 3.9). Although, 11% stated they use the program 7 days a week.

Table 3.7 Days per Week Combining Bicycling and Transit	Number	Percentage
1 or less	8	11.4%
2	2	2.9%
3	5	7.1%
4	11	15.7%
5	31	44.3%
6	7	10.0%
7	6	8.6%
Totals	68	100.0%

Table 3.8 Days per Week Bicycle Taken Aboard Metrorail	Number	Percentage
Never	37	51.4%
1	7	9.7%
2	2	2.8%
3	0	0.0%
4	4	5.6%
5	4	5.6%
6	2	2.8%
7	10	13.9%
Did not know of service	6	8.3%
Totals	72	100.0%

Table 3.9 Days per Week using Bikes-on-Bus Program	Number	Percentage
Never	54	75.0%
1	3	4.2%
2	0	0.0%
3	0	0.0%
4	2	2.8%
5	0	0.0%
6	0	0.0%
7	8	11.1%
Did not know of service	3	4.2%
Totals	72	100.0%

When not using their bicycles to get to transit stations, a wide variety of modes are used. Almost 30% walk, 22% are dropped off by friends or relatives, and almost 20% use the bus to get to the rail stations. Just under 10% reported that they drive their car to the station and park it before taking the train (see Table 3.10).

The most popular reason for bicycling to transit stations is exercise followed closely by saving money and the fact that they live close to a station (see Table 3.11). Almost half of respondents also stated that they either do not have access to a car or do not have a driver's license. Over 70% indicated that they combine bicycling and transit to get to work, and 30% for recreation or exercise (see Table 3.12).

Table 3.10 Mode When Not Bicycling	Number	Percentage
Walk	21	29.2%
Dropped off	16	22.2%
Bus	14	19.4%
Drive car and park at work	12	16.7%
Always Bicycle	7	9.7%
Drive car and park at station	2	2.8%
Totals	72	100.0%

Table 3.11 Reasons for Bicycling and Parking at Stations	Answered "YES"	Percentage
Exercise	40	55.6%
Save Money	38	52.8%
Live Close to Station	33	45.8%
Help Environment	26	36.1%
No Access to Car	23	31.9%
No Driver's License	12	16.7%
Cannot Bring Bike Aboard	9	12.5%

Table 3.12 Destination	Answered "YES"	Percentage
Work	51	70.8%
Recreation	21	29.2%
Shopping	8	11.1%
School	7	9.7%

In terms of getting to the station, 35% of respondents continue to bicycle despite feeling unsafe during the bicycling portion of their trip. The primary reasons for feeling unsafe are traffic conditions and fear of crime (see Table 3.13). As Table 3.14 shows, bicyclists use a variety of methods to get to their destination. Most use a combination of riding on the road and sidewalk, or only use the road or sidewalk. When asked what needs to be done to improve the situation and make it safer for bicyclists, their responses included, more bike lanes, wider sidewalks, improved lighting, increased pedestrian crossing time, and maintenance of bike lanes (i.e. removal of grass and debris). Bicyclists that use shared-use paths or separated bicycle paths stated that more of those type of facilities need to be built and connected to transit stations.

3. 13 Reasons for Feeling Unsafe Bicycling to Stations	Answered "YES"	Percentage
Traffic	49	68.1%
Crime	23	31.9%
Lighting	14	19.4%
Road Conditions	11	15.3%
Path Conditions	10	13.9%

3.14 Where bicycling	Number	Percentage
Road and Sidewalk	16	22.2%
Road only	15	20.8%
Sidewalk only	14	19.4%
Bike Path	9	12.5%
Road, Bike Path and Sidewalk	8	11.1%
Road and Bike Path	5	6.9%
Bike Path and Sidewalk	3	4.2%
Missing Information	2	2.8%
Totals	70	100.0%

Current Use of Bicycle Parking

Survey respondents came from 16 of the 21 Metrorail stations, and there were no surveys returned from Metrobus park and ride lots. Most of the surveys came from stations that also had the highest bicycle counts (see Table 3.15). Nearly 53% of the respondents typically use bicycle racks to park their bicycle, while 25% of respondents were currently renting a locker. Over 22% indicated that they use a fence, railing, tree or lamppost (see Table 3.16). Five or 6.9% of respondents indicated that they rented a locker in the past, but no longer do so (see Table 3.17). Bicycle theft was the most frequent reason for discontinuing locker rental. In fact, over 54% of respondents reported that they have had a bicycle stolen, vandalized or both. On the other hand, the majority of current renters are “satisfied” with the lockers, but 40% indicated they would pay more for more secure and higher quality bicycle lockers. It is important to note that over half of locker renters also earn \$70,000 or more per year.

Table 3.15 Stations Most Used	Number	Percentage
Allapattah	2	2.8%
Brickell	3	4.2%
Brownsville	1	1.4%
Coconut Grove	5	6.9%
Dadeland North	9	12.5%
Dadeland South	9	12.5%
Douglas Road	4	5.6%
Earlington Heights	2	2.8%
Hialeah	4	5.6%
Northside	4	5.6%
Okeechobee	7	9.7%
Overtown	2	2.8%
South Miami	8	11.1%
Tri-Rail	2	2.8%
University	6	8.3%
Vizcaya	4	5.6%
Total	72	100.0%

Table 3.16 Usual Parking Method	Number	Percentage
Bike Rack	38	52.8%
Locker	18	25.0%
Fence-Railing	7	9.7%
Lamppost	6	8.3%
Tree	3	4.2%
Totals	72	100.0%

Table 3.17 Locker Rental	Number	Percentage
Currently Rent	18	25.0 %
Rented in Past	5	6.9%
Never Rented	49	68.1%
Totals	72	100.0%

Table 3.18 Stolen/Vandalized Bicycles	Number	Percentage
No Problems	33	45.8%
Stolen	20	27.8%
Vandalized	12	16.7%
Stolen and Vandalized	7	9.7%
Totals	72	100.0%

Perceptions of Bicycle Parking

Over half of respondents reported that the bicycle parking was “easy” or “very easy” to use, while just fewer than 30% indicated that it was “difficult” or “very difficult” (see Table 3.19). Just over 45% stated that the bicycle parking available at Metrorail stations was not secure and needed to be improved (see Table 3.20). One third of respondents reported that overall the bicycle parking available was “good” or “excellent”, while just under half indicated that the parking was “below average” or “poor” (see Table 3.21).

Table 3.19 Ease of Parking	Number	Percentage
Very Easy	21	29.2%
Easy	19	26.4%
Neutral	11	15.3%
Difficult	11	15.3%
Very Difficult	10	13.9%
Totals	72	100.0%

Table 3.20 Security of Parking	Number	Percentage
Very Secure	21	29.2 %
Secure	11	15.3%
Neutral	7	9.7%
Not very secure	10	13.9%
Not secure at all	23	31.9%
Totals	72	100.0%

Table 3.21 Overall Rating of Parking	Number	Percentage
Excellent	15	20.8 %
Good	9	12.5%
Average	16	22.2%
Below Average	15	20.8%
Poor	17	23.6%
Totals	72	100.0%

Most important, over 75% reported that more and better bicycle parking is needed at Metrorail stations (see Table 3.22). Tables 3.23 to 3.28 show what is important to the respondents about bicycle parking. When looking at what they consider to be “important” or “very important” the ranking of the top three responses is as follows:

1. Having parking visible by Staff/Security (76.4%)
2. Having covered parking (72.2%)
3. Having a combination of long and short-term parking (70.8%)

In response to the visual preference section of the survey, over one-third preferred having covered bicycle racks, just under 30% preferred secure bicycle lockers, and 15% liked the idea of a Bikestation-type facility.

Table 3.22 Perception of Parking Needs	Number	Percentage
More and Better Parking Needed	56	77.8 %
More Parking Needed	3	4.2%
Better Parking Needed	2	3.4%
Parking is Acceptable	11	15.3%
Totals	72	100.0%

Table 3.23 Having Covered Parking	Number	Percentage
Very Important	29	40.3%
Important	23	31.9%
Neutral	14	19.4%
Not important	6	8.3%
Totals	72	100.0%

Table 3.24 Having Free Lockers	Number	Percentage
Very Important	30	41.7%
Important	8	11.1%
Neutral	17	23.6%
Not very Important	5	6.9%
Not important	12	16.7%
Totals	72	100.0%

Table 3.25 Having Lockers for Rent	Number	Percentage
Very Important	28	38.9%
Important	3	4.2%
Neutral	20	27.8%
Not very Important	14	19.4%
Not important	7	9.7%
Totals	72	100.0%

Table 3.26 Having Parking Visible by Staff	Number	Percentage
Very Important	52	72.2%
Important	3	4.2%
Neutral	12	16.7%
Not important	5	6.9%
Totals	72	100.0%

Table 3.27 Having Short and Long Term Parking	Number	Percentage
Very Important	35	48.6%
Important	16	22.2%
Neutral	15	20.8%
Not very Important	4	5.6%
Not important	2	2.8%
Totals	72	100.0%

Table 3.28 Having Repair Shop at Station	Number	Percentage
Very Important	17	23.6%
Important	7	9.7%
Neutral	22	30.6%
Not very Important	15	20.8%
Not important	11	15.3%
Totals	72	100.0%

Table 3.29 Visible Preference Survey	Number	Percentage
Covered racks	23	33.8%
Locker	20	29.4%
Bikestation	10	14.7%
Uncovered racks	9	13.2%
BikeLid	6	6.9%
Totals	68	100.0%

Interviews with Bicyclists

While most bicyclists surveyed at Metrorail stations were in a hurry and often on their way to work, 15 individuals were willing to respond to the survey in a one-on-one interview format. During the interviews, bicyclists were asked all the questions on the survey, but were also asked to elaborate on their answers. From these interviews, some key issues were identified.

The Concept of a Reward: Almost half of interviewees believed that they were entitled to better and more secure bicycle parking because they were “doing the right thing” by bicycling and not driving their cars. One interviewee stated that he deserved a more secure locker since he was not “out there contributing to congestion” and “air pollution”. Another said that he believes that “bicyclists should be rewarded for doing the right thing” and that they should be allowed to take their bicycles on Metrorail anytime, and “should not have to fear for their bicycle if they leave it” at the station. Bicyclists frequently mentioned the value of their bicycle as another reason for need more secure bicycle parking. Many of these bicycles also answered that traffic congestion was a major reason why they chose to bicycle to the

train station instead of driving to work. Others stated that it was their only opportunity for exercise, while another simply stated, "I am poor." No matter their reason for bicycling, these patrons that integrate bicycling and transit believe they are part of the solution rather than part of the pollution, and therefore deserve a reward.

"You couldn't pay me to leave my bike in a locker": 10 of the 15 interviewees stated that they would never leave their bicycles in a locker at a Metrorail stations. One respondent asked, "Have you seen them?" when asked whether he would ever consider renting a locker. In general, the bicyclists stated that they preferred to "take their chances with the rack" than rent a locker since the rack are for the most part "closer to the entrances" and therefore the security guards. Five of the interviewees reported seeing homeless individuals "living out of the lockers" and almost all commented on seeing lockers that had "holes kicked in", roofs that were caving in, and bcks that have been "jimmied". However, 8 of the 15 interviewees said they would consider renting a locker if new and better ones were installed and they were "monitored more regularly."

"Do you know how long that bike has been there?": Interviewees made a point of reporting bicycles that have been left to rust and take up space at various stations. They felt there was either no response or a "very slow" response when they alerted the security guards of the abandoned bicycle. Many offered a similar suggestion in that security guards should place a warning note on bicycles left on racks, and after an appointed period of time, abandoned bicycles should be cut free and taken away. Bicycles that are taken away can be donated to charity organizations that repair bicycles and give them a home. Security guards should be responsible for monitoring bicycle racks and responding to bicycle patrons that report abandoned bicycles.

"It would be nice if they were covered": As indicated in the survey responses, interviewees also placed a high importance on having covered bicycle parking. The majority of interviewees reported having cracked seats due to sun and heat exposure, or rusted chains after days of rain. One interviewee stated that he lives "closer to South Miami Station but parks his bicycle at Dadeland North because the bicycle "rack is undercover and close to the entrance".

Poor neighborhoods get the short end of the stick: Two of the interviewees used stations that were self-reported as being in "poor neighborhoods". One stated that the lack of any type of bicycle rack at Brownsville Station was directly related to the area's "reputation as a poor and high crime neighborhood." An interviewee at Earlington Heights stated that the bicycle rack (shown on page 29) at that station "was a damn shame" and would "never happened at Brickell Station". However, he still uses it, because he is used to "getting the short end of the stick."

Marketing and Promotional Value of Data

The quantitative and qualitative data collected from the surveys and interviews not only provide a strong base for project recommendations but also are valuable for the marketing and promotion of bicycle programs. The demographic data clearly identifies market segments that are more likely to integrate bicycling and transit as well as the motivational factors that guide their decision-making process. For example, low-income Hispanic populations are more likely to respond to marketing campaigns focused on saving money, while higher-income populations of all ethnicities will more likely react to marketing messages centered on healthy-lifestyles and traffic congestion.

The data also provides a set of points from which Miami-Dade Transit can react to the needs and wants of the patrons that combine bicycling and transit. Any programs developed or improvements made based on this quantitative and qualitative research can be marketed as programs and improvements mandated by the users of the system. Miami-Dade Transit could clearly say that they have listened and responded.

MDT Plan Review

All Metrorail stations built in the future should have a combination of both long and short-term bicycle parking. It is recommended that Miami-Dade Transit adopt a policy that sets minimum bicycle parking standards for Metrorail stations. For example, minimum bicycle parking standards could be 20 short-term parking spaces (which would translate into 10 inverted U racks) and long-term parking for ten bicycles.

Due to the success of the Miami-Dade Transit's Bike and Ride (bikes-on-bus) program, it is also important to provide short-term bicycle parking at Metrobus park-n-ride lots and bus stops. Some patrons are unable to take advantage of the bike racks placed on the front of Metrobus vehicles because the racks are full when the bus arrives at their stop. By providing short-term bicycle parking at Metrobus stops, patrons with bicycles have a choice of either waiting for the next bus in hopes that the vehicle's rack is not full or locking their bicycle to a rack at the bus stop and boarding the bus. The addition of a single inverted U rack would provide parking for two bicycles.

While funding shortages may limit the ability to place an inverted U rack at all Metrobus stops, it is possible to track the use of the bikes on bus program to identify routes and stops most frequently used by bicycling patrons. From this data, a list of prioritized stops can be developed. Stops along the South Miami-Dade Busway, and all future Bus Rapid Transit (BRT) lines, should be given special consideration in the prioritization process and be outfitted with bicycle parking facilities. Other factors that should be considered in a prioritization methodology are a bus line's connectivity to park and recreation facilities, major commercial shopping areas, and shared-use and/or bicycle paths.

Furthermore, it is recommended that Miami-Dade Transit alter its bus stop designs, perhaps limited to bus stops on concrete foundations with shelters, to include short-term bicycle parking so that future bus stops do not have to be retrofitted.

The Urban Transit Village Park and Ride Facility has the potential to incorporate the *Bikestation®* concept. There is already a bicycle rest area containing bicycle racks and locker and a compressed air pump in the facility plans. It is recommended that planners contact the Bikestation Coalition or examine the possibility of a joint development venture with a bicycle shop to develop and maintain a bikestation-type facility. If a bikestation-type facility is deemed not feasible, all racks and lockers should be placed within view of security, well lit, and with appropriate signage directing bicyclists to facilities.

Due to the prevalence of bicycling in Miami Beach, its Intermodal Facility is another possible location for a bikestation-type facility. Since this second site is only in the Feasibility stage, it is possible to include bicycle parking facilities into the design so that they are located in a secure, possibly restricted area. There are several bicycle shops that may be of interest in partnering with Miami-Dade Transit to operate a Bikestation-type facility.

The possibility of developing valet bicycle parking should also be considered in the planning phase of a project. It is possible to develop partnerships with non-profit organization or private companies to implement and maintain bicycle parking facilities. For example, at the Harris Field Metrobus park and ride area, there is a YMCA complex. It may be worth investigating whether or not a bicycle valet parking project may be of interest to the YMCA. Other potential collaborators may be bicycle repair shops that can be built into future transit stations and operate a valet parking facility.

Locker Management Process

Overall, the locker management process in place is adequate, although somewhat labor-intensive. There is significant potential for improvement through technology and Intelligent Transportation Systems (ITS) applications.

The best ways to improve bicycle locker management are by investing in a more durable and secure bicycle locker and placing them within view of transit security personnel posts. The current bicycle locker has proven to be vulnerable to damage from the elements and insecure. It is also recommended that supervision and surveillance of bicycle parking facilities, both racks and lockers, should be an explicit part of the responsibilities of security personnel. Another way of improving bike locker security is to place lockers within the station when space allows, so that access to the lockers is limited to transit patrons.

When half of lockers are damaged, it is very difficult to maintain current renters and attract new ones. In fact, all five respondents who had previously rented a locker stopped renting after their bicycle was stolen or vandalized. The present cost of locker rental is \$25 for three months, \$45 for 6 months and \$70 for one year. However, 40% of survey respondents who currently rent a locker stated they would pay more for better and more secure bicycle lockers (over half of current locker renters responding to the survey earn more than \$70,000 per year). There are also intelligent key-dispensing kiosks and locker-use tracking devices available on the market that could streamline locker management and provide a new source of funding through Intelligent Transportation Systems (ITS) programs.³

For example, the Digilock system developed by Security People, Inc. (SPI) can be used to streamline locker management and provide an additional layer of security. The Digilock system can be set up to accommodate pay for parking on a per use or time-used basis, using currency, credit cards, PINs or iButton keys (unique keys for each user). If desired, it can be set up so that after a designated time period a master key must be used to open the lock so that abandonment and long-term storage are deterred. If a locker is set as an "on-demand" locker and left empty in an attempt to "reserve it", once the master key is used to open it, the user's PIN or key will be unable to open any locker.

Also, American Bicycle Security Company's Card Swipe System offers a weatherproof system that operates on low voltage and the battery back-up allows user access even with power interruptions. A manual key override system is also standard. The standard Card Swipe Locking System is "stand alone" and includes all hardware and software to manage up to twenty (20) doors at one site. The system can be set with various parameters for access control and record use. Administrators can plug in a laptop loaded with the application software (included) and the Card Swipe System gives you the ability to reassign lockers or download locker use information to print an activity report. The Card Swipe System can also be integrated into your existing transit card system using your cards and card readers. An integrated system offers savings over a stand-alone system as the control box and software is not required. Furthermore, if power is not available American Bicycle Security Company makes a locker fitted with solar panels that has reserve power storage and will allow the card system to operate over a week without sun exposure.

There are also key dispensing kiosks available in conjunction with bicycle lockers and can eliminate much of the manual labor associated with the current bicycle locker management process. Key dispensing kiosks can also provide important data that can be used to determine use and identify needs. Intelligent locker systems do require a power source which if not readily available at the stations would add to the cost of implementation and maintenance.

³ <http://www.its.dot.gov/tea21/tea21.htm>

Recommendations

Project Recommendations (See Summary Chart on page 6 for details)

Bicycle Parking Recommendations

The recommendations focus on a significant increase in and improvement of quality of short-term bicycle parking (racks) and a reduction in the number of, but improvement in the quality of long-term bicycle parking facilities (lockers). Specifically, the recommendations are to:

- ❖ Remove all current lockers, except at Dadeland North, and replace with new lockers:
 - Invest in high quality lockers that allow security personnel to view the contents of the locker but do not compromise the security of the bicyclist's property, such as perforated metal sheeting on locker door or walls, or viewing skylights.
 - Consider investing in intelligent key, scan card or PIN technology to streamline locker management and provide a secondary layer of security.
 - When feasible locate lockers within view of transit security personnel posts and under cover.
 - When space allows place lockers within the rail station so that access is limited to patrons.
 - Recommended locker storage capacity is 190 bicycles. Since most lockers are designed with 2 separate bicycle compartments, this means 95 lockers are needed for the 21 existing Metrorail stations.
 - Placing lockers at Metrobus hubs is optional, since there does not seem to be any significant demand. However, the addition of high-quality and secure lockers could potentially generate demand. Some of the hubs included in the research are simply allocated parking spaces at strip mall-type commercial centers. The Metrobus hubs most conducive to having bicycle lockers are Harris Field, Miami-Dade Community College South Campus, and Metrobus Downtown.
- ❖ Remove all *wheel bender* racks, and replace with new inverted U racks.
 - The *inverted U* racks at Brickell, Coconut Grove, Dadeland North, Dadeland South, Douglas Road, and South Miami can stay. The two *rolling* racks at Tri-Rail can stay.

- When feasible locate all racks within view of transit security personnel posts and under cover. When racks cannot be located under existing roof structures, covered shelters can be built to protect bicycles from the weather.
- When space allows place racks within the rail station so that access is limited to patrons.
- At transit hubs and park and ride lots, convert a car parking space near the transit shelters to bicycle parking area.

❖ In general:

- Minor station modifications should be considered to improve visibility by security personnel and patrons. For example, the wall and berm structure around the lockers at the Coconut Grove station should be demolished to create an open plaza and improve visibility of facilities.
- Eliminate the Bike and Ride permitting process in order to eliminate the public's access to transit
- Investigate the liberalization of Metrorail Bike and Ride hours to allow bicyclists to take their bicycles aboard even during peak commute hours. In addition, it is recommended that patrons bringing bicycles aboard have access to all train cars (not only the last car) to mitigate the impact of liberalizing the peak hour commute restrictions.
- In order to measure and evaluate the impact of policy changes and bicycle parking plan implementations, Miami-Dade Transit should regular track bicycle usage on Metrorail and Metrobus. Statistics found in this report could serve as benchmarks for future evaluations. This data should be reported in the Transit Development Plan (TDP) and monthly transit statistics reports.
- A protocol needs to be developed to remove any bicycles abandoned at rail stations and left to rust on the bicycle racks. Warning notes can be attached to bicycles stating they will be impounded after a determined amount of days. Such bicycles can be donated to charity organizations. Security personnel should be responsible for monitoring bicycle racks and responding to the requests of bicycle patrons that report abandoned bicycles.

Estimated Cost and Funding Sources

The estimated cost of the bicycle parking improvements outlined above and shown in the chart on page 5, ranges significantly based on the particular bicycle rack and locker product used. The cost of a high quality, secure locker ranges from approximately \$1000 to \$2000 dollars. Since most lockers have two separate compartments, and therefore store two bicycles, the cost per bicycle ranges from \$500 to \$1000. As a result, the cost to meet the recommended locker capacity, including 10% for shipping, ranges from approximately \$115,500 to \$210,000. The recommended inverted U locks can range from \$40 to \$100. Cost also changes based on whether or not the racks are bolt into a concrete pad or imbedded into the pad. The cost to meet the recommended rack capacity, including 10% for shipping, ranges from approximately \$6,500 to \$15,000.

As a result, combination of both short term parking (bicycle racks) and long term parking (bicycle lockers) ranges from \$122,000 to \$225,000. This cost does not include installation or removal of old racks and lockers nor does it include the cost of minor station modifications or the construction of shelters to create covered bicycle parking. In terms of installation, most rack can be installed by bolting them onto a concrete pad, or by anchoring them within the concrete. The racks that are bolted in are generally more expensive, but have lower installation costs in terms of labor. Racks that are anchored within the concrete are considered more secure.

The primary funding sources include FHWA Enhancement Funds, Congestion and Air Quality (CMAQ) funds, and FTA Transit Enhancement Funds. All three of these major funding sources specifically reference bicycle parking improvements as acceptable projects.

The Transportation Equity Act, or TEA-21, is the national transportation program that provides federal money for planning, design, construction of the country's transportation infrastructure.⁴ TEA-21 is the descendent of the Intermodal Surface Transportation Equity Act or ISTEA, which was a revolutionary bill that changed how and which transportation facilities were funded. ISTEA dramatically increased the amount of funding available for bicycle and pedestrian projects and most importantly:

- Required every state DOT to have a bicycle/pedestrian coordinator;
- Required bicycles and pedestrians to be considered in statewide and MPO or regional long range transportation plans; and
- Permitted states to use federal transportation dollars for bicycle and pedestrians

TEA-21 preserves and expands the advances made for bicycling and walking under ISTEA. TEA-21 specifically mandates the consideration of bicycle facilities in state and regional long range transportation plans. It also requires public participation in the decision-making process. With its emphasis on multi-modal planning and development, bicycle infrastructure and facilities have become a major part of federal funding.

Section 1202 of TEA-21 states that bicycle and pedestrian facilities "shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use is not permitted." Bicycle and Pedestrian planners should arm themselves with this statement and use it whenever possible to insure that bicycle and pedestrian amenities are included. For if Miami-Dade transit wants to increase the integration of bicycling and transit, bicyclists must have safe roads and bike paths to use.

In terms of funding, TEA-21 preserves the two of the most popular sources, Transportation Enhancement Activities and the Congestion Mitigation and Air Quality (CMAQ) programs. Also, new funding programs focused on safety and educational activities for pedestrians and bicyclists. TEA-21 expanded the Hazard Elimination Program to protect the safety of bicyclists and pedestrians by making improvements to publicly owned bicycle and pedestrian pathway and trails eligible for safety funding.

For bicycling, the primary TEA-21 funding sources are: Transportation Enhancements through the FHWA, CMAQ, Hazard Elimination and Other Surface Transportation Program (STP) funds. The Transportation Enhancement program specifically names bicycle parking facilities as a "typical" improvement funded through the program. Bicycle parking facilities are also specifically mentioned under the types of improvements funded through the CMAQ program.

⁴ <http://www.fhwa.dot.gov/tea21/>

The addition of bike lanes through resurfacing and restriping project is also covered under CMAQ grants. Hazard Elimination funds should be sought to improve and maintain pre-existing bicycle trails and paths, and to develop traffic calming measures to make it safe for bicyclists and pedestrians during the trips to and from Metrorail and Metrobus stations. STP funds are typically used to fund the construction of bicycle facilities in conjunction with an ongoing highway improvement project or non-construction projects such as maps and brochures.

Another funding source for the improvement of bicycle facilities is the National Scenic Byways Program depending on the presence of scenic byways in the region. Since many of the bicyclists that integrate transit into their commute are low-income, Job Access and Reverse Commute Grants may be another source funding for bicycle facility projects.

Since the bicycle facilities needed are used in conjunction with transit, Miami-Dade Transit can also apply for federal Transit Enhancement Funds. Eligible enhancement projects include bicycle access projects such as bicycle storage facilities and the installation of equipment for transporting bicycles on mass transit vehicles. Specifically, TEA-21 provides that projects providing bicycle access to transit assisted with FTA enhancement apportionment shall be eligible for a 95% Federal share. This means that just 5% of the money would have to be local, raised through Capital Improvements Local Option Gas Tax funds for example.

If Miami-Dade Transit were to select the use of intelligent bicycle locker management systems such as scan cards or PIN technology, the bicycle parking improvements could also be eligible under the Intelligent Transportation Systems program of TEA-21. The Florida Department of Transportation has recently opened an Intelligent Transportation Systems Office to aid MPOs in the development of ITS projects.⁵

It is important to note that an investment in bicycle parking is worthwhile and demonstrates that Miami-Dade Transit appreciates the patronage of bicyclists. Also, bicyclists contribute a significant amount to fare box revenue and also pay for locker rental. For example, it can be argued that there are approximately 150-170 individuals that regularly combine bicycling and transit with many of them doing so 4 or more days per week. If they spend \$2.00 per day on average on their transit commute (\$1.00 for each way) and a 240-day work year is assumed that is approximately \$72,000 to \$81,600 added to the fare box each year by bicyclists. Furthermore, 50 locker renters can contribute another \$3,500 per year.

Advertising on or corporate sponsorship of bicycle lockers can also add to recouping the cost of investing in secure bicycle parking. Advertising panels can be easily added to most lockers which can be sold to help pay for the lockers and most locker manufacturers can emboss the sides of lockers with corporate logos that can be used to offset the high cost of secure lockers.

Bicycle Parking Policy, Administrative and Promotional Recommendations

Within the appropriate documents, such as the County's Comprehensive Plan and MPO's Long Range Transportation Plans, specific language regarding bicycle parking at Metrorail and Metrobus stations should be included. Such language should include the incorporation of both short and long term bicycle parking at all current and future Metrorail stations and major Metrobus transit stations. A standard amount of short and long-term bicycle parking capacity should be established so that their inclusion in station design is standardized. When feasible, bicycle parking should be placed under cover and within sight of transit security personnel posts.

⁵ <http://www11.myflorida.com/IntelligentTransportationSystems/default.htm>

The administration of the bicycle parking facilities may remain on the control of the MPO Bicycle and Pedestrian Coordinator or moved to the transit agency in order to centralize all operations. Maintenance of the bicycle parking facilities should remain the responsibility of the transit agency, and transit security personnel should be responsible for the surveillance of racks and lockers. Appropriate signage will serve to promote the integration of bicycling and transit. Signage at Metrorail stations is needed to guide bicycle-commuting patron to parking and instructions on the process to rent a locker. Metrorail cars should have signage that instructs patrons bringing their bicycles on board where to store the bicycle while on the train. Furthermore, the policy of restricting access to bicycles on Metrorail during peak commuting hours should be re-evaluated in order to determine whether or not the hours of restriction could be decreased or eliminated through modifications to train-car seating design to provide more efficient use of space for bicycles. It is also recommended that folding bicycles be allowed on the Metrorail at all times and bicycles should not be restricted to only the last car. Restricting bicycling patrons to the back of the train sends a negative message of their value to the agency. Also by spreading bicyclists out among all train-cars, their presence will be less of a problem during peak commute hours if restrictions are liberalized or eliminated.

It is also recommended that Miami-Dade Transit should eliminate the permit requirements for the Bike and Ride program as it restricts the public's access to transit. Information on the Bike and Ride Program rules and restrictions should be incorporated into the signage and markings at each station in addition to its current presence on the agency's website.

Further promotion of integrating bicycling and transit can be accomplished through coordinated efforts with South Florida Commuter Services, the regional Commuter Assistance Program for the Miami-Dade area. South Florida Commuter Services provide assistance to commuters who are seeking an alternative to driving alone and work with employers to develop alternative commute programs and encourage the use of Commuter Choice tax benefits under IRS Section 132(f). South Florida Commuter Services already has a database of commuters who have sought information on alternative modes and work with a network of businesses that are interested in providing commute benefits to their employees.

Lastly, in order to measure and evaluate the impact of policy changes and bicycle parking plan implementations, Miami-Dade Transit should regular track bicycle usage on Metrorail and Metrobus. Statistics found in this report could serve as benchmarks for future evaluations. This data should be reported in the Transit Development Plan (TDP) and monthly transit statistics reports. Other counties in Florida, such as Hillsborough and Broward, already collect data on bikes-on-bus usage. Such information would also be a valuable addition to the National Transit Database.



Attention Bicycle Riders!

We want your opinions on bicycle parking at Metrorail and Metrobus stations.

During the month of February, Miami-Dade Transit and the Miami-Dade Metropolitan Planning Organization will be conducting a survey of bicycle riders on what they think about bicycle parking at Metrorail and Metrobus.

Please take the time to fill out a survey so that we can better meet your needs!

For more information, please contact David Henderson at 305-375-1647 or davidh@miamidade.gov.

Ciclistas: ¡Atención!

Queremos saber su opinión acerca del estacionamiento para bicicletas en las paradas del Metrobus y las estaciones del Metrorail.

Durante el mes de febrero, el Departamento de Transporte Público y la Organización de Planificación Metropolitana de Miami-Dade realizarán una encuesta entre los ciclistas acerca de lo que piensan del estacionamiento para bicicletas en las estaciones del Metrorail y las paradas del Metrobus.

Por favor, dedíquele unos momentos a llenar la encuesta de modo que podamos satisfacer mejor sus necesidades.

Si desea información adicional, favor de llamar a David Henderson al teléfono 305-375-1647 o por correo electrónico en davidh@miamidade.gov.

Atansyon Tout Moun Ki Monte Bisiklèt

Nou vle opinion nou sou sèvis pakinn bisiklèt nan estasyon Metrorail yo ak Metrobis yo.

Pandan mwa Fevrye an, Transpò Piblik Miami-Dade ak Òganizasyon Planifikasyon Metropolitèn Miami-Dade pral mennen yon etid pou jwenn opinion moun ki monte bisiklèt epi tou pou nou konnen opinion yo sou pakinn bisiklèt nan Metrorail ak nan Metrobis.

Tanpri pran tan nou pou nou ranpli fòm papyè sa a, sa va ede nou bannou pi bon sèvis!

Si nou genyen ankenn kesyon, tanpri rele David Henderson nan 305-375-1647 oubyen pa kourye elektwonik nan davidh@miamidade.gov.



25. How many days per week do you use the bikes-on-bus program (the bike racks attached to the front of the bus)? (Circle one.)

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

☐ I did not know that bicycles were allowed on Metrobus.

Please tell us about yourself.

26. Name (optional):_____

27. Address (or the closest intersection):_____

28. What is your ethnicity?

☐ White, Non-Hispanic ☐ African-American ☐ Hispanic ☐ Haitian ☐ Asian
☐ African-Caribbean ☐ Native American ☐ Other:_____

29. What is your age?

☐ Under 16 ☐ 16-19 ☐ 20-29 ☐ 30-39 ☐ 40-59 ☐ 60+

30. What is your annual income?

☐ Under \$10,000 ☐ \$10,000 – \$19,999 ☐ \$20,000 – \$29,999 ☐ \$30,000 – \$39,999
☐ \$40,000 – \$49,999 ☐ \$50,000 – \$59,999 ☐ \$60,000 – \$69,999 ☐ \$70,000 or more

31. What is your sex? ☐ Male ☐ Female

Thank you very much for participating in this survey. We will use the results to help improve bicycle parking at Metrorail Stations and Metrobus Park-n-Ride lots. If you have questions or comments about this survey please call David Henderson, Miami-Dade MPO Bicycle/Pedestrian Coordinator by phone at 305-375-1647 or by E-mail at davidh@miamidade.gov.

PLEASE RETURN SURVEY IN PRE-STAMPED ENVELOPE OR LOOK FOR SURVEY DEPOSIT BOXES AT METRORAIL OR METROBUS STATIONS



Miami-Dade Transit Bicycle Parking Survey



Informed Consent:

The purpose of this survey is to get your opinions on the bicycle parking facilities at Metrorail and Metrobus stations. Your participation is completely voluntary and no names of individuals will appear in any public reports. If you agree to participate, then the information you provide will be used by the Center for Urban Transportation Research, the University of South Florida, the Miami-Dade Metropolitan Planning Organization, and Miami-Dade Transit to develop a bicycle parking plan for Metrorail and Metrobus stations.

Do you wish to participate? ☐ Yes ☐ No

Please tell us what you think of our bicycle parking.

1. Which Metrorail station or Park-n-Ride lot do you usually use? _____

2. On a scale of 1 to 5, how easy is it for you to park your bicycle at this Metrorail station or Park-n-Ride lot? (Please circle appropriate number)
Difficult 1 2 3 4 5 **Easy**

3. On a scale of 1 to 5, how secure are the bicycle facilities at this Metrorail station or Park-n-Ride lots? (Please circle appropriate number)
Not secure 1 2 3 4 5 **Very Secure**

4. Overall, how do you rate the bicycle parking at this Metrorail station or Park-n-Ride lot? (Please circle appropriate number)
Poor 1 2 3 4 5 **Excellent**

5. Is more bicycle parking needed at this Metrorail station or Park-n-Ride lot? ☐ Yes ☐ No

6. Is better bicycle parking needed? ☐ Yes ☐ No

7. Have you ever had a bicycle damaged or stolen while parked at a Metrorail station or Park-n-Ride lot?

☐ Stolen ☐ Vandalized ☐ No Problems

8. Do you or have you ever rented a bicycle locker?
☐ I rent a locker now
Are you satisfied with the bike locker? ☐ Yes ☐ No
Is the rental cost reasonable? ☐ Yes ☐ No
☐ I have rented a locker in the past
Why did you stop renting the locker? _____
☐ I have never rented a locker
Why have you not considered renting a locker? _____

9. Where do you usually lock up your bicycle at this station?
☐ Locker ☐ Bike rack ☐ Tree ☐ Lamppost ☐ Fence or railing
☐ Other: _____

10. Are you willing pay for more secure parking?
☐ Yes. If yes, what would be a reasonable fee? _____
☐ No

11. When you decide to park your bicycle at a Metrorail station or Park-n-Ride lot, how important are the following factors? (Please circle the appropriate number.)

Bicycle Parking Factors	Not important		Very important		
Having covered bicycle parking	1	2	3	4	5
Having free bicycle lockers	1	2	3	4	5
Having bicycle lockers available for rent	1	2	3	4	5
Having bicycle parking in view of MDT staff when possible	1	2	3	4	5
Having a variety of short and long term bicycle parking, i.e. racks and lockers at each station	1	2	3	4	5
Having the chance to buy bicycle merchandise and have bicycle repair services nearby	1	2	3	4	5
Other:	1	2	3	4	5

12. Which of the following would you prefer?



☐ Uncovered rack



☐ Bike locker



☐ Bike lid



☐ Covered bike racks



☐ Bike Station (Guarded valet bike parking)

Please tell us about your bicycling trip.

13. How many days a week do you normally bicycle to Metrorail or a Metrobus Park-n-Ride lot?

☐ 1 or less ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

14. When you do not bicycle, how do you get to Metrorail or Metrobus Park-n-Ride lot?

☐ Drive car and park ☐ Dropped off ☐ Bus ☐ Train
☐ Carpool ☐ Vanpool ☐ Walk ☐ Other: _____

15. Why do you choose to use a bicycle? (Check all that apply)

☐ To save money ☐ Not enough parking ☐ For exercise ☐ Help the environment
☐ I live close to Metrorail or Metrobus ☐ I do not have access to a car
☐ I do not have a driver's license ☐ I cannot bring my bike on Metrorail or Metrobus at the time I am traveling
☐ Other: _____

16. When you bicycle to Metrorail or Metrobus where are you usually going? (Check all that apply.)

☐ Work ☐ School ☐ Shopping ☐ Recreation ☐ Other _____

17. How far from your home is the Metrorail station or Park-n-Ride lot you use? _____ miles **OR** _____ blocks

18. How long does it take you to get from your home to the Metrorail station or Park-n-Ride lot you use?

_____ hours _____ minutes

19. How safe do you feeling riding your bicycle to the Metrorail station and/or Park-n-Ride lot you use?

☐ Very Safe ☐ Somewhat Safe ☐ Not Safe ☐ Somewhat Unsafe ☐ Very Unsafe

20. What are the things that make you feel unsafe when bicycling to Metrorail or Metrobus? (Check all that apply.)

☐ Traffic ☐ Condition of Road ☐ Condition of Path ☐ Lighting ☐ Crime
☐ Other _____

21. What should be done made to improve your safety and make it easier for you to ride to Metrorail or Metrobus?

22. How do you usually get to Metrorail or Metrobus (check all that apply)

☐ I ride on the road ☐ I ride on a bike path ☐ I ride on the sidewalk

23. What roads do you use to get to this station? _____

24. How many days per week do you take your bicycle aboard Metrorail?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

☐ I did not know bicycles were allowed aboard Metrorail.

10. Èske nou dakò pou nou peye pou pakinn la plis an sekirite?
☐ Wi. Si se wi nou dakò, sak ta yon pri abòdab? _____
☐ Non
11. Ki sa ki pi enpòtan pou nou lè pou nou deside pake bisiklèt nou nan yon estasyon Metrorail oubyen nan yon pakinn espesyal Park-n-Ride? (Tanpri fè yon ti won otou nimewo ki pi sanble opinyon nou.)

Eleman Enpòtan Pou Pakinn Bisiklèt	Pa enpòtan		Trè enpòtan		
Yon pakinn ki kouvri	1	2	3	4	5
Kazyè bisiklèt gratis	1	2	3	4	5
Kazyè bisiklèt pou lwe	1	2	3	4	5
Mete pakinn bisiklèt yo anba je anplwaye MDT le plis ke posib	1	2	3	4	5
Pou genyen yon chwa de divè ti pakinn bisiklèt nan chak estasyon, i.e. rak ak kazyè yo	1	2	3	4	5
Jwenn machandiz pou bisiklèt ak sèvis reparasyon bisiklèt tou pre	1	2	3	4	5
Osinon:	1	2	3	4	5

12. Kiyès nan chwa sa yo nou ta pito?




☐ Foto Rak Bisiklèt Ki Pa Kouvri




☐ Foto kazyè Bisiklèt



☐ Foto Bike Lid



☐ Foto Rak Bisiklèt Ki Kouvri



☐ Foto Rak Bisiklèt Ki Genyen Sekirite

Tanpri pale nou de vwayaj sou bisiklèt nou.

13. Konbyen jou pa semènn nou ale nan Metrorail oubyen Metrobis Park-n-Ride sou bisiklèt?
- ☐ 1 oumwens ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7
14. Si nou pa ale sou bisiklèt nou kouman nou rive nan Metrorail oubyen Metrobis Park-n-Ride?
- ☐ Kondwi machinn epi pake li ☐ Zanmi oubyen fanmi vinn lage mwen ☐ Bis ☐ Tren
- ☐ Woulib ak yon gwoup moun ☐ Woulib nan yon ti bis ak yon gwoup moun ☐ Mache a pye
- ☐ Osinon: _____
15. Pouki se ak yon bisiklèt nou sèvi? (tcheke tout sa ki konvni nou)
- ☐ Pou fè ekonomi ☐ Pa genyen ase pakinn ☐ Mabite tou pre estasyon Metrorail oubyen Metrobis
- ☐ Pou fè espò ☐ Pou pwoteje anviwonman ☐ Mwen pa genyen machinn ☐ Mwen pa genyen lisans pou kondwi
- ☐ Mwen pa kapab pote bisiklèt la sou Metrorail oubyen Metrobis lè map vwayaje yo. ☐ Osinon: _____
16. Dabitid lè nou deplase sou bisiklèt pou nou ale sou Metrorail oubyen Metrobis la ki kote nou? (tcheke tout sa ki konvni nou.)
- ☐ Travay ☐ Lekòl ☐ Acha ☐ Lwazi ☐ Osinon: _____
17. Ki distans lakay nou ye ak estasyon Metrorail la oubyen ak pakinn Park-n-Ride nou pake an? _____ mil **OUBYEN** _____ blòk
18. Konbyen tan sa pran de lakay nou a estasyon Metrorail oubyen pakinn Park-n-Ride nou pake an? _____ è _____ minit yo
19. Ak ki santiman sekirite nou santi pou nou monte bisiklèt nou pou nou ale nan estasyon Metrorail ak/oubyen pake nan Park-n-Ride la?
- ☐ Trè an sekirite ☐ En pe an sekirite ☐ Pa an sekirite ☐ en pe pa an sekirite ☐ Trè pa an sekirite
20. Sak fè nou pa santi nou an sekirite lè nou ale nan estasyon Metrorail oubyen Metrobis la sou bisiklèt? (Tcheke tout sa ki konvni nou.)
- ☐ Sikilasyon ☐ Eta Wout la ☐ Eta santye bisiklèt la ☐ Ekleraj ☐ Krim
- ☐ Osinon _____
21. Ki sa nou kwè ki ta bannou plis sekirite ak fasilite depasman nou pou nou ale nan Metrorail oubyen Metrobis? _____
22. Dabitid kouman nou rive a Metrorail oubyen Metrobis (tcheke tout sa ki konvni nou)
- ☐ Mwen monte sou wout la ☐ Mwen monte sou santye pou bisiklèt la ☐ mwen monte sou totwa a
23. Nan ki wout nou pase pou nou ale nan estasyon sa a? _____
24. Konbyen fwa pa semènn nou monte sou Metrorail ak bisiklèt nou?
- ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7
- ☐ Mwen pa te konnen ke mwen te gendwa monte sou tren Metrorail ak bisiklèt mwen.

11. Si usted decide estacionar su bicicleta en una estación del Metrorraíl o en un lote Park-n-Ride, ¿hasta qué punto son importantes los factores siguientes? (Trace un círculo alrededor del número apropiado.)

Factores relativos al estacionamiento de bicicletas	No es importante		Muy importante		
¿Tener un recinto cubierto para estacionar su bicicleta?	1	2	3	4	5
¿Tener recintos gratuitos para estacionar bicicletas?	1	2	3	4	5
¿Tener recintos que se puedan alquilar para guardar su bicicleta?	1	2	3	4	5
Siempre que sea posible, ¿tener el estacionamiento para bicicletas a la vista del personal del Departamento de Transporte de Miami-Dade?	1	2	3	4	5
¿Tener en cada estación una variedad de estacionamientos de alquiler a corto y a largo plazo, por ejemplo, parrillas y recintos para guardar bicicletas?	1	2	3	4	5
¿Poder comprar mercancía para la bicicleta y tener cerca servicios de reparación de bicicletas?	1	2	3	4	5
Otras consideraciones	1	2	3	4	5

12. De los siguientes, ¿cuál preferiría usted?



☐ Imagen de recinto o taquilla para bicicleta



☐ Imagen de recinto encerrado



☐ Imagen de recinto cubierto



☐ Imagen de recinto descubierto



☐ Bike Station (Imagen de parrilla con guardia)

Por favor, conteste lo siguiente acerca de su viaje en bicicleta.

13. Por lo general, ¿cuántas veces a la semana va usted en bicicleta al Metrorraíl o a un lote Park-n-Ride de Metrobús?

☐ 1 o menos ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

14. Cuando usted no usa la bicicleta, ¿cómo llega al Metrorraíl o al lote Park-n-Ride de Metrobús?

☐ Manejo y estaciono ☐ Me lleva un amigo o pariente ☐ En autobús ☐ En tren

☐ A pie ☐ Como parte de un grupo que comparte los viajes en un furgoneta o “van”

☐ Como parte de un grupo que comparte los viajes en un vehículo ☐ De otro modo: _____

15. ¿Por qué usa usted su bicicleta? (Marque todas las respuestas que se apliquen a su caso)

☐ Para ahorrar dinero ☐ Porque no hay suficiente estacionamiento ☐ Para hacer ejercicio

☐ Para contribuir a salvar el medio ambiente ☐ Porque vivo cerca del Metrorraíl o Metrobús

☐ Porque no tengo acceso a un vehículo ☐ Porque no tengo licencia para conducir

☐ Porque cuando viajo no puedo subir mi bicicleta al Metrorraíl o al Metrobus ☐ Por otro motivo: _____

16. Cuando usted usa su bicicleta hasta el Metrorraíl o el Metrobús, ¿hacia dónde se dirige por lo general? (Marque todas las posibilidades que se apliquen a su caso.)

☐ Al trabajo ☐ A la escuela ☐ Para ir de compra ☐ Para esparcimiento

☐ Por otro motivo _____

17. ¿A qué distancia de donde usted vive se encuentra la estación del Metrorraíl o el lote Park-n-Ride que usted usa?

_____ milla(s) ☐ _____ cuadra(s)

18. ¿Cuánto tiempo le toma ir de su casa a la estación del Metrorraíl o al lote Park-n-Ride que usted usa?

_____ hora(s) _____ minuto(s)

19. ¿Considera peligroso para usted ir en bicicleta a la estación del Metrorraíl o al lote Park-n-Ride que usted usa?

☐ No es peligroso ☐ Algo peligroso ☐ Peligroso ☐ Bastante peligroso ☐ Muy peligroso

20. ¿Qué le hace sentir a usted en peligro cuando usa su bicicleta para ir al Metrorraíl o al Metrobús? (Marque todas las posibilidades que se apliquen a su caso.)

☐ El tránsito ☐ El estado de las calles ☐ El estado de las pistas para ciclistas ☐ El alumbrado

☐ Los delitos ☐ Otro motivo _____

21. ¿Qué se debe hacer para mejorar la seguridad y facilitar el viaje suyo en bicicleta al Metrorraíl o al Metrobús?

22. Por lo general, ¿cómo llega usted al Metrorraíl o al Metrobús (Marque todas las posibilidades que se apliquen a su caso)

☐ Voy por las calles ☐ Voy por las pistas para ciclistas ☐ Voy por las aceras