Metro

Pedestrian and Bicycle Element of the 2012-2017 Capital Improvement Program

Washington Metropolitan Area Transit Authority
Office of Long Range Planning
600 5th Street, NW
Washington, DC 20001
www.metroopensdoors.com

AKNOWLEDGEMENTS

Lead Agency:

Washington Metropolitan Area Transit Authority
Office of Long Range Planning
600 5th Street NW
Washington, DC 20001

Project Manager:

Matthew Zych

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Prepared By:

Toole Design Group, LLC
6525 Belcrest Road
Suite 400
Hyattsville, MD 20782

AECOM, Inc.
2101 Wilson Blvd, Suite 800
Arlington, VA 22201

Introduction

The Washington Metropolitan Area Transit Authority's ("Metro") Capital Improvement Program (CIP) is a rolling 6-year program derived from the Authority's 10-year $11.4 billion Capital Needs Inventory. The CIP addresses Metro's physical asset requirements by advancing safety and state of good repair needs in the system. A significant source of funding for Metro's capital program comes from federal appropriations, along with state and local contributions.

In 2008, Congress passed legislation authorizing up to $1.5 billion in federal funds for Metro's Capital Improvement Program (CIP) over ten years. These funds are equally matched by Maryland, Virginia and the District of Columbia for a total of $3 billion over 10 years, or $300 million per year. One key provision is that 1% of these capital dollars must go to *transit enhancements,* which include pedestrian and bicycle improvements as well as bus shelters, landscaping/ beautification, public art, signage and improved access for persons with disabilities. This requirement provides a vehicle for funding bicycle and pedestrian access to Metro.

This document summarizes the bicycle and pedestrian element of Metro's 2012-2017 CIP, detailing funding availability and project descriptions. Currently, $6.6 million is available in funding for bike and pedestrian access over the next five years of the CIP. This allocation is based on current available funding and priorities.

Based on the level of implementation and the future needs of the Authority, the level of funding for bike and pedestrian improvements could change within the CIP. In addition to the CIP, local governments can elect to "reimburse" Metro for specific projects located in their jurisdiction or could incorporate bike and pedestrian projects into Joint Development plans or their own transportation projects near Metrorail. Using the information obtained in the inventory, Metro will continue to explore opportunities for partnerships to fund projects not currently funded in this CIP.

BACKGROUND AND PURPOSE

During the first six months of 2011, Metro's Office of Long Range Planning led a study to evaluate pedestrian and bicycle access conditions at all 86 stations in the Metrorail system. The review looked both at Metro station sites and at adjacent streets and land uses. As a result of this effort, Metro has identified a broad range of improvements or "needs inventory," totaling an estimated $25 million. In addition to extensive field work at the stations and review of relevant plans, feedback from customers, Metro staff, jurisdiction staff, and others contributed to the identification of these projects.

The primary goal of the needs inventory is to inform the pedestrian and bicycle element of Metro's CIP. Funding for pedestrian and bicycle access comes from two sources in the CIP, Programs 35 and 36. Together these two funds have $6.6 million in available funding over the next five years. This summary document identifies three implementation strategies that will aid in prioritizing funding. The improvements in this program will help Metro move towards its goals of tripling the bicycle access mode share by 2020 and increasing pedestrian access trips system-wide. Additionally, these projects are aligned with Metro's mission statement and will contribute significantly toward the realization of Metro's agency-wide goals.

In addition to serving as the foundation of the pedestrian and bike element of the CIP, the needs inventory has other wide-ranging applications. It will inform other budgeting processes. It will guide Station Access Studies undertaken by WMATA or local jurisdictions. It serves as a starting point for discussions with the private sector for Joint Development and transit-oriented development projects.

When outside funding opportunities become available, such as the Federal government's recent stimulus package, it will be a "one-stop" resource to find eligible pedestrian and bicycle projects. It will improve pedestrian and bicycle related coordination within Metro and between the agency and partner jurisdictions. At the same time, it will improve customer service and provide a mechanism for tracking progress over time.

Metro's Mission Statement and Strategic Framework

The improvements prioritized from the list of needs are aligned with Metro's mission statement and will help Metro realize five agency-wide goals. These goals have been cross-referenced with regard to pedestrian and bicycle access to Metrorail to clarify how they apply.

Mission Statement:

Metro operates and maintains a safe, reliable and effective transit system that enhances mobility, improves the quality of life, and stimulates economic development in the Washington metropolitan area.

Metro Goals	How the Pedestrian and Bicycle Program Supports the Goal
Create a Safer Organization	• Improve pedestrian and bicycle safety en-route to stations, both on station property and getting to/from station sites. • Ensure the security of person and property for pedestrians and bicyclists accessing stations.
Deliver Quality Service	• Invest in and maintain quality equipment and infrastructure in order to reliably serve bicyclists and pedestrians. • Increase bike parking and pedestrian and bicycle access capacity in order to meet access mode split goals. • Maximize rider satisfaction and increase the attractiveness of transit services by making bicycling and walking to/from stations convenient, comfortable and easy to navigate. • Enhance mobility by providing regional leadership that emphasizes seamless connectivity between travel modes and biking and walking to/from Metrorail.
Use Every Resource Wisely	• Efficiently and wisely manage existing bicycle parking, walkways, and bikeways.
Retain, Attract, and Reward the Best and the Brightest	• Make Metro a national leader in pedestrian and bicycle access planning.
Maintain and Enhance Metro's Image	• Increase communications about the Bike/Ped Program with Metrorail customers. • Promote the region's economy and livable communities by implementing the Bike/Ped Program. • Reduce environmental impacts by integrating energy efficient lighting, rain gardens, and green space into pedestrian and bicycle improvement projects, where feasible.

Why Metro is Interested in Walk and Bike Access

- **Safety and Personal Security:** Safety is the most important over arching priority at Metro today, and the cornerstone of its mission statement and strategic framework. The projects identified in this list of needs will directly improve safety for all customers who walk or bicycle to/from the station. It will also improve safety for motorists, Metrobus riders and drivers because many improvements target potential conflict zones where customers cross paths. Examples of safety-related projects recommended in this program include signage and crosswalk striping on and around stations, designated and improved bicycle access routes into stations, resurfacing deteriorated sidewalks, lighting, and more high security bicycle parking.

- **Metrorail Access Needs:** Metro is projected to have significant increases in ridership in the coming years. This will impose significant demands on the system especially its Park & Ride facilities. Improving pedestrian and bike access at and around stations is a viable and cost effective strategy to accommodate additional arrivals. Bicycling and walking trips offer additional benefits to health, traffic congestion, clean air, regional sustainability and vital communities. Approximately 45% of Metrorail customers live within walking or bicycling distance from a station (up to 3 miles).

- **Pedestrian and Bicycle Mode Share Goals**: Metro's Board of Directors has adopted a goal of tripling the bike access mode share percentage at stations from its current level of 0.7% to 2.1% by 2020. The agency is also committed to increasing the pedestrian access mode share, and will work toward providing direct connections and safe crossings for pedestrians. The pedestrian and bicycle element of the CIP represents the agency's plan to make physical improvements at stations to facilitate the realization of these goals.

- **Transit Oriented and Joint Development:** Walkable and bikeable station areas will have a positive and mutually reinforcing impact on Metro's Joint Development programs and local government's encouragement of Transit Oriented Development (TOD). Walk- and bike-friendly environments will ensure that existing and planned TODs function the way that they are intended to, while at the same time preserving and enhancing connections to the surrounding neighborhoods beyond the TOD. Bringing more people out into the streetscape will increase visibility and safety of those on foot and bike, while also demonstrating the viability of similar future developments.

- **Funding:** The data collected in the needs inventory will be used to help Metro leverage additional funding for pedestrian and bicycle access improvements. As discussed earlier in the text, the needs inventory is only partially funded. Projects not funded can now be quickly identified for Federal discretionary funds or other sources as opportunities become available. The data can also be used to inform routine planning coordination with the state, county and municipal transportation agencies that manage the roads surrounding stations; ensuring that the needed pedestrian and bicycle access improvements are integrated into road improvement projects initiated by local and state jurisdictions.

PROJECT OVERVIEW

Data Collection Process

Data collection efforts took place at each station between March and June 2011, with a review of applicable municipal, county, and Metro plans and studies prior to each station visit. An online survey conducted as part of the 2010 *Metrorail Pedestrian and Bicycle Access Improvements Study* and mode of access data recorded in the 2007 *Metrorail Passenger Survey* were also reviewed. Metro studied development plans and discussed station access with planners from local jurisdictions, as needed. Data were collected using a portable GPS unit during weekdays. While in the field, the team discussed pertinent issues with Station Managers and Transit Police. For example, Station Managers were often asked whether observed pedestrian and bike movement patterns were typical, or what were the biggest pedestrian and bicycle related complaints they regularly hear from customers.

Types of Data Collected

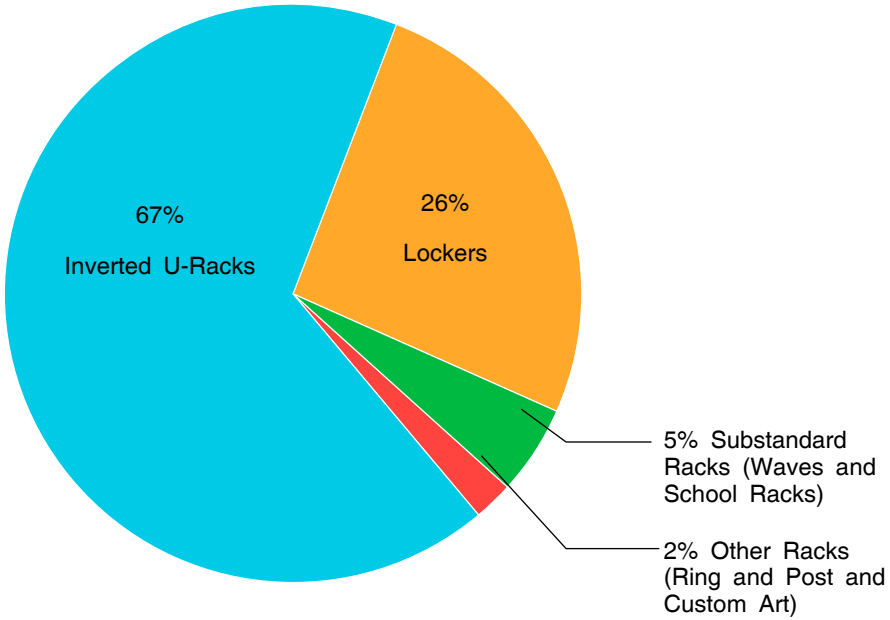
In addition to evaluating conditions and logging recommendations on Metro station property, crews also field checked the public streets and public space such as parks, immediately around the station, typically within a block or two.

DATA LAYER	EXAMPLES
Trail and Sidewalk Improvements	New sidewalks or trails needed; existing sidewalks or trails that need to be widened, or rehabilitated.
Intersection, Crossing, and Spot Improvements	Crosswalks, curb ramps, obstructions, signal improvements, lighting needs, personal security issues.
Existing and Future Bike Parking Recommendations	Type, quantity, geo-locations, footprint, proximity to entrance, security rating, and upgrades needed, such as weather protection or relocation.
On-Street Bicycle Facilities	Shared lane markings in Kiss & Ride loops, bike lanes leading to stations, bike lanes on station entrance roads.
Future Demand Lines	Desired walking and biking routes (through surface parking lots, to neighborhoods, across major highways), to preserve in future station plans.
Other Data at the Stations and Entrance Level	Needs for map kiosks showing routes to regional trails, other wayfinding signage needs.

Bike Parking Inventory

One of the baseline data sets developed for this project is a comprehensive inventory of existing bike parking at and proximate to Metrorail stations. This inventory includes the type, capacity, and location of parking, as well as supplementary information such as the location of damaged racks. This data was developed in a GIS environment so that it can be used on a day-to-day basis. Geo-referenced photographs were also taken of all existing bike parking facilities. As shown in the table below, Inverted U Racks comprise 2/3 of existing bike parking, lockers 1/4, with the remainder other types of racks. This data set will be updated regularly to reflect changing conditions and project implementation.

Existing Bike Parking Inventory



Current Bike Demand

During a six-week window from May 1 to June 15, 2011 Metro staff and field crews conducted a system-wide bicycle rack usage census. Bicycles parked at or near existing racks were included in the bike parking inventory. To ensure a valid count, all stations were surveyed on days with bike-friendly weather conditions and during similar times of the day. The counts provide a snapshot of both the availability of and demand for bike parking in station areas. Summary findings from the bike parking census are noted below.

- 84 of Metro's 86 stations have bicycle racks (all but Arlington Cemetery and Stadium-Armory).
- Bike-to-rail parking is up significantly over the last five years.
- Currently, there is space to park 3,540 bicycles at or very near Metrorail stations.
- A total of 2,196 bicycles were observed at stations locked to racks or other things.
- Supply is not always matched to demand.
- At a station-by-station level: some stations are at or above capacity today, and late arriving bike-to-rail customers are unable to find formal bicycle parking. Meanwhile, other stations have a significant amount of under used rack capacity.
- At the entrance level: at a single station, one entrance may have unused capacity and the racks at another entrance may be overflowing with bikes. Or similarly, one entrance has no supply of racks, yet a bevy of bikes were observed locked to railings, posts, trees, etc.
- Twelve stations where observed to have more bikes parked than existing rack spaces available.
- Even though a station may have some "empty spaces," (each rack is designed to hold two bikes) the racks may be crowded enough that a cyclist may judge the racks to be "full."

In Spring of 2012, Metro will conduct a rail passenger survey, which will provide a more definite indication of bicyclists accessing the system relative to other modes.

Stakeholder Engagement

The needs inventory incorporated public feedback from an online survey as well as input from a broad range of internal and external stakeholders including Station Managers and agency staff. As part of the *2010 Metrorail Pedestrian and Bicycle Access Improvements Study,* Metro held a public meeting and conducted an online survey that more than one thousand people completed. Metro held meetings with staff from various internal departments, including Plant Maintenance, Station Area Planning, Long Range Planning, Office of Parking, Planning and Joint Development, Transit Police, Americans with Disabilities Act (ADA) programs, and others. In addition, staff spoke directly with Station Managers and Transit Police representatives on site about station-specific issues and opportunities. Metro also engaged external stakeholders, including local jurisdiction pedestrian and bicycle planners and members of the National Capital Region Transportation Planning Board's Bicycle and Pedestrian Subcommittee.

PEDESTRIAN AND BICYCLE ACCESS: MEETING DEMAND, ACHIEVING A GOAL

Metro has developed this needs inventory as a practical and strategic approach to meeting its goal of increasing pedestrian and bike access mode shares. This section highlights the ways in which pedestrian and bicycle demand provided the framework for the development of the needs inventory.

Projected Pedestrian Demand

The pedestrian improvement recommendations in the list of needs, are based on the goal to increase pedestrian access mode share, which in 2007 was at 33.3 percent system-wide. The barriers to increased pedestrian access to stations are well known station are well known including: safety relative to motor vehicle traffic; difficult crossings at major roads; lack of connections to nearby neighborhoods; personal safety; and deficiencies in sidewalk, curb ramp and other pedestrian travel infrastructure. Because a safe, secure and attractive walk to Metrorail depends primarily on conditions outside Metro properties, the Board directed staff to collect data about pedestrian access needs on surrounding streets, roads and public lands. Improving pedestrian access will require upgrades both on and off of station sites.

Projected Bicycle Demand

Metro's goal of tripling the bicycle access mode share by 2020 serves as the foundation for the bike parking recommendations in the list of needs. The amount of bike parking needed in order to meet the goal was calculated and distributed throughout the system in a way that recognizes that each station will not contribute to the access goal

equally. Nevertheless, each station will contribute to the realization of the goal. The quantity and type of bike parking and other related improvements at and around stations is meant to capitalize on each station's potential, while not oversupplying stations in the near term. The improvements will better serve existing bicyclists, capture latent demand, and affect mode shifts from cars to bikes.

It is widely recognized that key elements must be present to significantly increase bicycle use for access to rail stations, including:

- Conveniently located bike parking in active or supervised locations on the station site.
- Weather protected parking.
- Quick, easy to access options such as Inverted-U racks, that fully support the bicycle.
- On-demand high security parking.
- Traffic-safe, convenient, and easy to navigate access routes to and from stations.
- Wayfinding and signage.

The challenge for transit agencies is how to determine the amount of each type of parking that will likely be needed at each station, especially given diverse demographics, varying land use and development patterns and other contextual factors. Simple observation of quantities of bikes parked reveals that volumes vary widely. As a result, every station cannot be expected to contribute equally toward meeting the system-wide bicycle access mode share goal.

Several data sets were used to make the best projections possible. Metrorail ridership projections for 2020 were used to calculate how much bike parking would be needed in 2020 to meet the 2.1 percent station access mode share goal. The raw total was calculated as a percent of AM Peak Period boardings. The amount of *existing parking* was subtracted from the *total need* to determine how much *new parking* will be needed. The amount of new parking needed was distributed across the 86 stations based on the share of total bike rack usage at each station[1]. A variety of adjustments were made based on projected changes in station boarding shares between 2010 and 2020, changes in land use projections and establishing a minimum need for each station.

To determine the best mix of bicycle parking types, the 86 stations were divided into seven categories based on their surrounding land uses and character and whether or not a surface station area exists. Each typology specifies a target percent (or range) for each of five types of bike parking, including: 1) covered racks, 2) uncovered racks, 3) standard lockers, 4) on-demand lockers, and 5) high volume/high security facilities (Bike & Ride centers, pre-fab modular bicycle storage rooms, or multi-service bike stations, e.g. Union Station). The typologies include: DC-Area Core, Edge of Core, Urban, Regional City Centers, Suburban, End of Line and One-of-a-Kind (e.g. Arlington Cemetery). The next section provides a set of summary statistics drawn from the 2011 bike parking census and improvement needs database.

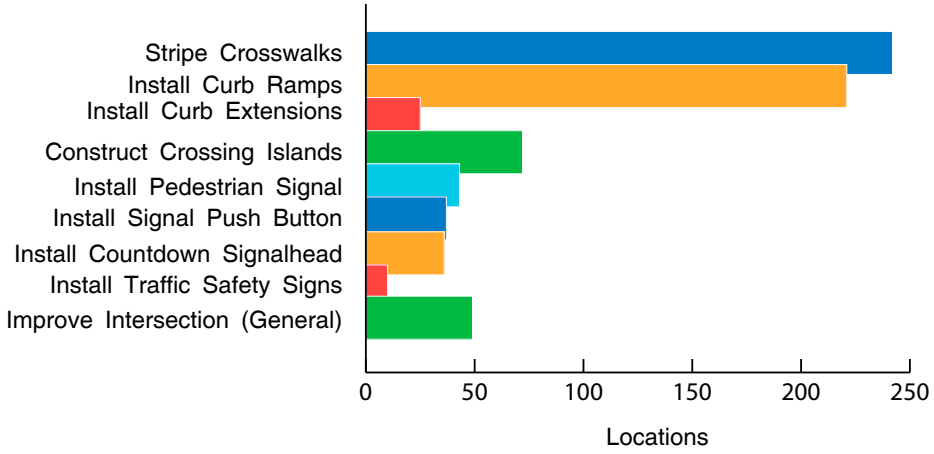
1 The 2006 WMATA Usage Survey was the best data available at the time the projections were made.

SYSTEM WIDE HIGHLIGHTS OF NEEDS INVENTORY

The needs inventory identifies physical improvements on and around Metro stations in order to make walking and bicycling to and from the station safer and more appealing. It includes pedestrian focused improvements such as crosswalks and curb extensions, and improvements that will serve pedestrians and bicyclists alike such as curb ramps and shared use paths. Additionally, the needs inventory provides a comprehensive assessment of future bike parking locations with guidance on which locations are needed to meet the established bike access mode share goal. Highlights from the needs inventory are provided in the chart and table to the right.

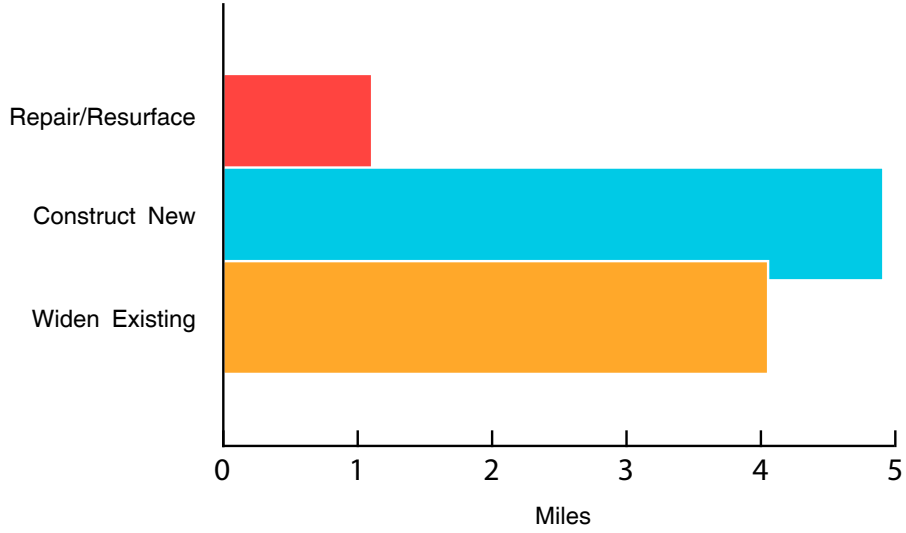
Recommended Pedestrian Improvements

Recommended Intersection Improvements



Sample Recommended Spot Improvements	Locations
Address Barrier or Obstruction	29
Address Modal Conflict Zone	14
Add Pedestrian Amenities (bench, shelter, shade trees)	10
Address Security Issue	2
Improve or Add Lighting	8
Repair Travel Surface	11
Provide Bicycle Rolling Tray on Stairway	22
Improve Bicycle/Pedestrian Access Through Parking Lots	8
Relocate Sidewalk Furniture	5

Sidewalk and Trail Improvements



Future Bike Parking

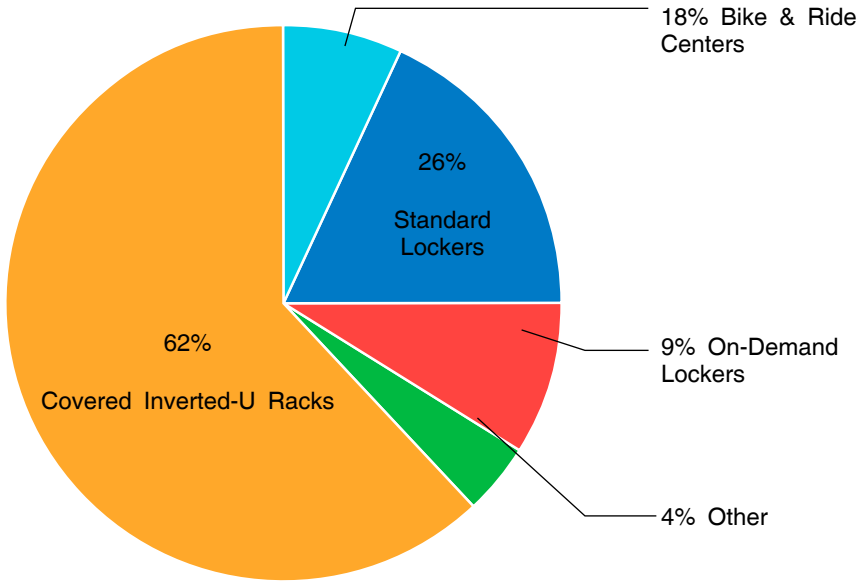
This effort identified more than 400 potential locations for future bike parking. These locations include recommended equipment types, capacity achieved, dimensions of the space to be used and geo-tagged photographs. These features also include cover recommendations, security ratings, convenience ratings, and factors that may impact the cost of installation. All potential bike parking locations are prioritized to ensure that by 2020 sufficient capacity exists, and the correct mix of parking types are provided.

Twice as much capacity for future bike future has been identified as is needed to meet the 2020 goal. Ultimately, sufficient space has been identified in this study to accommodate the 2030 goal of 3.5 percent AM peak bike arrivals; however, locations that might be developed post-2020 may not be distributed optimally among the stations to meet the variations in demand that may evolve by that time. Future development at and around stations will change bike parking needs, which will be reassessed on an ongoing basis.

Potential Locations for New Bicycle Parking

Parking Type	New Parking Options		Additional Capacity Needed to Meet 2020 Goal
	Total Number of Locations Identified	Total Capacity Identified	
Covered Inverted-U Racks	259	5,034	2,832
Uncovered Inverted-U Racks	35	568	312
Bike & Ride	30	1,508	740
On-Demand Locker	77	770	312
Other	9	320	112
Total	410	8,200	4,308

Recommended Mix of Equipment Types



STRATEGY AND APPROACH

Approach

The pedestrian and bicycle element of the CIP is fully integrated with Metro's strategic framework. Specific pedestrian and bike-related objectives are identified to meet Metro's larger institutional goals. Metro plans to adopt the following implementation strategy, which outlines how to achieve the objectives in the next five years. Throughout this process, guiding principles will inform pedestrian and bike planning and implementation efforts. This process is outlined below and discussed in more detail on the following pages.

Metro's Mission Statement and Strategic Framework

Metro operates and maintains a safe, reliable and effective transit system that enhances mobility, improves the quality of life, and stimulates economic development in the Washington metropolitan area.

1. Create a Safer Organization.
2. Deliver Quality Service.
3. Use Every Resource Wisely.
4. Retain, Attract, and Reward the Best and the Brightest.
5. Maintain and Enhance Metro's Image

CIP Study Objectives

1. Improve safety for walking and bicycling customers.
2. Improve personal security on station sites and increase capacity and diversity of high security bike parking options.
3. Increase bike parking capacity and equipment diversity system-wide, and pedestrian access capacity at key stations.
4. Improve the comfort and convenience of walking and biking to/from Metro.
5. Make better use of existing resources and improve the quality of equipment and infrastructure.
6. Maintain and enhance Metro's image and reduce environmental impacts.

Implementation Strategy

1. Complete targeted cost effective initiatives to enhance pedestrian and bike access in the near term.
2. Prioritize project types where the system-wide need is greater than available resources.
3. Set aside funding for special programs or pilot projects.

Guiding Principles

- Strategic
- Data driven
- Customer oriented
- Flexible

Guiding Principles

Project prioritization has been guided by the four principles shown on the right. In its day-to-day operations Metro will be strategic, targeting near term improvements where the need is greatest, prioritizing more costly medium term improvements, and coordinating with jurisdictions and other partners throughout. The baseline of data created in the needs inventory will enable Metro to make data driven decisions and to measure progress over time. The improvements will enhance comfort and convenience for Metro customers, and the agency will regularly engage them to identify and refine projects and to build public support. Finally, the pedestrian and bike effort will be flexible in order to leverage and make the most of opportunities as they arise. These principles will guide and inform Metro's pursuit of pedestrian and bike related objectives and implementation strategies, which are outlined on the following pages.

Employ Specific Strategies	• Target improvements to meet identified needs and prioritize based on importance. • Be proactive and opportunity driven (e.g. desire lines, TOD, Station Access Studies, coordination with TLC projects, WMATA station rehabilitation projects, local government station rehabilitation projects, etc.) • Develop dynamic feedback loops with customers and local government pedestrian and bicycle program staff to gather issue and/or station-specific feedback and incorporate it into the decision making process. • Actively partner and coordinate with stakeholders. • Incorporate "rules of thumb" in the placement, type and design of bicycle parking.
Utilize Available Data	• Use the GIS database to help inform a scheduled action plan. • Establish measurable goals. • Build upon methodology for projecting needs. • Build upon methodology for the "right mix" of bike parking types. • Develop a process to update and disseminate data. • Incorporate smart technology applications to collect data and utilize it to inform decisions.
Engage the Public	• Use coordinated marketing and public relations strategies. • Use blog posts. • Provide regular progress updates. • Pursue high profile projects like Bike & Rides. • Use customers as a resource to identify ongoing needs.
Ensure Flexability	• Leverage opportunities (e.g. Joint Development, TOD projects, and grant funding). • Be ready to provide specific recommendations to local jurisdictions, private developers or other improvement projects. • Evaluate progress and adjust approach if necessary based on feedback.

OBJECTIVES

Objectives

Examples

Objective 1

Improve safety for walking and bicycling customers.

- Fix poor surfaces and broken infrastructure in plazas and along sidewalks and trails
- Improve bike/pedestrian circulation in parking lots
- Address ingress/egress issues related to one-way station traffic loops
- Install on-street bicycle facilities (e.g. bike lanes)
- Improve intersections by adding curb ramps and crosswalks
- Build medians to improve pedestrian crossings
- Provide safety signage and wayfinding
- Address modal conflict areas

Objective 2

Improve personal security on station sites and increase capacity and diversity of high security bike parking options.

- Place bike racks in view of the Station Manager
- Develop more Bike & Ride facilities
- Introduce on-demand bike lockers
- Move bike lockers to conform to Crime Prevention Through Environmental Design (CPTED) principles
- Trim vegetation
- Add pedestrian scale lighting

Objective 3

Increase bike parking capacity and equipment diversity system-wide, and pedestrian access capacity at key stations.

- Add bike parking to serve all station entrances and approach routes
- Add sufficient bike parking to meet the projected 2020 need
- Build new shared-use paths
- Add major infrastructure like bridges, tunnels and new station entrances

Objectives

Examples

Objective 4

Improve the comfort and convenience of walking and biking to/from Metro.

- Partner with local governments to provide “door to door” routes
- Cover existing and future bike parking
- Build new bicycle, pedestrian & shared-use routes
- Remove barriers along bicycling & walking routes
- Provide map kiosks and wayfinding directing customers to regional trail systems
- Pursue comprehensive station site redesigns
- Improve bike and walk access routes by installing curb ramps, parking lot gate bypasses, and stairs with rolling trays

Objective 5

Make better use of existing resources and improve the quality of equipment and infrastructure.

- Cover existing bike racks
- Fix broken racks
- Shift underutilized bike lockers within the system and pursue targeted marketing at stations with low locker use
- Replace inefficient or undesirable racks
- Enhance connections between stations and existing trails
- Relocate poorly sited equipment

Objective 6

Maintain and enhance Metro’s image and reduce environmental impacts

- Regularly update pedestrian and bicycle information on Metro’s website
- Promote pedestrian and bicycle resources using social media, in-system advertising and in partnership with Metro’s government and non-profit partners
- Use energy efficient lighting

IMPLEMENTATION STRATEGIES

The pedestrian and bicycle element of the CIP is driven by three core implementation strategies. Targeted and cost effective initiatives will allow Metro to make important changes in the near term, while setting the stage for more far reaching changes in the future. Metro will establish a strategic and data driven process to prioritize projects where the need far outstrips the resources available. At the same time a series of special programs and pilot projects will allow the Authority to bring new concepts into the system, test emerging technologies, and build partnerships with our stakeholders. These strategies are outlined below.

Implementation Strategy 1: Complete targeted cost effective initiatives to enhance pedestrian and bike access in the near term. In the first two years of the CIP, Metro will complete a series of targeted, cost effective initiatives to enhance pedestrian and bike access for its customers. First and foremost, these improvements will focus on safety and security. They will range from improving crosswalks and adding safety signage and lighting, to addressing modal conflict areas. Metro will complete identified maintenance needs such as repairing damaged racks and repairing existing sidewalks and paths. Metro will take steps to make better use of existing resources by moving existing racks and lockers within and between stations. Finally, Metro will focus near term efforts on adding bike parking capacity at stations with the greatest need, as identified in the 2011 bike census, and at the most cost effective locations. At very low cost, Inverted-U racks can be added under escalator canopies, in existing parking garages and in some cases inside stations.

Outcomes	Near Term Improvements	Est. Cost
Improve safety and security	• Add general security lighting • Address barriers and obstructions • Address potential modal conflict zones • Implement low-cost crossing spot improvement such as crosswalk striping and restriping, safety and traffic signs, etc. • Implement Crime Prevention Through Environmental Design (CEPTD) • Provide bike bypasses at parking lot gates • Repair or resurface sidewalks and shared-use paths	$300,000
Address maintenance issues	• Repair damaged racks • Fix bolts on racks • Ensure all racks and lockers are installed to meet specifications • Trim vegetation • Relocate paper boxes and sidewalk furniture	$50,000
Making better use of existing resources	• Relocate racks and lockers to balance supply, improve convenience, provide weather protection and address security concerns • Add wayfinding signs to existing and new bike parking locations • Add general pedestrian and bicyclist wayfinding signs • Install on-street bicycle facilities such as shared lane markings, climbing lanes, and bike lanes • Remove damaged lockers and replace substandard racks	$150,000
Pursue low-cost bike parking capacity increases	• Add Inverted-U racks under canopies, existing overhangs, in stations, and in garages • Bring all stations up to a minimum capacity (10 spaces)	$300,000
Total Cost		**$800,000**

Implementation Strategy 2: Prioritize project types where the system-wide need is greater than available resources.

Due to both the volume and nature of many of the needs identified in the field review, initial cost estimates confirm that all of these projects cannot be completed using the resources available over the next five years. As a result, Metro will prioritize projects in these categories based on a number of factors, including: the severity of the problem; their potential contribution to the mode share goals; analysis of existing and projected ridership trends; balance among local jurisdictions; and opportunities that may arise to leverage additional resources. Coordination and partnership with local jurisdictions, VDOT and MDSHA and DDOT will also play a decisive role where projects are off Metro station sites. The table below outlines the categories of projects that will need to be prioritized, as well as some of the prioritization considerations that will be used.

Recommendation types that need to be prioritized	Prioritization Considerations	Percent of Total Need Funded	Estimated Dollars to be Allocated
Add lighting at existing bike parking locations	Bike theft and vandalism rates, station crime statistics, Transit Survey comments, site specific factors.	70%	$300,000
Provide wayfinding signs	Severity of need, Transit Survey comments, site specific factors, coordination with local partners, equitable distribution among jurisdictions.	NA	$125,000
Add racks with freestanding and cantilevered covers	Locations where no other covered options are available, total volume of existing and projected need, equitable distribution among jurisdictions.	12%	$475,000
On-demand lockers (see Pilot Program on page 17 for initial investment)	Bike theft and vandalism rates, station crime statistics, high turnover potential, equitable distribution among jurisdictions.	6%	$125,000
Bike & Ride Centers	High demand stations, high security needs due to bike theft and vandalism rates, Transit Survey comments.	25%	$1,600,000
Off-site bike lanes	Severity of need, routes leading directly to high capacity parking locations, total volume of existing and projected need, presence of a local partner.	49%	$250,000
Construct new and widen existing sidewalks and paths	Location on or off Metro property, priority rating: High, level of difficulty rating: Low, severity of need, potential volume of customers served.	42%	$1,750,000
Curb ramps	Location on or off Metro property, relationship to larger pathway improvement needs, severity of the problem, potential impacts on customers with physical disabilities.	57%	$500,000
Curb extensions and crossing islands	Location on Metro property, coordination with Metro Bus and Parking divisions and local transportation agency.	98%	$250,000
Total Cost			**$5.375 million**

Implementation Strategy 3: Set-aside funding for special programs or pilot projects.

Metro will set aside funding each year in the pedestrian and bicycle element of the CIP to be allocated to a set of system-wide initiatives. This funding is meant to initiate consistent and steady progress on the respective issues, while also providing templates and standards that can be applied system-wide.

1) Implement an On Demand Locker Pilot Program to introduce this new product and technology into the system and then test the results prior to a larger commitment of resources. Feedback from customers will be gathered before and during the roll out of on demand lockers and results will be shared as part of blog posts where appropriate.
2) Budget will be made available to partner and cost share with local jurisdictions, local business groups, and others on projects such as off-site trails, intersection improvements, and bike lanes.
3) Funds will be set aside to continue to add security cameras at bike parking locations and locations where pedestrian safety and security is a concern.

Category	Opportunities	Estimated Cost
On Demand Lockers	Pilot Program (6% of total need)	$125,000
Partnership Incentive Program	Cost sharing contribution for higher cost off-site projects (bike lanes, trails, signal upgrades, intersection improvements, security cameras)	$200,000
Security Cameras	For locations on Metro station sites	$100,000
Total Cost		**$425,000**

Moving Forward

The pedestrian and bicycle element of the Capital Improvement Program represents a strategic, data driven, and customer oriented approach that captures near term opportunities while setting the stage for consistent incremental improvements in the medium term. It maintains Metro's ability to be flexible and provides the opportunity for Metro to innovate and become a national leader amongst transit systems seeking to become more pedestrian and bicycle friendly. Metro will roll out projects and initiatives with the goal of building momentum and will be looking to partner with jurisdictions, the private sector, and other stakeholders to implement pedestrian and bicycle improvements around stations. The needs inventory will initiate discussions regarding partnerships and will also be used to inform Station Access Studies, planning studies undertaken by jurisdictions, and the review of planned road improvements. The list of needs should be continuously updated and coordinated with pedestrian and bicycle capital improvement programs of local and state jurisdictions. In doing so, it can serve as a mechanism to coordinate investments, monitor progress, and improve customer service.


Twisbrook Station