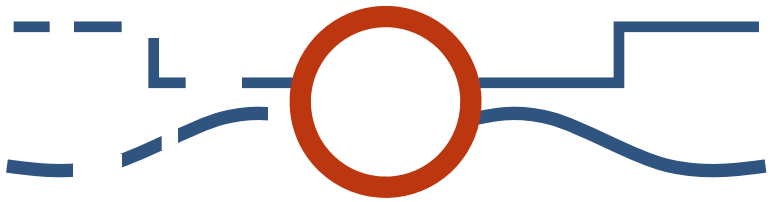
Multimodal Access Improvements for Rail Station Areas in the Washington Region



March 15, 2012

Application for Funding under the FY 2012 National Infrastructure Investments TIGER Discretionary Grant Program administered by the U.S. Department of Transportation

Submitted by
Metropolitan Washington Council of Governments

on behalf of
National Capital Region Transportation Planning Board

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

One Region Moving Forward

March 15, 2012

FY 2012 TIGER Grants Program Manager
via grants.gov

To Whom It May Concern:

The Metropolitan Washington Council of Governments is pleased to formally submit the attached application for grant funding under the provisions of the FY 2012 National Infrastructure Investments TIGER Discretionary Grant Program administered by the U.S. Department of Transportation. This application is being submitted on behalf of the National Capital Region Transportation Planning Board (TPB), the metropolitan planning organization (MPO) for the Washington region, which will serve as the lead agency for this application.

The proposed project in this application, *Multimodal Access Improvements for Rail Station Areas in the Washington Region*, is a set of seven multimodal capital improvement components that will enhance non-motorized access to the region's rail system. It was developed through a regional collaborative planning process involving the District of Columbia and local governments in Maryland and Virginia. This project exemplifies the Washington metropolitan area's commitment to enhancing the livability, sustainability, and economic competitiveness of the region.

Should you or your staff have any questions regarding our application, please contact Ronald Kirby, Director, Department of Transportation Planning, at (202) 962-3310 or by e-mail at rkirby@mwcog.org.

Sincerely,

David J. Robertson
Executive Director

Attachment: Grant Application

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Project Overview

Regional Context

The Washington metropolitan area encompasses the District of Columbia and the surrounding jurisdictions in Northern Virginia and Suburban Maryland. The region is home to more than 5 million residents and nearly 3.5 million jobs, making it the ninth largest metropolitan area in the nation, according to 2008 census population estimates[1]. As the seat of the national government, the District of Columbia alone receives 22 million visitors annually. Transportation planning at the regional level is coordinated by the National Capital Region Transportation Planning Board (TPB). The TPB is composed of representatives of the transportation agencies of the State of Maryland, the Commonwealth of Virginia, and the District of Columbia, local governments, the Washington Metropolitan Area Transit Authority (WMATA), the Maryland and Virginia General Assemblies, and members from the Metropolitan Washington Airports Authority (MWAA) and federal agencies. Established in 1965, the TPB is the federally-designated Metropolitan Planning Organization (MPO) that directs the comprehensive regional transportation planning process under the authority of the Federal-Aid Highway Act of 1962, as amended.

Project Summary

In response to the January 31, 2012, announcement of the FY 2012 TIGER Discretionary Grant Program notice of funding availability and a debriefing with USDOT staff on February 1, 2012, the TPB has revised its FY 2011 TIGER grant application consisting of seven multimodal capital improvement components that will enhance non-motorized access to the region's rail system (see map on following page). The revised TPB FY 2012 TIGER application provides a greater local match to the federal grant request, exhibits more advanced project component planning, and includes one new component in place of another. The TPB's project focuses on pedestrian, bicycle, and streetscape improvements to 16 rail station areas that are well-served by transit and support housing and employment. These station area locations include both suburban activity centers and potential housing and job centers on the eastern side of the region. In many cases, these locations are reverse commute destinations. Together, the improvements in this application enhance the ability of existing infrastructure to positively impact the accessibility, safety, and economic opportunity of these untapped regional assets.

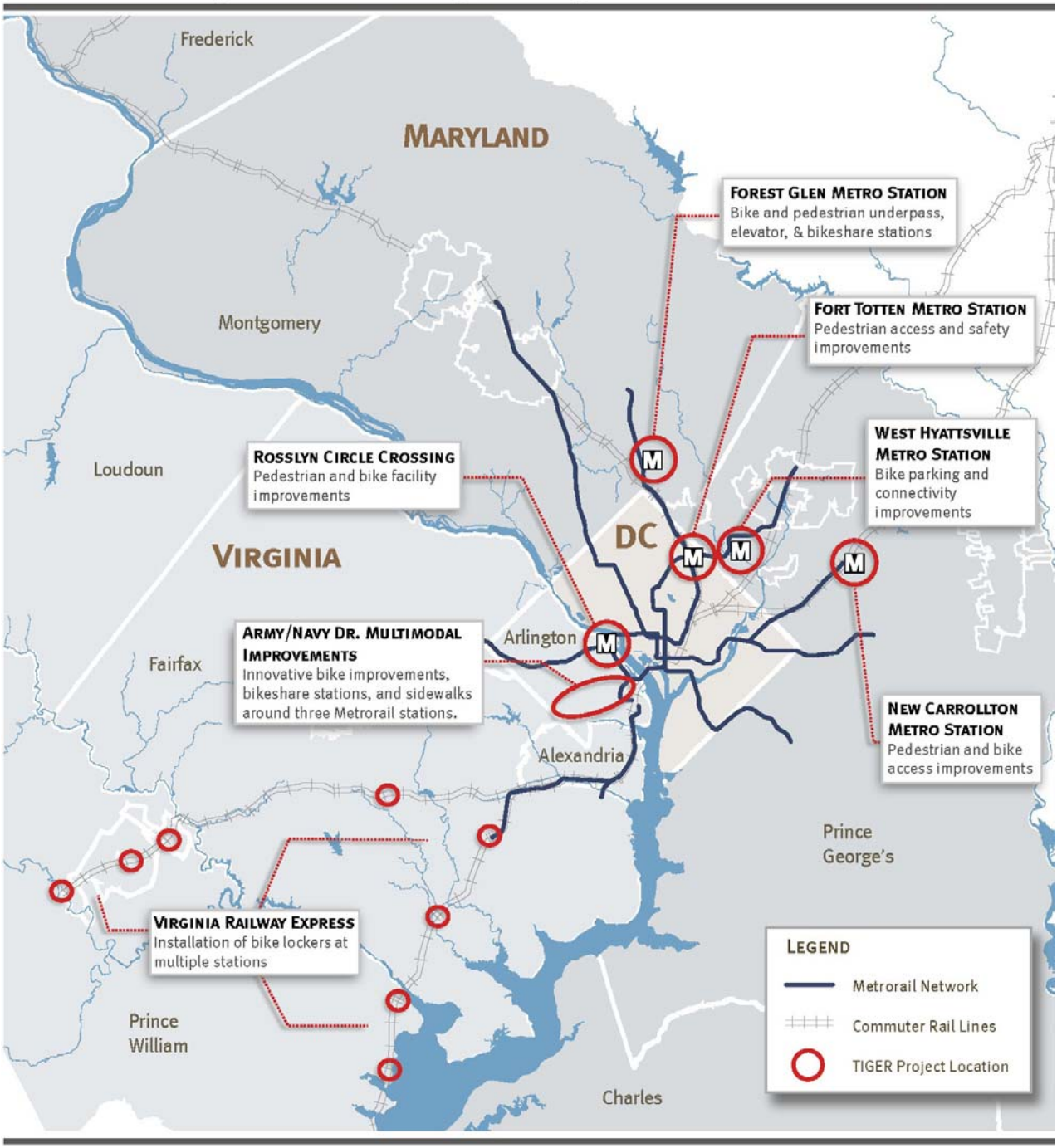
The TPB Vision, a policy document that outlines eight broad goals to guide the Washington region's transportation investments in the 21st century, describes a region with an accessible and interconnected transportation system that enhances the quality of life, provides additional economic resilience, and supports a growing economy throughout the entire area. TPB's scenario planning to support implementation of the Vision has demonstrated that the region could achieve significant benefits by focusing job and housing growth near rail stations. Through strategic access improvements to the existing transit infrastructure, demand pressures on the transportation system would be alleviated by using trains in reverse-commute directions that are currently operating under capacity, or by selling the same seat twice in peak commute directions (where one group of commuters alights at a mixed-use suburban location and another group boards). More broadly, promoting development near rail station areas would reduce distances between housing and employment, which would in turn reduce vehicle-miles traveled (VMT) and congestion.

Each component in the application supports multiple livability principles that enhance the effectiveness of the region's rail system by creating safer station areas for non-auto modes, by providing multimodal transportation options at station areas to reduce auto dependency, and by maximizing the efficiency of

existing rail transportation infrastructure. The components address the safety of rail system users, add streetscaping and capacity improvements to the built environment, and construct basic pedestrian infrastructure for typically underserved areas of the region. Each contributes to the vitality of its rail station area, and together the complete package represents an investment in transportation improvements that would otherwise remain unfunded.

COMPONENTS OF THE FY 2012 TPB APPLICATION PACKAGE

For The Metropolitan Washington Region



Project Need and Regional Challenges

By increasing the safety and accessibility of regional rail stations, the TPB's application package highlights the need for coordinated implementation of a regional transportation system that recognizes all modes and facilities as part of a balanced approach to economic development. Innovative, sustainable improvements to the transportation network are increasingly needed as the existing surface transportation system continues to come under strain, economic inequity increasingly limits access and opportunity, and regional and global environmental problems worsen. The Washington region seeks to leverage federal funds to implement small-scale, high-impact multimodal transportation improvements that increase safety and enhance access to the regional transit network. The following is an overview of the key challenges this project package will collectively address across the region. Each of these topics is explored in greater detail in the summary of how the TPB's project package meets the TIGER selection criteria.

Balance growth and development across the region

The National Capital Region has many successful examples of mixed-use, transit-oriented development. The region's robust economy is due in large part to the presence of the federal government, international community, and companies and organizations that do business with our government. The myriad pieces of these thriving developments have come together over time through a mix of local land use and funding decisions, developer contributions, and infrastructure improvements that were designed and funded on a regional level. Yet prosperity inequities persist throughout the region. There is significant disparity in job growth between the eastern and western portions of the region, what has become known as the "east/west divide." The TPB's Regional Mobility and Accessibility Scenario Study (at right) found that job growth in the western portion of the region increased by 20 percent between 1990 and 2000, while job growth in the eastern portion of the region increased by only one percent during the same time period, with the dividing line running roughly north-south through the core of the District of Columbia.

One way to address the east/west divide is to support future regional development initiatives and transportation options that encourage the development of locations well-served by transit, but currently underutilized for housing and employment. Small-scale improvements such as those proposed in TPB's TIGER application can serve as a catalyst for development around the region's rail stations with untapped potential. In many cases the proposed TIGER project completes a missing link between the station and job and housing destinations.

The Transportation Planning Board launched the ***Regional Mobility and Accessibility Study*** in 2001 to examine the impacts of alternative transportation and land use scenarios. In addition to identifying the east/west divide, the TPB scenario analysis identified land-use and transportation decisions that would alleviate pressure on the existing transportation infrastructure. These included moving jobs and housing closer together by providing more housing options near existing employment centers or diverting job growth to locations with a high concentration of residential development. The scenario analysis also showed that increasing the region's housing stock would decrease the number of longer distance commutes into the region. Finally, the study showed that concentrating job and housing growth in transit—oriented developments around the region's rail stations would maximize the utility of the existing transportation system.

Maximize efficiency of existing transportation infrastructure

The National Capital Region has an extensive highway network and the second largest public transit system in the country. Congestion and crowding on the region's roadways and transit system is increasing and meeting the travel demands of a growing population and workforce brings difficult challenges. Congestion on the road

network will continue to increase with an expected rise in VMT of 20 percent by 2030, impacting both private automobiles and bus transit. Over the next 20 years, transit work trips are forecast to increase by 35 percent as the region adds nearly 1.2 million people and almost 1 million jobs. Funding constraints for all modes translates into an inability to keep up with rapidly rising demand.

While the region continues to benefit from its world-class rail transit system, this system faces considerable capacity challenges. According to projections, Metrorail ridership during the morning peak will grow from approximately 250,000 to over 350,000 by 2040. This means that 100,000 new riders will need to access Metrorail stations by some means. This increase in ridership will create even more crowding on the Metrorail system on some of the more heavily traveled corridors and at the busiest stations. Since the ability of the transit system to expand its capacity is limited by funding constraints, more creative measures must be taken to most effectively capitalize on the capacity of the existing system by balancing regional growth and travel demand.

The area's highway and transit system will continue to play a critical role in the region; however, coping with the increase in demand for travel in a time of diminishing fiscal resources will require thinking differently about land use decisions, as well as the way the region plans, funds, and builds its future transportation system. The projects in the grant application will better integrate rail stations with surrounding communities. Integration will provide residents with viable housing and transportation options, including the possibility of taking transit and then traveling "the last mile" to a final destination by walking, biking, or riding a local circulator bus. The resulting system enhancements will support the land use decisions envisioned by the TPB's scenario analysis and use the transportation network more efficiently.

Fund projects that support complete communities

Although the National Capital Region has many successful examples of mixed-use, transit-oriented development, some areas of the region have been more successful than others in fostering sustainable, complete communities. TPB's application strives to build additional complete communities across the region by implementing projects that increase mobility options for all users of the transportation network, providing citizens with mode choices when considering daily trips.

The types of multimodal projects proposed in this application often slip through the cracks in the traditional federal modal funding programs. Projects that include multiple components across travel modes typically require creative funding options, and much of that funding is only available at the state and local levels. For example, there is no dedicated federal funding source for enhancements to existing rail stations. Similarly, projects that produce benefits such as safety improvements often compete for very small amounts of funding at the state level, even if the benefits show a likely reduction in auto-related deaths. To assess such benefits, WMATA, through its 2010 Metrorail Bicycle and Pedestrian Access Improvements Study, has identified the need for access improvements around the agency's station areas. These improvements depend upon investments in pedestrian and bicycle infrastructure by local jurisdictions. However, funding for such improvements is scarce and must compete with other needs.

At a time when local funding is scarce, the TPB TIGER project demonstrates how federal funding can be used to leverage limited local resources and provide for enhancements to the safety and options for all travelers. Each of the components in the TPB's application package enhance non-motorized opportunities around station areas, providing greater transportation flexibility for residents and workers to move throughout the region.

Proposed Project Components

The TPB has partnered with four jurisdictions and Virginia Railway Express (VRE) to develop a package of seven components that, together, enhance the region's interconnected, multimodal transportation system and, sustainably and affordably, provide better access to 16 rail stations in the region. The goal of each component is to improve access to a rail station, in a manner appropriate for each station area. Each project is the result of a comprehensive planning process. Some components were initiated by community members or planners at the local level. Several projects are the products of regional studies, including WMATA's "Metrorail Bicycle & Pedestrian Access Improvements Study,"[2] completed in October 2010, and the TPB's Transportation/Land-Use Connections (TLC) Technical Assistance Program.

Table 1: Project Component Details

	ID	Project Component	Location	FY 2012 TIGER Grant Request	Description
DC	1	Fort Totten / 1st Place-Galloway Road Access Improvements	District of Columbia	$3,336,840	Rebuild the two streets serving the Fort Totten Metrorail Station, improving accessibility and safety for pedestrians at this metro transfer station.
MARYLAND	2	Forest Glen Metrorail Access Project	Montgomery County	$10,444,000	Construct a grade-separated pedestrian/ bicyclist crossing at Georgia Avenue (MD 97), safely linking Forest Glen Metrorail Station to Holy Cross Hospital; establish ten bikeshare stations.
	3	Pedestrian Safety Measures for the New Carrollton Metrorail Station	Prince George's County	$402,797	Construct sidewalk and crossing improvements, including signal timing changes around the New Carrollton Metro Station, making it more suitable for transit oriented development.
	4	West Hyattsville Metrorail Station Access Improvements	Prince George's County	$542,750	Improve pedestrian facilities that connect into the West Hyattsville Station and add a full-service bicycle station.
VIRGINIA	5	Army Navy Drive Multimodal Access Improvements	Arlington County	$4,215,983	Reconstruct Army Navy Drive, providing enhanced pedestrian facilities and an innovative cycle track for bicycles near three Metrorail stations. Add ten bikeshare stations.
	6	Rosslyn Circle Crossing Multimodal Access Improvements	Arlington County	$750,000	Improve pedestrian and bicycle facilities in proximity to the Rosslyn Metrorail Station, including enhancing bicycle access on two of the most heavily used regional trails.
	7	Bicycle Lockers at VRE Stations	Virginia Railway Express (VRE) Stations	$226,880	The project will add bicycle lockers to eight VRE stations in Fairfax and Prince William Counties, and the Cities of Manassas and Manassas Park.

Total TIGER Request	**$19,919,250**
Local Match (38 percent)	**$12,234,953**
Total Project Cost	**$32,154,203**

Project Summary

TPB's proposal has been developed to support the regional goal of creating sustainable, multimodal linkages between existing and planned employment opportunities and housing. Each project component in the TPB's application package complements this goal by providing pedestrian, bicycle, and other non-motorized connections at rail station areas, tapping into an extensive regional asset. The TPB has strong relationships with each project partner and will streamline management of the components to ensure prompt implementation of the improvements.

Each project component in the TPB's application is the result of a comprehensive planning process initiated at the local, regional, or state level. The improvements identified around the ***Fort Totten*** Metrorail Station were part of a local planning effort initiated by the District Department of Transportation (DDOT). The ***Forest Glen*** access improvements were developed through local planning and community involvement. The improvements identified for funding around the ***New Carrollton*** and ***Rosslyn*** Metrorail stations are the results of TLC studies. There is also significant local planning that is ongoing around both Metrorail stations. The enhancements to the ***West Hyattsville*** Metrorail station are identified as a case study in WMATA's access study. The improvements included in the ***Army Navy Drive*** component are the result of a Federal Highway Administration study of the 14th Street Bridge and surrounding infrastructure, as well as local and state planning. The ***VRE Station*** project is the result of community input to VRE station planning.

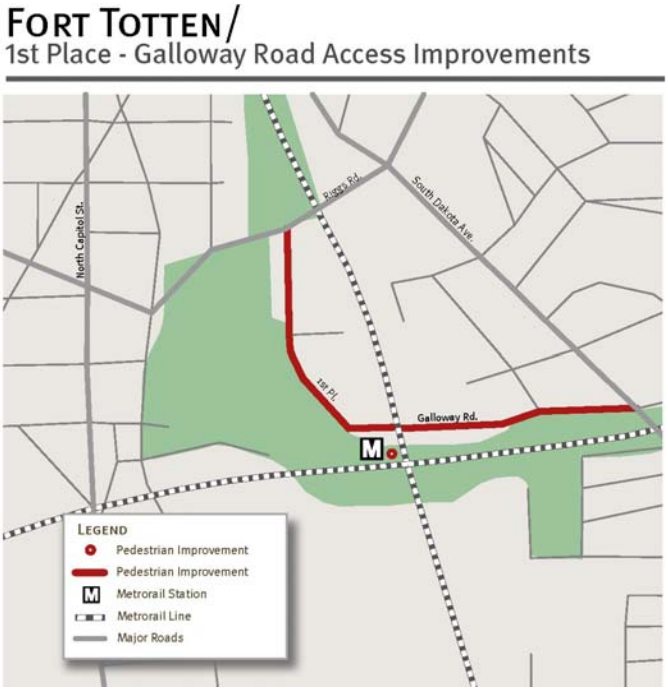
The products developed through the TPB's Transportation/Land-Use Connections (TLC) Program served as the inspiration for this regional TIGER grant application concept. Many of the planning efforts completed under the TLC Program recommend capital improvements, such as pedestrian facilities or multimodal concepts for intersections or streets that further the ability of all modes to function well in a dense, multimodal area and help activity centers work well as vibrant, mixed-use places. Jurisdictions often struggle to identify funding to implement multimodal TLC projects even though these types of projects greatly enhance active transportation and sustainable communities.

The project will, in the improved areas, facilitate a transportation system that recognizes all modes and facilitates a balanced approach to economic development. The components in this application will allow businesses to better integrate with surrounding communities and will provide employees with viable housing and transportation options, including the possibility to take transit and then travel "the last mile" on foot, by bike or by local circulator. The components all focus on the common goal of providing complementary, non-motorized transportation infrastructure that will encourage the increased development of housing and job centers in locations well-served by transit.

This project will serve as a regional and national example for how to infuse rail station areas with the capacity to not only entice employment growth but also serve existing jobs and housing with better access and greater mode choice. The components demonstrate key safety, livability, and sustainability principles at very small, moderate, and large scales and provide a set of templates for other areas struggling with the challenges of balancing regional housing and employment and maximizing capacity of their existing transportation infrastructure.

District of Columbia

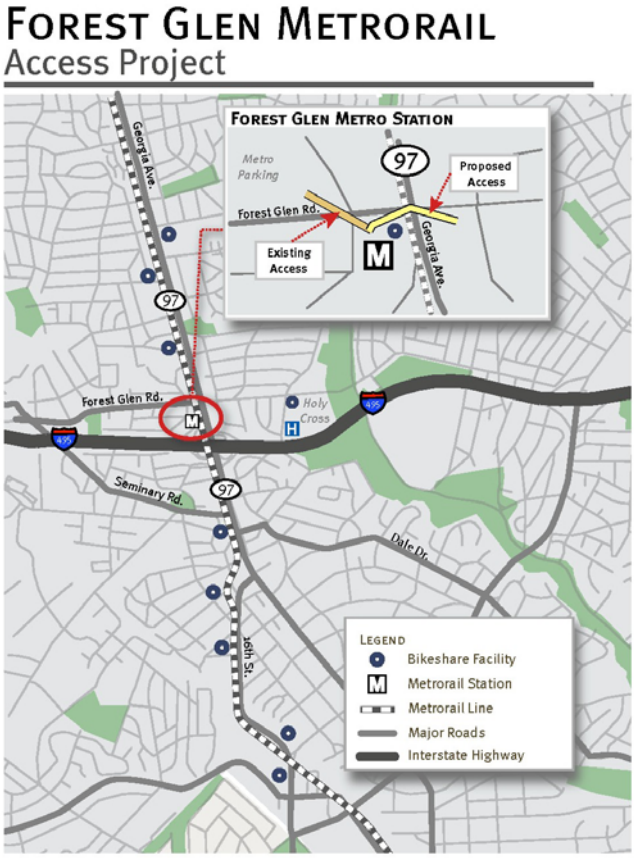
1. Fort Totten / 1st Place-Galloway Road Access Improvements



The component will redesign 1st Place NE and Galloway Street NE in the District of Columbia to improve circulation and make the infrastructure around the Fort Totten Metrorail station safe and accessible for all modes. The District Department of Transportation (DDOT) initiated this project to improve access and circulation for the confluence of pedestrians, bicyclists, buses, and vehicles at the Fort Totten Metrorail station. The final study report[3] recommends pedestrian improvements that include building missing sidewalk linkages, expanding some sidewalks to accommodate bicyclists, relocating crosswalks to safe locations, adding secure bike parking, and improving lighting. There are several significant changes coming to the area, including a planned intersection reconfiguration at Riggs Road NE and South Dakota Avenue NE, as well as several major real estate developments in various stages of planning and construction in the immediate vicinity that will significantly increase residential and commercial densities. These and other developments underscore the need to provide safe and efficient multimodal traffic circulation in the rail station area.

State of Maryland

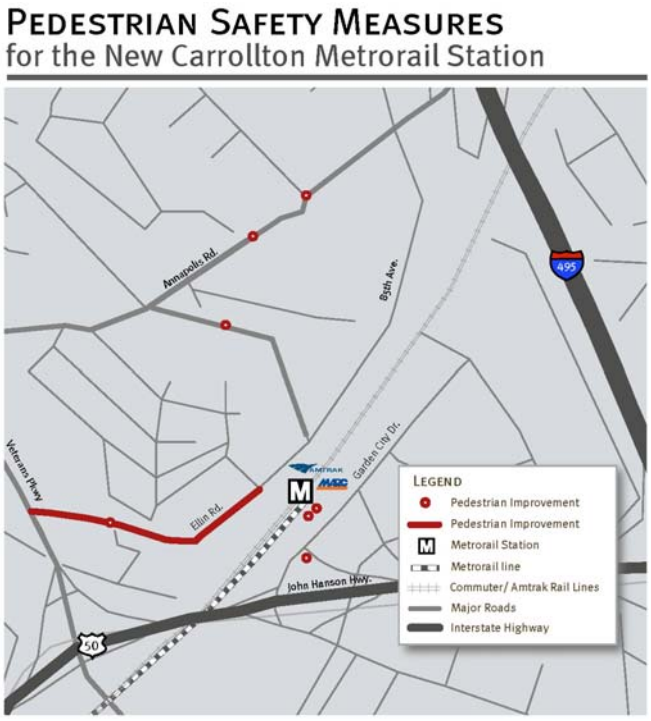
2. Forest Glen Metrorail Access Project



The project will construct a grade-separated pedestrian / cyclist crossing at the intersection of Georgia Avenue (MD 97) and Forest Glen Road in Montgomery County, Maryland. The crossing will create a safer linkage from the Forest Glen Metrorail station to Holy Cross Hospital, particularly for users of mobility devices. In order to increase access for users of all abilities, an elevator will connect the street level directly to the Metrorail station mezzanine. Finally, the project will establish Capital Bikeshare stations at the Forest Glen Metrorail station, Holy Cross Hospital and the surrounding area. The intersection of Georgia Avenue and Forest Glen Road is one of the most heavily used intersections located adjacent to a Metrorail station in the National Capital Region, with over 63,000 vehicles entering the intersection between the hours of 6:00am and 7:00pm. The intersection presents challenges for pedestrians and cyclists to safely cross Georgia Avenue. The community has been lobbying several years for a grade-separated crossing that would eliminate conflicts with automobiles and significantly improve access to the Metrorail station[4]. The effort is coordinated with local development and the Maryland State Highway Administration's MD 97/ Montgomery Hills study, and would support further reverse commuting via Metrorail.

3. Pedestrian Safety Measures for the New Carrollton Metrorail Station

The sidewalk and crossing improvements that are part of this component will greatly enhance pedestrian and bicycle access in the New Carrollton Metrorail station area in Prince George's County, Maryland. The improvements will provide adequate infrastructure to support transit-oriented development (TOD). New Carrollton is the top TOD priority for Prince George's County. Served by both the Maryland Area Regional Commuter (MARC) train and Amtrak in addition to Metrorail and buses, the New Carrollton station area is currently the County's only full-service intermodal transportation center. The improvements will provide the region with an excellent opportunity to transform the area into a premier high-intensity and livable urban center and regional transit-oriented destination, featuring a walkable and transit friendly environment. Additional funds are necessary to complete, expand, and enhance the somewhat fragmented pedestrian and bicycle facilities completed as part of separate development applications. The multimodal improvements implemented through this effort will provide for vital, accessible connections to a vibrant transit-oriented development that engages all sectors. The component includes a subset of pedestrian safety measures recommended in a 2010 TLC Study[5].



4. West Hyattsville Metrorail Station Access Improvements

Bicycle and pedestrian improvements will remove a significant barrier to accessibility around the West Hyattsville Metrorail station in Prince George's County, Maryland. The bicycle and pedestrian components were developed from the WMATA "Metrorail Bicycle & Pedestrian Access Improvements Study."[7] Sidewalks will be constructed along Jamestown Road to improve access to the station, providing direct access to the station for several apartment complexes and residential communities. The component will help provide connectivity surrounding the West Hyattsville Metrorail Station, increasing mobility and transportation options for underserved residents living around the station. The median income around the West Hyattsville station is 40 percent of the area median income. The enhancements in this component would increase the ability for residents living in proximity to the station to access employment opportunities around the region. Another improvement included in this component is to create a full service bicycle station at the Metrorail station.

Commonwealth of Virginia

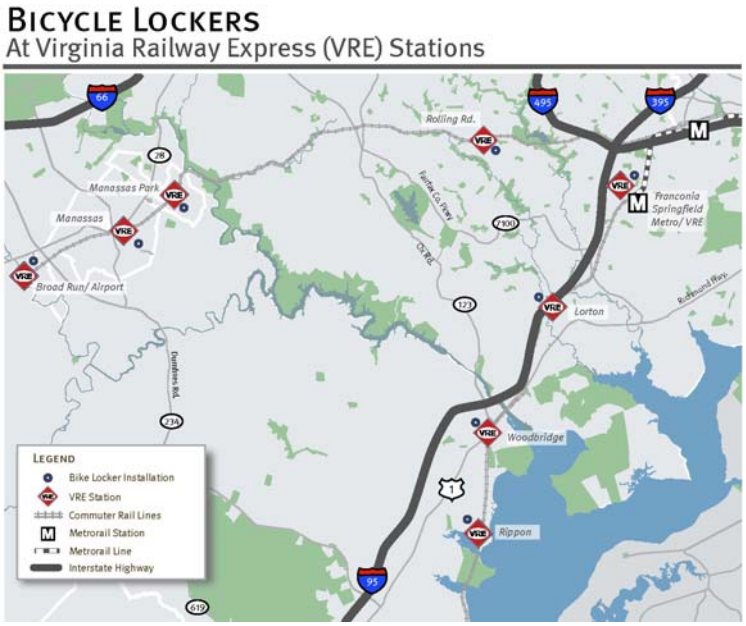
5. Army Navy Drive Multimodal Access Improvements

In this component, 3,300 feet of Army Navy Drive in Arlington County, Virginia, is reconfigured to provide a wider, safer sidewalk, a physically-separated two-way cycle track, and safer street cross section that will support a future streetcar. Collectively, the capital improvements will enhance multimodal access to three major activity centers. The component is located within one-half mile of three Metrorail stations: Pentagon, Pentagon City, and Crystal City; and within one-half mile of the Crystal City VRE station. The component comes from Arlington's Master Transportation Plan process, and also fully supports and connects to improvements underway as part of the Federal Highway Administration's *14th Street Bridge Corridor Environmental Impact Statement*, which aims to improve conditions for pedestrian and bicycle access to river crossings as part of a long list of mitigation efforts to reduce the environmental effects of transportation in the region. Ten new Capital Bikeshare stations will be added along Columbia Pike, strengthening bicycle connections to the west end of the project. One part of this project will be to construct the region's first separated two-way cycle track, an innovative facility that is common in other parts of the world, but the first purpose-built cycle track both in Metropolitan Washington and the Commonwealth of Virginia.

6. Rosslyn Circle Crossing Multimodal Access Improvements

The project component makes significant safety and access improvements to the intersection of N. Lynn Street and Lee Highway (US 29) in Arlington County, where the Custis Trail and Mount Vernon Trail meet the Rosslyn Metrorail Station and the Francis Scott Key Bridge into Washington, DC. Due to heavy traffic by bicycles, pedestrians, and automobiles, it is one of the most dangerous intersections in the region for bicyclists. The original Esplanade Study was prepared in 1999 to determine ways to improve pedestrian links and to create visual connections with the Potomac River. In 2007, the Lynn Street Esplanade Preliminary Design Study was prepared to determine how to implement the recommendations. This study was coordinated with Rosslyn Renaissance, the Arlington Bicycle Advisory Committee, the Virginia Department of Transportation (VDOT), NPS, FHWA, JBG Companies and County Agencies, and leverages local, private, state, and federal resources. Additionally, the Rosslyn Circle Pedestrian Safety Study was prepared to determine ways to improve pedestrian and bicycle safety at the Rosslyn Circle and along the Custis Trail, and supplemented with trail configuration and a traffic control study completed as part of a 2010 TLC project. The findings are also being incorporated into the current plans.

7. Bicycle Lockers at Virginia Railway Express (VRE) Stations



The component will add bicycle lockers to eight VRE commuter rail stations in Fairfax and Prince William Counties, and the Cities of Manassas and Manassas Park. This will improve multimodal access opportunities to VRE by providing additional bicycle facilities at eight VRE stations, introducing 35 bicycle lockers with the capacity for 70 bicycles to the system. The Franconia-Springfield station is co-located with Metrorail and several stations are served by local bus routes. VRE works closely with member jurisdictions to provide station amenities (e.g., sidewalks/trails, bicycle facilities, kiss-and-ride, station parking) that give riders a variety of transportation choices for accessing VRE service. Prince William County, Manassas, and Manassas Park are outer jurisdictions of the National Capital Region and are rarely included in discussions of transit access and multimodal transportation. The prospect of improving access to commuter rail stations provides a unique opportunity to not only facilitate bicycle access to the stations, but also encourage behavioral shifts towards active transportation.

More detailed information on each project component may be found in Appendix 1.

Project Parties

This project application is the result of many months of regional collaboration and cooperation among local, state, and transit partners who have multimodal project concepts that do not naturally fall into existing funding structures. For the TPB's original FY 2011 TIGER application concept, project partners came forward with individual projects that each met the TPB's application criteria in unique and innovative ways. Together, these projects, revised for inclusion in the TPB's FY 2012 TIGER application, represent the diversity of the region in form, application, and design. All partners and potential future partners have registered their support for this regional project, which is documented in numerous letters of support. Please see Appendix 2, Letters of Support from Project Owners, and Appendix 3, Letters of Support from Other Partners. On February 15, 2012, the TPB approved the TPB's FY 2012 TIGER project application concept described in the "Project Overview" section of this application and the slate of project components included in this application by adopting Resolution R10-2012. All project parties are identified with each component in Table 2, Project Cost Information.

Lead Applicant

As the MPO for the Washington Metropolitan Area, the TPB is an eligible applicant for this grant. The Metropolitan Washington Council of Governments (COG), which is a non-profit organization selected by the TPB to be its administrative agent, will be the lead applicant for this grant, and approved support and administration for this grant on March 14, 2012 through Resolution R11-2012. Since 2007, COG has administered the Federal Transit Administration's (FTA) Job Access and Reverse Commute (JARC) and New Freedom transit programs for the TPB when it became the FTA-designated recipient for grants

under these programs. COG is also currently administering the region's TIGER I grant award, Priority Bus in the National Capital Region. COG will administer the grant program proposed in this application in a similar manner on behalf of TPB.

Project Parties

As lead applicant, COG is joined by the project sponsors, which are composed of local governments and transit agencies located and operating in the Washington metropolitan region.

The District of Columbia
District of Columbia Department of Transportation

The State of Maryland
Montgomery County
Prince George's County

The Commonwealth of Virginia
Arlington County
Virginia Railway Express

Project owners will be the recipients of grant funds and will be responsible for administering these funds and implementing the projects in accordance with the grant provisions. Project owners have registered their support for the TPB application. They understand the obligation this role confers upon them, and will cooperate at all levels in carrying out the activities to be supported by the FY 2012 TIGER Discretionary Grant. Table 2 identifies project owners for each of the project components.

Grant Administration

Following award, COG will be responsible for managing the grant on behalf of TPB to ensure that the entire project is delivered as scheduled. To accomplish this, COG will execute a grant agreement with the Cognizant USDOT Modal Administration. To manage and integrate the project components into an effective system and deliver the entire project as timely and effectively as possible, COG will issue a request for qualifications (RFQ) for a management team promptly upon notice that the project grant will be awarded. Within 90 days, COG will hire a team of qualified consultants with appropriate staff and skills to coordinate, manage, and administer the implementation and integration of the project components, as well as to prepare all required documentation on the project grant implementation, project benefits, and financial reports. General project management expenses are included in the total project cost. It is anticipated that each public agency denoted as project owners above will execute specific grant agreements as first-tier sub-awardees in accordance with the regulations of the Cognizant USDOT Modal Administration.

Grant Funds and Sources/Uses of Project Funds

This application includes a series of multimodal transportation improvements that would collectively enhance access to the regional rail system. Each component provides unique pedestrian, bicycle, and/or streetscape enhancements to a rail station area and may stand alone from the rest of the application; however, the full benefits provided by the project package work together to improve the regional infrastructure and connect multiple modes of transportation.

Table 2 provides a listing of all components that collectively form the proposed project. The table includes the financial information including the amount of grant funding requested, total project costs, percentage of project costs that would be paid for with FY 2012 TIGER Discretionary Grant funds for each component, match sources, and percentage shares for each component of the total project. The total FY 2012 TIGER request for the project is $19,919,250, which is 62 percent of the total project cost of $32,154,203. This project is located in two states (Virginia and Maryland) and the District of Columbia. The proportions of the project taking place within each state-level jurisdiction are 35 percent, 52 percent, and 13 percent respectively. The project is comprised of components in nine local jurisdictions, each of which supported the application with at least a 20 percent funding match. Match sources are mostly from local capital budgets, but also come from local transportation demand management funds. Match commitments have been documented in support letters from project sponsors, which are provided in Appendix 2.

Table 2: Project Cost Information

ID	Project Component	Location	Project Parties	Total Project Cost	FY 2012 TIGER Grant Request	Percent TIGER	Match Source	Percent of Total Project
1	Fort Totten / 1st Place-Galloway Road Access Improvements	District of Columbia	District Department of Transportation (DDOT)	$4,171,050	$3,336,840	80%	Local funding	17%
District of Columbia Component Subtotal				**$4,171,050**	**$3,336,840**	**80%**		**17%**
2	Forest Glen Metrorail Access Project	Montgomery County	Montgomery County	$15,555,000	$10,444,000	67%	Local and state funding	52%
3	Pedestrian Safety Measures for the New Carrollton Metrorail Station	Prince George's County	Prince George's County	$575,424	$402,797	70%	Local funding	2%
4	West Hyattsville Metrorail Station Access Improvements	Prince George's County	Prince George's County	$710,250	$542,750	76%	Local funding	3%
Maryland Component Subtotal				**$16,840,674**	**$11,389,547**	**68%**		**57%**
5	Army Navy Drive Multimodal Access Improvements	Arlington County	Arlington County	$6,838,879	$4,215,913	62%	Local bond funding	21%
6	Rosslyn Circle Crossing Multimodal Access Improvements	Arlington County	Arlington County	$4,020,000	$750,000	19%	Developer contributions	4%
7	Bicycle Lockers at VRE Stations	Fairfax County, Manassas, Manassas Park, Prince William County	Virginia Railway Express (VRE), Fairfax County, Manassas, Manassas Park, Prince William County	$283,600	$226,880	80%	Local funding	1%
Virginia Component Subtotal				**$11,142,479**	**$5,192,793**	**47%**		**26%**
PROJECT TOTAL				**$32,154,203**	**$19,919,250**	**62%**		

Selection Criteria

This application is a result of regional cooperation and reflects region-wide support. All 21 jurisdictions in the National Capital Region support the TPB's application concept of enhancing non-motorized access to the region's rail system through investments in our existing infrastructure. These jurisdictions have a history of working together towards a prosperous and livable future. Through the TPB's planning process, regional leaders have developed policy principles, land use and transportation scenarios, and most recently voluntary regional agreements to achieve regional goals and targets. Currently, the TPB is embarking on a regional priority planning exercise that will yield a list of regional priorities that would have a high impact on the region's transportation infrastructure.

The partnerships and components in the TPB's application package demonstrate that, together, focused enhancements to the region's interconnected, multimodal transportation system provide better access to the region's existing transportation infrastructure. As shown below, the TPB's small strategic investments will not only provide a step toward broader long-term benefits.

Primary Selection Criteria: Long-Term Outcomes

The region's population in 2010 was 5.3 million and it is forecast to increase by 30 percent to 6.9 million by 2040. The region contained 3.3 million jobs in 2010 and it is forecast to add another 1 million jobs by 2040, a 39 percent increase.

The current transportation system is severely overburdened and can barely accommodate current demand, let alone a 30 percent population increase over the next 30 years. According to the Texas Transportation Institute's 2011 Urban Mobility Report[8], the National Capital Region ranks first in the country in annual delay per peak auto commuter. The report also reveals that 84 percent of peak VMT are in congested conditions.

Significant capacity expansion to the region's transportation infrastructure is unrealistic under the current financial forecast. Therefore, it is imperative that strategic, cost-effective solutions be implemented to ease the burden on the system. The seven components included in this project each enhance access to the region's rail infrastructure through a variety of small-scale, value-added measures. Each improvement will provide users of the region's rail system with better overall access to jobs and housing in the region.

State of Good Repair

One goal of the TPB's application package is to rehabilitate or reconstruct bicycle and pedestrian infrastructure that has deteriorated and negatively impacts non-auto accessibility to each of the rail station areas. This project will increase the efficiency of the transportation network and increase mobility of residents and workers who use these stations.

Reduce operating and maintenance costs

The repair and replacement of sidewalk infrastructure at the ***Fort Totten*** Metrorail station will reduce current upkeep costs for dilapidated and deficient infrastructure. Adding pedestrian infrastructure around the ***West Hyattsville*** Metrorail station will provide better access for users of the rail system who currently drive to the station from the surrounding neighborhoods. The reduced reliance on the road network will enhance the longevity of that system.

The projects will enhance the ability of residents who live within one mile of the stations to walk to the stations by creating safer, more efficient non-auto access. The grade-separated crossing at the ***Forest Glen*** Metrorail station will provide better non-motorized access to the Metrorail station for residents in the area. Of the drivers who park at the ***Forest Glen*** and ***Fort Totten*** Metrorail stations, over one-third live within a one mile radius of the station, according to a current WMATA survey on parking trends at the region's rail stations. The figure for the ***West Hyattsville*** Metrorail station is even greater; roughly one-half of those who drive and park at the station live within one mile of the station.

Enhance existing transportation infrastructure

Several projects will enhance portions of roadway by adhering to "complete streets" principles and create corridors that will improve use of the roadways for all modes *(**Army Navy Drive, Fort Totten, New Carrollton, Rosslyn, West Hyattsville**)*. These improvements will complement the existing road infrastructure with high-quality accommodations for pedestrians, bicyclists, transit users, and persons with disabilities. Through these complete streets improvements, each project component will serve to improve access to the region's rail stations, thus more effectively utilizing the extensive rail network in the National Capital Region.

The 20 Capital Bikeshare stations *(**Army Navy Drive*** and ***Forest Glen**)* proposed in this package will relieve pressure on many existing transportation systems, provide new transportation alternatives, and promote the most efficient use of the region's assets in terms of person throughput. First, new bicycle trips will replace short auto trips, reducing VMT. Second, they will replace short transit trips, relieving pressure on congested transit lines. Third, they will increase access to transit, enabling longer transit trips, many of which are likely to be shifted from private automobile.

Economic Competitiveness

The National Capital Region has many successful examples of mixed-use, transit-oriented development. As identified in the section on regional challenges, this successful development has not occurred evenly throughout the region. This application provides for multimodal enhancements that will enable station areas throughout the region to attract mixed-use development that is accessible for residents and workers. The strategic capital improvements in this application will support a balanced economy through accessible and efficient transportation infrastructure.

Improving the efficiency of the transportation system

Small, strategic improvements to the region's non-motorized transportation infrastructure can have a positive impact on the road network and potentially reduce the anticipated usage of the road system, thus improving the quality and functionality of the region's multimodal transportation system. Between 2010 and 2020, roads in the National Capital Region will be used more heavily, with VMT increasing by 22 percent. The number of new lane miles created is only expected to increase by 11 percent, which leads to an increase of 38 percent in lane miles of congestion for the morning rush hour period. Capital improvements that provide for alternatives to automobile use allow for greater user flexibility and improved performance of the multimodal transportation system.

Currently, 30 percent of transit users drive and park at Metrorail stations in the morning peak, many alone, some with others. Given the cost of structured parking and the desire for WMATA to use land at its stations for joint development, there is a need to think strategically about how customers will access the system in the future. As mentioned above, a great many automobile trip to the ***Forest Glen***, ***Fort Totten***, and ***West Hyattsville*** stations could be converted to walk or bike trips. The reduction of short

auto trips to Metrorail stations will reduce congestion around the stations. Building on the findings from the *Metrorail Bicycle and Pedestrian Access Improvements Study*, WMATA's *Bicycle and Pedestrian Capital Improvement Project Summary*[9], completed in December 2011, identified more than 3,000 unmet bicycle and pedestrian access needs across the 86 Metrorail stations. It created a comprehensive list of projects to improve the safety, capacity, and convenience of bike and pedestrian facilities at or adjacent to Metrorail stations, much like those projects included in this application to improve access to the ***West Hyattsville*** station, a site included in the former study.

Address the east/west divide and jobs/housing imbalance

Several of the components will provide bicycle and pedestrian capital improvements around rail station areas that are currently underutilized for both jobs and housing and located in the eastern portion of the region. This east/west divide has caused several trends to develop. First, there is an imbalance of employment distribution related to a relatively balanced housing distribution across the region. This creates a peak period travel pattern where there is a general trend to commute west during the morning peak and east during the afternoon period. Second, the eastern regional jurisdictions suffer economically because of this trend, causing friction at the regional and state levels due to the competition to attract high-quality employers. Third, housing costs have increased disproportionately in the western portion of the region; people want to live where they work to reduce commute time, but those locations are simply unaffordable for many workers in the region.

The goal of the TIGER application is to provide strategically placed infrastructure in locations ripe for economic development and traditionally underserved. These improvements will serve to provide infrastructure and connections around rail station areas that may serve to attract developers and businesses to underutilized rail stations. By balancing economic activity more evenly across the region, demands on the road and transit network related to the east/west divide should be alleviated.

(U.S. Census: 1/2 mile radius)[10]	Fort Totten	New Carrollton	West Hyattsville
Population	9,429	1,374	7,233
Median Income as a Percent of AMI	49 %	48 %	40 %
Percent Minority	93 %	91 %	80 %

West Hyattsville is located in Prince George's County, in the eastern portion of the region. The improvements around the ***West Hyattsville*** Metrorail station will provide access to the non-motorized transportation network for traditionally underserved populations, while providing better infrastructure for potential employment. The improvements proposed surrounding the ***New Carrollton*** Metrorail station will provide access for residents to the Metrorail and MARC commuter rail, as well as access for employees using these modes to the burgeoning employment center around the New Carrollton station. The ***Fort Totten*** Metrorail station is situated in an area of the District that is underserved by high-quality multimodal transit options. The improvements will provide better access to the station for the surrounding community, as well as better access from the station to jobs in the area, which would provide for a reverse commute or the opportunity to "sell the same seat twice."

Increase multimodal access to jobs

In addition to the east/west divide, the National Capital Region also exhibits traditional commuting congestion of workers traveling from outer areas to reach jobs in the central core. This is due in large part to the presence and location of the federal government and complementary businesses. This dynamic is an asset to the region in that it provides for stable employment; however, it also creates

gridlock during the AM and PM peak periods. By improving rail station access at strategic stations, workers who live near these stations may choose alternative modes to access the station if they typically use rail to commute, or may choose to switch to rail commuting altogether, alleviating some congestion on the road network. Conversely, workers who are employed near these stations may choose to commute by rail if they can rely on safe, efficient walkways from transit to work.

(MWCOG Round 8.0 Cooperative Forecast (2010): 1/2 mile radius from Metrorail)	**Army Navy Drive** (Pentagon City)	**Rosslyn**
Employment	16,704	37,434
Households	8,975	7,718

The area around the ***Rosslyn*** Metrorail station is experiencing growth and development, solidifying its place as an attractive destination for employment. The improvements proposed for this area will improve pedestrian and bicycle connections within one-half mile of the Metrorail station. While Arlington County has a national reputation for leveraging the rail system successfully, the Pentagon City area will soon lose 20,000 jobs due to the Base Realignment and Closure (BRAC) actions taken by the Department of Defense. This area is well-served by transit on two of the rail system's less congested Metrorail lines (Blue and Yellow). The reconfiguration of ***Army Navy Drive*** into a complete street supports other efforts the county is undertaking to revitalize this area and attract new employers to a transit-rich, multimodal environment, creating a more efficient local transportation network to serve residents and workers.

Congestion savings across all modes

Each of these improvements will facilitate the use of multimodal transportation options and enhance the non-motorized transportation network. These projects will lead to reduced motorized vehicle congestion for the region, saving all users time and money.

The grade-separated pedestrian and cyclist crossing of Georgia Avenue will create an additional access point to the ***Forest Glen*** Metrorail station, improving access to Holy Cross Hospital and saving pedestrians time by creating a streamlined pathway to points east of Georgia Avenue (MD 97). Montgomery County has studied possible changes to the signal timing to allow more time for pedestrians to cross these roads, however, this would result in greater delays in automobile traffic on the already highly congested roadway. This improvement will also facilitate automobile throughput on Georgia Avenue, which has one of the highest traffic volumes in the State of Maryland for an arterial roadway. The intersection of Forest Glen Road and Georgia Avenue was designated as Montgomery County's most congested intersection during peak hours by the Maryland National Capital Park and Planning Commission[11].

The ***Rosslyn*** project component makes significant access improvements to the intersection of N. Lynn Street and Lee Highway (US 29), where the Custis Trail and Mount Vernon Trail meet Metrorail's Rosslyn Station and the Key Bridge into Washington, DC. Due to heavy traffic by bicycles, pedestrians, and automobiles, it is currently one of the most congested intersections in the region for bicyclists. The project includes bike trail and intersection improvements to reduce congestion for both motorists and bicyclist. The cycle track planned for ***Army Navy Drive*** will provide high-quality bicycle access to the Pentagon, Pentagon City, and Crystal City areas (and their respective Metrorail stations). This improvement, coupled with the bikeshare stations along adjacent Columbia Pike, will provide time savings for bicyclists on an efficient facility.

Retailers benefit from increased pedestrian and bicycle traffic

Walking and bicycling can increase exposure to storefronts and retail businesses in main street shopping destinations. A study in Toronto, Ontario found that people who biked and walked to a main commercial area of the city spent more money in the area per month than people who drove there to shop[12].

Tourists from around the globe visit the National Capital Region each year. Increasing accessibility to multiple modes of transportation not only provides more options for tourists to experience the region without impact to the road network, but also benefits the local economy by creating opportunities for tourists to make their way beyond the immediate station environment and explore and spend money in local businesses. Adding pedestrian facilities on ***Army Navy Drive*** around the Pentagon City Metrorail station, and bikeshare facilities in conjunction with ***Army Navy Drive*** and around the ***Forest Glen*** station, will provide users with more opportunity to see and take advantage of retail locations.

Capital Bikeshare: Capital Bikeshare is the multijurisdictional bicycle sharing network in the National Capital Region, with stations located in Arlington County and the District of Columbia. As of October 2011, the Capital Bikeshare system consists of 110 stations and roughly 1,100 bicycles. Capital Bikeshare averages about 4,000 trips per day.

Livability

One of the goals of many jurisdictions in the National Capital Region is to create neighborhoods where residents can live, work, and play. The goal of the TPB's application package is to foster complete communities across the region, linked by a multimodal transportation network.

Enhance the regional transportation network

The 20 bikeshare stations *(**Army Navy Drive*** and ***Forest Glen**)* proposed in this package will add capacity to the Capital Bikeshare network in the Washington Region. The bikeshare system welcomed its one millionth trip on its first anniversary[13]. Users of the bike-sharing system will operate their bicycles on existing roadways and paths, utilizing the existing infrastructure and network of bicycle facilities and streets, as well as the new cycle track proposed on Army Navy Drive. The ability of commuters to securely stow bicycles in bike lockers at ***VRE Stations*** at the beginning of their journey to work will potentially attract these commuters to use the bikeshare system upon reaching the core of the region.

Create complete communities

Jurisdictions in the region often struggle with the goal of creating complete communities when faced with the task of converting auto-oriented, single-use environments into multimodal, mixed-use communities. Small, strategically located capital improvements on public property can help to encourage developers to build and employers to locate in these communities. By focusing these improvements around underutilized rail stations, the jurisdictions can truly create a multimodal environment where residents and workers can live, work and play without having to rely on an automobile. Several of the projects provide multimodal infrastructure in locations where residents are typically underserved or have few high-quality options for travel. Some locations in the eastern part of the region struggle with attracting employment opportunities, leaving low-income residents with long commutes to jobs in the western portion of the region. Creating options for residents and workers allows them the flexibility to determine the most cost-effective and time-efficient mode of transportation.

The ***New Carrollton*** Metrorail station is an intermodal hub located in Prince George's County in the eastern portion of the region. New Carrollton is served by Amtrak, MARC commuter rail, Metrorail, and bus services; however, pedestrian and bicycle access to the station is both difficult and dangerous. The County has named the station area as its number one transit-oriented development priority. The

improvements funded through this grant will help provide access to the station for existing residential and employment sites, as well as complement the development already underway around the station. The areas around both West Hyattsville and Fort Totten are also poised for development and the enhancements outlined for these components will support future housing and economic development in these locations. The bike lockers installed at ***VRE stations*** will serve to provide for high-quality facilities for bicycles in a traditionally auto-oriented environment.

Improve transportation options for millions of residents in need

The region suffers from a current lack of housing and transportation affordability. According to the Center for Neighborhood Technology's online Housing and Transportation Affordability Index, virtually the entire region is marked by housing and transportation costs that are more than 45 percent of area median income[15]. This need for affordable options is also highlighted by the dependency of the region's residents upon non-automobile travel modes. Around 12 percent of the residents of the Baltimore-Washington region are without an automobile, and in the District this number jumps to 37 percent. Creating better active transportation connections around rail stations in the National Capital Region will provide more options and connectivity for persons not owning an automobile.

Environmental Sustainability

Each improvement in this package enhances non-motorized access to rail stations in the National Capital Region. These projects will provide current and future residents with infrastructure that allows them to move about the region without relying on an automobile.

Reduce fuel use and air pollution

The net impact of these improvements will reduce dependency on single-occupant automobiles by enhancing non-auto access to transit, making jobs and housing more accessible through non-motorized modes. This will give motorists the option to use an alternative mode to make a commute previously completed in an automobile. By taking motorists off the roads, congestion will be reduced for those who must rely on an automobile for moving about the region, creating a more efficient transportation system. The reduction of single-occupant vehicles will also have positive effects on other environmental resources. For example, less VMT means less polluted runoff in the region's waterways and groundwater. As a result of the grade-separated pedestrian crossing at the ***Forest Glen*** Metrorail station, motorists on Georgia Avenue will experience less congestion at the Forest Glen Road intersection. The cars will not stop as long or frequently, reducing emissions resulting from idling.

Improve service without building resource-intensive new infrastructure

A major environmental benefit of the TPB's project package is that some elements seek to improve service and increase transit capacity without building extensive infrastructure. This eliminates the need to take more land for travel lanes or build and/or operate new transit lines to extend the current reach of transit. By investing in small-scale, strategic multimodal improvements, the region can capitalize on the existing transportation network by providing better access to the rail system. Each project contributes to this goal: the ***Army Navy Drive*** and ***Forest Glen*** projects add bikeshare facilities to a regional network; the ***West Hyattsville*** and ***VRE Stations*** projects add bicycle amenities to rail stations; the ***Fort Totten***, ***New Carrollton***, and ***Rosslyn*** projects enhance pedestrian connections to rail stations.

Safety

The improvements proposed in the TPB's application package enhance safety for all modes in the National Capital Region. In some cases this means removing barriers for certain modes to achieve

access, such as creating sidewalks where none exist and providing bicycle infrastructure to highlight the presence of bicycles in the roadway. In other cases, this means keeping modes separated to reduce conflicts in highly congested areas and save lives, including separate facilities for bicycles and grade-separated crossings to enhance non-motorized connections.

Accommodate all modes safely

The goal of complete streets is to provide for transportation infrastructure that accommodates all modes safely and efficiently. Several of the projects highlight the commitment to create transportation facilities that accommodate all modes, with equivalent attention to the needs of each mode. Access to the ***West Hyattsville***, ***New Carrollton***, and ***Fort Totten*** Metrorail stations is significantly impeded by the lack of any sidewalk infrastructure along several corridors. By connecting the pedestrian infrastructure, access to transit will be enhanced for those currently using informal paths and may also encourage use of the transit system by persons deterred by the current lack of safe passage.

	Walk Score[14]
Arlington (Pentagon City)	78
Forest Glen	49
Fort Totten	43
New Carrollton	57
Rosslyn	78
West Hyattsville	51

The reconfiguration of ***Army Navy Drive*** will provide for an environment that accounts for the safety of all modes with complete streets enhancements to the roadway, providing safer access for pedestrians and bicyclists. According to Arlington County Traffic Counts from 2005, over 22,000 pedestrians traverse the intersection at Army Navy Drive at Hayes Street each weekday and almost 19,000 pedestrians use the same intersection on each weekend day. Army Navy Drive will also include a dedicated cycle track to expedite the throughput of bicyclists in an area used extensively by all modes. This will provide bicyclists with a safe, efficient, parallel route to motorists.

The intersection of N. Lynn Street and Lee Highway (US 29) near the ***Rosslyn*** Metrorail Station is one of the most dangerous intersections in the region for bicyclists due to heavy traffic from bicycles, pedestrians, and automobiles. The improvements proposed in this component provide for safer bicycle throughput where the Custis Trail and Mount Vernon Trail meet the Key Bridge into Washington, DC, as well as access to the Metrorail station.

Reduce automobile and non-motorized modal conflict

The ***Forest Glen*** grade-separated crossing will reduce the significant number, rate and consequences of the crashes, injuries and fatalities of pedestrians and drivers at the intersection of heavily traveled Georgia Avenue and Forest Glen Road. There is currently no significant pedestrian refuge in the middle of the road where people can wait for the next signal phase. According to the benefit-cost analysis (BCA), the grade-separated improvement will prevent at least one crash-related death and sixteen vehicle-pedestrian crashes, making access to the station safer for patrons and employees of Holy Cross Hospital and the community. Additionally, the Forest Glen Metrorail Station will be more accessible to users of mobility devices, providing a safe passage to the Holy Cross Hospital for users who might otherwise seek another mode of transportation. The cycle track proposed as part of the ***Army Navy Drive*** component will provide a safe options for bicyclists in this congested area, reducing modal conflict. By installing trail signalization and intersection improvements along Lee Highway (US 29) in Arlington County, bicycle and automobile conflicts will be reduced around the ***Rosslyn*** Metrorail Station.

Primary Selection Criteria: Job Creation & Near-Term Economic Activity

Investment of grant funds in the project and its components will result in economic benefits to the region and nation, including both jobs and increases in economic activity. Economic activity itself will generate induced jobs, which are not jobs that directly result from the infused spending; rather, they result from the increases in economic activity that occurs from these overall increases.

As determined by the Council of Economic Advisors, a factor of one new job is created per $76,923 of government spending and was used to estimate the number of new jobs that will be created by this project. Of this, 64 percent of the new jobs were direct and indirect jobs, while 36 percent were induced jobs. The total number of new jobs estimated to occur as a result of implementation of the entire project is 411 (Appendix 4). Of these, 263 are direct/indirect jobs, and 148 are induced jobs. These jobs result exclusively from the capital investment in the proposed projects. In addition to these jobs, some components will yield long-term jobs required to either operate and maintain the services and facilities.

Secondary Selection Criteria: Innovation

The projects included in the application package will introduce several innovative transportation techniques to the National Capital Region. Innovations include constructing the region's first separated two-way cycle track and providing extensive bicycle treatments to traditionally auto-oriented locations, building on the success of one of the nation's leading bikeshare systems.

Dedicated, two-way cycle track

Part of the TPB's project package includes building the region's first separated two-way cycle track along ***Army Navy Drive*** in Arlington County. This type of facility is common in other parts of the world, especially in northern Europe, and this would be the first purpose-built cycle track in the Metropolitan Washington, DC area, and the first in the Commonwealth of Virginia. By narrowing the wide existing street cross section of Army Navy Drive, space will be created for greatly improved conditions for pedestrians along an improved sidewalk, and a new alignment will be created for a dedicated bicycle facility. This will be done without negatively affecting motor vehicle operations, and while assuring a good fit for the anticipated fixed-rail streetcar line in the corridor. The cycle track facility proposed for Army Navy Drive is difficult to implement under existing modal funding in part because it is costly to build in prime urban settings, and in part because there are few precedents in this country for this type of bicycle accommodation. Together with international best practices as embodied in reference standards such as the Dutch *Design Manual for Bicycle Traffic*, the County is confident it can build a safe, convenient, and exemplary urban bicycle facility.

Enhanced Bicycle Facilities

Several components in the TPB's application provide bicycle facilities in areas that are heavily auto-dependent. The addition of bike lockers to eight ***VRE Stations*** in Fairfax and Prince William counties and the cities of Manassas and Manassas Park will provide users with high-quality bicycle facilities in suburban locations around commuter rail, creating an incentive for VRE customers to commute to the rail station by bicycle. The application includes the addition of bikeshare facilities around the ***Forest Glen*** Metrorail station and as part of the ***Army Navy Drive*** project along Columbia Pike in Arlington County, providing an alternative to the automobile for this auto-dependent area. The trail improvements that are part of the ***Rosslyn*** Circle Crossing project will provide better access for bicyclists to the Metrorail station, as well as to the extensive regional trail network. These safety enhancements will incentivize use of this already popular multiple trail connection.

The bike parking facility at the ***West Hyattsville*** Metrorail station will be located adjacent to the station entrance and will have access to the local bike network, including a trail system. Given the station's proximity to the regional trail network, West Hyattsville has one of the highest rates of bike access in the entire Metrorail system. During the morning peak, 2.4 percent of the station's riders arrive on bicycle, compared to the system wide average of 0.7 percent. In a recent census of bike parking, 73 bikes were parked at the station. Over time, WMATA expects bike demand to grow at this station and plans to provide enough bicycle parking to accommodate over 200 bikes by 2020.

Secondary Selection Criteria: Partnership

The TPB has partnered with four jurisdictions and Virginia Railway Express (VRE) to develop a project package of seven components that, together, enhance the region's interconnected, multimodal transportation system and, sustainably and affordably, provide better access to rail stations in the region. The project components will be implemented in coordination with various regional and state agencies, as well as private developers. The project reaches 16 rail stations and adds 20 bikeshare stations to a regional system, creating more intermodal connections throughout the region. While small in scale compared to the overall need for these types of multimodal capital improvements, this application package provides a framework around which jurisdictions can build momentum for multimodal projects that are difficult to fund, and a template for discrete improvements that can be completed as precious resources become available. The project's access improvements will allow users to reach more of the region without using an automobile. Improvements such as bike-sharing contribute to an existing, vibrant system that is continuously being expanded and improved. The goal of each component is to improve access to a rail station, as appropriate for each station area, and each is the result of a comprehensive planning process.

TPB staff revised this project proposal over six weeks of regional coordination, cooperation, planning and consensus building. Staff consistently met with state and jurisdictional agencies to refine the proposal and discuss the merits of the individual projects. Decision-makers from throughout the region have stated that this application concept is integral to creating livable communities and ensuring the optimal use of transportation infrastructure.

Additionally, several of the components of the project were developed through public processes that engaged many stakeholders. The ***Forest Glen*** Metro Access Project was developed through a collaborative process and has the unanimous support of the surrounding communities, businesses, and Holy Cross Hospital. The ***New Carrollton*** Metrorail station improvements and the ***Rosslyn*** trail improvements were each the result of a regional planning grant received by Prince George's County and Arlington County under the TPB's TLC program, a process which included significant stakeholder input. The improvements recommended around the ***Fort Totten*** Metrorail station were developed through a comprehensive public process[16].

Benefit-Cost Analysis

A benefit-cost analysis (BCA) was conducted for the proposed project to quantify the benefits of the project versus the costs and any impacts. A summary of the BCA may be found immediately following below as part of the Benefit-Cost Analysis Project Matrix. The Matrix provides information about the individual project components and how these components impact users of the system. The Matrix notates where more detailed information about each project is located in the BCA Model.

Project Summary, Benefit-Cost Analysis: Current, 3 Percent and 7 Percent Discounts	
Current Dollars (2011)	
Rate of Return	17.38 %
Benefit/Cost Ratio	2.47
3 Percent Discount Rate	
Rate of Return	13.96 %
Benefit/Cost Ratio	2.07
7 Percent Discount Rate	
Rate of Return	9.70 %
Benefit/Cost Ratio	1.65

Table 3: Benefit-Cost Analysis Project Matrix, Part I

Current Status/ Baseline & Problem to be Addressed	Change to Baseline/ Alternatives	Type of Impacts	Population Affected by Impacts	Economic Benefit	Summary of Results (Net Benefits, 7% Discount Rate)	Tab Reference in BCA
1. Fort Totten / 1st Place-Galloway Road Access Improvements (District of Columbia)						
Inadequate pedestrian and bicycle infrastructure on two major access roads and at the entrance to the Fort Totten Metrorail Station	- Provide two pedestrian plazas near the station entrance - Provide a secure bike parking facility at the station - Provide new and enhance existing sidewalks along 1st Street, NE and Galloway Place, NE - Provide lighting and other amenities - Provide complementary pedestrian infrastructure on WMATA property	- High-quality non-motorized access to the station, increasing transportation options - Improve safety by reducing vehicle/ pedestrian conflict resulting from current conditions	- Number of accidents/ fatalities and injuries per year - Current persons walking or biking to the station - New users who would walk or bike to the station under improved conditions	- Monetized value of reduced auto use, emissions, and accident costs - Qualitative value of leveraging planned mixed-use development through enhanced non-motorized infrastructure	Net benefits are forecast to be $8.39 million dollars (from 2013 through 2036). The largest benefits are from accident reduction ($4.00 million) and travel cost savings ($1.99 million).	FT, FT Users
2. Forest Glen Metrorail Access Project (Montgomery County, Maryland)						
Hazardous crossing conditions at Georgia Avenue (MD 97) and Forest Glen Road	Construct a grade- separated crossing of Georgia Avenue (MD 97) at Forest Glen Road to provide for safer access to the Forest Glen Metrorail Station to several communities and Holy Cross Hospital	- Reduced vehicle/ pedestrian and vehicle/ bicycle conflicts in this congested location - Better ADA access to the station - Reduced wait time for vehicles	- Number of accidents/ fatalities and injuries per year - Current persons walking, biking, or using mobility devices to access the rail station - New users who would walk, bike or use mobility devices to access the station under improved conditions - Number of auto users with reduced wait time	- Monetized value of reduced emissions, accident costs, and travel times - Qualitative value of increased accessibility to Holy Cross Hospital by the mobility impaired.	Net benefits are forecast to be $13.56 million dollars (from 2013 through 2036). The largest benefits are from accident reduction ($5.29 million). Travel cost savings ($2.49 million) and congestion reduction ($2.19 million) are also significant.	FG, FG Users
Few non-auto transportation options in this portion of Montgomery County	Add ten Capital Bikeshare stations in proximity to the Forest Glen Metrorail Station to complement the established region system	Reduced auto-dependency in the area.	Number of new bicyclists using Capital Bikeshare	Monetized value of reduced emissions and user costs	In addition to the above, there is a benefit of $2.06 million from increased access and $0.56 million from environmental benefits.	FG, FG Users
3. Pedestrian Safety Measures for the New Carrollton Metrorail Station (Prince George's County, Maryland)						
Unsafe pedestrian conditions, including lack of sidewalks, non-compliant sidewalks, and lack of lighting	- Provide sidewalks and install lighting on Ellin Road - Upgrade crossing geometry and signal timing to ADA standards at Garden City Drive and Corporate Drive	- Reduced vehicle/ pedestrian conflict resulting from current conditions - High-quality non-motorized access to the station, increasing transportation options	- Number of accidents/fatalities and injuries per year - Current persons walking or biking to the station - Number of persons living and working in the area and who would potentially walk to the station	- Monetized value of reduced accidents costs - Leverage planned mixed-use development through enhanced non-motorized infrastructure	Net benefits are forecast to be $1.38 million dollars (from 2013 through 2036). The largest benefit is from accident reduction ($0.61 million).	NC, NC Users

Table 3: Benefit-Cost Analysis Project Matrix, Part II

Current Status/ Baseline & Problem to be Addressed	Change to Baseline/ Alternatives	Type of Impacts	Population Affected by Impacts	Economic Benefit	Summary of Results (Net Benefits, 7% Discount Rate)	Tab Reference in BCA
4. West Hyattsville Metrorail Station Access Improvements (Prince George's County, Maryland)						
Lack of a sidewalk on a major pedestrian route to West Hyattsville Metrorail Station	Provide 500 linear feet of sidewalk along the south side of Jamestown Road	- Reduced vehicle/ pedestrian conflict resulting from current conditions - High-quality non-motorized access to the station, increasing transportation options	- Number of accidents/ fatalities and injuries per year - Current persons walking or biking to the station - New users who would walk or bike to the station under improved conditions	Monetized value of reduced emissions and accident costs	Net benefits are forecast to be $1.79 million dollars (from 2013 through 2036). The largest benefits are accident cost reduction ($0.70 million) , travel time savings ($0.47 million) and travel cost savings ($0.40 million).	WH, WH Users
Lack of secure bicycle parking at the West Hyattsville Metrorail Station	Provide a secure, weather-protected bike parking facility at the station	Incentivize bicycle access to the station, reducing auto-dependency and increasing the utility of the local trail system	- Number of bicyclists who will travel to the station	Monetized value of reduced emissions	In addition to the above, there is a benefit of $0.06 million from increased access and $0.12 million from environmental benefits.	WH, WH Users
5. Army Navy Drive Multimodal Access Improvements (Arlington County, Virginia)						
Lack of adequate and safe pedestrian and bicycle infrastructure on Army Navy Drive and lack of connectivity in the vicinity of the Pentagon Reservation and three Metrorail Stations	Reconceive 3,300 feet of Army Navy Drive providing: - a wider, safer pedestrian passageway, - a physically-separated two-way cycle track, - a street cross section that will support a future planned streetcar	- Reduced vehicle/ pedestrian, vehicle/ bicycle, and bicycle/ pedestrian conflicts in this congested location - Incentivize non-motorized access to the station, reducing auto-dependency	- Number of pedestrians and bicyclists with safe, more efficient access through this congested area - Number of accidents/fatalities and injuries per year - New users who would walk or bike to the station under improved conditions	Monetized value of reduced travel times, emissions, and accident costs	Net benefits are forecast to be $27.83 million dollars (from 2013 through 2036). The largest benefits are from accident reduction ($15.05 million) and travel cost savings ($6.96 million).	A-N Drive, A-N Users
Lack of non-motorized transportation options along Columbia Pike, a major residential and commercial corridor in Arlington	Add ten Capital Bikeshare stations along Columbia Pike to complement the established region system	- Incentivize bikeshare access to the station, reducing auto-dependency along the Columbia Pike corridor.	Number of new bicyclists using Capital Bikeshare	Monetized value of reduced emissions and user costs	In addition to the above, there is a benefit of $4.28 million from increased access. This is offset by a net impact of $1.42 million increase in travel time costs, as users swithc from the marginally faster (though more expensive and polluting) automobile.	A-N Drive, A-N Users
6. Rosslyn Circle Crossing Multimodal Access Improvements (Arlington County, Virginia)						
- Lack of safe pedestrian and bicycle infrastructure on Lee Highway (US 29) due to heavy traffic by bicycles, pedestrians, and automobiles - Bicycle trail connections unsafe and disjointed near Rosslyn Metrorail Station	- Improve bicycle and pedestrian facilities on the one-block segment where Lee Highway (US 29) is bisected by I-66 and Arlington Gateway Park, including ADA-compliant sidewalks, improved traffic signals, bike lanes, signage, lighting, and the integration of public art - Provide bike trail and intersection improvements and safety improvements to Custis Bike Trail	- Reduced vehicle/ pedestrian, vehicle/ bicycle, and bicycle/ pedestrian conflicts in this congested location - Incentivize non-motorized access to the station, reducing auto-dependency	- Number of current pedestrians and bicyclists with safe, more efficient access through this congested area - Number of accidents/fatalities and injuries per year - New users who would walk or bike under improved conditions	Monetized value of reduced travel times, emissions, and accident costs	Net benefits are forecast to be $14.03 million dollars (from 2013 through 2036). The largest benefits are from accident reduction ($13.43 million) and travel cost savings ($2.13 million). These are offset by increased costs in congestion ($4.00 million) due to roadway and traffic signal modifications in favor of non-auto users.	Rosslyn, Ro Users

Table 3: Benefit-Cost Analysis Project Matrix, Part III

Current Status/ Baseline & Problem to be Addressed	Change to Baseline/ Alternatives	Type of Impacts	Population Affected by Impacts	Economic Benefit	Summary of Results (Net Benefits, 7% Discount Rate)	Tab Reference in BCA
7. Bicycle Lockers at Virginia Railway Express (VRE) Stations (Various Locations, Virginia)						
Lack of secure bicycle parking at VRE Stations	Add bicycle lockers to eight VRE Station locations	Incentivize bicycle access to VRE Stations, reducing auto-dependency	Number of bicyclists who will travel to the station	Monetized value of reduced emissions and user costs	Net benefits are forecast to be $0.69 million dollars (from 2013 through 2036). The largest benefits are from accident reduction ($0.22 million) and travel cost savings ($0.26 million).	VRE, VRE Users

The benefit-cost analysis model is available at the TPB's FY 2012 TIGER application website and includes all calculations, assumptions and sources used, and is available for download from www.mwcog.org/transportation/tiger2011. Select the link "BCA Model." Appendix 5, Benefit-Cost Analysis: Model Description and Methodology, provides a full description of methodologies, input data, and data limitations, which are summarized below.

Overall Methodology

The benefit-cost model for the *Multimodal Access Improvements for Rail Station Areas in the Washington Region* TIGER application is based on a quantitative assessment of the project costs and of the impacts of the projects on each of the primary project selection criteria. The major costs are: capital, operations & maintenance (O&M), construction congestion, and increased accidents. The major benefits are: user cost savings, travel time savings, increased access, congestion reduction, emissions reduction, improved public health, and accident reduction.

Users and Non-Users

The primary source for pedestrian and bicycle users accessing transit, current and forecast (no-build), is WMATA Metrorail statistics and forecasts of rail ridership. The 2007 Metrorail Passenger Survey is a comprehensive assessment of mode of access at every rail station, and WMATA has forecast models (based on planned land use and station typology changes) going through 2030 which were used to develop annual growth numbers. Other data included parking numbers, the percent of parking users living within close proximity to each station, and bicycle locker occupancy rates. Finally, for the Forest Glen project, mobility device users are calculated based on anecdotal estimates of device use at the station, as no survey has collected this data in a statistically significant way. New users are forecast based on the potential population for such mode switches and an assumption on how many users could be induced to switch, based on the 2010 WMATA *"Metrorail Pedestrian and Bicycle Access Improvements Study"* and the ranges for mode use for different station typologies. A similar calculation is made for users making induced trips (trips not previously made).

Supporting the above data, for some projects local governments were able to supply additional pedestrian and bicycle survey or count data (***Forest Glen, Army Navy Drive, Rosslyn*** and ***Fort Totten***) for the proposed improvements.

Bikeshare use (***Forest Glen*** and ***Army Navy Drive***) is calculated based on experience with bikeshare use rates for suburban areas, increasing over time as familiarity and acceptance of the system increase. Bike locker use (**VRE Stations**) is based on typical rail station bike locker occupancy rates, increasing over time as traveler knowledge and experience increases.

Non-users are calculated for the projects that will have construction impacts on roadways (***Forest Glen, Army Navy Drive,*** and ***Rosslyn***) and are automobile trips. Regional travel demand model data for 2020,

2030, and 2040 provided raw Annual Average Daily Traffic (AADT) counts. These numbers were used in calculating construction impacts, and as a baseline from which VMT is reduced and fuel savings and emissions reductions are experienced as automobile users switch to other modes.

Construction and O&M Costs

The **capital cost** is the construction costs of the projects, including final engineering, utility re-location and other site preparation work, and infrastructure installation. Costs vary for each of the seven projects included in the application

The **operations & maintenance cost** is presented for those projects that identified such costs. In most cases, there is no anticipated significant change in government or other source expenditures for the operations & maintenance of the improvements to be built under this application. Only the Forest Glen Metro Access and VRE Bicycle Locker projects have identifiable O & M costs. Maintenance of sidewalks and bake paths, upkeep and power supplies for crossings, and other improvements have no significant change in O & M costs from the base or current condition.

Note: The Capital Bikeshare expansion proposed for the ***Army Navy Drive*** and the ***Forest Glen*** projects is considered operating cost-neutral. The first year of operation of this system in the Washington metropolitan region returned a slight operating profit. Whether this will change as the system expands, with both economies and dis-economies of scale stemming from that expansion, is unclear, as is whether any operating profit can fund capital replacement of bikes and stations as they reach the end of their useful operating life. Accordingly, there are no O&M costs or capital replacements costs included for the bikeshare components. Fees to make use of the bikeshare system are included in the user travel costs, but are not considered as revenue to be gained from the operation of the system.

Primary Selection Criteria Costs and Savings

The benefit-cost analysis model is organized in terms of the five primary selection criteria of the TIGER Discretionary Grant Program.

State of Good Repair

State of Good Repair impacts are not calculated for this application. Some improvements to be funded by the grant will lead to an improved State of Good Repair, including sidewalk and bikeway rehabilitation and replacement crossing signals for pedestrians. However, the physical infrastructure improvements have a relatively short life-time before maintenance requirements begin, while both physical and technological rehabilitation and replacement improvements have minimal costs for upkeep, leading to negligible savings.

Economic Competitiveness

The primary factors considered in this criterion were User and Time Costs and Savings. Some improvements lead to travel time savings and reduced user costs. Other projects led to greater user time costs as users switched modes from faster autos to a combination of walk/bike and transit. In these latter cases, user cost savings outweighed the time costs, indicating the net benefit of the decision to switch modes.

User cost savings are a determination of the change in the direct per mile or trip user fees paid by travelers based on mode shifts among auto, transit (rail and/or bus), walk/mobility device, personal bike, and bikeshare. Assumptions behind this determination include average trip length (provided from the HHTS 2007/2008); vehicle operating cost, based on fuel costs, maintenance, repair, tire costs, and capital depreciation; average transit fares; average taxi fares; and bikeshare fees, based on percentage

of members vs. day pass users. A parking fee assumption is also applied to all auto trips, which represents 50 percent of the average daily parking cost at either a Metrorail station or in downtown DC.

Travel time savings are a similar determination that measures the time difference for bike trip shifted from another source. Assumptions behind this calculation include mode shifts, average trip length, average speed by mode (including an average transit wait time of 5 minutes), and value of time, which was taken from the NHTSA guidance.

Livability

Increased access is a determination of the benefit from trips taken that previously were not possible or worth the time or cost (i.e., new user induced trips). This benefit was calculated using a consumer surplus model, based on the difference between the user/time cost of the mode used and the automobile use alternative.

Congestion reduction is based on an assumption of the congestion relief benefit for each VMT reduced. This is therefore based on VMT reduction calculations and a congestion reduction value, taken from NHTSA guidance. VMT reduction calculations are based on the average trip length and trips shifted to the combination of walk/bike plus transit for a commute from auto, and auto and taxi to bike. For the bikesharing components users were shifted from walk, personal bike, auto, and bus transit.

Environmental

Emissions reductions is a straightforward determination of reductions in VOCs, NO_x, $PM_{2.5}$, SO_x, and CO_2 based on average light duty fleet emissions rates from COG's Mobile 6 model used for air quality conformity and the VMT reductions described above, using the figures specified in the TIGER Benefit-Cost Analysis Resource Guide.

Improved public health is determined using assumptions taken from reports on active transportation, including the health care cost savings for people completing 30 minutes of daily exercise vs. those that currently do not ($20 per year), the percent of those bicycling or walking who do not meet activity recommendations (conservatively assumed to be 20 percent), and the average extra exercise time needed to meet the requirement (15 minutes). These benefits are modest, but nonetheless be a contribution towards meeting the region's public health goals.

Safety

Accident costs/savings are based on the current accident rates, projected changes in the number of users and their choice of modes, assigned values for different types of accidents, and the anticipated changes in safety from the capital improvements to be funded by this grant application.

Accident rates at the regional level were determined for automobile users based on accident and VMT data from the Virginia Department of Motor Vehicles, Maryland Office of Highway Safety, and the District Department of Transportation, based on an average across the past 10 years. Accident rates were determined on a trip basis for pedestrians and bicyclists based on regional accident data for these modes (same sources and timeframe as for automobiles) and the number of trips for each mode obtained from the Household Travel Survey (HHTS) for 2007/2008, projected to 2011 use. Reductions in pedestrian and bicycle accident rates were based on local experience, specifically the Montgomery County Pedestrian Safety Initiative (http://www.montgomerycountymd.gov/dirtmpl.asp?url=/Content/dot/dir/pedsafety/index.asp). Focused safety engineering efforts of projects similar to those of this application have witnessed accident reductions from 18 percent to 56 percent, depending upon the level of improvement, and as summarized in the CountyStat system. Some projects also made

use of the FHWA Highway Safety Improvement Program (HSIP) analysis to develop Crash Reduction Factors following implementation of the proposed improvements. Anticipated benefits to be realized from the improvements were then used to calculate safety benefits. Accident rates also take into account new users and users switching modes, so that automobile accident numbers decline for the overall project. The increase in bicycle and pedestrian activity, on the other hand, generates a modest increase in accident numbers and costs for these modes.

Additional, Unquantified Benefits

There are several qualitative benefits of the proposal that were not captured in the BCA. Many of these benefits are discussed throughout the primary and secondary criteria discussions; however, a few are noted here.

The procurement of twenty Capital Bikeshare stations *(**Army Navy Drive*** and ***Forest Glen**)* further extends the system throughout the region. While the stations to be added by this project are a relatively small extension of the system, there will be further network effects as users have greater access to the system across the region, increasing its visibility and utility. The spread of bicycle infrastructure, including bike sharing, bike lanes, bike lockers, and complementary accessibility improvements will act as a marketing tool to attract more people to consider a bicycle for a utilitarian trip.

Improvements in station infrastructure, lighting, and quality of service amenities are anticipated to improve personal security and safety for rail travelers, improving the attractiveness of utilizing transit. Theft and property vandalism are an issue at rail stations; improved lighting and amenities will deter such minor crimes. Improved sidewalks and lighting will also reduce safety hazards such as slips and falls. Sufficient data is lacking to make a quantitative assessment of these security and safety benefits, aside from the increases in transit use anticipated.

Finally, economic development benefits from the increased productivity of proximate businesses and residences with persons making use of the project components will take place. Typically such a change is quantified by estimating a modest increase in property value (approximately one percent) within a quarter mile around rail stations. However, recent fluctuations in property value, particularly for the several parcels that are currently under-developed *(**New Carrollton, Fort Totten**)* or are experiencing significant transition *(**Army Navy Drive**),* make use of the current property values unrealistic in projections of actual or future value.

Summary of Results

The number of users and other transportation impacts of the proposal are presented in Table 4. Tables 5 and 6 provide a summary of the BCA, which shows that the benefits of the proposal outweigh the costs over the 20 year performance period (50 years for Forest Glen). At a 3 percent discount rate, the benefit-cost ratio of the project is 2.07, with a 13.96 percent rate of return. At a 7 percent discount rate, the benefit-cost ratio of the project is 1.65, with a 9.70 percent rate of return.

Table 4: Benefit-Cost Analysis Summary

Benefits to System Users	2020 (Year 8)	2036 (Year 24)	Total (2013-2036)
Pedestrian Trips	6,712,000	8,040,230	**157,524,054**
Bicycle Trips	924,316	1,246,291	**22,736,517**
Bikeshare Trips	290,620	337,401	**6,678,709**
Mobility Device Trips	3,960	4,034	**74,261**
New Trips (all modes)	228,941	270,710	**5,274,750**
Travel Impacts	**2020 (Year 9)**	**2035 (Year 24)**	**Total (2012-2035)**
Rail Transit Trips	390,101	463,073	**9,008,754**
Bus Transit Trips	-78,866	-91,955	**-1,851,945**
Auto Vehicle Trips	-224,032	-265,355	**-5,169,020**
Auto VMT	-1,369,482	-1,675,947	**-31,944,479**

Table 5: Benefit-Cost Analysis—3 Percent Discount Rate

('000s of $, 3% Discount Rate for Costs and Benefits)	Fort Totten / 1st Place-Galloway Road Access Improvements	Forest Glen Metrorail Access Project	Pedestrian Safety Measures for the New Carrollton Metro Station	West Hyattsville Metrorail Station Access Improvements	Army Navy Drive Multimodal Access Improvements	Rosslyn Circle Crossing Multimodal Access Improvements	Bicycle Lockers at VRE Stations
Costs	**$6,401**	**$20,558**	**$760**	**$937**	**$18,134**	**$7,403**	**$535**
Capital	$3,865	$14,079	$557	$671	$6,479	$3,832	$267
Operating	$0	$1,162	$0	$0	$0	$0	$68
Construction Impacts	$46	$516	$80	$0	$292	$300	$0
Accident	$2,490	$4,802	$123	$267	$11,364	$3,271	$201
Benefits	**$13,029**	**$22,567**	**$2,122**	**$2,794**	**$43,380**	**$22,213**	**$1,171**
Net Travel Time Savings	$1,874	$1,609	$209	$746	($2,104)	$1,128	($70)
Net Travel Cost Savings	$3,085	$4,154	$286	$628	$10,814	$3,358	$449
Increased Access	$187	$3,437	$9	$103	$6,617	$1,779	$22
Congestions Reduction	$744	$3,594	$962	$37	$2,082	($6,165)	$69
Environmental	$897	$908	$86	$183	$2,351	$973	$318
Health Benefits	$0	$11	$0	$1	$27	$7	$1
Accident Reduction	$6,241	$8,853	$570	$1,096	$23,592	$21,134	$382
Net Present Value	**$6,627**	**$21,165**	**$1,362**	**$1,856**	**$25,246**	**$14,810**	**$635**
Rate of Return	**16.18%**	**5.13%**	**14.37%**	**19.74%**	**24.84%**	**21.81%**	**12.56%**
Benefit-Cost Ratio	**2.04**	**1.54**	**2.79**	**2.98**	**2.39**	**3.00**	**2.19**

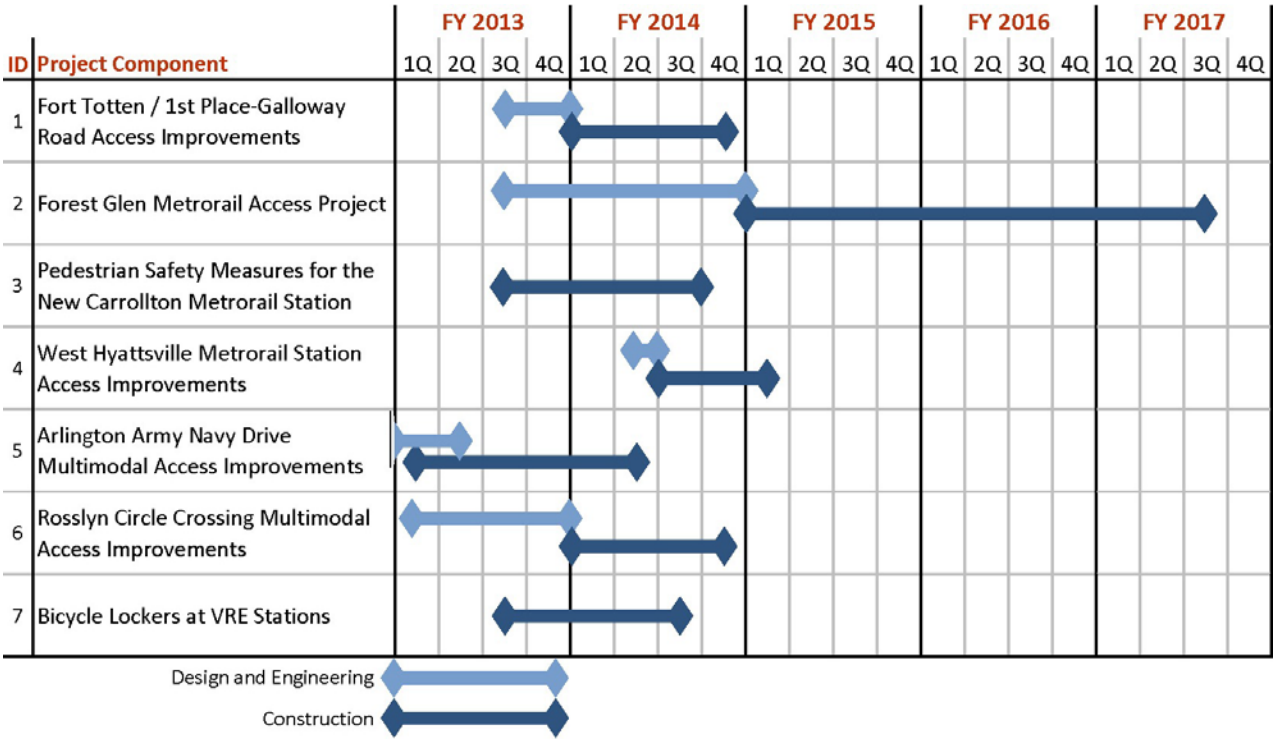
Table 6: Benefit-Cost Analysis—7 Percent Discount Rate

('000s of $, 7% Discount Rate for Costs and Benefits)	Fort Totten / 1st Place-Galloway Road Access Improvements	Forest Glen Metrorail Access Project	Pedestrian Safety Measures for the New Carrollton Metro Station	West Hyattsville Metrorail Station Access Improvements	Army Navy Drive Multimodal Access Improvements	Rosslyn Circle Crossing Multimodal Access Improvements	Bicycle Lockers at VRE Stations
Costs	**$5,000**	**$16,432**	**$690**	**$793**	**$13,674**	**$5,964**	**$409**
Capital	$3,504	$12,399	$535	$623	$6,043	$3,604	$247
Operating	$0	$697	$0	$0	$0	$0	$43
Construction Impacts	$43	$453	$74	$0	$276	$282	$0
Accident	$1,454	$2,882	$81	$171	$7,355	$2,079	$118
Benefits	**$8,386**	**$13,555**	**$1,380**	**$1,792**	**$27,832**	**$14,032**	**$694**
Net Travel Time Savings	$1,206	$957	$129	$477	($1,416)	$704	($42)
Net Travel Cost Savings	$1,987	$2,490	$189	$402	$6,967	$2,134	$264
Increased Access	$112	$2,061	$5	$65	$4,283	$1,125	$13
Congestions Reduction	$476	$2,195	$621	$23	$1,354	($4,007)	$41
Environmental	$600	$556	$59	$122	$1,570	$642	$193
Health Benefits	$0	$7	$0	$0	$17	$4	$0
Accident Reduction	$4,004	$5,289	$376	$702	$15,056	$13,430	$225
Net Present Value	**$3,386**	**$4,800**	**$690**	**$998**	**$14,157**	**$8,068**	**$285**
Rate of Return	**11.84%**	**1.20%**	**10.10%**	**15.26%**	**20.17%**	**17.26%**	**8.35%**
Benefit-Cost Ratio	**1.68**	**1.11**	**2.00**	**2.26**	**2.04**	**2.35**	**1.70**

Project Readiness and NEPA

Each of the components in the TPB's application package requires final design and engineering prior to construction readiness. Most of the components will complete final design and engineering by the end of FY 2013. Construction will be completed for five of the components by the end of FY 2014. Construction of the most complex element, the grade-separated crossing of Georgia Avenue at the Forest Glen Metrorail Station, will be completed by the end of FY 2017. Funds for all projects will be obligated by June 30, 2013. A detailed project schedule may be found in Appendix 4.

Table 7: Project Schedule



FY refers to the local fiscal year, July 1 through June 30.

National Environmental Policy Act Requirement

Components of the proposed project may be subject to the provisions of the National Environmental Policy Act of 1969, as amended (hereafter NEPA). A feasibility report for the Forest Glen Metrorail Station Access Project is currently underway. Potential impacts to community, property, and natural, cultural and socio-economic resources are anticipated to be minor and it is expected that a Categorical Exclusion (CE) will be completed and approved by the Summer of 2012.The project to install bike lockers at VRE stations qualifies as a CE under 23 CFR **§771.117, c.3,** and does not require any further NEPA approvals by FTA. For all other components in the proposed project, NEPA analysis has not been completed, but it is anticipated that they will meet the criteria standards for a CE. These projects do not entail construction or other surface disturbing activities or they are confined to existing rights-of-way. For all project components, the appropriate level of NEPA analysis will be completed in time for project implementation and completion, in accordance with the project schedule provided in the previous section.

Environmentally-Related Federal, State and Local Actions

As part of project implementation, all project applicants and owners will comply with all applicable Federal, State, and local permitting requirements. Permits required for both the construction and operation of these proposed projects will be obtained. As is the case with all capital improvement projects implemented by any of the parties identified in this application, all applicable Federal, State, and local permits will be identified and obtained in accordance with standard construction management procedures carried by the applicants. All coordination necessary has begun or will be undertaken, such as coordination with WMATA on capital improvements at Metrorail stations.

Federal Wage Rate Certification

As the signatory to this application, the Metropolitan Washington Council of Governments certifies it will, in its role as administrative agent for the TPB and lead applicant for this TIGER grant application comply with all wage rate requirements and other applicable provisions of the United States Code, Subchapter IV of Chapter 31 of Title 40.

Material Changes to the Pre-Application

Since submission of the pre-application on February 20 the federal request has been reduced. The total project cost was reduced slightly from $32,404,203 to $32,154,203. The local match is now $12,234,953 (versus $10,484,953) and the total federal funding request is 62 percent of the total project cost, or $19,919,250 (versus $21,919,250).

Endnotes

[1] U.S. Bureau of the Census, Metropolitan and Micropolitan Statistical Area Estimates: April 1, 2000 to July 1, 2008, accessed from http://www.census.gov/popest/metro/CBSA-est2008-annual.html, accessed August 20, 2009.
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[3] District Department of Transportation, 1st Place and Galloway St, NE Transportation Access Study and Improvement Plan Final Report & Conceptual Design, August 2011: http://tooledesign.com/forttotten/project.html
[4] Crossing Georgia MD-97: Why are Pedestrians at Risk? http://www.crossinggeorgia.org/
[5] MWCOG/Prince George's County, New Carrollton Interim Pedestrian Safety Improvements, June 2010: http://www.mwcog.org/transportation/activities/tlc/pdf/NewCarrolltonPedSafety.pdf
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[10] Data captured from the MWCOG Cooperative Forecast and the 2005-2009 American Community Survey at the Census Tract level.
[11] Washington Post, "Stuck at a Crossroads is Par for the Course", Thursday June 1, 2006
[12] Clean Air Partnership, "Bike Lanes, On-Street Parking and Business: A study of Bloor Street in Toronto's Annex Neighborhood," February 2009: http://www.cleanairpartnership.org/pdf/bike-lanes-parking.pdf
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[14] Data was captured using the WMATA station address from www.walkscore.com.
[15] CNT Housing and Transportation Affordability Index http://htaindex.cnt.org/mapping_tool.php?region=Washington--Baltimore,%20DC--MD--VA--WV
[16] DDOT, 1st Place and Galloway St, NE Transportation Access Study and Improvement Plan Final Report & Conceptual Design.