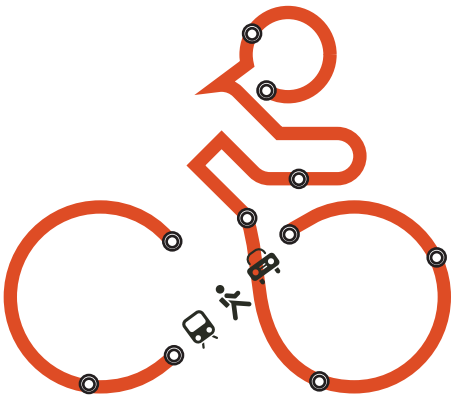
A Regional Bike-sharing System for the National Capital Region



Application for Funding from the Transportation Investments Generating Economic Recovery II (TIGER II) Competitive 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

August 23, 2010

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

Local governments working together for a better metropolitan region

August 23, 2010

TIGER II 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 *Transportation Investments Generating Economic Recovery (TIGER) II* Competitive 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 is an extensive regional bike-sharing system that will provide a sustainable, affordable, and healthy transportation alternative and extend the reach of the current public transit 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 9th 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 and federal agencies. Established in 1965, the TPB is the official Metropolitan Planning Organization (MPO) designated by the federal government to carry out the comprehensive regional transportation planning process under the authority of the Federal-Aid Highway Act of 1962, as amended.

Project Summary

The proposed project is to implement a regional bike-sharing system throughout the National Capital Region that will serve as "bicycle transit" and make vital connections to the region's extensive bus and rail transit network. The bike-sharing system will consist of bike-sharing stations at numerous locations throughout the region as shown in Figure 1, allowing the region's residents and visitors to ride a bike from one station to any other in the region, facilitating connections to transit, employment centers, and residential centers. The proposal also includes two Bikestations, which are high quality bicycle facilities that house enclosed, secure bicycle parking for private bicycles, as well as other services, such as repair, bike rental, showers, and bike-sharing. The two Bikestations are colocated with transit and can be used by both residents with private bicycles and bike-sharing members.

This proposal has been planned to increase bicycle ridership for utilitarian trips, as well as increase transit ridership, thus responding the U.S. DOT's Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations. This project goes beyond minimum requirements for bicycle and pedestrian infrastructure to provide an innovative, intermodal service that is affordable, non-polluting, healthy, and accessible to people of all ages.

The project total cost is $15,542,000, with a TIGER II grant request of $12,118,400, and a local match percentage of 22%. This project includes components in the District of Columbia, Virginia, and Maryland, demonstrating extensive regional partnership.

Figure 1: The Proposed Regional Bike-sharing System

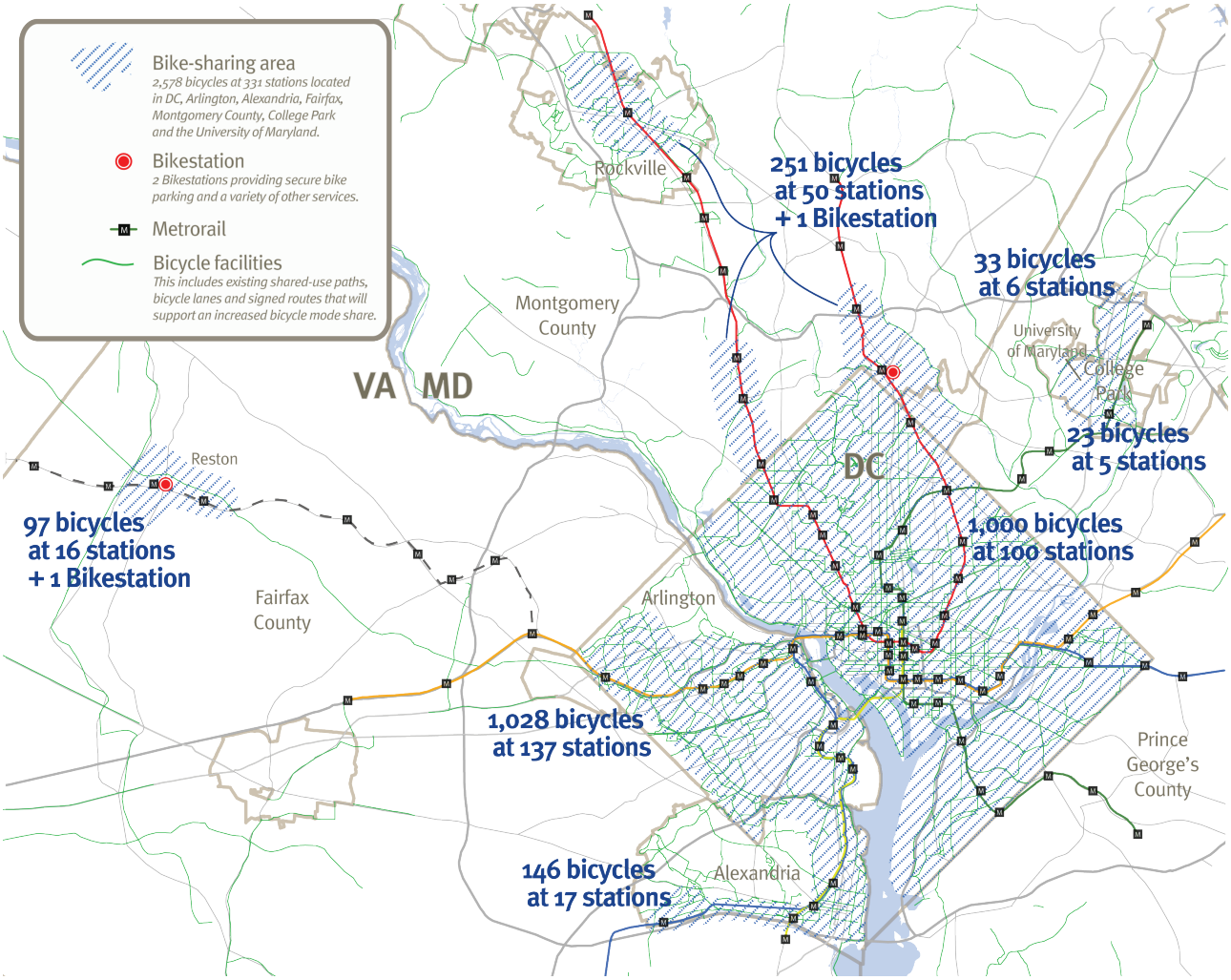


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Photo credit: Eric Gilliland


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Photo credit: Commuter Page Blog


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Photo credit: jpchan

1. New cycle track on New Hampshire Avenue at the intersection of 16th St NW and U St NW in DC.
2. U.S. DOT Secretary Ray LaHood tests out a Bixi bicycle for DC's new bike-sharing program.
3. Inside view of the full service Bikestation at Union Station in Washington DC.

Project Need

Innovative, sustainable forms of transit provision such bike sharing are increasingly significant and 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 develop a vast bike-sharing system that is truly accessible to travelers of all income levels and further promotes bicycling as a serious form of sustainable transportation.

Increasing Congestion for Roads and Transit

The National Capital Region has an extensive highway network and the second largest public transit system in country; however, congestion and crowding on the region's roadways and transit system is increasing and meeting the travel demands of a growing population and workforce bring difficult challenges. Over the next 20 years, transit work trips are forecast to increase by 35% as the region adds nearly 1.2 million people and almost 1 million jobs. This will inevitably create even more crowding on the Metrorail system, since the ability of the transit system to expand its capacity is limited by funding constraints. Similarly, congestion on the road network will continue to increase with an expected rise in VMT of 20%, impacting both private automobiles and bus transit. Funding constraints for all surface modes translates into an inability to keep up with rapidly rising demand.

While the region has and continues to benefit from a world-class transit system, this system faces considerable capacity challenges that endanger the future prosperity of the region. Undoubtedly, the area's roadways and transit system will continue to play an important role in the region; however coping with the increase in roadway traffic and transit constraints will require thinking differently about the way we plan, fund, and build our future transportation system.

Meeting Global/National Challenges with Limited Resources

Beyond direct challenges to the provision of public transit and an efficient roadway system, the region is facing the same global problems that impact sustainability and livelihoods of regions everywhere. The National Capital Region has suffered through the current economic downturn with high rates of foreclosure, rises in unemployment, and sharp declines in access to credit, resulting in sharper household/transportation affordability challenges for the region's residents.

The region's future environmental quality is also a major factor in its long-term planning strategy. The region has been an official ozone nonattainment area since 1968, a PM2.5 nonattainment area since 2005, and is projected to experience steadily rising greenhouse gas emissions (2). In response, the National Capital Region is now among the most proactive regions on climate change, with a goal of reducing emissions 80% by

2050. The solution to these environmental problems and our funding crisis is to connect increasing numbers of people to vital services, affordable housing, and jobs, while reducing our overall resource consumption, thus lessening our dependence on oil and our impact on the environment.

For these reasons, the region wishes to expand its low-cost transportation options, through reliable transit and facilities to allow bicyclists and pedestrians to travel safely and conveniently. The TPB has made increasing the extent and quality of our transportation options a policy priority for decades and has worked toward this aim through ongoing vision planning and long-range studies. A recent study undertaken by the TPB, the "What Would it Take? Scenario: Transportation and Climate Change in the National Capital Region", investigated what transportation actions would be necessary to meet the region's aggressive climate change goals. The findings of this study supported bike sharing and other bicycle and pedestrian infrastructure improvements as quick-to-implement and cost-effective strategies for reducing the environmental impact of the region's transportation system.

Moving Toward Sustainability in Transportation

Future transportation investments need to be sustainable in every sense of the word if they are to adequately address the various challenges we are confronted with, including those outlined above and others. This means:

Economic vitality: Finding ways to make the most efficient use of existing infrastructure and finding less costly ways to meet people's mobility needs.
Equal opportunity: Developing equitable, affordable transportation options and providing those options to as many people as possible.
Environmental quality: Supporting transportation options that help us meet our environmental goals.

Bike sharing, which increases bicycle mode share, can achieve all three of these goals. This project proposes to create a robust regional bike-sharing program with supporting bicycle infrastructure, which will be available to 30% of the region's households and 45% of the region's employees. By promoting bicycling for short trips of less than 3 miles, which currently are 17% of all commute trips, and 30% of non-work trips, and for the "last mile" of longer transit trips, bike sharing maximizes existing infrastructure by extending the reach of rail and bus transit in an effective, innovative, and low-cost way.

Building on Experience and Best Practice

The National Capital Region is poised to deliver the nation's largest bike-sharing system based on years of experience with a smaller bike-sharing system and a long history of successful and robust regional cooperation. In August 2008, the District of Columbia implemented a small 100-bike pilot bike-sharing system that was the first of its kind in the United States. While small in size, it was successful, proving that bike sharing works in this region and garnering enthusiastic regional support and interest. The District of Columbia and neighboring Arlington County, VA have now planned to expand bike

sharing, switch to a more flexible bike-share technology, and give it a new name – Capital Bikeshare. This program, to be launched in fall 2010, includes 1,100 shared bikes serving 114 stations, with 1,000 bikes at 100 stations in DC and 100 bikes at 14 stations in Arlington. The DC-Arlington system demonstrates the interest in expanding the system regionally and has been planned explicitly for further expansion throughout the region. The TIGER II grant award would drastically accelerate this process and enable participation of smaller jurisdictions that would otherwise be unable to participate.

Proposed Project

The TPB is partnering with six jurisdictions and the University of Maryland to develop a regional bike-sharing program that would add 2,578 bicycles and 331 stations to a nascent bike-sharing program and develop two new Bikestations at transit centers. When added to current bike sharing plans, this proposal would create a bike-sharing system of 3,578 bicycles and 431 stations, which would be the largest year-round system in North America. The project components form a logical and integrated regional system that would function as a new layer of transit serving communities across the region.

This proposal will not only increase bicycle mode-share in the metropolitan Washington area, but it will also promote increased transit use via numerous convenient intermodal connections. Bike sharing facilities will provide greater, more convenient access to Metrorail stations and major bus hubs, and will provide commuters, residents, and visitors with an alternative to driving. This project will also provide additional transit options to the vast Federal workforce in the region and showcase this new technology to the millions of tourists visiting the Nation's Capital from abroad and domestically.

1. Arlington County Bike Sharing

Bike sharing will build upon the County's smart growth and TOD successes along the Rosslyn-Ballston corridor of Metrorail's Orange Line, Crystal City, Pentagon City, Potomac Yard, Shirlington and the Columbia Pike Corridor. The Arlington system will include 1,028 shared bikes at 137 stations, serving an area that includes 10 Metrorail stations and approximately 155,000 jobs and 112,000 residents in major mixed-use activity centers. The Arlington component allows for direct connections to the bike-share system and destinations in neighboring DC (to the east) and the City of Alexandria, VA (to the south).

2. City of Alexandria Bike Sharing

The bike-sharing program will include 146 shared bikes and 17 stations throughout the City, stretching from its northern border with Arlington County (Shirlington and Arlington's Potomac Yards), through Alexandria's Potomac Yards, Del Ray, and Old Town neighborhoods, and down to the Carlyle, East Eisenhower, and West End communities. Bike sharing would connect these activity centers and neighborhoods

with four Metrorail stations and will be located in areas of high potential bicycle activity as identified in the City's 2008 Pedestrian and Bicycle Mobility Plan (Appendix 7). These locations were chosen based on a high percentage of residents that bike or walk to work and/or do not own a vehicle, as well as the availability of supporting bicycle infrastructure.

3. Reston Bike Sharing

Fairfax County proposes making 97 shared bicycles available at 16 stations in the greater Reston area, including the Reston Town Center Transit Center and major employment and activity centers. The Reston area was selected for bike-sharing not only because it contains some of the densest commercial and residential development in Fairfax County, but also because it has the highest concentration of bicyclists in the County. It would also complement the existing and growing transit network, which currently includes over 20 established bus routes and will soon include two new Metrorail stations along the new Dulles Corridor Silver Line (Wiehle Avenue Station in 2013 and Reston Parkway Station to follow). This high quality transit and the W&OD trail connect Reston with the regional bike-sharing system and the rest of the metropolitan area.

4. Reston Bikestation

Fairfax County is also proposing to construct a Bikestation at the Reston Town Center Transit Center, which is centrally located in the greater Reston area and is easily accessed from the W&OD trail. This facility will provide secure, enclosed, and convenient bike parking for approximately 36 private bicycles and would be collocated with one of the bike-share stations. The Bikestation would provide needed bicycle infrastructure, enabling increased bike-to-transit trips via private bicycle. A photograph of a similar station operating in California can be viewed in Appendix 6.

5. District of Columbia Bike Sharing

The District of Columbia seeks to add another 1,000 shared bikes and 100 stations to their soon-to-be constructed 1,000-bike system. With over 600,000 residents, a daytime population near 1 million people and approximately 16 million visitors each year, providing a robust bike-sharing system will positively transform transportation in DC and the region. DC is supporting bike sharing with major investments in bicycle infrastructure, growing from 45 miles of bike lanes to 80 miles in the next two years, including 5 miles of separated lanes (European-style cycletracks) and 100 bike boxes, which are queuing spaces reserved for cyclists at intersections. The proposed bike-sharing stations will create a denser network of stations in the downtown core, improve transit accessibility at Metrorail stations and transit hubs, and further connect other moderate- to high-density mixed-use and residential areas to many destinations throughout the region.

6. Montgomery County Bike Sharing

Bike sharing would include 251 shared bikes and 50 stations across the Bethesda, Silver Spring and Rockville areas. These areas connect to the DC system and to the regional

system through high quality transit connections. Both Bethesda and Silver Spring are major mixed-use activity centers in the region, serving as regional destinations for employment, retail, and entertainment. The City of Rockville is also a major hub of activity, particularly with the development of the Rockville Town Center, which connects employment, retail, and residences with the Rockville Metro/MARC/Amtrak Station. Bike-sharing will connect the Rockville Station with these high-activity areas, including Montgomery College's Rockville campus

7. Montgomery County Silver Spring Bikestation

Montgomery County's goal is to triple the existing bicycle mode share to the Silver Spring Metrorail Station. Therefore, in combination with bike-sharing, a 1,500 square foot full service, LEED Silver Bikestation with bicycle parking, changing rooms, repair, and rental is proposed for construction. This Bikestation would be colocated with Metrorail, Metrobus, MARC commuter rail, and bike-sharing at the Silver Spring Transit Center, and would provide valet parking for about 150 bicycles, employing between 5 to 10 staff to operate the station and its associated coffee bar facility. A diagram of the station can be viewed in Appendix 6.

8. University of Maryland College Park Bike Sharing

Bike sharing includes 33 shared bikes and 6 stations to serve the University's campus and tie into the bike-sharing proposed for the adjoining City of College Park. UMD is a major employment and residential center, with 13,000 employees and 37,000 students. Bike-sharing stations will be located at major activity centers on campus, including the Stamp Student Union, South Campus Dining Hall, McKeldin Library, Eppley Recreation Center, and Regents Drive parking garage. A bike-sharing station will also be placed near the secondary campus residential area and dining hall.

9. City of College Park Bike Sharing

Bike sharing includes 23 shared bikes and 5 stations, connecting the College Park Metrorail Station, downtown, and major commercial areas adjoining the University of Maryland campus. College Park has a well established network of bicycle facilities, including paved shared-use trails and bike lanes, which will support the implementation of a bike-share system and increased bicycling. The proposed bike-share station at the College Park Metrorail Station will allow employees and students of UMD greatly improved access to the heart of campus, which is slightly over one mile away, and downtown College Park, which is about ½ mile away. A high number of lower-income residents and students will benefit from this affordable and convenient transit option.

This proposal has been developed according to tested best practices and reflects the National Capital Region's unique ability to deliver the nation's largest bike-sharing system based on the region's growing experience.

- The region has committed to cycling as a serious transportation mode by making infrastructural investments, which is necessary to ensure safety and accessibility to bike-sharing stations.

- The proposal is a large and sufficiently dense system. Growing worldwide bike-sharing experience shows the number of daily users per bike rises dramatically with system density and size. Dense station placement also encourages short, utilitarian trips and service reliability. This is reinforced by the pricing structure for the proposed system, in which the first half-hour is free and the cost for subsequent half-hours escalates rapidly. This distinguishes bike-sharing from bike rental. The latter is often utilized for longer, recreational rides, while bike-sharing essentially serves as small-scale public transit.
- This proposal includes sufficient bicycles and docks to guarantee accessibility of bikes. As with transit, service reliability is paramount to the system's success.
- The proposed bike sharing locations are the right ones. Bikes and stations are co-located with transit, as well as important origins and destinations, which allows bike-sharing to serve as an important link to larger transit services, solving the first or last mile problem.

Table 1: Project Component Details

ID	Project Component	Congressional District	TIGER II Grant Request	Description
1	Arlington Bike-sharing	VA-8	4,346,000	1028 bicycles and 137 stations in Crystal City, Potomac Yard, and Shirlington, and Columbia Pike, Route 1 and Metrorail Orange Line corridors
2	Alexandria Bike-sharing	VA-8	622,900	146 bicycles and 17 stations around Metrorail, Old Town, Del Ray, Potomac Yard, and Eisenhower Ave.
3	Reston Bike-sharing	VA-8	500,000	97 bicycles and 16 stations at Reston Town Center Transit Center, Reston Station, and major employers and activity centers
4	Reston Bikestation	VA-8	80,000	Enclosed modular bicycle parking facility to be collocated with transit and a bike-sharing station, creating multi-purpose Bikestation.
5	District of Columbia Bike-sharing	DC-At Large	4,080,000	1000 bicycles and 100 stations distributed in each ward, which will double the soon-to-be constructed 1000-bike system
6	Montgomery County Bike-sharing	MD-8,4	1,383,500	251 bicycles and 50 stations in Bethesda, Silver Spring, Wheaton, Takoma Park and Rockville areas
7	Silver Spring Bikestation	MD-8,4	800,000	Full service enclosed Bikestation with bicycle parking, repair, and rental collocated with Metrorail, Metrobus, and bike-sharing
8	University of Maryland College Park Bike-sharing	MD-5	166,000	33 bicycles and 6 stations throughout the University campus
9	College Park Bike-sharing	MD-5	140,000	23 bicycles and 5 stations at Metrorail, downtown, and major commercial areas, connecting directly to UMD.
	TOTAL TIGER II REQUEST		$12,118,400	2578 bicycles and 331 stations in regional bike-sharing network
	LOCAL MATCH (22%)		$3,423,600	
	TOTAL PROJECT COST		$15,542,000	

Project Parties

This project application is the result of many months of regional collaboration and cooperation among numerous partners who are eager to promote bicycling as a legitimate transportation option through bike sharing. Many partners were able to quickly commit resources toward the installation of a system in their jurisdiction; however, many others see the benefits that will accrue to the entire region and the potential for expansion in the future after this initial system is operational. 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 8, Letters of Support from Project Owners and Other Partners, or http://www.mwcog.org/transportation/TIGERII/ (Select "Project Support Letters"). Underpinning these letters is TPB Resolution R25-2010 that was unanimously adopted June 16, 2010 and approved the submission of this application, signaling broad regional support for the proposed project. Several of the project partners will also play more formal roles with respect to their status as applicant/grant recipients, which are noted in the following sections. 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. Since 2007, COG has administered the Federal Transit Administration's (FTA) 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. COG will administer the grant program proposed in this application in a similar manner on behalf of TPB.

Project Owners

COG is joined by other parties as project owners, which are composed of local governments, state departments of transportation, and state universities located and operating in the Washington metropolitan region. These include:

The District of Columbia:
District of Columbia Department of Transportation (DDOT)

The State of Maryland:
Montgomery County
City of College Park
University of Maryland, College Park, Department of Transportation Services

The Commonwealth of Virginia:
Arlington County

City of Alexandria
Fairfax County

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

Grant Administration

COG will be the lead applicant and 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 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 with the Cognizant Modal Administration.

Grant Funds and Sources/Uses of Project Funds

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 TIGER II Discretionary Grant funds for each component, match sources, and percentage shares for each component of the total project. The total TIGER II request for the project is $12,118,400, which is 78% of the total project cost of $15,542,000. This project is located in two states (Virginia and Maryland) and the District of Columbia, with percentage shares of the total project at 46%, 20%, and 34% respectively. The project is comprised of components in six local jurisdictions and the University of Maryland, each of which supported the application with at least 20% match. Match sources are mostly from local capital budgets, but also come from private developer contributions, BIDs, and TMAs. Match provided by the University of Maryland is the only state-sourced match commitment. Match commitments have been documented in support letters from project partners, which is provided in Appendix 2.

This application includes seven bike sharing components that would collectively create a regional bike-sharing system and enhance the region's transit system, allowing many in the region to make complete door-to-door trips efficiently, sustainably, and affordably. Each component creates a localized bike-sharing system in one specific area and could conceivably stand alone; however, the full benefits calculated for this project rely on a large and dense regional system connected by multiple modes of transportation. The project also contains two Bikestations, each of which can stand alone from the rest of the application. Additionally, some larger bike sharing components may be scalable; however, the density of the bike-share system is paramount to the success of the system, which limits the extent to which some components in this proposal can be scaled back.

Table 2: Project Cost Information

ID	Project Component	Project Owner	Project Cost	TIGER II Grant Request	% TIGER II	Local Match Source	% of Total Grant Request
1	Arlington Bike-sharing	Arlington County	5,793,800	4,346,000	75%	FY2011 & FY2012 capital program, BID, and TMA	36%
2	Alexandria Bike-sharing	City of Alexandria	802,900	622,900	78%	Local budget	5%
3	Reston Bike-sharing	Fairfax County	625,000	500,000	80%	Commercial & Industrial Tax Revenues	4%
4	Reston Bikestation	Fairfax County	100,000	80,000	80%	Commercial & Industrial Tax Revenues	1%
Virginia Bike-sharing Subtotal			7,331,700	5,548,900	76%		46%
5	DC Bike-sharing	District of Columbia	5,100,000	4,080,000	80%	Local funds	34%
District of Columbia Bike-sharing Subtotal			5,100,000	4,080,000	80%		34%
6	Montgomery County Bike-sharing	Montgomery County	1,729,300	1,383,500	80%	FY2012 & FY2013 capital program	11%
7	Silver Spring Bikestation	Montgomery County	1,000,000	800,000	80%	FY2012 & FY2013 capital program	7%
8	University of Maryland Bike-sharing	University of Maryland College Park	216,000	166,000	77%	Department of Transportation Services FY2011 budget	1%
9	College Park Bike-sharing	City of College Park	175,000	140,000	80%	FY2011 budget, delevoper contributions	1%
Maryland Bike-sharing Subtotal			3,121,300	2,489,500	80%		20%
PROJECT TOTAL			$15,542,000	$12,118,400	78%		

Selection Criteria

Regional bike sharing aligns with all of the TIGER II criteria and overall is well-supported by jurisdictions in the region because of the numerous benefits it can deliver. Planning of the system has been a model for regional cooperation and innovative, multimodal thinking with broad participation in the region's center city and throughout the inner suburbs. It has also exemplified the Washington region's movement toward innovative planning that expands sustainable, affordable, and healthy travel options and increases the efficiency of more capital- intensive investments, such as bus and rail transit and roads.

The bike-sharing project is low cost and delivers significant and far-reaching benefits, such as increasing bicycle ridership region-wide, increasing transit accessibility, offering the most affordable transit service, improving public health, reducing emissions of air pollutants, increasing safety for all cyclists, and supporting economic development. These benefits far outweigh the capital and operating costs at a benefit-cost ratio of 1.74 using a 7% discount rate. A more detailed summary and description of the benefit-cost analysis is provided later in this section.

General Priorities: Regional Significance

A regional bike-sharing system will provide new transportation options to travelers to and through the Washington, D.C. core; the City of Alexandria and Arlington and Fairfax Counties in Virginia; and throughout Montgomery County and part of Prince George's County in Maryland. It will bring an affordable, convenient, and healthy travel option directly to 30% of the region's households and population and provide access to 45% of the region's jobs, particularly in areas where low-income and/or transit-dependent populations are concentrated. The project also provides far-reaching access to residents and visitors going to destinations within the service area. The one-way nature of bike-sharing allows travelers to drive or take some other mode to transit in less dense areas of the region, take transit, and then use bike-sharing to ultimately get to their destination, such as the office.

The project is also a result of regional cooperation and reflects region-wide support. Virtually all jurisdictions in the 21-jurisdiction region have expressed interest in the concept and in participating at some point in the future; however, resource constraints have meant that the ability to expand the system regionally through this proposal and future efforts needs a catalyzing force, such as the TIGER II program. Support from jurisdictions expressing interest in future participation has been formally registered and is included in Appendix 3.

The project also bears national significance by providing increased mobility to thousands of federal workers in the region and transit support for BRAC job site relocations in the region, such as the National Naval Medical Center in Bethesda, Maryland.

Primary Criteria 1: State of Good Repair

Sustainable sources of revenue for O&M costs
Each participating local jurisdiction has committed to providing necessary operating costs assuming very conservative "fare-box" recovery and advertising revenue. Nevertheless, revenues are expected from corporate sponsorships and user fees and based on other bike-sharing systems it is projected that annual revenues will exceed annual O&M costs after four years. User fees are paid by members who pay a relatively small yearly ($80) or monthly fee ($30) or by non-members who pay for a day pass ($5). Based on existing bike sharing best practices, corporate sponsors can provide financial support at various levels, ranging from support for the overall program to support for individual stations in exchange for advertising opportunities and as a benefit for their employees and visitors to their offices or retail locations.

Extending the life of existing transportation infrastructure
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. Compared with private vehicles, bicycle trips have relatively little detrimental impact on existing streets. The extensive regional bike-sharing system proposed in this application will not only improve person throughput, but will also shift some trips away from vehicles. This means less wear on the pavement, which prolongs the life of roads and reduces maintenance and repair costs.

Improving the performance of the overall transportation system
Bike sharing will affect trips in three major ways. First, new bicycle trips will replace short auto trips, reducing VMT. Second, they will replace short transit trips, relieving pressure on congested transit lines, such as the Orange Line in Arlington and the Red Line in Montgomery County. Third, they will increase access to transit, enabling longer transit trips, many of which are likely to be shifted from private automobile. Bike sharing will thus relieve pressure on many existing transportation systems and promote the most efficient use of the region's assets in terms of person throughput.

Primary Criteria 2: Economic Competitiveness
Today the national bicycling industry contributes an estimated $133 billion a year to the U.S. economy. It supports nearly 1.1 million jobs and generates $17.7 billion in federal, state, and local taxes. Another $46.9 billion is spent on meals, transportation, lodging, gifts and entertainment during bike trips and tours (3). Investments in bicycle infrastructure makes good economic sense as a cost effective way to enhance shopping districts and communities, generate tourism and support business.

Prioritizing efficient movement of people, not vehicles
This project prioritizes person throughput rather than vehicle throughput, allowing more people traveling by various modes to get to work faster, cheaper, and more comfortably. Specifically, bike-sharing extends the current reach of transit to 850,000 people who currently must drive or take a local bus trip to access a rail station or rapid

bus route. The bike-sharing system will allow these riders to use transit for a door-to-door journey to work, opening up newly accessible jobs to 850,000 workers. Bike sharing also generates 60 million trips previously not taken over the 20 year period, which in turn will generate economic activity that would not have occurred otherwise.

Employers benefit from increased bicycling
Worker productivity gains are associated with increased cycling. Studies in Holland and Denmark show that increased rates of bicycling to work result in improved health and lower rates of employee absenteeism (4).

Retailers benefit from increased bicycling
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 (5).

Home values benefit from bicycle facilities
The bike-sharing system will add value to homes and businesses in communities across the region located near the over 400 bike-sharing stations. By mapping real estate transactions, researchers have been able to show that bike facilities can have positive, statistically significant impacts on home values. For example, a study in Indianapolis, Indiana found that home values near a shared use trail sell for an average of 11% more than a similar house located elsewhere (6).

Primary Criteria 3: Livability

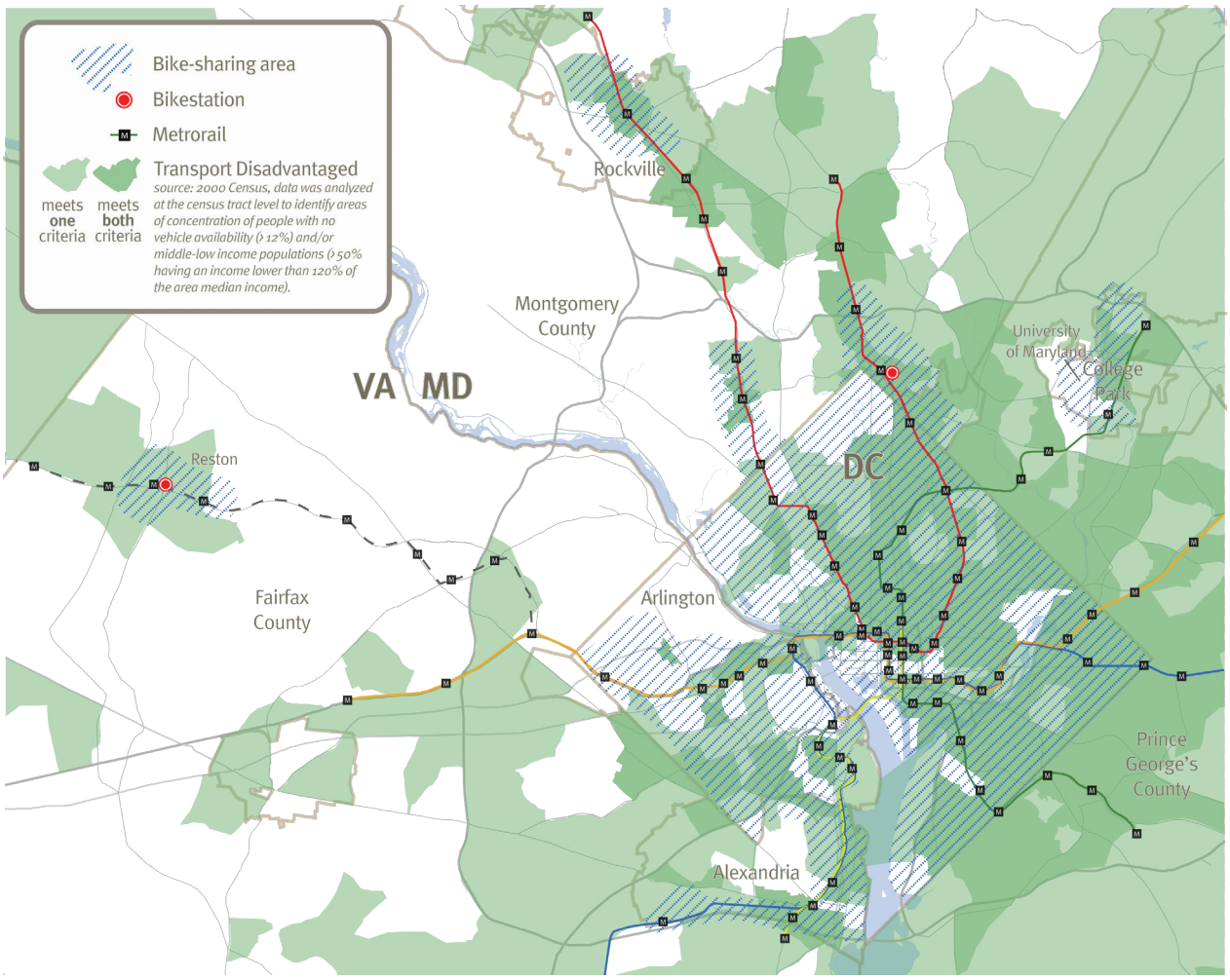
The scope of impact for the project is regional
Bike-sharing adds tens of thousands of bikers to the region's streets every day. The bike-sharing system will generate more than 650 billion bicycle trips (2011-2030) in 6 major urban and suburban jurisdictions, as well as throughout the campus of the University of Maryland. It is projected that over 180,000 people would be using the system every day by 2030.

Adds affordable transportation options for millions of residents in need
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% of area median income (7). This need for affordable options is also highlighted by the dependency of the region's residents upon non-auto forms of transport. Around 12% of the residents of the Baltimore-Washington region are without an automobile, and in the District this number jumps to 37%.

Bike sharing will allow around 1.4 million people to either replace short auto or transit trips and save money, or replace current walk trips and save time. Bike sharing provides the lowest cost per mile of any available mode, creating a regional consumer fuel savings of around $10,500 per day. Bike sharing also extends the current reach of high quality

transit to 850,000 people who currently must drive or take a local bus trip to access a rail station or rapid bus route. With bike sharing, these riders will be able to more quickly and cheaply access transit, which is also a relatively low cost mode, and 430,000 jobs that are newly bike-to-transit accessible.

Figure 2: Bike sharing service and low-income and transit dependent populations



Enhances regional intermodal connections

The project will connect bike sharing to over 60 Metrorail stations, 6 commuter and regional rail stations, and over 500 bus routes, creating over 55 million new transit trips by 2030. Additionally, the two Bikestations in Reston and Silver Spring will provide amenities and infrastructure to two major transit centers in the region, connecting to rail, local bus, and express bus. Table 3 is a detailed discussion of each project location and the positive synergies with existing transit services. It is estimated in the BCA that almost 8,000 new transit trips will be created each day as a result of this proposal. For this reason, WMATA, the regional transit operator, has expressed support for this proposed project and for increased bike-to-transit access. This is evidenced in their support letter in Appendix 3 and also through increased access improvements made at WMATA rail stations, such as the addition of bike trails and routes to station area maps.

Table 3: Intermodal bike sharing connections

	Bike sharing will connect to:			
	Metrorail Stations	Bus Routes	Commuter Rail Stations	Other
Arlington County	10	150+	1 VRE station	1 new busway, Columbia Pike planned streetcar route, and Shirlington regional bus station. Connections are facilitated by walk- and bike-friendly land use and infrastructure in places like the Rosslyn-Ballston Corridor, the Columbia Pike Corridor, which is Virginia's most heavily ridden local bus corridor, and the Pentagon area, which has the region's largest bus transfer facility.
City of Alexandria	4, existing; 1 planned	40, 1 BRT route	1 VRE station	1 Amtrak station.
Reston, Fairfax County	2 planned	20+		Park-and-ride lots and the Reston Town Center Transit Center, which is a major transit hub.
District of Columbia	40	300+	2	1 Amtrak station. Numerous bicycle facilities facilitate access to bike-sharing stations.
Montgomery County	6	160	2 MARC stations	1 Amtrak station. The Silver Spring Bikestation will enable more convenient bike-to-transit access for the Silver Spring Transit Station, which includes Metrorail and over 50 bus routes.
University of Maryland	Via bike sharing to College Park Metrorail	See "other"		The University's extensive bus system, which has an annual ridership of 2.6 million and has routes that extend into Montgomery County and Prince George's County.
City of College Park	2	30		University of Maryland shuttles and future Purple Line stations, which will provide circumferential rail service in Montgomery and Prince George's Counties.

Bike sharing increases access to the region's jobs, services, and amenities

All bike-sharing stations and the two Bikestations are located in 25 of the region's 58 activity centers, which serve as major employment or mixed use centers in the region, as well as numerous local activity centers. Specifically, bike sharing will connect residential areas and transit hubs to the following major employment and/or mixed use centers: Downtown DC (390,000 jobs), Federal Center/Southwest/Navy Yard (116,000 jobs); Georgetown (17,000 jobs), Monumental Core (49,000 jobs), Old Town Alexandria/King Street/Eisenhower Avenue (50,000 jobs and 6,000 jobs at the Patent and Trade Office), Crystal City/Pentagon City/Potomac Yard (38,000 jobs), Rosslyn/Clarendon/Ballston/Falls Church (100,000 jobs), Columbia Pike Corridor (11,000 jobs), Downtown College Park/commercial district/Hollywood (25,000 jobs).

Increased cycling results in measurable health care cost savings

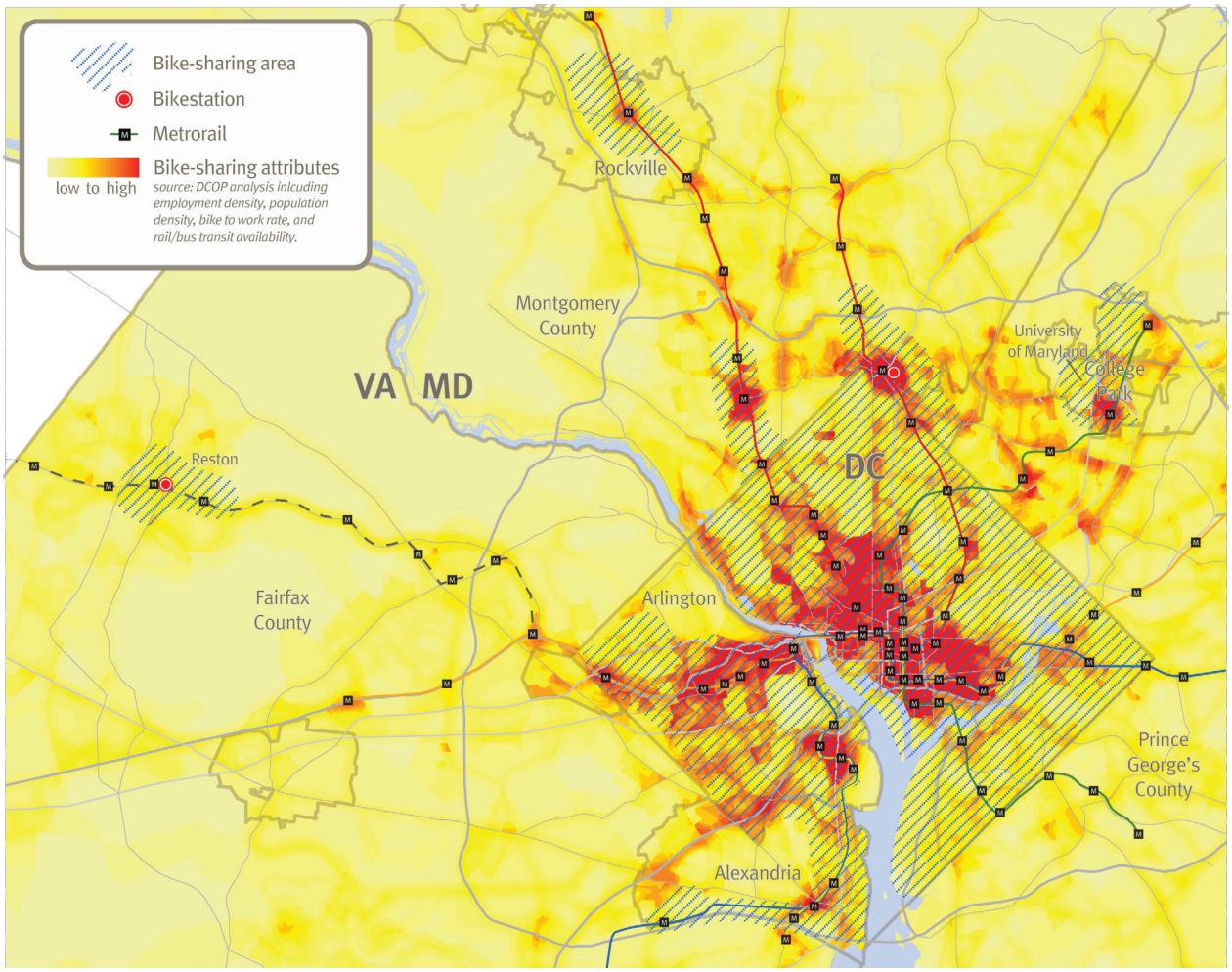
The CDC finds that 25% of the population do not meet their recommended 30 minutes of physical activity per day (8). There is a measurable health care cost differential

between those that do meet the activity requirement and those that do not by between $20 and $330 per year. Bike sharing improves this health metric measurably and is estimated to save the region more than $3 million in health care costs over 20 years.

Planned with land use coordination and community input

Bike-sharing station locations are being decided based on transportation services and land use, such as residential and employment densities, bicycle infrastructure, and proximity to transit facilities. Station locations include transit stations, entrances of large buildings and places of employment, and areas at the fringes of the walkable radius from transit. Figure 3 shows ideal bike-sharing locations based on land use and transportation criteria. The proposal was also the result of substantial land use coordination in each jurisdiction with multiple departments, public commissions, transportation management districts, and private property owners. Additionally, the proposal has been planned to complement land use, transit, and other bicycle-related plans. For instance, in Alexandria, station site selection in Old Town has been coordinated with the ongoing Waterfront Plan and in Potomac Yard bike sharing supported the newly approved land use plan that includes a new Metrorail station and

Figure 3: Ideal bike sharing locations based on land use and transportation



bike station. In DC, bike sharing complements major new land use developments, such as the proposed Department of Homeland Security headquarters at St. Elizabeth's.

Community input has also been an integral part of project planning. For instance, the District Department of Transportation used crowdsourcing to get public input on the specific placement of their initial 100 bike sharing stations throughout DC. Surveys to determine desired locations were used in conjunction with the aforementioned transportation and land use information. This technique will likley be used in determining locations for the second 100 stations proposed.

Primary Criteria 4: Sustainability

Increases per passenger fuel efficiency and reduces air pollution and GHG emissions

The bike-sharing system provides environmental benefits by shifting trips that were previously made by automobile to bike and by increasing transit ridership. The system is estimated to reduce more than 75,000 daily VMT by 2030 and 300 million VMT over 20 years. This translates into 115,000 tons of CO2, 90 tons of PM2.5, 80 tons of NOx, and 125 tons of VOCs. The reduction of single occupant vehicle use will also have positive effects on other environmental resources. For example, less VMT means less polluted runoff in the region's waterways and groundwater.

Not only are bicycles non-polluting, but the bike-sharing stations are 100% solar-powered. This approach to transportation combines human-powered bicycles and solar-powered stations to provide a transportation system that is entirely non-polluting.

Improves service without building resource-intensive new infrastructure

As stated in the State of Good Repair section, this project will increase person throughput without building new major road or transit infrastructure. This ability to increase system efficiency without major new construction limits severe disturbance to the region's natural resources, ensuring the continued integrity of the region's green infrastructure network and its varied and valuable ecosystem functions.

Primary Criteria 5: Safety

Bike-sharing makes biking safer for all cyclists by putting more cyclists on the road, replacing cars

Shifting trips from private cars to bicycles reduces VMT and the number of cars on the road, which reduces overall accident risk. Additionally, there is empirical evidence that achieving a critical mass of bicyclists on the roads makes cycling safer for everyone. In a study of American and European cities, it was found that while the number of cyclists can double, the number of accidents would only increase by 32% (9). This is evidenced by a steadily decreasing crash rate as overall bicycle ridership increases.

Planned in coordination with infrastructure for safe bicycle access
Bike sharing and Bikestation locations were chosen based on the adequate provision of bicycle infrastructure to support increased bicycle ridership and to ensure safe cycling. The Washington region has greatly supported sustainable modes, such as cycling, through the building of trail and shared roadway networks. For instance, this year D.C. has begun implementing a citywide bicycle plan that includes cycle tracks (protected bike lanes) on major streets downtown, such as Pennsylvania Avenue, 9th Street, L Street, I Street, 15th Street, 13th Street, and New York Avenue. Additionally, numerous bike trails, such as the Sligo Creek Trail in Montgomery County and the W&OD Trail in Fairfax County provide safe bicycle routes for bike-sharing users. This type of infrastructure, such as trails, shared paths, bike lanes, greenways, shared roadways, and cycle tracks, exist in all locations chosen for the regional bike-sharing system because they have been proven to reduce injuries and crashes involving all road users.

Primary Criteria 6: Job Creation and Economic Stimulus

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. Infused spending will directly result in increased economic activity, which will generate induced jobs in a domino effect. The total number of new jobs estimated to be created as a result of implementation of the entire project is 169. Of these, 108 are direct/indirect jobs, and 61 are induced jobs (10). These jobs result exclusively from the capital investment in the proposed projects. The majority of project components will be implemented immediately upon award (See Table 5: Project Schedule), therefore most of the jobs will be added shortly after the grant award is made. In addition to these jobs, some components will yield long-term jobs required to either operate the bike-sharing program or Bikestation facilities, as well as jobs that may result from increased economic activity prompted by the components.

Secondary Criteria 1: Innovation

Solar-powered docking stations
The bike-sharing stations are 100% solar-powered. This allows maximum system flexibility, because station placement is not contingent on the availability of utility connections. If commuting patterns change, there is planned construction, or for any other reason stations can be easily relocated to other areas of high demand.

Real-time information on bicycle availability
Bike-sharing stations are wireless-enabled, allowing information on the status of every docking station to be shared in real-time. From home or office computers and on-the-go via smartphones or other web-enabled mobile devices, users of the bike-sharing system can find out how many bicycles are available at any station in the region and how many empty docks are available to return a bicycle after their trip. The availability of this real-time information not only makes this system convenient for users, but also lets operators of the system monitor the usage and flow of bicycles throughout the day and redistribute bicycles by truck to ensure availability at each station.

Smart cards
Bike-sharing users who sign up for an annual or monthly membership can access bicycles at any station by using a subscription card. Members simply swipe their subscription card at the bike-station terminal, select their bicycle, and ride away. Day users can access bicycles using their credit card.

Dynamic pricing
The availability of real-time information allows monitoring of the usage of bicycles throughout the day and direct communication with users. When appropriate, users can be offered incentives via text message or e-alert, such as credits to their bike-sharing account, to aide in the redistribution of bicycles, which is very low-cost method of enhancing the operational performance and efficiency of the program. This approach has been implemented with success in the Paris bike-sharing system.

Secondary Criteria 2: Partnership

Regional coordination and expansion
This proposed regional bike-sharing project brings together six jurisdictions located in three different states, as well as the University of Maryland, to support sustainable transportation in the metropolitan Washington area. For the past year and a half, TPB staff has collaborated with state and local agencies on the development of a regional bike-sharing program that would allow residents and workers to seamlessly use bike sharing anywhere in the region.

COG has worked with the District of Columbia and Arlington County, VA to develop a framework for expansion of the initial bike-sharing system. The development of a COG Rider allows any other jurisdiction interested in bike sharing to easily join the system under the same terms and conditions that were negotiated by DC and Arlington.

Engaging non-traditional parties in funding transportation projects
Funding sources for this project include traditional state and local sources, but also include private and non-profit sources that are not traditional sources of funding for transportation projects. For example, Arlington County has secured financial commitments for both capital and operating expenses from the Crystal City Business Improvement District and the Potomac Yards Transportation Management Authority. Other project partners will seek funding from Transportation Demand Management programs, area business interests, non-profits and institutions, and developer contributions. Additionally, TPB is working with jurisdictional staff to secure corporate sponsorships to provide broad financial support for the overall bike-sharing program.

Completing the financing package
Arlington County and DC are seeking TIGER II funding to complete their overall financing packages for their components of the regional bike-share system; however, the effectiveness of bike-sharing systems improves dramatically with increased system size and density, so the smaller bike-share system that would be implemented without

TIGER II grant funding will not be as successful nor have the same regional benefits as the proposal. Other project partners have indicated that without TIGER II grant funding, they will likely be unable to implement a bike-sharing program that is robust enough to be successful.

Support of multiple disciplines engaged with livability efforts

Many non-transportation agencies and organizations have also registered their support. This includes planning departments, housing departments and health departments serving area jurisdictions, as well as national non-profits. Documentation of this support can be viewed in Appendix 3.

Benefit-Cost Analysis

The benefits and costs of the bike-sharing project were evaluated and are presented in this section. The following table provides a summary of this analysis, which shows that the benefits of the proposal far outweigh the costs over the 20 year performance period. At a 7% discount rate, the benefit-cost ratio of the project is 1.72, with a 79% rate of return. The analysis summary is followed by a description of benefits not quantified in the analysis and a description of the methodology and limitations of the data available. The benefit-cost analysis, including a full description of input data, methodologies and data limitations are included in Appendix 4 and Appendix 5, and also available for download from http://www.mwcog.org/transportation/TIGERii/.

TABLE 4: Benefit-Cost Analysis Summary

	7% discount rate	3% discount rate
Costs	$202,495,000	$312,392,000
Capital	-$15,431,000	-$18,632,000
Operating	-$54,373,000	-$83,456,000
Accident	-$132,691,000	-$210,304,000
Benefits	$348,584,000	$569,033,000
User Cost Savings	$151,511,000	$247,712,000
Travel Time Savings	$154,440,000	$252,344,000
Increased Access	$23,484,000	$38,371,000
Congestion Reduction	$6,557,000	$10,682,000
Emissions Reduction	$8,894,000	$13,901,000
Healthcare Cost Savings	$1,269,000	$2,067,000
Accident Reduction	$2,429,000	$3,956,000
Net Present Value	$146,089,092	$256,642,416
Rate of Return	79%	
Benefit-Cost Ratio	1.72	1.82

20-year period, 2010 dollars

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. First, it is anticipated that 50% of trips made using the bike-sharing system will come from transit, pointing to a shift from transit to bike for short trips. This is particularly important in the regional core where Metrorail congestion is severe and in fact constrained after 2025. Shifting these trips from transit to bike will help relieve some of this pressure on the Metrorail system, potentially reducing future infrastructure and/or transit operating costs.

The prevalence of the system throughout the region will also make biking more visible and conceptually accessible to people who may not have otherwise considered a bicycle for a non-recreation trip. This is also true of the Bikestations in Reston and Silver Spring, which provide a convenience for cyclists not fully quantified in the BCA. Convenient, high quality, and innovative bicycle infrastructure, such as bike sharing and the Bikestations, serve a marketing purpose to attract more people to consider a bicycle for a utilitarian trip.

There are other Bikestation benefits that were not quantified, but should be considered in evaluating the project. Bicycle theft or vandalism is a significant issue at transit stations, and the Silver Spring Metrorail station, where one Bikestation will be located, has been identified as one of WMATA's top theft stations. The security afforded by enclosed Bikestations not only translates into cost savings for previous cyclists from not having bicycle/parts stolen, but also encourages potential cyclists who were previously deterred by threat of theft to bike to transit. Unfortunately, sufficient data was not available to quantify this benefit in the timeframe required.

Input data and methodological standards used

The foundation of the model is built around several basic assumptions regarding ridership, capital increases over time, revenue generation, and mode shifts, all of which were based on existing bike-sharing models, such as the Montreal, Barcelona, Paris, and Lyon systems. Major assumptions regarding bike trip characteristics, such as average trip lengths were taken from the COG Household Travel Survey (HHTS) 2007/2008.

The major costs in the model are capital, O&M, and increased accidents. Capital costs include initial system set-up, such as bicycles, docks, card-readers, map frames, installation, and replacement costs every 6 years. The operating cost includes system operations, maintenance, redistribution of bicycles as needed, and an 8% theft and vandalism rate. Accident costs reflect the possible increase in accidents from adding more cyclists to the road. This is based on the current accident rate, bicycle ridership, and an accident increase factor per new cyclist added to the road, taken from Jacobsen's "Safety in Numbers" (2003).

The major benefits are user cost savings, travel time savings, increased access, congestion reduction, emissions reduction, improved public health, and accident

reduction. Benefits apply to new riders of the proposed system, as well as to existing riders of the smaller local system currently planned in DC and Arlington. Ridership was estimated based on existing systems and is a function of system size and density. User cost savings are a determination of the change in the direct per mile user fees paid by travelers based on mode shifts, which in this case are shifts to bike from auto, taxi, transit, and walk or personal bike. Travel time savings are a similar determination of the time difference for a bike trip shifted from another source. Increased access benefits were determined for trips that previously were not possible or worth the time or cost by finding the difference between the user/time cost of the next cheapest possible mode (assumed to be bus transit) and bike sharing.

Benefits were also assumed from reducing VMT, such as congestion reduction, emissions reductions, and accident reduction. VMT reductions were assumed to come from trips shifted from auto and taxi to bike and from auto to transit, resulting from increased bike-to-transit access.

Lastly, benefits were assumed from increasing the number of people meeting the CDC's recommended daily physical activity. Using the Rails to Trails report on active transportation, improved public health is quantified by determining the defrayed health care costs from meeting this requirement through cycling.

A more detailed methodology is available in Appendix 4.

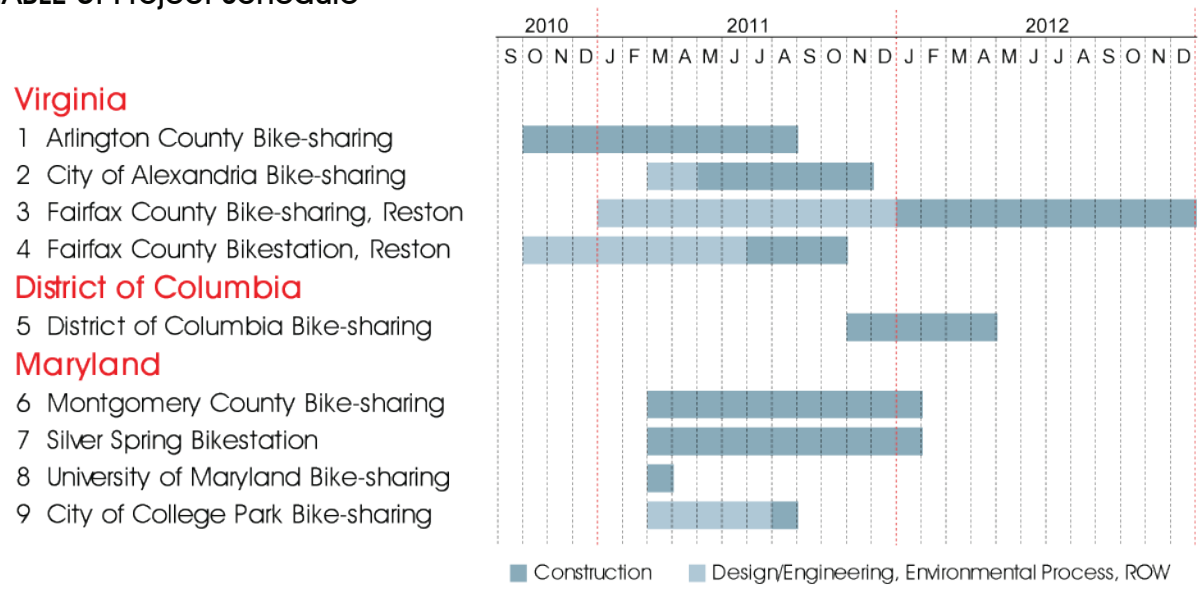
Data Limitations:
Data limitations include a lack of sufficient data points from other bike-sharing models, which would allow more accuracy in mode shift, ridership, and transit generation predictions. The models used were in operation for only 3 years or less. There was also limited data on the specific relationship between increased bicycle ridership and accident rates for the Washington region.

Project Readiness and NEPA

Project Schedule

The project schedule below shows how the various components of the proposed project will be implemented over the period of performance of the grant. Nearly all components will start immediately upon grant award and the remainder will start within a few months of award, underscoring the readiness of the proposed project to be implemented promptly. The schedule assumes an award date of February 2011 and does not factor in the amount of time necessary to develop a grant agreement with the cognizant modal administration. As such, the schedule is intended to be a guideline that will be shifted according to the actual award date. Nevertheless, all project components will be able to obligate all awarded TIGER II grant funds by September 30, 2012 as required.

TABLE 5: Project Schedule



Environmental Approvals

The proposed project may be subject to the provisions of the National Environmental Policy Act of 1969, as amended (NEPA). To date, NEPA analysis has not been performed for the proposed actions because federal funding was not anticipated prior to this application. As a result, the project was not reasonably foreseeable in the near future. Nevertheless, upon successful award of the TIGER grant, the appropriate level of NEPA analysis will be conducted for these projects. The FHWA and FTA joint "Environmental Impacts and Related Procedures" as described in 23 CFR 771 classify Bicycle facilities as a Categorical Exclusion (CE) under NEPA because "such types of projects meet the criteria for CEs in the CEQ regulations (sec 1508.4) and 771.117(a) of this regulation and normally do not require any further NEPA approvals by the administration (23 CFR 771.117C)". The proposed project meets the definition of project defined in: 23 CFR 771.117 C(3) Construction of bicycle and pedestrian lanes, paths, and facilities. Therefore, we believe a CE under 23 CFR 771.117 C is an appropriate level of NEPA analysis for this project, and we anticipate submitting a CE request to the appropriate modal administration once analysis has been completed. The District of Columbia has an already planned bike-sharing system funded with federal funds not included in this grant, for which NEPA compliance was completed quickly and concluded with a CE. All necessary reviews and preparation of the corresponding CE documentation, or higher level documentation should it be required, will be completed at least ninety days prior to September 30, 2012, in accordance with the requirements of the TIGER II grant. Documentation of this assurance by each project owner can be found in the support letters in Appendix 2.

Federal, State, and Local Actions

As part of project implementation, COG, as the lead applicant for TPB, along with all other project parties, will comply with all applicable Federal, State and local permitting requirements. Permits required for both the construction and operation of the proposed

components 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 provision of bike-sharing and Bikestations 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 II 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 Form

Small changes have been made to the total project cost and the total amount requested from TIGER II funds. Both cost figures have increased slightly (by 1%) as a result of refined calculations for specific project components.

Endnotes

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4. Hendriksen, Ingrid, "Reduced sickness absence in regular commuter cyclists can save employers 27 million euros," TNO Quality of Life, February 2009. http://www.vcl.li/bilder/518.pdf
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6. Lindsey et al, "Property Values, Recreation Values, and Urban Greenways," Journal of Park and Recreation Administration, V22(3) pp.69-90.
7. CNT Housing and Transportation Affordability Index http://htaindex.cnt.org/mapping_tool.php?region=Washington--Baltimore,%20DC--MD--VA--WV
8. CDC Physical Activity and Health Report, 1999. http://www.cdc.gov/NCCDPHP/SGR/concl5.htm
9. Jacobsen, PL. "Safety in Numbers" Inj. Prev. 2003;9;205-209
10. A factor of 1 new job per $92,000 of government spending was used to estimate the number of new jobs. Of this, 64% of the new jobs were direct and indirect jobs, while 36% was induced jobs. This is based on the May 2009 memorandum, Estimates of Job Creation from the American Recovery and Reinvestment Act of 2009, issued by The Executive Office of the President, Council of Economic Advisors.