Tech Committee
Item #4

DRAFT

Regional Priority Bus Project

Application for Funding from the Transportation Investments Generating Economic Recovery (TIGER) Competitive Grant Program Administered by the U.S. Department of Transportation

Submitted by

National Capital Region Transportation Planning Board

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1.0 FIRST PAGE

1.1 Project Type

The proposed project is composed of several modal components, including highway improvements, bicycle facilities, and transit-supporting improvements. As a result, it is considered a regional, integrated multimodal effort. For purposes of this grant application, the proposed project is designated as a *highway* project because it is primarily composed of highway improvements necessary to accomplish project objectives.

1.2 Project Location

As a regional initiative, the proposed project, composed of three component packages, is located in multiple locations of the Washington, DC, metropolitan area, including the District of Columbia, the states of Maryland and Virginia, and various cities and counties in Maryland in Virginia.

1.3 Urban / Rural Classification

Because it is located within the Washington, DC, metropolitan area, the proposed project is considered to be ***urban*** in nature. The project is fully contained within the Washington-Arlington-Alexandria, DC-VA-MD-WV Metropolitan Statistical Area, as defined by the Office of Management Budget (OMB) (OMB Bulletin No. 09-01, November 2008, accessed August 23, 2009 from http://www.whitehouse.gov/omb/assets/omb/bulletins/fy2009/09-01.pdf)

1.4 Proposed Funding

Total funding requested for this grant is $278,218,500. This amount is further broken down by individual package, as noted in Table 1.

Table 1
Project Summary

Project Package	City / County	Congressional Districts	Proposed TIGER Funding
Package 1: Priority Bus Corridor	District of Columbia Maryland: Montgomery and Prince George's Counties Virginia: City of Alexandria, Arlington, Fairfax and Prince William Counties	DC-At Large MD-4, 5 and 8 VA-1, 8 and 11	$204,038,000
Package 2: Regional Bicycle Sharing and Intermodal Smart Hubs	District of Columbia Maryland: Montgomery and Prince George's Counties Virginia: Cities of Alexandria and Fairfax, and Arlington County	DC-At Large MD-4, 5 and 8 VA-8 and 11	$13,380,500
Package 3: Regional Transit Centers	Maryland: Montgomery and Prince George's Counties Virginia: Arlington Co.	MD-8 VA-8	$ 58,800,000
Program Management			$2,000,000
GRAND TOTAL			$278,218,500

2.0 REGIONAL CONTEXT

The Washington, DC, metropolitan area encompasses the District of Columbia and the surrounding suburbs 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.[i] 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 states of Maryland and 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.

Transportation needs of the region are served by a system composed of various modes, including an extensive road network, Metrorail, commuter rail, an extensive bus system, walking and bicycling facilities, and specialized services for the disadvantaged. In 2003, then-TPB Chairman, Peter Shapiro, in The Region magazine, described a set of transportation challenges confronting the Washington region. He stated: "Transportation funding is tighter than ever. Land use patterns are projected to make us more and more dependent on our cars. The region's air quality does not yet meet federal Clean Air standards. Meanwhile, congestion is getting worse and our infrastructure is aging faster than we can maintain it." REFERENCE Four years later, 2007 TPB Chair, Catherine Hudgins said, "In the next 25 years the Washington metropolitan region is forecast to grow by 1.6 million people. That's like adding the City of Philadelphia . . . to our existing population of 5 million. Where will all these people live and work? How will they get around?" REFERENCE These same challenges beset the region today, and are compounded by the greatest levels of fiscal stress encountered in more than a generation due to recessionary conditions that prompted ARRA in the first place.

3.0 PROJECT OVERVIEW

The proposed project in this application is composed of an interconnected system of multimodal transportation options enabling travelers to make complete door-to-door trips efficiently, sustainably and affordably. Three primary packages constitute the project. The first is a package of priority bus corridors. Next is a package that includes a regional bicycle sharing program and the creation of intermodal "smart" hubs that extend the reach of bus and rail service. The final package is a set of three transit centers that improve intermodal access to major transit services.

Together, these three packages form a proposed project that is the next step in achieving the regional vision adopted by the TPB in 1998. Notably, the Vision describes a region with a reasonably accessible and priced interconnected transportation system that enhances the quality of life and supports a growing economy throughout the entire region, including a healthy regional core and dynamic regional activity centers that offer a mix of jobs, housing and services in a walkable environment. Due to the current financial and economic climate, it is uncertain whether this next step can be achieved in the foreseeable future. The project will improve the efficiency of the current system by prioritizing the movement of people over vehicles, encouraging alternative modes of transportation through increases in accessibility, and prioritizing transit at major bottlenecks. It will improve access to and through the region's central city, the District of Columbia, which is a federally defined Economically Distressed Area.

Increased efficiencies, coupled with increases in uses of alternative transportation modes, will have overall beneficial environmental effects. These include increases in energy efficiency as well as reductions in automobile emissions. Finally, implementing and operating these improvements and programs will also result in short-term construction jobs, permanent jobs administering these program and facilities, and induced jobs created by the capital expenditures. The section on *immediate economic benefit* later in this application addresses increases in new jobs expected from the project in more detail. Table X provides the number of jobs to be generated by the proposed action.

4.0 CONTACT INFORMATION

Mr. Ronald Kirby is the designated primary point of contact for this application. All inquiries, grant decisions and/or other official correspondences concerning this application should be directed to Mr. Kirby as noted:

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5.0 PROJECT NEED

5.1.1 A World Class, but Challenged Multimodal Transportation System

The National Capital Region has the second largest public transit system in the country.ii Through a history of multi-state and multi-jurisdictional cooperation, the greater Washington region was able to build a vast heavy rail network (Metrorail), complimented by an even more extensive connector system of local and regional bus routes and commuter rail lines. The completion of the Metrorail system truly united the region and enabled what were once just dormitory communities and other suburban parts of the region to prosper through more advantageous and convenient connections to the central business district within the District of Columbia.

Nevertheless, while the region has and continues to benefit from a world-class transit system, this system faces considerable challenges that endanger the future success and prosperity of the region. Continued metropolitan growth will in many cases exert more pressure on the surface transportation system than it can manage, requiring regional foresight to maintain an efficient and equitable system in the face of coming challenges. This project thus seeks to build the resiliency of the current system by improving its efficiency. By prioritizing the movement of people over vehicles, encouraging alternative modes of transportation and increasing capacity at major transit bottlenecks, many of the region's future challenges may be met more effectively and with greater ease.

5.1.2 Keeping our Assets from Turning into Liabilities

The root of the challenges that lay ahead is in the region's economic growth and prosperity. The region continues to experience steady and even rapid growth in some areas—driven in large part to the immense federal presence in the region. This presence was further bolstered by the 2005 Base Realignment and Closure (BRAC) decision, which resulted in more federal and contractor jobs for the Washington region. This growth is forecast to continue in the coming decades. Unfortunately, the majority of this growth is occurring in suburban and exurban locations, meaning more and more people continue to add to congestion on the region's road and transit system to reach jobs in other communities. This increased pressure on the surface transportation system translates directly into congestion and a loss of accessibility and efficiency for all modes using both highway and fixed guideway infrastructure.

Metrorail already experiences heavy congestion in some heavily trafficked locations, but by 2025, the rail system is projected to reach capacity on trips to and through the regional core unless a major funding gap is filled. As a testament to the success of the region's partnership in the past, Metrorail ridership has increased by 42% between 1996 and 2006.iv This annual 4% increase in ridership is projected to continue despite Metro's funding problems. Nevertheless, not all riders are expected to be accommodated beyond 2025, pushing riders onto the bus system or into private automobiles.

Even without spillover riders due to the rail system's capacity constraints, local and regional bus systems face myriad challenges, largely stemming from ever increasing road congestion. As the region has expanded outward and congestion has increased in past years, Metrobus ridership has grown an average of 2% a year, while local circulator and feeder systems have grown 7% per year since 1996. Like the rail system, this growth will continue, and this will adversely affect more and more riders. As road congestion worsens (congested traffic flow is expected to be prevalent throughout the entire region by 2030) [REFERENCE?], virtually, if not all bus systems will be negatively impacted through increased difficulty with schedule adherence, reliability and overcrowding.

5.1.3 Reading the Global Tea Leaves

Beyond direct challenges to the provision of public transit, the region is facing the same global problems that impact sustainability and livelihoods of regions everywhere. And like many other regions in the world, the National Capital Region is prepared to address to these problems. This region has suffered like all others through the current economic downturn with high rates of foreclosure, rises in unemployment, and sharp declines in access to credit. As a result, the region's residents are increasingly challenged to afford housing and transportation. Relieving this pressure is a regional problem solved through the regional provision of more low-cost, yet high quality transportation options, such as reliable transit and an increased ability to safely and conveniently use non-motorized forms of transportation. In this environment of scarce funding tight, public agencies throughout the region have attempted to apply creative solutions to the problem that require less and less capital and operating funds.

Funding and affordability are not the only constraints on the region's transportation future: energy efficiency and emissions reductions have become increasingly important. This metropolitan region, like so many others, faces serious environmental concerns. The region has been an official ozone nonattainment area since 1968, a PM2.5 nonattainment area since 2005.v and is projected to experience steadily rising greenhouse gas emissions. The region has made great strides in achieving attainment through transportation demand management strategies, such as telecommuting and carpooling; however, tackling climate change will require more aggressive measures to address increasing congestion-related emissions and higher regional vehicle miles traveled (VMT). These environmental problems require a similar strategy as our funding crisis: connect increasing numbers of people to vital services, affordable housing and jobs, while reducing our overall resource usage, and thus lessening our impact on the environment.

5.1.4 Doing More with Less

The most immediate method of making the region more resilient to the aforementioned challenges and maintaining our competitive advantage as a prosperous and livable world city is through efficiency: a mix of solutions that will make the entire existing system work better.

The region's transportation system does not currently operate with the greatest efficiency. Single occupancy vehicles dominate all modes of transportation in the region at 75% of all trips.vi Even with the resulting rising congestion on the roads, the region does not currently prioritize modes that result in the greatest person throughput, such as bus transit. As a result, bus operators are forced to use more and more buses to achieve the same level of service, wasting precious operating funding and, more specifically, diesel fuel. Moreover, many transit and auto trips are relatively short, with 17% of both transit and auto commute trips and between 30 and 45% of all non-work trips being less than 3 miles. These short trips can theoretically be replaced with more environmentally friendly and low-cost options—if more options were available.

There are clear opportunities to make major efficiency gains. First, the region can make bus service more reliable, more frequent and faster by applying relatively small-scale fixes in the form of priority treatments that give buses priority over other road users. These include transit signal priority (TSP) (where designated buses can effect a longer or a faster arriving green signal), queue jump lanes (short bus-only lanes at an intersection allowing a bus to bypass traffic queues), fully dedicated bus-only lanes, and cameras to enforce bus-only components. These treatments allow buses to move faster, therefore achieving either a greater level of service with the same number of buses, or the same level of service with fewer buses. The net effect is an increase in bus capacity with equal, if not lower, operating costs.

Second, a new strategy of tiering our transit services can be employed, not just by feeder bus to rail, but also to capitalize on cheaper, sustainable modes of transit service. One such method is bike-sharing, which can provide a low-cost, active transportation feeder to the bus network, thereby extending our transit reach even farther into the region's neighborhoods. This tiered transit provision approach can be supported by making the region's numerous intermodal connections quick, easy, safe and clear to the public through technology enhancements and targeted improvements at places where existing bottlenecks prevent access to current services. These may include areas where transferring from one vehicle to another is dangerous or time-consuming or areas where current stations cannot handle passenger volumes.

These strategies taken together provide a significant first phase of a truly regional, multimodal, and economically and environmentally efficient surface transportation system for the National Capital Region.

6.0 PROPOSED PROJECT

TPB's regional project proposal for an ARRA TIGER grant includes three modal packages that collectively provide an interconnected system of multimodal transportation options that allow the region's residents and visitors to make complete door-to-door trips efficiently, sustainably and affordably. Each package is supported by the other two, yet can stand alone and therefore be funded and implemented individually. Similarly, the 'sub-packages' contained within Package 1 (described next) can also stand alone, and therefore be funded and implemented individually.

6.1 Package 1: Priority Bus Corridors

The Priority Bus Corridors package is a network of fifteen connected bus priority corridors in Maryland, Virginia and the District of Columbia, running on both arterials and managed lanes (high occupancy vehicle, HOV) on freeways, as well as two bridge and arterial connections that tie the region together. These fifteen corridors represent areas with some of the highest bus ridership levels in the region and are central to the efficiency, equity and sustainability of the region's entire transportation system. Taken together these priority bus corridors provide an efficient rapid bus system overlay that both complements the current bus and rail systems and also increases regional accessibility through better use of the region's existing infrastructure and operational assets.

6.1.1 K Street Transitway Sub-package

1. *K Street Transitway*: This corridor is the centerpiece of this first package, and includes reconstructing and reconfiguring K Street, NW between 9th Street, NW and 23rd Street, NW to create a dedicated transitway with two-lanes and a third passing lane option, as well as two or three general purpose lanes in each direction and possible bicycle lanes. The improvements will also create a "Great Street" that is high-performing and safe for all modes: pedestrians, bicyclists, transit, and automobiles and a "Green Street," featuring highly inventive ways of achieving greater environmental and financial sustainability.

6.1.2 Priority Corridors Enhancements Sub-package

2. *16th Street Bus Priority Improvements:* This corridor provides a major regional connection between points of high activity in Maryland, such as the Silver Spring Metrorail station, to the DC central core and K Street. As such, 16th Street has been identified as a primary priority of WMATA in its Priority Corridor Network, which seeks to focus resources along specific, high ridership corridors. Proposed capital improvements include a queue jump lane, NextBus real time passenger information displays at 17 stop locations, and transit signal priority/traffic system management (left turn phase for bus) at a number of intersections.

3. *Georgia Avenue Bus Priority Improvements*: Also a WMATA Priority Corridor, improvements include completing TSP implementation at several intersections, bulb-outs, and nearly 30 stop locations enhanced with NextBus real time arrival technology. Additionally, a bus only lane would be constructed on Georgia Avenue for short span to alleviate current exorbitant bus delays.

4. *H Street/Benning Road Bus Priority Improvements*: This project would implement running way improvements along the existing corridor of a major local bus route, including a left turn phase for buses at a busy intersection, a queue jump lane, and NextBus real time arrival technology displays at 22 bus stop locations. These improvements support future streetcar plans.

5. *Wisconsin Avenue Bus Priority Improvements*: A WMATA Priority Corridor with the highest ridership in the region, capital improvements include transit signal priority and/or traffic signal management at a number of intersections and NextBus real time arrival technology deployed to a number of express service stop locations.

6. *Addison Road Improvements*: A WMATA priority corridor that connects the eastern ends of the Blue and Green Metrorail lines, bus shelters along the existing P12 bus route will be upgraded with NextBus real-time arrival prediction displays.

7. *University Boulevard Bus Priority Improvements*: Also a WMATA Priority Corridor that connects multiple jurisdictions, improvements include four queue jump lanes, transit signal priority at around 20 intersections, and a number of bus stop enhancements, such as the deployment of NextBus technology. This project will support planned light rail transit, such as the Purple Line, and will utilize the Takoma Langley Transit Center also included in this proposal.

8. *U.S. Route 1 (MD) Bus Priority Improvements*: The Maryland portion of US 1 is also a WMATA Priority Corridor. Capital improvements proposed include queue jump lanes and transit signal priority at several intersections, enabling parallel transit service to the auto-serving I-95 corridor.

9. *Veirs Mill Bus Priority Improvements:* Also a WMATA Priority Corridor that connects the commerical centers of Silver Spring and Rockville, capital improvements include a queue jump lane and NextBus real time bus arrival displays at several stations along the route.

10. *US I Transitway (VA)*: Similar in concept to the K Street Transitway, the City of Alexandria will develop a bus transitway in the median of US 1 within its city limits. The transitway would provide exclusive right of way for buses and would provide passenger amenities, such as transitway stations and new buses.

11. *VA 7 (Leesburg Pike) Bus Priority Improvements*: A WMATA Priority Corridor that provides access to the vast economic and commercial center of Tysons Corner, improvements include NextBus displays at several express service bus stops and transit signal priority at a number of intersections along the corridor. This project supports future street car corridors by creating linkages other transit lines, such as the I-66 and I-395 Express Bus corridors.

12. *Van Dorn-Pentagon Rapid Bus*: The project will provide a new rapid bus service in the City of Alexandria from the Van Dorn Metrorail Station in Fairfax County to the Pentagon. It will incorporate limited stop service, signal prioritization, super stops, and possibly queue jump lanes; however, the City of Alexandria eventually seeks to build exclusive bus lanes on Van Dorn Avenue. This project is being developed partly to support a new BRAC facility opening at Seminary Road and I-395 by September 2011.

13. *Theodore Roosevelt Bridge to K Street Bus Priority Improvements*: This major regional connection will be improved to link the K Street Transitway to bus priority/HOV lanes along I-66 in Virginia. Like the 14th Street Bridge, this is also a major access point for commuters into the Washington D.C. central business district, and would receive complimentary transit signal priority and bus mounted enforcement cameras along E Street, northbound 18th Street, and southbound 19th Street. Local money may be provided for dedicated curbside bus lanes, if deemed feasible.

14. *14th Street Bus Priority Improvements*: This major regional connection will be improved to link the K Street Transitway to bus priority/HOV lanes along I-395 in Virginia. This is a major access point for commuters into the Washington D.C. central business district, and includes complimentary transit signal priority and bus mounted enforcement cameras along 14th Street from the bridge to K Street. Bus only lanes may be included along 14th Street to south of Constitution Ave, which is consistent with a current federal EIS process to reconfigure the bridge in concert with HOT lane development on I-395 south of the bridge. Local money may be provided to extend the bus only lanes to K Street.

6.1.3 Bus Priority on Managed Lanes Sub-package

15. *I-66 Multimodal Improvements:* I-66 is a major corridor connecting Virginia to the central city core, and is one that currently suffers from debilitating congestion and inefficient bus movements. This project will provide direct access to and from the Vienna/Fairfax-GMU Metrorail station from the HOV lanes of I-66. Access will be provided via a two way fly-over ramp from the I-66 HOV lanes to Saintsbury Drive, directly west of the station's south side multi-modal transfer facilities. This new ramp will eliminate the delays associated with weaving across I-66 for buses accessing the Vienna Metrorail station from the west.

16. *I-95/395 Multimodal Improvements*: The corridor, like I-66, is an often congested connector of Virginia with the DC core. It was historically built as a busway and this proposal seeks to begin to restore some of its transit functionality through station improvements at Pentagon Station and Franconia/Springfield Station, including bus bays, real time bus information, and traffic circulation/access/security improvements. Major technology improvements include a mobile web application for real-time bus information, bus information display, cameras outfitted on 40 buses, computer-aided dispatch/automatic vehicle location technology, and transit signal priority at several potential locations.

6.2 Package 2: Regional Bicycle Sharing and Intermodal Smart Hubs

17. A common issue in promoting use of public transportation, such as the network of rapid bus described above, is the "the last mile" problem entailing that, while transit may be accessed from point A, it is still not a feasible option because the closest end stop or station is too far from the final destination. A regional bicycle-sharing program, or bike transit service, with a large number of bikes (3250 bikes) placed at strategic locations (325 bicycle stations), such as transit stations, points of major activity, and major residential locations, addresses this issue. It allows a user to ride to or from a transit station to his/her destination, effectively extending the reach of the current transit system. This proposal would provide a layer of supportive connector transit surrounding the aforementioned bus priority corridors and Metrorail stations in the regional core of DC, Arlington and Alexandria, allowing more people to affordably use high quality transportation to access the region's many amenities and services.

A bike-sharing system works similar to car-sharing system, such as ZipCar, where members pay an annual fee and have access to any available bike throughout the region by paying a small, additional per-hour fee. The grant request includes capital for 2250 bicycles, 225 stations, and administration of the service for 1000 bikes in the District of Columbia, 750 bikes in Arlington County, 200 bikes in the City of Alexandria, and 300 bikes that will be dispersed throughout the City of Fairfax in Virginia and College Park, Hyattsville, Bethesda, Silver Spring, and National Harbor in Maryland. The District is using $5.2 million in other federal funds for 1000 additional bikes and 100 stations, and local jurisdictions have also committed to providing the necessary operating funds for this system. Based on similar sized models in other major cities, user fees from memberships, day passes and advertising revenue should fully sustain the system after three to five years.

Although the bike stations are not physical stations like rail stations, when placed at points of intermodal transfer, they can be a substantial catalyst to create a sense of place and opportunity. In the proposed program, 20 intermodal "smart hubs" will be created at transfer points between services, such as bike-share, bus, rail, or car-share. At these hubs users will be able to use free wireless internet to access a regional website of transportation information, created under this proposal, using their PDAs and mobile phones, and learn what modes are available in the vicinity of the hub. Additionally, high-tech "smart displays" with information such as real-time bus arrivals and expanded wayfinding will be placed at each hub. This bike sharing program builds off of the success of the District's pilot bike-sharing program of 500 bikes, which has recently sparked interest in local jurisdictions throughout the region, underscoring the applicability of a connected, regional system of bike-sharing.

6.3 Package 3: Regional Transit Centers

The third and final package of projects creates an additional layer of access for users of the regional transportation system by making capacity and safety improvements to transit centers. Within this package are three transit center improvements or creations that allow travelers to make bus and/or rail transfers more safely than is currently possible. In addition to safety, these improvements will provide increased station capacity, which will support increased rail and bus ridership. The stations themselves differ with regard to the existing commercial, office, and residential character, but all support increased economic and residential development through their support of the transit system and increased amenities. Below are descriptions of each of the three proposed transit centers.

18. *Takoma/Langley Transit Center*: This transit center will be located at the intersection of University Boulevard and New Hampshire Avenue on the border of Montgomery and Prince George's Counties in Suburban Maryland. This bustling intersection serves as a major point of connection and transfer between eleven different bus routes, making it one of the busiest transit locations in the DC area. Currently the bus stops are scattered far from each other at different locations around the intersection, making transfers difficult and often dangerous. The new transit center will consolidate all the bus stops at the intersection into one facility. This will eliminate the need for people to cross wide and busy roads and also provide a permanent and visible transit amenity. Through new bus bays, pedestrian walkways, a full canopy, restrooms, lighting, and bus information, the transit center will ultimately provide a safe, attractive, comfortable and efficient facility for passengers and for bus transfer activities, and will also improve pedestrian safety, accessibility, and connections to bus services in an area that is largely low income and transit dependent.

19. *Rosslyn Metrorail Station Access Improvements*: The Rosslyn Metrorail station in Arlington, VA, is among the busiest access and transfer points in the entire transit system and currently experiences capacity constraints. This project will improve access to and increase capacity within the Rosslyn Metrorail station

by creating a new entrance consisting of three new high speed, high capacity elevators, a mezzanine at train platform level, emergency stairs from the train platform to street level, and related systems and infrastructure This project is being completed in conjunction with and partially funded by the JBG Central Place site plan development and thus supports major land use developments planned for the area.

20. *Medical Center Metrorail Station Access Improvement*: A major driver of land use changes in the National Capital Region is the 2005 Base Realignment and Closure (BRAC) decision, which has created new hubs of major activity throughout the region through it's relocation of facilities. One such location is proximate to the Medical Center Metrorail Station, where BRAC construction at the National Naval Medical Center (NNMC) will place significant demands on the current rail system that cannot be met efficiently through the current station access points. Therefore, the project will include construction of a grade separated pedestrian tunnel to connect the existing Medical Center Metrorail Station and Transit Center to the NNMC.

7.0 PROJECT PARTIES

This project application is the result of six months of regional collaboration and cooperation among numerous partners who understand that the entire region will benefit from this project, even though its components may or may not be specifically located in their jurisdiction. These partners have registered their support for this regional project, which is documented in numerous letters of support, accessible at REFERENCE. Several of the project partners will also play more formal roles with respect to their status of applicant/grant recipients. These are noted in the following sections.

7.1 Primary 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 will administer the grant program proposed in this application in a similar manner.

7.2 Joint Applicants

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

- City of Alexandria, VA
- Montgomery County, MD
- Prince George's County, MD
- Washington Metropolitan Area Transit Agency (WMATA),
- District of Columbia Department of Transportation (DDOT),
- Maryland Department of Transportation (MDOT),
- Virginia Department of Transportation (VDOT), and
- Potomac and Rappahannock Transportation Commission (PRTC).

As joint applicants, these parties will be project "owners" of specific project components identified in this application. In this role, joint applicants will be direct recipients of grant funds and will be responsible for administering these funds and implementing the projects in accordance with the grant provisions. Joint applicants have 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 Discretionary Grant. Documentation demonstrating joint applicants' acceptance of this role and applicable terms is available at [[INCLUDE REFERENCE]] Table XX contains all the project components included in this application and identifies the responsible joint applicant for each.

7.3 Other Partners

Several other parties play an important role in the development and success of the projects proposed in this application. Although they are not considered formal applicants because they are neither proposed as grant recipients nor will own or implement projects, these other partner organizations have registered their support for

specific projects. Documentation of these other partners' support is available at [[INCLUDE REFERENCE]]. In most cases, partners are local governments or large-scale developments where the regional bicycle sharing program or transit centers are proposed to be implemented. Other partners include the cities of Alexandria and Fairfax and Fairfax County in Virginia, and the cities of College Park and Hyattsville, Montgomery and Prince George's Counties and National Harbor in Maryland.

Table 2 identifies all applicants for each of the proposed component projects constituting the three packages in this application.

7.4 Grant Administration

COG will be the lead applicant and responsible for managing the grant to ensure that the entire project is delivered as scheduled. As part of this, COG will be the direct recipient the $16 million proposed for the regional bicycle sharing program and up to $2 million for overall program management. Other state, regional and local agencies identified as joint applicants will be direct recipients of all other TIGER grant funding identified in the application.

To accomplish this, COG will execute a grant agreement with the Cognizant Modal Administration to receive up to $2 million for over all project management. 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 consulting firms 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. This team will also prepare a detailed and comprehensive plan for evaluating the success of the project that TPB will implement beginning in 2012. The budget for the two-year general project management contract will be up to $2 million and COG will retain 2.5 percent for administrative expenses. The $2 million identified for program management will be proportionally lower if grants are awarded at lower amounts than proposed in this application.

It is anticipated that the public agencies that own and/or operate their specific priority corridor project components or transit centers will execute specific grant agreements as first-tier sub-awardees with the Cognizant Modal Administration. These agencies include DDOT, MDOT, VDOT, WMATA, PRTC, the City of Alexandria, Arlington County, Montgomery County and Prince George's County.

COG will also be responsible for the implementation of the regional bike-sharing system. In that role, COG will execute a grant agreement to be the direct recipient of $13.4 million, issue an RFP for a contract to purchase the bicycles and install the stations, and retain 10 percent for administrative expenses. COG will execute agreements with the participating jurisdictions to direct the contractor to provide them each a specific number of bikes and install their bike stations and bus and bicycle user information hubs at specified locations.

7.5 Grant Funds and Sources and Uses of Project Funds

Table XX provides a detailed listing of all components that collectively form the packages constituting the proposed project. The table includes the amount of grant funding requested, sources and uses of all project funds, total project costs, percentage of project costs that would be paid for with TIGER Discretionary Grant funds, and the identity and percentage shares of all parties providing funds for the project (including Federal funds provided under other programs.

Table 2
Project Information

ID	Project Name	State	Jurisdiction	Applicant * lead applicant	Implementing Agency	NEPA Status	Project Cost	Grant Request	% TIGER	Prog Mgmt %	Other funding sources
Package 1: Priority Corridors Network											
K Street Transitway Sub-package											
1	K Street Transitway	DC	Washington DC	District DOT (DDOT)	DDOT	EA	139,000,000	139,000,000	100%	0.25%	
	Grant Program Management	**COG**		**COG***		**-**		**347,500**	**100%**		
K Street Transitway Subtotal							**139,000,000**	**139,347,500**	**100%**	0.25%	
Priority Corridor Enhancements Sub-package											
2	16th Street Bus Priority Improvements	DC	Washington DC	DDOT	WMATA/DDOT		1,295,000	1,295,000	100%	0.25%	
3	Georgia Avenue Bus Priority Improvements	DC	Washington DC	DDOT	WMATA/DDOT		4,111,000	4,111,000	100%	0.25%	
4	H Street/Benning Road Bus Priority Improvements	DC	Washington DC	DDOT	WMATA/DDOT		415,000	415,000	100%	0.25%	
5	Wisconsin Avenue Bus Priority Improvements	DC	Washington DC	DDOT	WMATA/DDOT		745,000	745,000	100%	0.25%	
6	Addison Road	MD	Prince George's County, Maryland	Prince George's County	WMATA/Maryland SHA/Prince		200,000	200,000	100%	0.25%	
7	University Boulevard Bus Priority Improvements	MD	Montgomery County/Prince George's County	MD State Hwy Admin (SHA)	WMATA/Maryland SHA/Montgomery County/Prince George's County		1,262,000	1,262,000	100%	0.25%	
8	US 1 (MD) Bus Priority Improvements	MD	Prince George's County, Maryland	SHA	WMATA/Maryland SHA/Prince George's County		805,000	805,000	100%	0.25%	
9	Veirs Mill Bus Priority Improvements	MD	Montgomery County	SHA	WMATA/Maryland SHA/Montgomery County		265,000	265,000	100%	0.25%	
10	US I Transitway (VA)	MD	Alexandria, Arlington County	Alexandria	Alexandria		12,000,000	8,500,000	71%	0.25%	
11	VA 7 Bus Priority Improvements	MD	Virginia	VA DOT (VDOT)	WMATA/VDOT		1,340,000	1,340,000	100%	0.25%	
12	Van Dorn-Pentagon BRT	MD	Alexandria, Arlington County	Alexandria	Alexandria		670,000	670,000	100%	0.25%	
13	T.R. Bridge to K Street	DC	Washington DC	DDOT	DDOT		1,800,000	1,800,000	100%	0.25%	
14	14th Street to K Street	DC	Washington DC	DDOT	DDOT		5,200,000	5,200,000	100%	0.25%	
	Grant Program Management	**COG**		**COG***		**-**		**66,520**	**100%**		
Priority Corridors Enhancements Subtotal							**30,108,000**	**26,674,520**	**89%**		
Bus Priority on Managed Lanes Sub-package											
15	I-66 Multimodal Improvements	VA	Virginia	VDOT			44,500,000	18,500,000	42%	0.25%	
16	I-95/395 Multimodal Improvements	VA	Virginia	VDOT/PRTC/ Alexandria			19,930,000	19,930,000	100%	0.25%	
	Grant Program Management	**COG**		**COG***		**-**		**96,075**	**100%**		
Bus Priority on Managed Lanes Subtotal							**64,430,000**	**38,526,075**	**60%**		
Priiority Corridors Subtotal							**$ 233,538,000**	**$ 204,548,095**	**88%**		
Package 2: Regional Bike-sharing											
17	Regional Bike-sharing and Intermodal Technology Service		District of Columbia, Arlington County, Cities of Alexandria and Fairfax, Montgomery County, Prince George's County	Metropolitan Washington Council of Governments (COG)*	District of Columbia; Arlington County; Cities of Alexandria and Fairfax; Montgomery County; Cities of Hyattsville and College Park; and National Harbor		**$ 19,225,000**	**$ 13,380,500**	**70%**	**10%**	
	Grant Program Management	**COG**		**COG***		**-**		**1,342,905**	**100%**		
Bike Sharing Subtotal							**$ 19,225,000**	**$ 14,723,405**	**77%**		
Package 3: Transit Centers											
18	Medical Center Station Access Improvement	MD	Montgomery County	Montgomery County	Montgomery County/MDOT/ WMATA		31,500,000	31,500,000	100%	0.25%	
19	Rosslyn Metrorail Station Access Improvements	VA	Arlington County	Washington Metropolitan Transit Admin (WMATA)	Arlington DOT		42,000,000	15,000,000	36%	0.25%	
20	Takoma/Langley Transit Center	MD	Prince George's County, Maryland	MD Mass Transit Admin (MTA)	MTA		24,600,000	12,300,000	50%	0.25%	
	Grant Program Management	**COG**		**COG***		**-**		**147,000**	**100%**		
Transit Centers Subtotal							**$ 98,100,000**	**$ 58,947,000**	**60%**		
PROJECT TOTAL							**$ 350,863,000**	**$ 278,218,500**	**79%**		

8.0 SELECTION CRITERIA

8.1 General Priorities

8.1.1 Regional Significance

Although the project physically touches the entire regional core and much of the region's inner suburbs, its benefits penetrate the entire National Capital Region. The project proposes improvements to bus services across the metropolitan Washington region. The K Street Transitway, the centerpiece of the project, provides much-needed congestion relief and priority to buses operated by not only the District of Columbia and WMATA, the regional transit operator, but also by commuter bus services from both Maryland and Virginia. The WMATA Priority Corridors components provide increased bus service levels and reliability to six jurisdictions on both sides of the Potomac River, while transit priority at the two river crossings will provide significant benefits to inter-jurisdictional and interstate commuters. Local, regional and inter-jurisdictional bus services will also benefit greatly from the improvements along the two freeway corridors in Virginia.

The bike sharing component will provide new transportation options to travelers to and through the Washington, D.C. core; the City of Alexandria and Arlington County and the City of Fairfax in Virginia; and Bethesda, Silver Spring, College Park, Hyattsville, and National Harbor in suburban Maryland. Both the Rosslyn and Takoma Langley transit centers increase capacity and convenience at two major transit access points very proximate to jurisdictional borders, thus facilitating regional travel.

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 Mark Center in the City of Alexandria in Virginia and the National Naval Medical Center in Bethesda, Maryland.

8.1.2 Completion by February 2012

Nearly all the components of the project can be completed by the two-year deadline of February 2012. This grant application identifies one component of the Priority Bus Corridors package that will be substantially underway by this date but not yet completed within the preferred timeframe. The sub-package containing this component can be excluded if so desired by the US DOT. For a more detailed description of the project components completion dates, see the project schedule shown in Section XXX.

8.1.3 Leverages Outside Funding

The requested $278-million in TIGER grant funds will used to leverage an additional $75-million dollars from a variety of federal, state and local sources. For a detailed description of project funding sources, see Section 7.5, Grant Funds and Sources and Uses of Project Funds, A short discussion of additional funding that has been or will be leverage is below.

The physical component of the K Street Transitway is only one part of the larger project to provide a new cross-town transit service connecting Georgetown to Union Station. The other component is the actual rolling stock and operating funds. While the capital funds needed to construct the transitway have not yet been allocated, the District worked with WMATA and the local business-improvement districts to purchase the vehicles and operate the service, which has been in place since 2005. Completion of the transitway will increase the efficiency of this service, and complement the existing multi-million dollar investment in transit vehicles and service operations.

TIGER grant funds will complement and leverage funding for four other project components. The US 1 Transitway in the City of Alexandria component includes $12-million in non-TIGER capital funding, including FTA, FHWA and WMATA money. The Rosslyn Metrorail station improvements includes $17-million in local funding, a $10-million state contribution and $5-million in developer contributions. The Takoma/Langley Transit Center will combine $5-million in county funds with $7.2-million in tax-increment financing revenue from WMATA to cover half of the project's capital costs. Lastly, the bike-sharing project includes additional federal funding for the 1000 additional bikes in the District of Columbia, as well as local operating funding.

8.2 Primary Criteria

Jurisdictions within the National Capital Region has a history of working together to envision 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. Nevertheless, for the first time since the implementation of the Metrorail system, the region has come together to begin implementing a long-term transportation vision that has been developed not through disparate, parochial interests, but a regional plan for success. This plan represents a first phase of this long-term vision that includes corridors of high quality rapid bus service running over variably priced lanes and connecting the region's 58 major residential and employment activity centers to each other, the Metrorail system, and to the regional core. This proposal, therefore, is inherently regional and long-term in nature, with wide-reaching benefits across time, demography, and geography.

The following is a specific discussion of how the first phase of the TPB's multimodal, multi-sector vision will not only provide a step toward broader long-term outcomes, but will also achieve a multitude of long-term benefits resulting specifically from this first phase alone.

8.2.1 State of Good Repair

8.2.1.1 Upgrading existing infrastructure:

Both the bus priority package and the transit centers package upgrade and, in some cases, reconstruct, existing infrastructure that currently hampers future economic growth and stability.

- *Restructuring existing roadways to ensure the highest person throughput:*
  The current congested conditions of roadways threaten the viability of bus transit. Although the priority treatments provided in this package are not traditional reconstruction projects, they restructure roadways to provide bus priority treatments, such as exclusive bus right of way (as in the K Street and Virginia US 1 projects) or transit signal priority, which eliminate costly delays and ensure the most efficient person throughput.

- *Creating capacity by upgrading transit access points:*
  The transit center package upgrades current transit access/egress and transfer points to eliminate current and future transit capacity constraints, costly auto delays, and time-consuming and dangerous transfers between transit vehicles. For instance, to ensure continued transit-oriented growth in the nationally recognized Rosslyn-Ballston corridor, the Rosslyn Metrorail station capacity constraints must be solved. Rosslyn largely developed as a result of Metrorail access, but current access points are increasingly failing to meet high demand. This has directly constrained the area's potential land use development, and as a result the new entrance in this application is a condition of the Central Place mixed use development in Rosslyn—which could simply not be supported without the new entrance.

8.2.1.2 Sustainable sources of revenue for O&M costs:

The projects put forward in the TPB's grant application were all included with an acute understanding of the grim financial future, particularly for transportation, and therefore all minimize dependency on public funding for operations and maintenance (O&M) costs.

- *Bike*-sharing *can be sustained by user fees and advertising revenue:*
  Each participating local jurisdiction has committed to providing necessary operating costs. However, revenues are expected from user fees and advertising revenue. User fees are paid by members who pay a relatively small yearly fee ($80) and by non-members who pay for a day pass ($5). Each bike will also have advertising space, which is projected to sell for a similar fee as space on other transit vehicles in the region. It is projected that annual revenues will exceed annual O&M costs.

- *Bus corridors save operating dollars by improving current service:*
  The bus corridors improve service efficiency rather than adding capacity, allowing the same number of buses to achieve faster, more reliable service. Therefore, additional operating expenses will not be needed. In fact, most routes are able to generate operating savings because buses are able to adhere to schedules and shave off actual daily operating time otherwise spent in congestion. All new priority treatments are simply restructuring existing roadways and signals and therefore are expected to help reduce operating costs.

- *Transit centers will require WMATA support, largely met by additional fare revenue:*
  Both the Rosslyn and Medical Center Metrorail stations will require yearly O&M funds provided by WMATA. Rosslyn will require ten new WMATA employees and between $25,000 and $50,000 per year in non-personnel costs. However, WMATA will also save a considerable amount on O&M expenses from the addition of another elevator, which will eliminate the need to operate a shuttle to another Metrorail station when the current elevator is out of service. Additionally, WMATA currently operates at an 80% farebox recovery rate and it is expected that a large share of the additional operating expenses will be covered by the additional fare revenue that the new entrance allows. The Medical Center pedestrian tunnel will require an additional $50,000 per year in operating costs, which will be borne by WMATA. ADD TAKOMA LANGLEY INFO

8.2.1.3 Improving the performance of the system:

Overall, the project aims to improve the performance of the *existing* system, rather than adding a great deal of expensive new capacity.

- *Current projections indicate serious capacity constraints, solved through increasing access to the current system:*
  For the Rosslyn station, ridership projections show that the existing station will require 4 fare gates and 6 ticket vending machines to serve year 2020 usage levels. The new entrance will provide 4 new gates and 7 new machines. Additionally, the existing elevator is WMATA's busiest with over 68,000 uses per month. The elevator capacity is not adequate, resulting in frequent back-ups and frequent use of expensive-to-operate shuttle buses during elevator maintenance and repair.

- *The bus priority treatments will improve average on-time performance rates:*
  The WMATA priority corridors included in the bus package have an average on-time performance rate (the ability of the buses to run on schedule) of 76%, with some lines exhibiting on-time performance rates as low as 63%. Excess delays to buses result in increased operating costs and overtime pay for operators. The running-way improvements proposed should help increase the reliability of bus operations along the priority corridors. WMATA currently predicts a 15% improvement in on-time performance due to service and running-way improvements.

8.2.2 Economic Competitiveness

8.2.2.1 Prioritizing efficient movement of people, not vehicles

This project serves as a first step toward regionally prioritizing efficient people movement rather than vehicle movement, allowing more people traveling by various modes to get to work faster, cheaper, and more comfortably. It does this without negatively affecting the region's economic future by focusing improvements upon the existing system, as discussed in the previous section.

- *All of the bus corridors provide faster access to major regional employment centers*
  For instance, the K Street Transitway, will provide faster access to and through the region's primary employment center. The K Street corridor is currently quite congested, resulting in potential loss of jobs in the regional core and potential future suburbanization of the region's workforce. The transitway will help unlock access to emerging areas in the District, enabling the location of new jobs closer to a large base of currently economically distressed employees. These emerging areas have the ability to support approximately 141,000 jobs. Other components enhance transit service to major BRAC sites, including the Mark Center in Alexandria and the National Naval Medical Center. The Priority Corridors components alone provide access to approximately one-third of the region activity centers, which make up a large percentage of the region's employment areas. The K Street Transitway and five of the WMATA priority corridors will provide enhanced local transit service to the population of the District of Columbia, a federally defined Economically Distressed Area.

- *Bike-sharing increases transit accessibility to 500,000 jobs and 1 million workers*
  Bike-sharing extends the current reach of high quality transit to almost 1.5 million 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 more than one million workers. Bike-sharing also generates more than 80 million trips previously not taken over the 20 year period. These new trips will certainly generate economic activity that likely would not have occurred in the region otherwise.

- *Transit center improvements make higher transit shares possible with future land use growth*
  Each of the transit centers allows for faster and safer transfers, faster and safer access to transit, and/or faster travel times for road users, thereby allowing more people to get to work in a timely and affordable fashion. However, the transit center projects also make it possible for increased land use development to use existing transit amenities. The Rosslyn station, described earlier, is one example. Additionally, the Medical Center tunnel also expected to support Montgomery County's policy goal of a 30% transit share for increasing numbers of Medical Center employees by increasing the access capacity of the current station.

8.2.2.2 The project supports long-term job creation and training

- The K Street Transitway will also support job creation and training: DDOT implements an On-the-Job training program in compliance with federal civil rights regulations at 23 CFR Part 230. The purpose of this program is to train and upgrade minorities and women toward journeyman status. The contractor is obligated to make every effort to recruit and enroll minority trainees and women by conducting a systematic and direct recruitment through public and private sources, including partnering with community-based organizations that will be likely to yield minorities and women within a reasonable area of recruitment.

- The bike-sharing system will likely include an innovative apprenticeship program, including a potential partnership with local bike shop and community organization, Phoenix Bikes, in Arlington County. This shop provides business leadership and hands-on bike repair skills to at-risk youth. The regional bike-sharing system in Arlington County would partner with Phoenix Bikes to give at-risk youth work experience by employing their repair skills on bike-share bikes, with a professional bike mechanic overseeing the youths' work.

8.2.3 Livability

8.2.3.1 The scope of impact for the project is regional

The project positively affects the livability of the entire core of the Washington region, as well as all of the inner suburbs and even parts of our outer suburbs. The benefits will be directly and indirectly felt throughout the region, allowing millions of people to access the region's amenities more quickly, more comfortably and conveniently, and more affordably.

- *Tens of bus lines and thousands of transit and bicycle trips will be affected*
  The bus package will decrease travel time and improve quality of bus service on approximately 75 bus lines throughout the region, providing benefit to over 260,000 current daily riders, and up to over 400,000 riders by 2030.
- The bike-sharing system will generate almost 1 trillion additional bicycle trips over the 20 year period in 5 major urban and suburban jurisdictions, with almost 150,000 using the system every day by 2030.
- Each of the transit center projects has been developed to fulfill demand that is currently evident and therefore all will exhibit high levels of usage. The Takoma-Langley transit center will facilitate approximately 5,000 boardings and transfers per day and eliminate 750 potentially dangerous road crossings. Similarly, the Medical Center pedestrian tunnel will take 2000 people off of a busy intersection by allowing safe, grade-separated access to the rail station. The new Rosslyn station entrance will facilitate an additional 12,000 trips per day, allowing the station to accommodate the total projected ridership for 2020 and beyond.

8.2.3.2 Improves and adds more affordable transportation options for millions of residents in need

The project addresses current issues of affordability by expanding low-cost transportation options.

- *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 except the eastern portion of Washington DC is marked by housing and transportation costs that are more 45% of area median income.[vii] This need for affordable options is also marked 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, while in the District this number jumps to 37%. More than 30% of the riders that the Takoma-Langley transit center will serve are transit dependent. According to the 2008 TPB Regional Bus Survey, 52% of the bus passengers on the WMATA Priority Corridor routes included in this project are transit dependent.

- *Bike-sharing provides the lowest cost transit possible and even increases access to other low-cost transit*
  The bike-sharing package will allow more than 2.5 million people to either replace short auto or transit trips with a low-cost, healthy option and save money, or to replace current walk trips with new bicycling trips and save time. Bike-sharing provides the lowest per mile cost of any available mode by far, creating a regional consumer fuel savings of around $1800 per day. Bike-sharing also extends the current reach of high quality transit to almost 1.5 million 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 in itself has a cheaper owner/operating cost than the private automobile.

8.2.3.3 Improves mobility and accessibility to the region's services, jobs, and amenities

The project will enhance user mobility by making transit more attractive, reliable and available.

- *Bus transit corridors provide connections between residential and commercial areas.*
  All of the components in the bus package provide improved connections between residential and commercial areas. The K Street Transitway connects residential areas on the east and west sides of the core to the employment center of downtown. The priority corridor and express bus components connect residential areas of all three jurisdictions with activity centers, Metrorail stations and the regional core.

- *Bike-sharing increases quick, convenient access*
  The bike-sharing system will saturate regional core locations throughout the District, City of Alexandria and Arlington County with a low-cost, healthy transit option that will allow riders to make short trips quickly without having to wait for transit or waste time looking for parking, or to access areas that are currently not served by transit. As mentioned in the previous section, over 80 million *new* trips by 2030 will be made possible with bike-sharing. The system also provides bikes at Metrorail stations and major points of activity, which will allow riders to use transit to access parts of the region that were previously inaccessible. Bike-sharing also further opens up the region to non-drivers, such as the youth population.

- *Transit centers improve accessibility for the physically disadvantaged and persons with disabilities*
  Major accessibility gains will also be made for persons with disabilities who rely on elevator access to the Rosslyn Metrorail station. By providing a second entrance with a second elevator, when one elevator is not in service, persons with disabilities will no longer be required to alight at the nearest station with a working elevator and take a shuttle bus to the Rosslyn station. The Takoma-Langley transit center will benefit persons with physical mobility constraints, who currently find it difficult to walk long distances to make bus transfers.

8.2.3.4 Enhances regional intermodal connections

The project is intended to be multimodal by providing benefits to users of various transportation modes. Therefore, it is logical to encourage enhanced mobility and accessibility through intermodality.

- *Increases bus capacity at rail stations by improving bus waiting areas*
  Efficient bus-rail transfers are central to the success of the transit system as a whole. The bus corridors package includes new bus bays at two Metrorail stations, facilitating faster, more reliable bus-rail transfers.

- *Improves public information to make possible intermodal connections clear and easy*
  The technology component of the bike-sharing system includes a regional website of transportation information, including bike-sharing, car-sharing, taxi., bus and rail, coupled with wi-fi enabled hot spots at major hubs of current intermodal transfer. The effect will be to make available transfer opportunities clearer to the public to ensure that when a door-to-door transit option is possible and convenient, riders know to take advantage.

8.2.3.5 Increases cycling, which reduces accident risk, and improves regional public health

The bike-sharing program is expected to follow the models elsewhere where bicycling on the whole increased significantly from the increased visibility of cyclists and therefore decreased accident risk, which is discussed later in the Safety section.

- *Increased cycling results in measurable health care cost savings*
  The CDC finds that 25% of the population reports no physical activity at all and therefore do not meet their

recommended 30 minutes of physical activity per day[ix]. It has been found that 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. In aggregate, the bike-sharing system is estimated to save the region more than $5 million in health care costs over the 20 year period.

8.2.3.6 Planned with the understanding that land use is a primary driver of transportation need

Each component included in the project was the result of a planning process that coordinated transportation and land-use planning decisions and encouraged community participation, when possible.

- *Transit centers were planned in response to future growth*
  The Medical Center project has been developed in order to manage immense BRAC-related growth that will depend on Metrorail. The Rosslyn station improvements have been proposed to accommodate major developments in the near and long-term future that would otherwise be met with transit capacity constraints. The Takoma-Langley center is currently the largest bus transfer site in the region and is only projected to grow as commercial and residential uses expand.

- *Ideal bike-sharing locations have been determined based on land use*
  The specific bike-sharing locations are currently being decided based on both transportation services and land use, such residential and employment densities, bike infrastructure (such as bike lanes) and proximate transit facilities.

- *Bus corridors have been developed with land use plans and anticipated growth in mind*
  The K Street component, in conjunction with the network of priority corridors connecting to it, has been developed to *support* a large list of District plans for land use, culture, arts and transportation, including the Downtown Action Agenda in 2000 and the District's 2006 Revised Comprehensive Plan. The project has also been designed to support a variety of redevelopment projects in K Street area.

8.2.3.7 Also planned with the understanding that community buy-in is necessary for success

Each set of recommendations for the WMATA priority corridors is the result of an extensive outreach process, where engaged community groups and transit riders developed a comprehensive set of service and running-way improvements. The K Street Transitway has also been developed with robust community participation, most recently through the Environmental Assessment process when public meetings were held. More information on this process may be found in the appendix.

8.2.4 Sustainability

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

Bus priority treatments improve bus reliability and attractiveness as an alternative mode to the private automobile All bus package components work to prioritize bus transit over auto modes, and as such would reduce fuel consumption and greenhouse gas emissions as they encourage new transit trips and make existing transit trips faster and more efficient. Additionally, increased operating speeds of buses translates directly to lower operating costs, including reduction of fuel use. Specific reductions in fuel consumption and GHG emissions are documented in the benefit-cost analysis.

- *Bike-sharing promotes a zero emissions, non-motorized mode and reduces emissions*
  The *bike*-sharing system provides environmental benefits primarily from shifting trips that were previously made by automobile to bike and by increasing transit ridership. In aggregate, the system is estimated to reduce more than 50,000 daily VMT by the end of the 20 year horizon. This translates into more than 65,000 tons of CO_2, 60 tons of $PM_{2.5}$, 60 tons of NO_x, and 110 tons of VOCs over the 20 year period.

- *Transit centers support small area transit mode shares well above the regional average*
  The transit centers do not solely increase transit ridership, however, they support projected increases in transit capacity. Therefore, without Rosslyn's second entrance, or the pedestrian tunnel across MD 355, it is *unlikely* that all of the projected growth around those two stations would be able to be accommodated by the rail system. It is therefore likely that those trips would be diverted to other modes, such as bus and private automobile.

8.2.4.2 Improves service without building resource-intensive new infrastructure

A major environmental benefit of this project that should not be overlooked is that it seeks to improve service and increase transit capacity without building new infrastructure. This eliminates the need to take more land for travel lanes, run more buses to improve reliability, or build and/or operate new transit lines to extend the current reach of transit.

8.2.5 Safety

- *Transit centers aim to provide safer transit access and egress*
  Pedestrians attempting to access the Medical Center Metrorail station currently have a short time to cross a major thoroughfare and additionally have occasional conflicts with a large number of turning vehicles. The pedestrian tunnel removes these conflicts and eliminates 23 potential accidents over the 20 year horizon. The new Takoma-Langley transit center will eliminate a great a deal of time and risk pedestrians assume from crossing an extremely busy and currently not-walkable intersection, by formalizing the bus stops into one centralized station. This will eliminate more than 200 potential accidents over the 20 year period. The Rosslyn station provides significantly enhanced emergency access to/from the platforms. *The* new entrance elevators will be the fastest way into/out of the station and will therefore be instrumental to EMS personnel in the case of emergency. A new stairwell will provide access in case the elevators and escalators are out of service. Additionally, over 15,000 people are accommodated on trains using Rosslyn in the peak hour in the peak direction, so the additional capacity of this new entrance will be crucial to any evacuation events. Finally, the new entrance will also include a new mezzanine area that will serve as a refuge in the case of evacuation.

- *Bike-sharing makes biking safer for all cyclists by putting more cyclists on the road and taking cars off the road*
  By inducing a mode shift from private cars to bicycles, the number of cars and VMT will be reduced, thus reducing overall accident risk. Additionally, there is empirical evidence that simply increasing the number of cyclists on the roads makes cycling a safer mode of travel for all users. For instance, 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%[x]. This is evidenced by a steadily decreasing crash rate as overall bicycle ridership, including bike-sharing, increases.

- *Some bus priority treatments also serve to reduce the probability of private vehicle-bus conflicts*
  The K Street project will include left turn restrictions, which will reduce conflict points, and also *enforcement* mechanisms to ensure that not only bus priorities are respected, but general safety laws are as well, such as speeding, pedestrian violations, and no turn on red. Lastly, similarly to the bike-sharing, enhanced bus transit leads to increased transit ridership, some of whom are switching from the private automobile. As previously stated, fewer cars on the road translate into less accident risk for all road users.

8.2.6 Cost-Benefit Analysis

The costs and benefits of the three packages of the project were evaluated and are presented in this section. The following table provides a summary of this analysis and is followed by a summary narrative. Input data and methodologies used in the analysis are presented after the summary.

Table 3
Benefit Summary Table

Project	Present Value of Total Benefits	Present Value of Total Costs	Net Present Value	Rate of Return	Benefit-Cost Ratio	Employment
Priority Bus Package						
3% discount rate	$3,200	$200	$3,000	70%	16.0	Direct/Indirect: 1,423 Induced: 800
7% discount rate	$2,000	$180	$1,800		11.1	Total: 2,223
Bike-sharing						
3% discount rate	$1,081	$379	$702	77%	2.85	Direct/Indirect: 102 Induced: 58
7% discount rate	$632	$237	$396		1.67	Total: 160
Transit Centers						
Rosslyn						
3% discount rate	$5,510	$53	$5,457	343%	104.43	Direct/Indirect: 220 Induced: 124
7% discount rate	$3,624	$46	$3,577		78.02	Total: 343
Takoma-Langley						
3% discount rate	$333	$24	$309	66%	14.14	Direct/Indirect: 105 Induced: 59
7% discount rate	$219	$22	$2197		9.86	Total: 163
Medical Center						
3% discount rate	$107	$31	$76	20%	3.47	Direct/Indirect: 86 Induced: 48
7% discount rate	$70	$29	$40		2.41	Total: 134

**all costs shown in millions*

8.2.6.1 Summary

8.2.6.1.1 Priority Bus Package

The priority bus package is clearly beneficial based on the benefit-cost analysis results. The large savings are the result of reductions in actual waiting time, perceived waiting time and in-vehicle travel time. These travel time reductions not only benefit approximately 260,000 current (June/July 2009) riders, but an additional 5000 riders who switch from private auto and 2000 additional trips that did not occur but will occur due to travel time reductions. These ridership numbers are predicted to grow at a rate between 3% and 10% per year. The analysis determined that passengers switching from private auto will save approximately $600 annually by switching to one of the bus lines improved by this package of improvements. This mode shift results in a 20-year aggregate total reduction of approximately 300-million vehicle-miles traveled and 30-million auto trips. Additionally, emissions reductions over that period of time are valued at approximately $5.6-million, with reduced accident value of $6.8-million and congestion relief benefit of $16-million. Finally, transit agencies are predicted to experience an annual reduction of operating costs of approximately $40-thousand.

Other benefits outside of travel time savings were not quantified in this analysis. First and foremost, the land use benefits of significant infrastructure expenditures are not factored into this analysis. The K Street Transitway will increase accessibility to properties located along the corridor, which would result in higher rents for existing properties as well as potential redevelopment of currently underused parcels. Similarly, likely increases in tax revenue from increased land values are not quantified in this assessment.

Another benefit not quantified is the bus stop improvements applied to the majority of the local bus routes operating on arterial roadways. These improvements (such as bulb-outs, shelters and other amenities) should result in increases comfort and safety of riders, helping justify the increase in ridership due to the corridor improvements assumed in the analysis.

The benefit of the new rolling stock requested as part of the buses-on-freeways component is not quantified in the analysis. The replacement of 13 buses in revenue service from 11-year-old vehicles to modern, clean vehicles will result in annual reductions of VOCs and NOx (2.4 tons and 5.1 tons respectively) and a reduction of nearly $1-million in maintenance costs over a five-year period.

It is not currently known how many of the new trips resulting from the bus running-way improvements would be shifted from Metrorail, and more specifically the core of the Metrorail system. However, any trip shifted would relieve pressure on the downtown segments of the system, which are currently nearing capacity and, without change in the status quo, will reach capacity by 2020. The K Street Transitway, as well as three of the WMATA priority corridor routes, could possibly take passengers off the overburdened subway onto surface buses.

8.2.6.1.2 Bike-Sharing

The bike-sharing and smart hub system has a wide-range of benefits that achieve a high rate of return on a relatively low investment of capital and operating expenses, as well as projected increased accident costs. The primary benefits are achieved from shifting trips from less efficient modes, creating new trips because of increased accessibility, inducing new transit trips because of this same increased accessibility, and creating new bicycle trips. The following is a discussion of the specific benefits, all stated in aggregate totals over the 20 year period. As such, the system is expected to reduce VMT by over 270 million and vehicle trips by almost 140 million. This results in significant emissions reductions for both criteria air pollutants (VOCs, NOx, and $PM_{2.5}$) and GHG emissions, which in aggregate translates into an almost $21 million reduction value. The VMT reduction also results in decreased accidents costs by reducing risk by over $5.4 million and decreased congestion, valued at over $14.5 million. Benefits are also accrued for users in terms of time and cost savings, since short bike trips can be quick and are extremely low cost. It was estimated that the affordability benefits of the system are almost $530 million, while the time savings (primarily for those that previously had to wait for transit or walk) is over $1 billion. Another major benefit of this system is public health benefit, assumed to manifest through decreased health care costs from the increased physical activity of thousands of new cyclists. Over $5.3 million in health care costs are predicted to be avoided as a result of this bike-sharing system. Finally, although increased accidents are portrayed as a cost in this analysis, it should be noted that a benefit of the bike-sharing system is a decreased crash rate, achieved through the "safety in numbers" or "critical mass" concept of putting more cyclists on the road to increase visibility.

There are several benefits of the bike-sharing system that were not captured in the cost-benefit analysis. First, most mode shifts will represent shifting short trips made by auto or transit. For instance, 17% of both auto and transit work trips are currently under 3 miles, while 44% of auto non-work trips and 31% of transit non-work trips are currently under 3 miles Many of these short transit trips will be within the District core, which will relieve pressure on the already congested Metrorail system.

The bike-sharing system has also created cultural shifts in other cities where it has been implemented, such as Paris. There is a social aspect of returning a bike and sometimes handing it off to another user, presenting the opportunity for social interaction, such as tips on issues with that particular bike. This kind of effect amplifies the cultural and social benefits of a tight urban fabric, adding to the livability of communities. 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.

8.2.6.1.3 Transit Centers

The transit center package, comprised of three centers, achieves high rates of return with positive benefit-cost ratios. Costs for each center represent capital costs and O&M. Benefits of each will be discussed separately. First, the Takoma Langley transit center achieves benefits from four distinct sources: preventing bus transfer-related street crossings, far walks for transfers, long bus loops to serve multiple stops in one area, and the construction of a permanent structure with a variety of amenities. The benefits are thus travel time savings for bus riders going through the center, walk access travel time savings, reduced accidents and economic development from a major transit amenity. Total travel time savings is estimated at around $143 million. Reduced accident costs are estimated at above $244 million. Lastly, increased economic development, determined through increased property values, is estimated at above $89 million.

The Rosslyn station has similar benefits, primarily manifested in walk access travel time savings for riders who can now use a closer and less congested entrance and economic development, which is assumed to capture the elimination of a major transit capacity constraint that would have otherwise hindered new growth. The area has a high Metrorail transit share at 28% of all work trips, which is roughly three times the regional average; therefore it is thought that new developments would be similarly reliant on the Metrorail system. Total walk access time savings are estimated at around $66 million. Economic development benefits are estimated at over $7.8 trillion.
The Medical Center tunnel has two primary benefits of reduced accident costs and auto travel time savings. By removing pedestrians from the street, pedestrian-vehicle conflicts are eliminated, achieving both of the aforementioned benefits. Reduced accident costs are estimated to be relatively small at $7.8 million. Travel time savings are estimated at almost $130 million.

Some of the transit centers also achieve qualitative benefits that were not captured in the cost-benefit analysis. For instance, the Takoma-Langley center provides a comfortable location for people to wait that does not currently exist, making transit more attractive to choice riders. Additionally, the center will serve a largely low-income, transit-dependent community. All of the transit centers will facilitate transit ridership and better integrate connectivity between rail, bus, car/vanpool, and pedestrian and bicycle commuters.

8.2.6.2 Description of input data and methodological standards used

8.2.6.2.1 Bus Priority Package

The basis for the cost-benefits assessment of the bus package is travel time savings and quality of service improvements along the approximately 75 bus routes impacted by the improvements. Time savings benefits are experienced by the transit operators as well as bus passengers. Running-way improvements and real-time bus arrival information will greatly improve the quality of the bus riding experience, which can be translated into a reduction of perceived wait time that transit riders find much more onerous than travel time.

The bus component's analysis is broken out into five different bus transit modes, each with different operating characteristics including average fares and average trip lengths. The bus routes in each mode are then assigned a number of travel time savings in minutes based on the project components with which they interact. These travel time savings per bus route were then used as the basis for determining the following quantifiable benefits:

- Travel time and wait time savings for existing riders
- Total travel cost reductions for new riders, including household savings
- Reductions in operating costs for transit operators
- Reductions in GHG and other emissions from both private and transit vehicles
- Reductions in auto-related accidents due to decreased auto travel

The analysis uses values of travel time specified in the regulations. Nevertheless, this analysis assumes that waiting and transfer time for bus transit is especially onerous without real-time bus arrival information. Therefore, a perceived waiting time is assumed to be double the actual expected waiting time. Project components that provide real-time bus arrival information assume that the perceived and expected wait time are the same.

The analysis captures the increased reliability due to the proposed bus by calculating expected bus wait times. For bus routes that can assume random arrivals (headways of 10 minutes or lower) a value is used that represents half the headway plus the standard deviation of the headway as the expected wait time. The expected wait time of buses that run less frequently is simply the standard deviation of the wait time. A value of 5 minutes has been agreed upon in this region as a realistic value for this parameter, as the region's commuter bus operators recommend to their passengers to arrive 5 minutes before buses schedule departure times.

8.2.6.2.1.1 Bus Priority Package Data Limitations

Bus Priority Package
The primary data source for this analysis is the 2009 Constrained Long Range Plan transit network for the year 2010, which includes average travel time and distance for all bus routes impacted by the improvements. Ridership averages were solicited from the individual transit operators who provided the latest data available, generally June or July of 2009. Local and regional transit operators in the region provided assumptions for potential mode shifts, average trip lengths, regional average fares, and operating costs. Values for transit travel time elasticities, average

auto speeds and annual growth rates of transit ridership were taken from the regional travel demand model or from regional studies.

Bus Priority Corridors
The primary limitations of the data are the lack of specificity and the need to average different assumptions into one regionally representative figure.

8.2.6.2.2 Bike-sharing Package

The cost-benefit model for the bike-sharing package is based on a relatively simple framework of three major sources of costs and seven major sources of benefits and a set of basic and complex assumptions.

Basic programmatic assumptions are as follows:

1. 3250 total bikes in the system, which will increase 5% a year under the assumption that the program will be expanded to eventually achieve ideal saturation (roughly 200 residents per bike).
2. This bike-sharing system will be similar in size to the Montreal, Barcelona, and Lyon bike-sharing systems. The greatest data is available for the much larger Paris bike-sharing system. Therefore, a combination of experiences from these global models was used to generate system assumptions, such as revenue generation, mode shifts, and ridership.
3. Each bike will be used by 7 people per day, but this increases 5% a year as the system expands.
4. Each person will make 2 trips (1 roundtrip).
5. The average bike trip length is 1.5 miles, according the COG Household Travel Survey (HHTS) 2007/2008. This is used as the average trip length for all trips assumed to have been replaced with a bike trip.

The major costs are: capital, O&M, and increased accidents. The assumptions behind these costs are as follows:

1. The **capital cost** is a per bicycle cost of $3700, which includes initial system set-up, such as bicycles, bike racks, and card-readers. Each bike is also assumed to require replacement every 6 years for a cost of $500 per bike. This is also the cost for a new bike after the initial set-up year.
2. The **operating cost** is a per bicycle cost of $1400, which includes an 8% theft and vandalism rate.
3. Both the capital and operating costs are based on the Bixi system in Montreal.
4. **Accident costs** are based on the current accident rate, bicycle ridership, and an accident increase factor per new cyclist added to the road. Injuries and fatalities were obtained from the Virginia Department of Motor Vehicles, Maryland Office of Highway Safety, and the District Department of Transportation. Bicycle ridership was obtained from the HHTS for both 1994 and 2007/2008. The accident increase factor per new cyclist was obtained by applying the following equation: $(\text{new ridership} / \text{old ridership})^{0.4}$, which was taken from Jacobsen's "Safety in Numbers" (2003). The accidents attributable to the bike-sharing program were estimated by taking the difference in yearly accidents involving cyclists with bike-sharing and without. Accident cost assumptions were used as follows: $6 million per fatality and all injuries were assumed to be moderate in nature at $93,000 per injury.

The major benefits are: user cost savings, travel time savings, increased access, congestion reduction, emissions reduction, improved public health, and accident reduction. All benefits apply to new riders only as this is an entirely new system, therefore a consumer surplus model was applied to time cost, user cost, and increased access benefits. The assumptions behind these benefits are as follows:

1. **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. 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, based on average rail vs. bus trips, SmarTrip usage, and fares; average taxi fares; and bike fees, based on likely percentage of members vs. day pass users. A parking fee assumption is also applied to all auto trips, which represents the average daily parking cost in DC.
2. **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 and average transit wait time of 5 minutes), and value of time, which was taken from the NHTSA guidance.

3. **Increased access** is a determination of the benefit from now allow trips to be taken that previously were not possible or worth the time or cost. This benefit was calculated using a consumer surplus model, where it is based on the difference between the user/time cost of the next cheapest possible mode (assumed to be bus transit) and the new bike-sharing option.
4. **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, trips shifted from auto and taxi to bike, and also trips shifted from auto to transit, resulting from an increase in transit trips due to the technology component and increased transit access from bike-sharing. The technology component is estimated to induce a 3% increase in transit use over 5 years. A general assumption of 10% was used to determine the mode shifts for auto to transit, based on WMATA guidance. New transit generation was determined using a percentage of bike-share trips connected to bus or rail transit and applying a percentage based on the number of people and jobs with new access to transit and ideal bike-sharing locations.
5. **Emissions reductions** is a straightforward determination of reductions in VOCs, NO_x, $PM_{2.5}$, 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.
6. **Improved public health** is determined using assumptions taken from a recent Rails to Trails report on active transportation, including the health care cost increase 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%), and the average extra exercise time needed to meet the requirement (15 minutes).
7. **Accident reduction** is a simple calculation assuming that with each VMT reduced, accident risk decreases. Therefore, a value per VMT for accident reduction, taken from NHTSA guidance, was applied to the total reduced VMT.

8.2.6.2.2.1 Bike-sharing Data Limitations:

The major data limitation was the 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 2 years or less. There was also limited data on the specific relationship between increased bicycle ridership and accident rates for the Washington region in particular. The exact bike-sharing locations within the local jurisdictions have not fully been determined, which eliminated the possibility for a detailed analysis of the affected demographic. This could have allowed for greater accuracy in determining the public health benefits, ridership, transit generation, and mode shifts

8.2.6.2.3 Transit Centers Package

The cost-benefit model for the transit centers package is based on a relatively simple framework of two major sources of costs and three major sources of benefits. The major costs are: capital and O&M. O&M costs include non-personnel costs and new employees. The major benefits are: economic development, travel time savings (for auto, bus riders, and bus access), and safety. The assumptions behind these benefits are as follows:

1. **Economic development** was determined for the Rosslyn and Takoma-Langley stations by estimating the increase in property value within a quarter mile around the stations. Property value was determined using tax assessment data. Increase in property value was assumed to be 1% for Rosslyn and 2% for Takoma Langley, based on cost-benefit guidance from HDR Decision Economics. The lower figure was used for Rosslyn because it was assumed that a greater portion of the surrounding area is built out. The Central Place development, for which the new Rosslyn entrance is conditional, was also added to the total benefits since it cannot be built without the station improvement.
2. **Travel time savings** were developed in three different ways for each transit center, but all applying to existing riders only. For the Rosslyn center, time savings of 2 minutes are assumed to be gained by 12,000 existing riders who will be able to use a closer entrance. The NHTSA value of time for waiting was used. For the Takoma-Langley transit center, time savings were determined for both existing bus riders and those transferring between buses. Inputs included MDOT estimates of travel time savings per bus route in the peak period, MDOT estimates of peak period bus ridership, trip lengths between bus stops, and transfers by bus route from the HHTS 2007/2008. Assumptions of likelihood of transferring from one particular bus route to another were determined based on individual routes and common paths. For the Medical Center station, time savings for autos was determined by applying MDOT estimates of AM and PM peak period per auto time savings to the total volume of peak period auto traffic.

3. **Accident reductions** were determined based on the current accident rate, which is based on fatalities and injuries and pedestrian crossings. It was assumed for both the Medical Center and Takoma-Langley centers that all transfer-related street crossing would be eliminated.

8.2.6.2.3.1 Transit centers Data Limitations

A precise understanding of the number of transfers to be positively affected by the Takoma-Langley center are not known, therefore requiring a series of assumptions to be applied to the total transfers at the intersection.

8.2.7 Evaluation of Project Performance

As part of the overall grant program management, the TPB, as lead applicant, will develop a performance monitoring system to evaluate the success and effectiveness of the project and its components. This is a critical step needed to assist USDOT determine the return on investment and honor its fiduciary responsibility to the American people, ensuring federal stimulus funding served the economic recovery purposes for which it was intended. Working with the consulting firms to be hired to administer the grant and its various requirements, TPB will develop a suite of performance metrics that will be used to grade the performance of the project and its components. Using a score card approach such as this will promote transparency, fostering public understanding of the progress of the project and accountability of grantees. This score card of performance metrics will include both short- and long-term indicators of success for the project and its components. The score card will be developed by TPB and its joint applicant partners within the first six months of grant award and will feature indicator metrics that can be tracked over time to monitor and evaluate the success of the project. Types of indicators will include, among others, (1) financial performance of the project (i.e. is it implemented within budget), (2) measures to indicate if the project meets transportation performance objectives, and (3) indicators of how the project is contributing to both short- and long-term economic recovery. Once developed and operational, metrics will be updated on a regular basis and results will be included in required program reporting documentation as well as be made available to the general public.

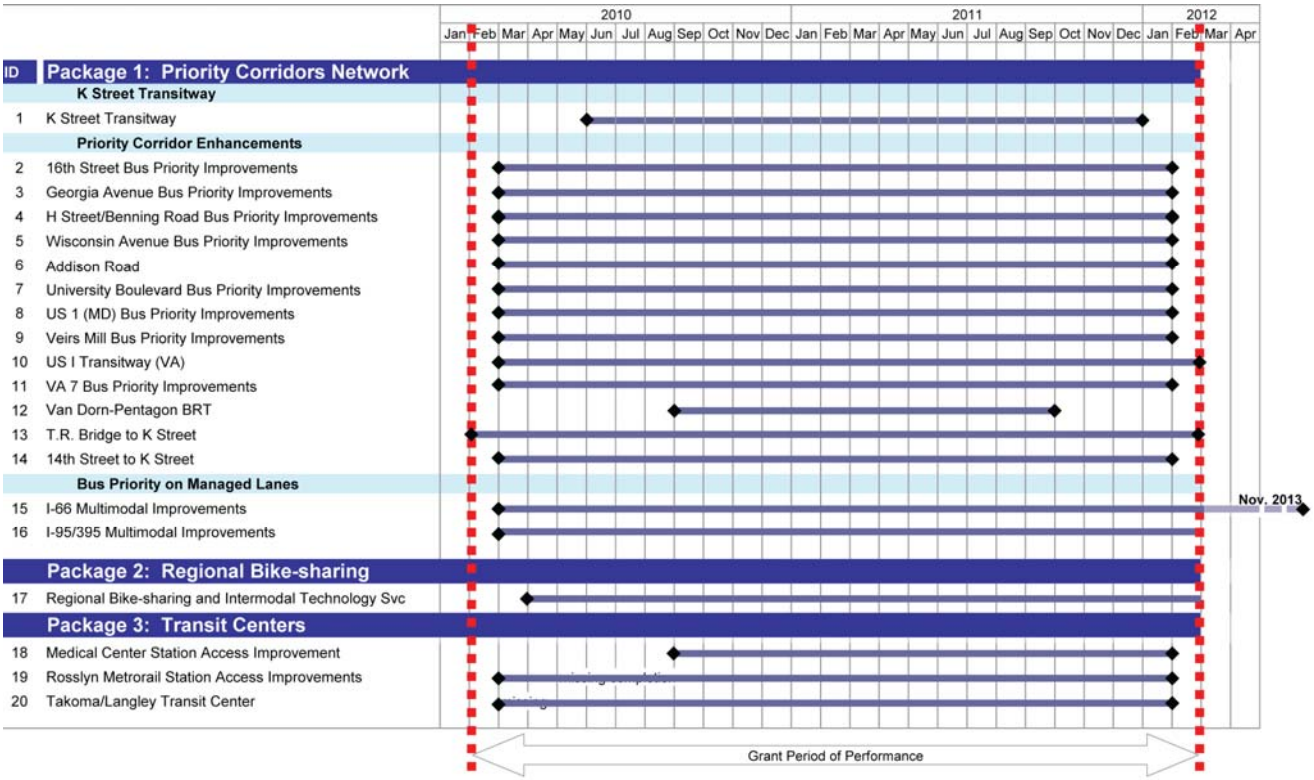
8.2.8 Immediate economic benefit

Investment of grant funds in the project and its components will result in economic benefits to the region. These benefits include 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 result from these overall increases. The number of jobs created by each project component is listed in Table 3. Because the vast majority of project components will be implemented immediately upon award (See Section 8.2.9, *Project Schedule*, most of the jobs subsequently will be added in a corresponding immediate manner. 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. The total number of new jobs estimated to occur as a result of implementation of the entire project is 3,024. Of these, 1,935 are direct/indirect jobs, and 1,089 are induced jobs.

8.2.9 Project Schedule

The project schedule below shows how the various components and packages constituting the proposed project will be implemented over the period of performance of the grant. Nearly all components will start immediately upon grant award, while a few others will start within a few months of award.

Figure 1
Project Schedule



8.3 Secondary Criteria:

8.3.1 Innovation

This proposal contains a variety of innovative strategies aimed at prioritizing bus transit and increasing the efficiency of existing operations.

8.3.1.1 Advanced Technology

Many of the project components include advanced technology solutions. Most of the bus corridors will implement transit signal priority and real-time arrival prediction technology. The Takoma/Langley transit center also includes real-time arrival prediction services.

The bike-sharing system includes several innovative, advanced technology components. The bike sharing component relies on solar-powered, wireless-enabled bicycle docking stations that provide secure storage and easy check-out of bicycles. At places of high intermodal transfer, "smart" hubs are also proposed to create mobility hot-spots that will combine bike stations, car sharing, transit information terminals and wireless internet hot-spots, from which a new and innovative transportation information website will be accessible.

8.3.1.2 Innovative Road Use Policies

Through the process of developing this grant proposal, the state DOTs in the metropolitan Washington region have begun to adopt a philosophy of optimizing roads for person throughput instead of simply vehicle throughput. This

shift is made possible by considering ways to provide priority to high-capacity bus transit vehicles over single-occupant vehicles on arterials and freeways. This consideration has resulted in the inclusion of several policies that prioritize buses over private vehicles, including transit signal priority, queue jump lanes and exclusive bus lanes, all of which are incorporated into the arterial priority corridor component.

8.3.2 Partnership

As indicated above, the TIGER grant funding request will be used to leverage $75-million in other funding, including state, local, private and other federal sources, indicating strong partnerships between different political/administrative entities.

TPB staff developed this project proposal after over 6 months of regional coordination, cooperation, planning and consensus building. Staff met several times with state and jurisdictional agencies to fine-tune the proposal, and in the process developed a first draft regional long-range bus transit plan. This project proposal is thus the result of a very extensive collaborative and cooperative process. Decision-makers from throughout the region have stated that this exercise alone has provided the region with a great benefit, in making connections between local governments, transit agencies, state DOTs, and regional planners.

Additionally, several of the components of the project were developed through public processes that engaged many stakeholders. The WMATA priority corridor improvement recommendations are all the result of innovative corridor studies that fully engaged the public in the planning process. The process of developing the K Street Transitway included the downtown business improvement districts from the project's inception. The Takoma/Langley Transit Center project planning process involved many non-profit human service agencies that work to support the low-income and immigrant communities in the Langley Park area of Montgomery and Prince George's Counties.

9.0 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 (NEPA). The NEPA status of each component is identified in Table 2. Citations for final NEPA documents for those components with completed NEPA analysis can be obtained from REFERENCE. The respective joint applicant will conduct the appropriate level of NEPA analysis for those components that require it. Those projects believed to meet documented criteria will be classified as a categorical exclusion (CE) in accordance with the regulations of the respective DOT Modal Administration. Those projects not classified as a CE will be subject to an Environmental Assessment (EA) or the less-likely Environmental Impact Statement (EIS), as appropriate. Regardless of the appropriate level of NEPA review to be performed, all NEPA analysis and subsequent CEs, Findings of No Significant Impact, or Records of Decision will be completed in time for project implementation and completion by February 17, 2012, in accordance with the requirements of the TIGER grant.

10.0 ENVIRONMENTALLY RELATED FEDERAL, STATE AND LOCAL ACTIONS

As part of project implementation, COG, as the lead applicant, along with all joint applicants, 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.

11.0 FEDERAL WAGE RATE REQUIREMENT

The Metropolitan Washington Council of Governments, in its role as administrative agent for the TPB and lead applicant for this TIGER grant, along with joint applicants identified in this application, certifies that it will comply with all wage rate requirements and other applicable provisions of the United States Code, Subchapter IV of Chapter 31 of Title 40. Written certification from both COG as the lead applicant as well as all joint applicants can be accessed from REFERENCE

[i] (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).
[ii] http://en.wikipedia.org/wiki/List_of_United_States_rapid_transit_systems_by_ridership, accessed 9/2/2009
[iv] Status Report on the Bus Systems in the National Capital Region http://www.mwcog.org/uploads/pub-documents/zldbWg20080611161227.pdf
[v] http://www.mwcog.org/environment/air/
[vi] TPB Air Quality Conformity Report, 2009
[vii] http://htaindex.cnt.org/mapping_tool.php?region=Washington--Baltimore,%20DC--MD--VA--WV
[ix] http://www.cdc.gov/NCCDPHP/SGR/concl5.htm
[x] Safety in numbers, Jacobsen