



## **Appendix S**

Tiger II—Discretionary Grants Application for Capitol Funding: Anacostia Streetcar Line Phase II  
Extension





District Department of Transportation

# USDOT TIGER II Discretionary Grants Application for Capital Funding

## Anacostia Streetcar Initial Line Phase 2 Extension

**Project Narrative**  
**August 23, 2010**

Funding Request: \$18,115,000  
Employer/Taxpayer Identification Number: 53-6001131  
Dunn & Bradstreet Number: 003880940  
Central Contractor Registration: #3XKU5

**Application Contact:**

Mr. Scott Kubly  
Associate Director, Progressive Transportation Services Administration  
District of Columbia Department of Transportation  
2000 14th Street NW, 5th Floor  
Washington, DC 20009  
(202) 673-6813  
Scott.Kubly@dc.gov



## Table of Contents

I. PROJECT DESCRIPTION.....	1
II. PROJECT PARTIES.....	7
III. GRANT FUNDS AND SOURCES/USES OF PROJECT FUNDS.....	7
IV. SELECTION CRITERIA .....	8
V. PROJECT READINESS AND NEPA .....	20
VI. FEDERAL WAGE RATE CERTIFICATION.....	25
VII. CHANGES TO PRE-APPLICATION INFORMATION SUBMITTED .....	25

## List of Figures

Figure 1: Anacostia Streetcar Initial Line Phase 2 Extension Project Location .....	2
Figure 2: Project Corridor Community Resources and Development Projects .....	4
Figure 3: Project Schedule .....	21

## List of Tables

Table 1: Total Economic Competitiveness Benefits (millions of 2009\$) .....	9
Table 2: Ridership of Principal Bus Lines that serve the Project Corridor.....	12
Table 3: Community Services in the Project Corridor.....	13
Table 4: Summary of Planning Processes related to the Project.....	14
Table 5: Estimated Reductions in Vehicle Emissions .....	15
Table 6: Quarterly Project Construction Expenditures and Economic Impacts (millions of 2009\$).....	17
Table 7: Development Construction Expenditures and Economic Impacts (millions of 2009\$).....	17
Table 8: Total Operations Impacts for the Washington, DC MSA (millions of 2009\$).....	18
Table 9: Benefit-Cost Analysis Summary (millions of 2009\$).....	20
Table 10: Anacostia Streetcar Phase 2 Extension Project Estimated Capital Costs (millions of 2010 Dollars).....	23
Table 11: Anacostia Streetcar Phase 2 Project Capital Sources and Uses of Funds (millions of 2010 Dollars).....	24
Table 12: Changes to Pre-Application.....	25

## Appendices: Supporting Documents

- Appendix A – Financial Commitments
- Appendix B – Benefit-Cost Analysis Technical Memorandum
- Appendix C – Letters of Support
- Appendix D.– Federal Wage Rate Certification



## I. PROJECT DESCRIPTION

### **Overview**

The District Department of Transportation (DDOT) is requesting grant funding under the National Infrastructure Investments program authorized by the 2010 Appropriations Act ("TIGER II Discretionary Grants") for the Anacostia Streetcar Initial Line Phase 2 Extension Project (referred to in this document as the "Anacostia Streetcar Phase 2 project" or "the Project") located in Ward 8 within the southeast portion of the District of Columbia. The project generally follows Martin Luther King, Jr. Avenue SE ("MLK Jr. Avenue"), connecting the Anacostia Metrorail Station and the Downtown Anacostia business and Historic District. The project links to the Anacostia Streetcar Initial Line Phase 1, currently under construction, which will provide service to the U.S. Naval Support Facility (NSF Anacostia) (part of Joint Base Anacostia-Bolling) employment center and the Barry Farm residential community. The project will also serve as a showcase of new wireless streetcar vehicle technology, enabling its exhibition and use in revenue-service operation. Figure 1 on the following page shows the project location, connecting transportation projects and adjacent activity centers.

The Anacostia Streetcar Line is part of the planned DC Streetcar System, a 37-mile network of eight new interconnected lines, outlined in the *DC's Transit Future System Plan* (2010). Future planned extensions will link the Anacostia Streetcar Phase 2 project south to the St. Elizabeths Campus, which will house 14,000 federal workers from across the region and states as far as Pennsylvania and West Virginia by 2016, and north across the Anacostia River to the developing Navy Yard/Near Southeast activity center (the Capitol Riverfront) and Capitol Hill. (See *System Plan* at: [www.t2gsupportdc.com](http://www.t2gsupportdc.com))

### **Purpose and Need**

The purpose of the proposed Anacostia Streetcar Phase 2 project is to provide high-capacity and high-quality transit service to District residents, employees and visitors and invest in infrastructure that will catalyze economic development in an emerging commercial and residential corridor.

#### Accommodating Population and Employment Growth

Southeast Washington, DC has become increasingly congested with traffic since the relocation of new District government facilities<sup>1</sup> and federal construction activities, which include: the new US Coast Guard Headquarters at the St. Elizabeths Campus, increased activity at the NSF Anacostia and Bolling Air Force Base as a result of the BRAC movements, and increased private sector investment in Ward 8 (these are outlined below in Detailed Project Description). The NSF Anacostia is expanding to accommodate the movement of 816 workers from Arlington, VA,<sup>2</sup> in addition to the 460 workers already present,<sup>3</sup> and the relocation of the U.S. Department of Homeland Security headquarters to the St. Elizabeths West Campus is planned to bring 14,000 workers to an area adjacent to the project corridor by 2016.<sup>4</sup>

The District of Columbia is planning large-scale redevelopment projects at the St. Elizabeths East Campus, with an estimated mixed-use development potential of 4 million sq.ft., and Poplar Point, with an estimated development potential of 8 – 10.5 million sq.ft.<sup>5</sup> See DC Office of Planning map of existing and planned major development projects at [www.t2gsupportdc.com](http://www.t2gsupportdc.com). While the Anacostia Streetcar Phase 2 will not connect all the way to the St. Elizabeths Campus, the project sets the stage

<sup>1</sup> The District opened the \$116-million Unified Communications Center (UCC) in 2006, which includes the DC Metropolitan Police Department (MPD), Fire and Emergency Medical Services (FEMS), Homeland Security and Emergency Management Agency (HSEMA), and the Mayor's Citywide Call Center under one roof. In 2009 the DC Department of Housing and Community Development opened a new resource center at the corner of MLK Jr. Avenue and Good Hope Rd, SE.

<sup>2</sup> April 5, 2010. Washington Business Journal, Breaking Ground Blog, accessed August 15, 2010.

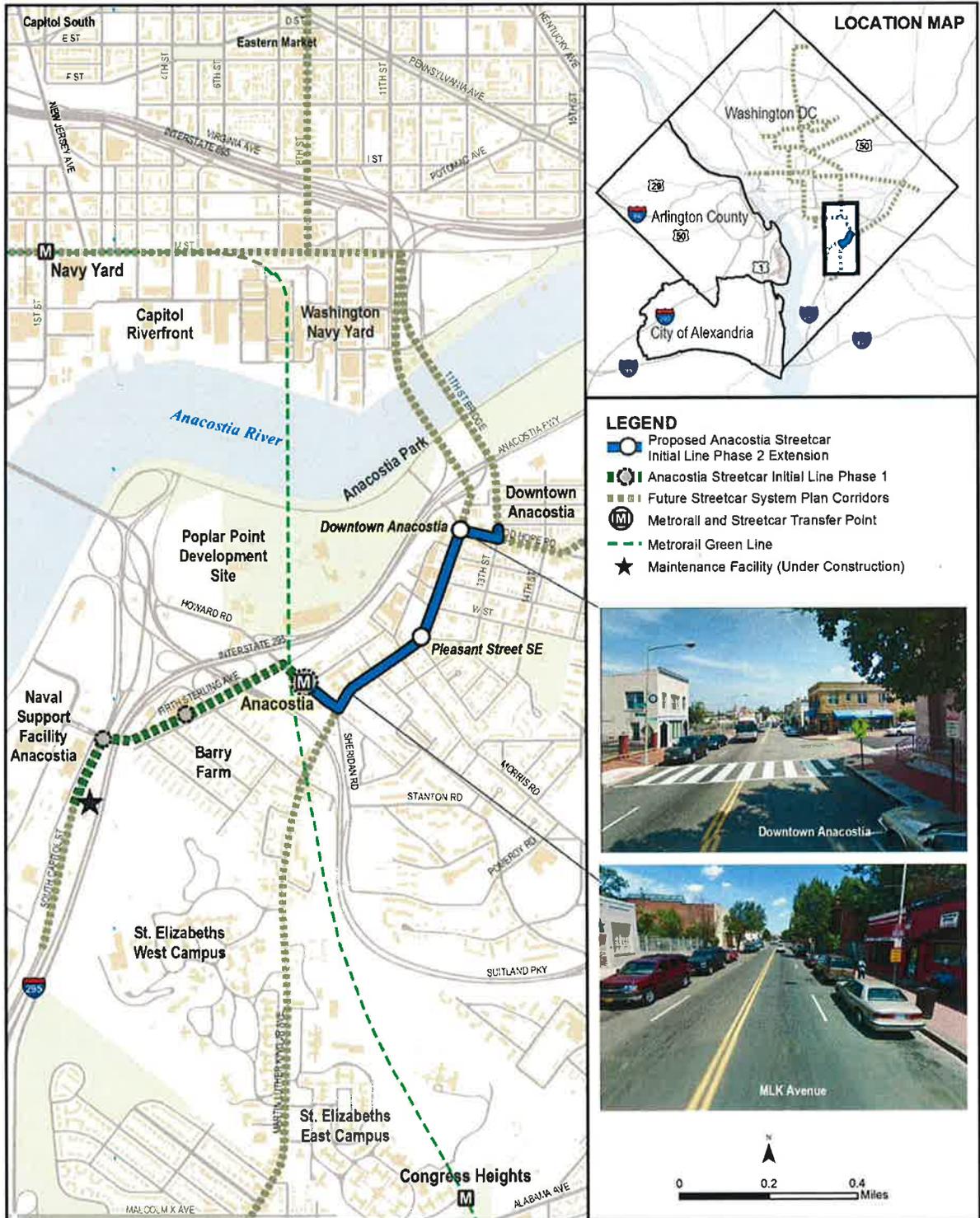
<sup>3</sup> Bolling Air Force Base website, [www.bolling.af.mil/news](http://www.bolling.af.mil/news).

<sup>4</sup> See additional details at: <http://stelizabethsdevelopment.com/>

<sup>5</sup> DC Office of the Deputy Mayor for Planning and Economic Development

for future extensions of the line that will connect the Campus to Downtown Anacostia and to the Capitol Riverfront/Navy Yard activity center on the other side of the Anacostia River.

Figure 1: Anacostia Streetcar Initial Line Phase 2 Extension Project Location



### Providing Enhanced Mobility

Current and future District residents need new transit services that extend to new activity centers within communities and for trip purposes that are currently underserved and require multiple transfers. There is also a need to serve non-work trips made by neighborhood residents and visitors. The Anacostia Streetcar Phase 2 will help meet critical transportation needs and demands by:

- Improving connectivity between the Anacostia Metro Station and Downtown Anacostia;
- Providing a direct connection from the NSF Anacostia employment center and Barry Farm neighborhood to Downtown Anacostia;
- Reducing and/or eliminating the number of trip transfers along the corridor;
- Increasing transit service options along the corridor;
- Improving access for residents and visitors to the Anacostia business and Historic District; and
- Integrating other related streetscape, bicycle and pedestrian projects along the corridor.

### Supporting Continued Economic Development

There are mutual benefits to be obtained by supporting community development initiatives with transit investments (e.g., convenient transportation options and an increased ridership base). The corridor includes Downtown Anacostia, which is a designated historic district and listed on the National Register of Historic Places.<sup>6</sup> This activity center also serves as a neighborhood commercial node and community focal point. New government facilities and increased private sector development interest in the Anacostia area have led to the completion of 19 development projects since 2001, 5 projects that are under construction, and 24 that are in the development pipeline, including several large planned mixed-use projects. Most of these projects are located in the MLK Jr. Avenue corridor. The Washington, DC Economic Partnership's *2009/2010 Development Report* listed Anacostia as one of four development "hotspots" in the District of Columbia.<sup>7</sup>

Recent development activity in Downtown Anacostia would be supported by fixed guideway transit investments. Studies of streetcar projects in other cities report that annual new private investment attracted to streetcar corridors is significant, ranging from \$39 million/mile to \$615 million/mile.<sup>8</sup>

Figure 2 on the following page shows recent and planned development projects as well as community resources in the Project corridor.

### Improving Community Livability

Several livability initiatives are underway for the Anacostia neighborhood, providing coordinated streetscape improvements, economic development projects, new community facilities, improved pedestrian linkages, and major new infrastructure projects. The Anacostia Streetcar Phase 2 project will help tie all of these improvements together, supporting the area's overall livability, as defined by the DOT-HUD-EPA Partnership for Sustainable Communities, in the following ways:

- *Enhancing the variety of transportation choices* (surface transit, Metrorail access, pedestrian improvements and new bicycle sharing stations) along the MLK Jr. Avenue corridor;
- *Supporting planned new housing and mixed-use development projects* within the Phase 2 project station areas and existing housing, including linking the large Barry Farm neighborhood (via connection to the Anacostia Streetcar Phase 1 project) to Downtown Anacostia;
- *Increasing economic competitiveness* of the Downtown Anacostia business district through linkages to the Metro station and adjacent employment centers;
- *Investing in an existing community* that is attracting renewed interest and activity due to its convenient location close to central Washington and adjacent to the Anacostia River parklands;

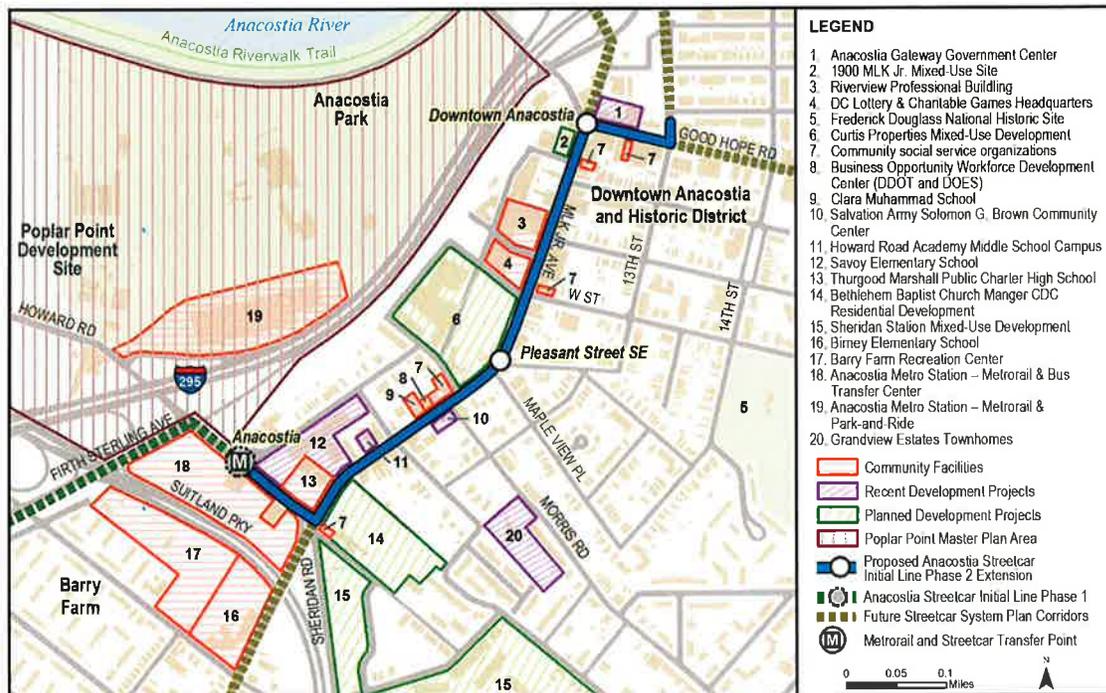
<sup>6</sup> See National Parks Service website for Anacostia Historic District at: <http://www.nps.gov/nr/travel/wash/dc90.htm>

<sup>7</sup> *2009/2010 Development Report*, Washington, DC Economic Partnership (WDCEP). See the WDCEP *Neighborhood Profile* and list of development projects at: [www.t2gsupportdc.com](http://www.t2gsupportdc.com)

<sup>8</sup> *Streetcar Approaches of Other Cities*. City of Portland, 2010.

- *Leveraging regional investments* of existing and planned federal facilities in the area (e.g., Washington Navy Yard and NSF Anacostia, St. Elizabeths West Campus, and Anacostia Park) and other transportation projects such as the new 11<sup>th</sup> Street Bridge span for local traffic and the Anacostia Streetcar Phase 1 project; and
- *Providing transportation infrastructure* that is appropriate for the Anacostia neighborhood scale and supports the historic community and business center for Ward 8.

Figure 2: Project Corridor Community Resources and Development Projects



Source: DC Office of Planning, Deputy Mayor's Office for Planning and Economic Development, and WDCEP.

### Providing Metrorail Coverage and Core Capacity Relief

The Metrorail system serves several parts of the city effectively, but there are still large gaps in service coverage such as the core of Downtown Anacostia near Good Hope Road. In addition, both the Metrorail and Metrobus systems are approaching their maximum capacities. MLK Jr. Avenue is one of the highest ridership corridors in the Metrobus system. Several existing Metrobus lines serve the project corridor as part of their routes, including the "A" Line routes, which have the 4<sup>th</sup> highest ridership in the District, with 14,900 riders per day; the "90s" Line routes which have the 5<sup>th</sup> highest ridership line in the District, with more than 14,700 riders per day; and three other lines with a combined total of almost 14,000 riders per day.<sup>9</sup>

## Detailed Project Description

### Project Corridor Description

The Project is a 0.61-mile fixed guideway transit line that includes electrically powered streetcar vehicles operating along tracks located within the existing street and travel lanes. The proposed alignment generally follows MLK Jr. Avenue, between the Anacostia Metro Station and Good Hope Road SE (see Figure 1). The Project is an extension of the Anacostia Phase 1 line under construction. The alignment is located outside of the area covered by the 1888 statute banning the use of overhead wires in portions of the District of Columbia. The Project has the following logical termini:

<sup>9</sup> WMATA 2009 Metrobus ridership data.

- *Southern Terminus* – Anacostia Metro Station, a regionally significant transit transfer center for connecting service to the Metrorail Green Line, 29 Metrobus routes, and the northeast terminus of the Anacostia Streetcar Phase 1 project (under construction). Average weekday Metrorail passenger entries at the Anacostia Metro Station during June 2010 were 7,759.10
- *Northern Terminus* – Downtown Anacostia activity center, near the intersection of MLK Jr. Avenue, Good Hope Road SE, and the 11<sup>th</sup> Street Bridge. The area is the primary business district for Ward 8 as well as a focal point of social services, community institutions, schools, historic residential neighborhoods, and an access point to the Anacostia Waterfront.

#### Station Stops

The Project proposes three station stops: Howard Road by the Anacostia Metro Station (under construction as part of Phase 1), MLK Jr. Avenue at Pleasant Street, and MLK Jr. Avenue at Good Hope Road. The stops will include a passenger waiting area, shelter, and system information regarding fares, routes, and schedules. The stops would use special platforms that are about 75-feet long and 14-inches high, which enable level boarding, or they may simply utilize a portion of the sidewalk.

#### Vehicles

The Project would require two streetcar vehicles. DDOT will operate the service with bi-directional modern vehicles. DDOT hopes to procure wireless vehicles at an estimated cost of \$5.5 million per vehicle if the technology proves to be cost-effective and adaptable to current operational needs (see section below regarding Wireless Propulsion System). In the event that suitable wireless vehicle technology is not available; the current Inekon wired vehicle, procured previously for the Anacostia Initial Line Phase 1 and H Street/Benning Rd streetcar corridors, will be procured for the Phase 2 project. (Inekon vehicle specifications are available at [www.t2gsupportdc.com](http://www.t2gsupportdc.com)).

#### Innovative Wireless Propulsion System

In July 2010, the DC Council passed the Transportation Infrastructure Amendment Act of 2010, which repealed a section of a 19<sup>th</sup> century law banning the use of overhead wires on streets in a section of the historic core of the District. The ban was originally put in place to prevent the unsightly tangle of wires developing in cities around the country during the late 19<sup>th</sup> century. Although the original ban did not apply to the Anacostia Streetcar project area, DDOT remains committed to identifying a wireless technology that would protect historic view corridors within the Nation's Capital and has been working tirelessly to identify a streetcar technology that can operate both with and without overhead wires. DDOT has done extensive research on the current state of the electric-powered streetcar vehicle industry and published a Request for Information (RFI) in May 2010 for streetcar vehicles that can travel up to one mile without overhead wires and operate in local weather and topographical conditions. To evaluate the performance of new hybrid streetcar vehicles, DDOT is proposing to showcase wireless technologies along the Anacostia Phase 2 project. The cars will be electrically powered via technology that allows the vehicle to operate for limited distances without an overhead power supply. A copy of the July 2010 DC Council Act, the RFI, and a summary of the RFI responses can be found at [www.t2gsupportdc.com](http://www.t2gsupportdc.com).

#### Maintenance and Storage Facility

The Project will use the maintenance and storage facility that will be located at 2750 South Capitol Street, just south of the NSF Anacostia. This facility is currently being designed as part of the Anacostia Streetcar Phase 1 project and will serve five streetcar vehicles, which is large enough to accommodate the estimated two to three vehicles needed for both the Anacostia Streetcar Phase 1 and Phase 2 projects. A facility description and rendering are available at [www.t2gsupportdc.com](http://www.t2gsupportdc.com).

#### Operations

The streetcar service is proposed to operate seven days per week, Monday through Thursday from 6:00am to 12:00am, Friday from 6:00am to 2:00am, Saturday from 8:00am to 2:00am, and Sunday from 8:00am to 10:00pm. The service will operate on 10-minute headways during peak and off-peak periods.

<sup>10</sup> WMATA 2010 Metrorail ridership data.

Estimated travel time from the Anacostia Metro Station to Good Hope Road/MLK Jr. Avenue intersection is approximately 3.5 minutes. Total travel time along for the entire Anacostia initial line, from NSF Anacostia to the Anacostia Metro Rail Station (1.1 miles), will be approximately 7 minutes. Two vehicles and one spare car will provide service for the entire streetcar line (Phase 1 and Phase 2). Fare structure will be the same as the DC Circulator bus service with a \$1 cash fare.

### Planned Streetcar Network

The Anacostia Streetcar Line is part of the planned DC Streetcar System, outlined in the *DC's Transit Future System Plan* (2010) (see: [www.t2gsupportdc.com](http://www.t2gsupportdc.com)). This plan is the culmination of a five-year effort to identify transit challenges and opportunities and recommend appropriate investment. The recommended System Plan consists of a 37-mile network of eight new interconnected streetcar lines in addition to a supporting network of thirteen Metro Express bus lines. The new streetcar services are forecast to accommodate more than 147,000 daily trips by 2030, improve travel times by up to 38%, and reduce crowding on existing Metrobus lines by 27% in the corridors served by the new system. The heaviest forecast ridership was concentrated in the MLK Jr. Avenue corridor and three other corridors of the streetcar system.<sup>11</sup> The streetcar component of the system also has the potential to stimulate more intense mixed-use development consistent with the city's zoning designations for the streetcar corridors. Currently the DC Office of Planning is conducting a Master Land Use Plan for the District's proposed Streetcar System evaluating land use and zoning, economic development potential, community demand and development, historic and cultural resources, and affordable housing.<sup>12</sup>

### Leveraging Related Transportation Projects

#### Anacostia Streetcar Initial Line Phase 1

The 0.5-mile Phase 1 project is currently under construction and is scheduled to begin operation in Fall/Winter 2012-2013. The line will connect the NSF Anacostia and Barry Farm Residential Area to the Anacostia Metro Station. The \$34-million project is being funded locally by the District of Columbia. It will be one of the first operational streetcar segments for the system, providing an opportunity for the public to see and experience streetcars in operation.

#### 11<sup>th</sup> Street Bridges Project

The Anacostia Streetcar Phase 2 project will terminate at the southern approach of the 11<sup>th</sup> Street Bridge. DDOT began reconstruction of the 11<sup>th</sup> Street Bridges in December 2009, replacing the two existing spans. One of the new bridge spans will serve local traffic and will include tracks to allow future streetcar connections from Downtown Anacostia across the river. Estimated completion is mid-2013.<sup>13</sup>

#### Two-way Conversion of MLK Jr. Avenue

Previously, the segment of MLK Jr. Avenue in Downtown Anacostia, from W Street to Good Hope Road, was a one-way street, paired with the parallel 13<sup>th</sup> Street; together these roads acted as feeders to the on- and off-ramps of the 11<sup>th</sup> Street Bridge and I-395. In 2006, this segment was converted to two-way traffic with on-street parking on both sides to provide a more suitable traffic configuration for the neighborhood business district and future streetcar line, improve the pedestrian safety and allow better access to the Anacostia waterfront.

#### Anacostia Riverwalk Trail

The District is currently implementing various segments of this 16-mile greenway trail network. Downtown Anacostia provides an important access point to the Riverwalk Trail. Planned improvements

<sup>11</sup> *DC's Transit Future System Plan*, pages 4-23.

<sup>12</sup> *Master Land Use Plan for Streetcar System, Fact Sheet*, see: [www.t2gsupportdc.com](http://www.t2gsupportdc.com).

<sup>13</sup> See *11<sup>th</sup> Street Bridges Project Sheet and Environmental Impact Statement* at [www.t2gsupportdc.com](http://www.t2gsupportdc.com)



to the pedestrian facilities from MLK Jr. Avenue along Good Hope Road to the waterfront will create a clear gateway to this regional trail network.<sup>14</sup>

#### South Capitol Street Improvements

The project includes planned improvements to MLK Jr. Avenue at Suitland Parkway that will improve the pedestrian environment at the southern end of the Anacostia Streetcar Phase 2 project corridor and facilitate access to the streetcar service.

## **II. PROJECT PARTIES**

DDOT, the project sponsor, is a state department of transportation that delivers an annual work program of \$140M, which includes major structural and civil engineering work. In 2009-2010, DDOT managed American Recovery and Reinvestment Act of 2009 (ARRA) grant-funded projects worth \$94.9 million. In addition, DDOT has an annual operating budget of over \$127 million and 1,121 employees.

The agency is responsible for the planning, design, construction, and maintenance of the city's multimodal transportation system. DDOT manages over 1,100 miles of streets, 241 bridges, 1,600 miles of sidewalks, 453 miles of alleys, and 144,000 street trees.

The Progressive Transportation Services Administration (PTSA) within DDOT coordinates the District's public transportation and is responsible for the design and construction of the DC Streetcar Program. Currently the Streetcar team includes nine dedicated DDOT staff with additional supporting staff. The first 2.75 miles of the system are currently under construction and are scheduled to initiate operations in 2012. PTSA is also responsible for the development of premium bus services including the DC Circulator, new branded limited-stop bus routes, and the new Capital Bikeshare program.

DDOT has begun a Streetcar Program Management contract under a single team that will coordinate planning, engineering, construction and operations of the streetcar program. (See description of DDOT Staffing program and Streetcar Program Management team at [www.t2gsupportdc.com](http://www.t2gsupportdc.com))

## **III. GRANT FUNDS AND SOURCES/USES OF PROJECT FUNDS**

#### Grant Funds Requested

DDOT is requesting \$18,115,000 in TIGER II grant funds, which would fund 50% of the capital costs of the project. DDOT is seeking TIGER II funding so that it can expedite implementation of the project to meet the anticipated needs described above; other funding programs are not available that would allow DDOT to achieve its project schedule. The TIGER II funding will enable DDOT to leverage regional and local investment, address infrastructure and capacity impacts due to recent and near-term future moves of federal jobs, and continue to pursue wireless streetcar technology innovations.

#### Source of Local Funds

The District of Columbia will provide \$18,115,000 (50% match) in DDOT capital funds out of streetcar project funding allocated to the District in the regional FY 2010-2015 Transportation Improvement Program (TIP ID #2620). DDOT will apply General Obligation bond debt to fund the local share of project capital expenses. The project financial plan is described in more detail under "Financial Feasibility," in Section V. below. Commitments for local capital funding have been provided by the District of Columbia and are included in Appendix A.

#### Uses of Project Funds

The total capital costs of the project are \$36.23 million in 2010 dollars. Capital uses of funds for the project are summarized in Table 9 in the Financial Feasibility section.

<sup>14</sup> See Anacostia Riverwalk at [www.t2gsupportdc.com](http://www.t2gsupportdc.com)



#### **IV. SELECTION CRITERIA**

##### **Long-Term Outcome: State of Good Repair**

The Anacostia Streetcar Phase 2 project is a new facility. It is one of the substantial improvements to the Anacostia waterfront's transportation network that will help improve access to its new and existing destinations while appropriately linking adjacent communities within the Washington metropolitan region.<sup>15</sup> The Project will be well-capitalized with operations that will be supported by a sustainable revenue source (see "Financial Feasibility", Section V., below).

The Project aims to upgrade transportation assets that will improve the existing/planned transportation network's efficiency and mobility of goods and people. The MLK Jr. Avenue roadway will be rebuilt in conjunction with the streetcar project. The MLK Jr. Avenue Great Streets Initiative is a \$13-million comprehensive streetscape enhancement project that will be coordinated with the streetcar project. This will allow for the replacement and modernization of the roadway, sidewalk, street trees, street furniture and pedestrian crossings to be done in an integrated manner as the streetcar infrastructure is installed. The Anacostia Streetcar Phase 2 project will also leverage existing transportation investments, including the Anacostia Metro Station, 11<sup>th</sup> Street Bridges, Anacostia Riverwalk Trail and Anacostia Streetcar Phase 1, providing direct connections to these facilities.

##### **Long-Term Outcome: Economic Competitiveness**

The Project supports the health of the regional Washington, DC economy in two ways: 1) productivity gains associated with allowing the Anacostia portion of the DC economy to perform more efficiently, and 2) productivity gains associated with higher-density development. These productivity gains are associated with the new development attributable to the Project (excludes transfers from other regions); therefore, these benefits are net gains for the Washington, DC region and the U.S.

The Project contributes to the long-term economic growth of the economically distressed Ward 8 in the District of Columbia and the wider region through recurring labor productivity gains for local businesses, compact land development benefits that further reduce Vehicle Miles Traveled (VMT), and an increase in residential property values as residents pay a premium for the improved access at nearby locations. Business productivity gains are realized in the labor market and residential property gains are realized in the land market; the separation avoids any indirect duplication of benefits through interactions. The total benefits associated with these economic competitiveness gains for the 20-year period following opening (2014-2033) are summarized in Table 1 and described below.

The commercial and residential development impacts for the project are based on the *District of Columbia Transit Improvements Alternatives Analysis Return on Investment Report* (May 2005), which examined the development potential of the broader corridor. According to this report, residential and commercial development attributable to the introduction of streetcar service is 25 percent higher than the baseline forecast within a ¼ mile of the project corridor. The report identifies this development as new to the region (i.e., the development would not have occurred elsewhere in the region).<sup>16</sup>

The documented economic benefits of the Project do not compromise environmental sustainability. The Project has a number of environmental benefits that are described below under "Long-Term Outcome: Environmental Sustainability."

<sup>15</sup> See Anacostia Waterfront Initiative, <http://www.theanacostiawaterfront.com/>

<sup>16</sup> The full *Return on Investment Report* is available at [www.t2gsupportdc.com](http://www.t2gsupportdc.com)

**Table 1: Total Economic Competitiveness Benefits (millions of 2009\$)<sup>17</sup>**

Type of Benefits	20-year Total (2014-2033)
Commercial Productivity Benefits	\$ 98.75
Discounted @3%	\$ 61.45
Discounted @7%	\$ 34.92
Compact Development Benefits	\$ 40.05
Discounted @3%	\$ 24.01
Discounted @7%	\$ 12.82
Residential Land Productivity Benefits	\$ 4.27
Discounted @3%	\$ 2.98
Discounted @7%	\$ 1.92
<b>Total Economic Competitiveness Benefits</b>	<b>\$ 143.08</b>
<b>Discounted @3%</b>	<b>\$ 88.44</b>
<b>Discounted @7%</b>	<b>\$ 49.67</b>

Source: AECOM Calculation

#### Commercial Productivity Benefits

The commercial productivity gains are based on the increased commercial development density that occurs along the ¼-mile Project corridor due to the streetcar’s implementation relative to the baseline projection for density. As businesses and households become “agglomerated,” each has access to more specialized workers, consumer goods, and services; this access to specialized goods and services and the wider range of labor allow businesses to operate more productively, increasing the output per worker relative to what they could achieve in the absence of the higher degree of specialization. The regional productivity gains are small, as the increase in density is limited in its scope relative to the larger metropolitan economy.<sup>18</sup> Based on the increase in commercial development density along the ¼-mile corridor and recent research on increases in productivity associated with greater density,<sup>19</sup> the increase in productivity attributable to the Project for the larger ½-mile corridor was estimated and is summarized above in Table 1.<sup>20</sup>

#### Compact Development Benefits

The increase in denser or more compact development that occurs within a ¼ mile of the Project results in a reduction of VMT in the ½-mile project corridor, as residents and employees in the area are able to conduct more activities (retail, services, etc.) within the corridor without driving.<sup>21</sup> The reduced VMT is then translated into transportation benefits (travel cost savings), environmental benefits (reduced emissions), and safety (reduced accidents), which are summarized above in Table 1.<sup>22 23</sup>

<sup>17</sup> Greater detail on the economic competitiveness impacts and methodology are presented in the Benefit-Cost Analysis Technical Memorandum in Appendix B.

<sup>18</sup> In order to avoid overestimation, the productivity gain associated with the higher density development within a ¼ mile of the Project is only applied to workers in the ½-mile corridor—those in closest proximity to where the productivity gains are generated.

<sup>19</sup> Transit Cooperative Research Program J-11 (7) – *Economic Impact of Public Transportation Investment*, p. 54.

[http://www.apta.com/resources/reportsandpublications/Documents/economic\\_impact\\_of\\_public\\_transportation\\_investment.pdf](http://www.apta.com/resources/reportsandpublications/Documents/economic_impact_of_public_transportation_investment.pdf)

<sup>20</sup> Analysis assumes that the ½ mile corridor shares in productivity benefits of the increase in commercial development density within a ¼ mile of the alignment. It is important to note that the analysis assumes NO additional growth in development occurs beyond the ¼ mile area.

<sup>21</sup> This reduction in VMT is estimated based on the Moving Cooler study finding that development occurring in an area with compact development (> 5.0 Dwelling Units/acre) will reduce overall urban light-duty VMT by 12.6% by 2050, which translates into an annual VMT reduction of 0.34% through 2050. Moving Cooler, Technical Appendix B, p. B-22.  
<http://www.movingcooler.info/>

<sup>22</sup> The transportation, environmental, and safety benefits are estimated in the same manner described in the transportation, environmental, and safety benefits sections of this application. Greater detail is provided in the Benefit-Cost Analysis Technical Memorandum in Appendix B.

<sup>23</sup> Total 2015 VMT for the ½ mile corridor was provided by the network travel demand model. The analysis conservatively assumes that annual VMT remains constant at the 2015 level for the entire 20-year period.

### Increase in Residential Property Values

Once the streetcar begins operation, communities along the corridor will enjoy greater access to the broader metropolitan economy. Renters and purchasers will be willing to pay a premium<sup>24</sup> for the locations (both new and existing properties) where access is improved relative to the baseline. As a result, the Project is expected to attract new residential development within a ¼ mile of the alignment as well as raise the value of existing residential properties along the alignment.<sup>25</sup> Based on past market studies of the alignment (*District of Columbia Transit Improvements Alternatives Analysis Return on Investment Report* (May 2005) the amount of new residential development is expected to be 25% higher than the baseline forecast within a ¼ mile of the project corridor due to the introduction of streetcar service.<sup>26</sup> The analysis conservatively applies the premium to the estimate of new residential development only.<sup>27</sup> This underestimates the impact of the streetcar on land values, but hints at the streetcar's value to this revitalizing community. The residential property productivity benefit is summarized above in Table 1.

### **Long-Term Outcome: Livability**

As described above in Section I, several initiatives are underway for the Anacostia neighborhood that include the streetcar project along MLK Jr. Avenue as a key component. These initiatives include: streetscape improvements, economic development projects, new community facilities, improved pedestrian linkages, and major new infrastructure projects. The Anacostia Streetcar Phase 2 project will tie all of these improvements together, supporting the area's overall livability, as defined by the DOT-HUD-EPA Partnership for Sustainable Communities.

### Enhancing Mobility

**Increased Travel Options** – The Project will enhance personal mobility for Anacostia and other DC residents by providing a more convenient travel option in the corridor. Specifically, the Project will:

- Improve connectivity between the Anacostia Metro Station and Downtown Anacostia;
- Provide a direct connection from the NSF Anacostia employment center and Barry Farm neighborhood to Downtown Anacostia by linking to the Anacostia Streetcar Phase 1 project;
- Reduce and/or eliminate the number of trip transfers along the corridor;
- Foster more pedestrian activity and leveraging existing and planned bicycle connections;
- Increase transit service options along the corridor; and
- Improve access and connectivity for residents and visitors to the Anacostia business and Historic District.

**New Ridership** – The opening year projected weekday ridership for the Project is 438 riders, or 131,400 annual weekday riders. Of these, the number of new transit riders diverted from personal autos is 93, or 27,900 annual weekday riders. For these new transit riders who will no longer depend on their car for these trips, the net savings in fuel, maintenance, depreciation and tires adds up to \$93,339.<sup>28</sup> It is important to note that the new riders reflect the forecast ridership associated with 2015 regional projections for demographics, trip patterns, and development patterns.<sup>29</sup>

<sup>24</sup> Studies have shown that an increase in property values near transit lines can range from 2% to over 30%; a 6.4% increase in the property values of new development is applied in the analysis. Capturing Value from Transit (Center for Transit Oriented Development, November 2008) and Robert Cervero and M. Duncan. "Real Estate market Impacts of TOD," 2001.

<sup>25</sup> Productivity gains due to commercial development take this increase in property value into account, and are thus excluded.

<sup>26</sup> The development impact for the project is based on the District of Columbia Transit Improvements Alternatives Analysis Return on Investment Report (May 2005), see [www.t2gsupportdc.com](http://www.t2gsupportdc.com).

<sup>27</sup> Ideally the analysis would use land records to apply the premium to the existing residential base; however, the study area has many incomplete records and non-market price transactions (e.g. family transactions for \$1.00).

<sup>28</sup> New transit riders diverted from walking will have a more convenient travel option, but will incur additional financial costs.

<sup>29</sup> Forecasted ridership does not reflect the long-term future demographic/development growth patterns projected to occur along in Anacostia as a result of the streetcar project and relocations/new federal and District facilities in the area.

**More Accessible Transit Mode** – The District selected streetcar for this corridor because of its suitable characteristics for simultaneously enhancing transit mobility and the surrounding neighborhood pedestrian environment. These characteristics include:

- High vehicle capacity to serve a high-ridership transit corridor;
- Ease of boarding/alighting for persons of all abilities and ages;
- Smooth running movement which allows safer and more convenient use by persons of all abilities and ages;
- Quiet and emission-free operation which does not detract from adjacent pedestrian environment and public spaces; and
- Fixed guideway which more effectively stimulates economic development along corridor.

#### Enhancing Modal Connectivity and Reducing Congestion on Existing Modal Assets

**Modal Connectivity** – The Project will enhance modal connectivity to the following existing and new transportation facilities:

- **Anacostia Metro Station Rail and Bus Transfer Center** – the Project will provide an enhanced connection from the core area of Downtown Anacostia (not served by Metrorail) to the Anacostia Metro Station, a regionally significant transit transfer center for connecting service to the Metrorail Green Line, 29 Metrobus routes, over 1,100-car park-and-ride facility, and the northeast terminus of the Anacostia Streetcar Phase 1 (under construction). Average weekday Metrorail passenger entries at the Anacostia Metro Station during June 2010 were 7,759.<sup>30</sup>
- **On-board Bicycle Capacity** – Streetcar vehicles and DDOT operations policy will accommodate bicycles on board.
- **Bike Sharing Stations** – the Project will coordinate the co-location of streetcar stops and new bike sharing stations to be installed as part of the District’s new and expanded Capital Bikeshare program that is launching in September 2010, in collaboration with Arlington County, VA. Currently, Capital Bikeshare stations are planned adjacent to the Howard Road streetcar stop (by the Anacostia Metro Station) and adjacent to the MLK Jr. Avenue/Good Hope Road streetcar stop.<sup>31</sup>
- **Anacostia Riverwalk Trail** – the Project will directly link transit riders to a major access point for the Anacostia Riverwalk Trail, a 16-mile regional trail system under construction. The streetcar stop at MLK Jr. Avenue/Good Hope Road will enable residents to conveniently access the Riverwalk via planned sidewalk improvements along Good Hope Road (part of the Anacostia Waterfront Initiative). The Riverwalk Trail connects to various regional attractions along the waterfront as well as serving as a regional recreational attraction in itself.<sup>32</sup>
- **New Local Traffic Span of 11<sup>th</sup> Street Bridge** – the Project will link to the new 11<sup>th</sup> Street Bridge (under construction) span dedicated to local multimodal traffic (with accommodations for pedestrian, bicycle, streetcar and local vehicular traffic) between Anacostia and the emerging Navy Yard/Near Southeast activity center. This bridge will allow direct pedestrian access to new waterfront public spaces on the opposite side of the river. Streetcar tracks are being installed in the bridge to allow for future extension of the Anacostia streetcar line to the Capitol Riverfront.

#### Reducing Congestion on Existing Modal Assets

The Project will reduce congestion on heavily used bus, metro, and roadway facilities in the project corridor.

<sup>30</sup> WMATA 2010 Metrorail ridership data.

<sup>31</sup> See [www.capitalbikeshare.com](http://www.capitalbikeshare.com)

<sup>32</sup> See Anacostia Riverwalk website: <http://dcbiz.dc.gov/dmped/cwp/view,A,1365,Q,605993.asp>

**Relieving Bus Crowding** – The Anacostia Streetcar Phase 2 project will reduce crowding on Metrobus services by diverting local trips<sup>33</sup> from heavily used bus lines along the corridor and providing significantly higher passenger-capacity vehicles than standard buses.

Currently MLK Jr. Avenue is one of the highest ridership corridors of the Metrobus system. 14 Metrobus routes serve the Anacostia Streetcar Phase 2 project corridor along MLK Jr. Avenue, including several lines that have very heavy ridership and suffer from overcrowding. During the peak period approximately 40 public transit buses per hour (20 in each direction) travel the project corridor. Even during the midday non-peak period on weekdays, approximately 30 buses (15 in each direction) travel the corridor.<sup>34</sup> Table 2 lists principal existing bus routes that serve the corridor.

**Table 2: Ridership of Principal Bus Lines that serve the Project Corridor**

Metrobus Line/Route	Average Weekday Ridership (2009)
A line (multiple routes)	14,900 (4 <sup>th</sup> highest ridership line in the District)
P line (multiple routes)	14,700 (5 <sup>th</sup> highest ridership line in the District)
B2 route	7,600
P1, P2 and P6 routes	3,500
W6 and W8 routes	2,700

Source: WMATA 2009 Metrobus data

**Reducing Traffic Congestion** – The Project will reduce passenger vehicle VMT and congestion along surface streets in the corridor. It is estimated that it will divert 27,900 annual auto trips, resulting in a reduction of 315,600 VMT annually. In addition, the higher-capacity streetcar vehicles are expected to enable future restructuring of bus transit service based on this added capacity and reduce the total number of transit vehicles using MLK Jr. Avenue. The congestion benefits for the corridor are expected to increase over time as expected long-term population and employment growth occurs in Anacostia. The MLK, Jr. Avenue corridor will become an even more important arterial for local trips by 2016 when the St. Elizabeths West campus will be home to 14,000 workers.

Improve Accessibility for Economically Disadvantaged

The Anacostia Streetcar Phase 2 project will serve an economically distressed and transit-dependent community, providing access to an important community center for social services, local business, recreation and transit transfers.

**Economically Distressed Area** – The Project is located in Ward 8 of the District of Columbia, which is an Economically Distressed Area (see details under “Job Creation and Economic Stimulus”, below).

**High Low-income Population and Rate of Transit-dependency** – Based on DC Office of Planning and US Census data, the project corridor has substantial concentrations of low-income and transit-dependent households. Within ¼ mile, approximately 45.6 percent of the households have incomes below \$35,000, and 51.8 percent of the households have no access to a car.<sup>35</sup>

**Focal Point of Community Services** – Downtown Anacostia is the primary business district and center for social services and local government outreach for the northern half of Ward 8. It is a focal point of community institutions, schools, historic residential neighborhood, and a gateway to the Anacostia waterfront parkland and recreational uses. In 2009 the Salvation Army opened the 69,000-sq.ft. Solomon G. Brown Corps Community Center, located on MLK Jr. Avenue in the Downtown Anacostia, which provides social services geared toward the communities east of the Anacostia River. The Project will facilitate access to these services in the corridor. Table 3 below provides a list of services and facilities in the corridor. Figure 2 above shows the locations of important facilities in the corridor.

<sup>33</sup> Project ridership forecast estimates that 242 weekday trips in the year 2015 are diverted from bus lines.

<sup>34</sup> WMATA Metrobus schedules and route maps, August 2010.

<sup>35</sup> Based on 2000 Census data, DC Office of Planning background data for Streetcar System Master Land Use Plan.

**Table 3: Community Services in the Project Corridor**

Type of Service	Facilities in Project Corridor
Retail and Office	<ul style="list-style-type: none"> <li>• Historic business district for Anacostia area and southern Ward 8, with traditional storefront retail and professional offices establishments</li> <li>• New multi-story office development and several planned mixed-use development projects</li> </ul>
Health and Social Services	<ul style="list-style-type: none"> <li>• Anacostia Economic Development Corporation</li> <li>• Riverview Plaza medical and professional office building and various clinics, including Whitman-Walker Clinic, Health Services for Children with Special Needs</li> <li>• Job training and housing services non-profits, including the Salvation Army Solomon G. Brown Corps Community Center, ARCH Training Center</li> <li>• Multiple day care centers</li> <li>• Multiple churches (many of which include community service facilities)</li> </ul>
Government services	<ul style="list-style-type: none"> <li>• Anacostia Gateway Government Center, includes offices of various DC departments) including the Dept. of Housing &amp; Community Development headquarters office,</li> <li>• Advisory Neighborhood Commission (ANC) 8-A office and Malcolm X Cultural Center</li> <li>• Business Opportunity Workforce Development Center and the Anacostia Waterfront Business Resource Center (managed by DDOT and DC Dept. of Employment Services)</li> </ul>
Schools	<ul style="list-style-type: none"> <li>• Public schools: Savoy Elementary School, Thurgood Marshall Academy Public Charter High School, Howard Road Academy Middle School Campus, Birney Elementary School</li> <li>• Private schools: Clara Muhammad School and Bishop John T. Walker School for Boys</li> </ul>
Cultural Institutions	<ul style="list-style-type: none"> <li>• American Poetry Museum, Frederick Douglass Home National Historic Site, African Heritage Dancers and Drummers Studio, and various private art galleries.</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>• Anacostia Park (National Park Service), Anacostia Riverwalk Trail, and Barry Farm Recreation Center (District of Columbia).</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• Anacostia Metro Station, including bus transfer center.</li> </ul>

Source: DC Office of Planning, Deputy Mayor's Office for Planning & Economic Development, and WDCEP.

**Result of Planning Process that Coordinated Transportation and Land Use and Encouraged Community Participation**

The Anacostia Streetcar Phase 2 project is the result of numerous community planning processes and studies for transit improvements in Anacostia as well as larger inter-disciplinary initiatives (see Table 4).

Recent presentations and open house meetings regarding streetcar plans were held for the general public and community groups in Anacostia. These included:

- DC's Transit Future and Streetcar System Plan, Ward 8 Public Open House, November 2, 2009
- Anacostia Projects Open House (covered Streetcar, St. Elizabeths redevelopment and other Ward 8 projects), December 10, 2009
- Fairlawn Citizens Association Meeting, May 18, 2010
- Ward 8 Anacostia Business Leaders Meeting, May 18, 2010

Other related public involvement efforts:

- **DC Transit System Plan** – Phases of the planning process prior to 2009 had extensive public and agency involvement that focused on determining community needs (2003) and reviewing initial results and recommendations (2004-2005). Outreach efforts included focus groups, presentations to community groups, briefings of community leaders, public meetings and workshops, newsletters, vehicle showcase, project website, a project hotline, and a final citywide public forum.
- **Anacostia Waterfront Initiative (AWI)** – had extensive public involvement activities during the initial development of the Framework Plan (2000-2003). Recent AWI activities (2009) included public meetings focused on the Anacostia Streetcar project and other current AWI projects.
- **MLK Jr. Avenue Great Streets Initiative** – hosted several rounds of public meetings during the planning process, including meetings and workshops at locations within the Anacostia Streetcar Phase 2 project corridor (2005-2006).

Table 4: Summary of Planning Processes related to the Project

Year	Study	Sponsor	Summary
2010	<i>DC's Transit Future System Plan and Alternatives Analysis, Final Report</i>	DDOT, WMATA	A comprehensive assessment and evaluation of alternative modes and levels of investment in 14 corridors across the District. The study recommended an integrated system of transit service investments that includes combinations of Streetcar, BRT, and Enhanced Bus services. Phase 1 of the recommended streetcar element includes the "Historic Anacostia" segment from the Anacostia Metro Station to Downtown Anacostia.
2008	<i>Metrobus Priority Corridor Network Plan</i>	WMATA	Identified MLK Jr. Avenue as a priority corridor for surface transit improvements to serve the existing high ridership.
2006	<i>Great Streets Initiative – Martin Luther King Avenue Framework Plan</i>	DDOT	Multi-disciplinary corridor improvement plan of public realm investments, strategic land use plans, public safety strategies, and economic development assistance. The plan for the entire MLK Jr. Avenue corridor included accommodation of the Anacostia Streetcar, as well as improvements to the roadway, pedestrian facilities, bicycle facilities, transit facilities, and parking.
2005	<i>Anacostia Streetcar Project Environmental Screening Report</i>	DDOT	Assessed the proposed Anacostia Streetcar Project (including Phases 1 and 2 and additional phases) from the Bolling Air Force Base to Pennsylvania Avenue, SE at Minnesota Avenue, SE.
2004	<i>Anacostia Transit-Area Strategic Investment and Development Plan</i>	DC Office of Planning	Assessed economic development opportunities that could be implemented in conjunction recent new transit and land use plans for the Anacostia.
2004	<i>South Capitol Gateway Corridor and Anacostia Access Study</i>	DDOT	Part of the study focused on transportation and transit improvements. The transit recommendations supported new streetcar service through Anacostia.
2004	<i>Anacostia Corridor Demonstration Project, Environmental Assessment &amp; Section 4(f) Statement</i>	DDOT, WMATA	Assessed a previous Build Alternative light rail alignment along the existing CSX Railroad Shepherd Industrial Spur (inactive since 2001) through Anacostia.
2003	<i>Anacostia Waterfront Initiative Framework Plan</i>	DC Office of Planning	Brought together residents and 20 federal and DC agencies to develop a coordinated plan for land use, recreation, and conservation along the Anacostia River and adjacent neighborhoods.
2003	<i>Regional Bus Study</i>	WMATA	Identified MLK Jr. Avenue as a long-term priority corridor for premium transit services.

### Long-Term Outcome: Environmental Sustainability

The streetcar project will support efforts to provide more sustainable transportation alternatives in the District of Columbia, particularly in areas without Metrorail service. The streetcar plan is a key part of its initiatives to achieve its climate and energy efficiency goals in the transportation sector.

#### Energy Efficiency, Reduced Oil Dependence, Reduced GHG Emissions

**Reduction in Vehicle Miles Traveled (VMT)** – Based on the regional travel demand model, it is estimated that the Project will result in a reduction of approximately 315,600 VMT per year.

**Reduction in Fuel Consumption** – With the projected reduction in VMT, the resulting reduction in fuel consumption was estimated to be 13,960 gallons of gasoline per year (based on 2008 FHWA fleet average fuel economy for passenger vehicles). Note that this reduction will decline over time as the fleet average fuel economy improves.

**Reduction in Vehicle Emissions** – Based on the estimated reduction in VMT, the resulting passenger vehicle emissions reductions as a result of the Project were estimated (see Table 5).

**Table 5: Estimated Reductions in Vehicle Emissions**

Pollutant	Abbreviation	Reduction in Emissions (Tons Per Year)
Carbon Monoxide	CO	0.40
Nitrous Oxide	NO <sub>x</sub>	0.39
Volatile Organic Compounds	VOC	0.02
Particulate Matter	PM-10	0.03
Carbon Dioxide	CO <sub>2</sub>	150.49

Source: Regional Travel Demand Forecasting Model, Mobile source emission factors for the Washington DC region.

**Avoidance of Adverse Environmental Impacts and Environmental Benefits**

In addition to the expected environmental benefits outlined above, the project is expected to have insignificant adverse environmental impacts, because the planned project corridor utilizes existing roadway right-of-way within a developed urban area, as supported by the findings of previous environmental studies (cited below under *Section V. Project Readiness and NEPA*). Implementation of the project will be conducted in accordance with DDOT’s Environmental Policy and Process Manual.

**Environmentally Friendly Features**

Sustainability features that DDOT proposes to incorporate include the following:

**Bicycle Sharing** – DDOT will integrate its new regional Capital Bikeshare program<sup>36</sup> with the Anacostia Streetcar, locating bicycle sharing stations at the Downtown Anacostia and Anacostia Metro streetcar stops. Streetcar vehicles will also be able to accommodate bicycles on board.

**Electric Vehicle Recharging Stations** – The Project will require one additional small electrical substation along the route. DDOT proposes co-locating Level 2 and 3 electric vehicle charging stations at its streetcar substation and neighborhood substations.

**Powered by 50% Renewable Energy Sources** – Sustainable alternative electricity sources will provide at least half of the power for the streetcar system. In 2009, the District entered into an electricity contract to provide a minimum of 50% of the District’s electricity from renewable energy sources. Renewable electricity includes wind, geothermal, solar and hydroelectric.<sup>37</sup>

**Roadway reconstruction using sustainable techniques** – These include:

- **Protection and Preservation of Existing Trees** – required actions to protect existing trees from being damaged by nearby construction activities. “Rubber” sidewalk material is being used around large trees to accommodate future growth.
- **Pervious Material to Improve Roadway Drainage** – a permeable concrete base below the roadway surface is being installed to decrease runoff and allow groundwater recharge.
- **Recycling Granite Curbing** – granite curbing that is removed is being recycled in the construction of the curbs on the side streets, helping to diminish the waste volume.
- **Erosion and Sediment Control** – the projects must adhere to the detailed erosion and sediment control regulations of the DC Bureau of Environmental Quality.
- **Installation of Solar-powered Electronic Parking Meters** – individual coin meters are being replaced with solar-powered pay-box meters on each block.

<sup>36</sup> New expanded bike sharing program that will launch in September 2010. See <http://capitalbikeshare.com>.

<sup>37</sup> District Department of Energy, [www.ddoe.dc.gov](http://www.ddoe.dc.gov)



**Tree Planting** – Extensive tree and shrub planting is programmed for the entire MLK Jr. Avenue corridor as part of the streetscape improvements of the Great Streets Initiative. Tree planting in the project area will occur in conjunction with streetcar construction.

### Long-Term Outcome: Safety

The Project will improve the safety of drivers and pedestrians along MLK Jr. Avenue. As intersections are reconfigured for the streetcar project, documented high accident locations will be addressed as part of the improvements. The project corridor has three intersections that were listed as “High Crash” intersections by DDOT for 2007 to 2009, the last three years of available data. Existing hazardous vehicular movements will be eliminated and improved pedestrian accommodations will be incorporated as needed. In addition, DDOT has developed a working draft *Streetcar Safety and Security Management Plan* that will govern each phase of the Anacostia Streetcar Phase 2 project (see [www.t2gsupportdc.com](http://www.t2gsupportdc.com)).

Furthermore, the resulting reduction in VMT from the Project is expected to decrease the occurrence of auto crashes involving fatalities, injuries, and property damage. Using fatality, injury, and property damage-only crash rates developed by the USDOT Bureau of Transportation Statistics (BTS), these additional safety benefits have been estimated and their financial value is included in the Benefit-Cost Summary (Table 9) below.<sup>38</sup>

### Job Creation and Economic Stimulus

#### Preserving and Creating Jobs and Economic Activity

**Economic Distress** – The Project area (Ward 8 of the District of Columbia) meets the unemployment rate criteria contained in the definition of “Economically Distressed Areas” from section 301 of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3161). Ward 8’s average unemployment rate for the most recent 24 months is 14.75 percentage points above the comparable 24-month average for the U.S. The average for Ward 8 is 22.21 percent; the average for the U.S. is 7.46 percent over the same time period. Because available unemployment rate data at the Ward level lags the U.S. data, the 24-month span reported here runs from November 2007 to December 2009.<sup>39</sup> This is the most recent data available at the time of this application. (See Appendix B for detailed data)

**Construction Benefits** – The Project can quickly help to mitigate the economic downturn as it is expected to begin construction during the second quarter of CY2011 as outlined in Table 6. The Project will be complete in the second quarter of CY2013. The quarterly construction schedule and economic impacts from construction (including direct, on-project jobs created) are shown in Table 6.<sup>40</sup> The construction costs shown in the table are for the Project construction, professional services, and contingency activities only; the costs of finance charges, vehicles, and right-of-way have been excluded because these costs are expected to occur outside the Washington, DC Metropolitan Statistical Area (MSA).<sup>41</sup>

<sup>38</sup> The detailed methodology and sources are presented in the Benefit-Cost Analysis Technical Memorandum in Appendix B.

<sup>39</sup> The Ward level data was only available through December 2009. In addition, Ward 8 data was not available for April 2008 or July 2008. As a result, the 24-month averages for the U.S. and Ward 8 exclude these two months.

<sup>40</sup> The direct employment impacts were estimated using the quarterly construction expenditures RIMS II multipliers for the Washington, DC Metropolitan Statistical Area (MSA). Given the multiplier relationships, the final-demand employment multiplier divided by the direct-effect employment multiplier yields an estimate of the initial (or direct) employment per \$1 million final demand. Please see BEA RIMS II Workshop Presentation, Slide 71, <http://uwf.edu/auber/conf/Pensacola07/presentations/AUBER%20RIMS%20Presentation.ppt>

<sup>41</sup> Based on the construction expenditures and the construction RIMS II multipliers for the region. The Final Demand construction RIMS II multipliers are 0.5566 (earnings) and 14.3762 (employment) for the Washington, DC MSA. Please note that to use the final demand multiplier for employment (based on 2007 data), the construction costs were deflated to 2007 dollars using the direct capital non-defense GDP deflator. (<http://www.gpoaccess.gov/usbudget/fy10/sheets/hist10z1.xls>)



**Table 6: Quarterly Project Construction Expenditures and Economic Impacts (millions of 2009\$)<sup>42</sup>**

Category	2011				2012				2013		Total 2009\$
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
<b>Construction Expenditures</b>											
Construction					\$ 3.02	\$ 3.02	\$ 3.02	\$ 3.02	\$ 3.02	\$ 3.02	\$18.12
Professional Services		\$ 0.59	\$ 0.59	\$ 0.59	\$ 0.59	\$ 0.59	\$ 0.59	\$ 0.59	\$ 0.59	\$ 0.59	\$ 5.27
<b>Total Construction Expenditures</b>		\$ 0.59	\$ 0.59	\$ 0.59	\$3.61	\$3.61	\$3.61	\$3.61	\$3.61	\$3.61	\$23.40
Direct Construction Employment		4	4	4	28	28	28	28	28	28	181
<b>Economic Impacts</b>											
Earnings		\$ 0.42	\$ 0.42	\$ 0.42	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$ 2.10	\$13.83
Discounted Earnings @3%		\$ 0.39	\$ 0.39	\$ 0.39	\$ 1.98	\$ 1.98	\$ 1.98	\$ 1.98	\$ 1.98	\$ 1.98	\$13.04
<b>Discounted Earnings @7%</b>		\$0.34	\$0.34	\$0.34	\$ 1.73	\$ 1.73	\$ 1.73	\$ 1.73	\$ 1.73	\$ 1.73	\$11.39
<b>Total Employment</b>		8	8	8	50	50	50	50	50	50	324

Notes:

- (1) The direct employment impacts shown are included in the total employment estimates; they are not additive.
- (2) Total Employment includes direct + indirect + induced employment associated with the period.

Source: AECOM construction cost estimate and calculations using RIMS II multipliers

In addition to the Project construction, residential and commercial development attributable to the introduction of streetcar service is expected to be 25 percent higher than the baseline forecast within a ¼ mile of the project corridor.<sup>43</sup> Based on previous District studies, the development is assumed to be new to the region (i.e., the development would not have occurred elsewhere in the region).<sup>44</sup> The construction of this additional development is expected to occur between 2013 and 2029 and will bring additional construction expenditures and benefits to the region (see Table 7). Construction of the Project and the associated development represents a large capital investment in the regional economy and in the economically distressed Ward 8 of the District of Columbia.<sup>45</sup>

**Table 7: Development Construction Expenditures and Economic Impacts (millions of 2009\$)<sup>46</sup>**

Type of Expenditure	20-year Total (2014-2033)
Construction Expenditures	\$ 172.28
Earnings	\$ 95.89
Discounted Earnings @3%	\$ 67.96
Discounted Earnings @7%	\$ 44.95
<b>Total Employment (1-year duration)</b>	<b>2,384</b>
<b>Direct Employment (1-year duration)</b>	<b>1,393</b>

Notes:

- (1) The direct employment impacts shown are included in the total employment estimates; they are not additive.
- (2) Total Employment includes direct + indirect + induced employment associated with the period.

Source: AECOM calculation based on RS Means 2009 Square Foot Costs and DCAA Return on Investment Report, May 2005 (type of construction cost to use for residential, industrial, retail, office, and other), and RIMS II multipliers

**Operating Benefits** - The Project will sustain direct transit jobs as a result of DDOT expenditures in the District and the Washington, DC MSA. Since the operating funds (less fare revenues) for the project are coming from local sources, the transit jobs created as a result of the project are considered sustained rather than new jobs because the funding would otherwise be spent in the District. The economic effects of the new employment and earnings associated with the operation of the Project and the local non-personnel operating purchases are summarized in Table 8. These are recurring impacts that last as long as the Project is in operation. The impacts shown in the table below summarize the impacts for the 20-year period following project opening in 2014.<sup>47</sup>

<sup>42</sup> Detail on the construction impacts are in the Benefit-Cost Analysis Technical Memorandum in Appendix B.

<sup>43</sup> The development impact for the project is based on the District of Columbia Transit Improvements Alternatives Analysis Return on Investment Report (May 2005) which examined the broader corridor.

<sup>44</sup> District of Columbia Transit Improvements Alternatives Analysis Return on Investment Report (May 2005).

<sup>45</sup> The new construction jobs and wages created will be temporary, lasting only as long as the construction occurs; and therefore, these impacts are excluded from the Benefit-Cost ratio.

<sup>46</sup> Greater detail is presented in the Benefit-Cost Analysis Technical Memorandum in Appendix B.

<sup>47</sup> Please note that these operating benefits are not included in the Benefit-Cost Analysis ratio presented below.

**Table 8: Total Operations Impacts for the Washington, DC MSA (millions of 2009\$)<sup>48</sup>**

Total Operations Impacts	20-year Total (2014-2033)
Earnings	\$27.80
Discounted Earnings @3%	\$18.38
Discounted Earnings @7%	\$11.24
Total Employment (1-year duration)	\$398
Direct Employment (1-year duration)	292

Notes: The direct employment impacts shown are included in the total employment estimates; they are not additive.  
Source: AECOM

**Employment at New Development** – The commercial development attributable to the project will accommodate new direct jobs with recurring benefits within the District of Columbia and Washington, DC MSA. The new jobs located in this commercial development will directly benefit the regional economy. The total new, recurring commercial employment attributable to the Project by 2030 is 1,007, including 162 industrial, 151 retail, 278 office, and 417 other jobs.<sup>49</sup>

**Providing Opportunities for SBEs, DBEs, Low-income Workers and Neighborhood Residents**  
DDOT has several assistance programs and follows DC and Federal contracting requirements that support locally certified businesses, Disadvantaged Business Enterprise (DBE) firms, Small Business Enterprise (SBE) firms, low-income workers, and residents of economically disadvantaged areas in benefitting from transportation construction projects and program operations and maintenance.

**DBE/SBE Contracting and Procurement Goals** – The District of Columbia establishes DBE goals on federal-aid projects in accordance with 49 CFR Part 26. The goals are monitored for compliance by DDOT’s Office of Civil Rights. Firms that win federal-aid projects are required to submit a DBE plan prior to the commencement of the project to ensure compliance and are subjected to post-award contract monitoring to ensure that the Required Contract Provisions (Form 1273) are incorporated in each executed contract and subcontract of \$10,000 or more. Contractors are required to make good faith efforts to seek qualified DBE firms and ensure that DBE firms are performing on the project as identified in the contract. This would also include the Training Special Provisions that pertaining to the On-the-Job Training program to recruit and train qualified minorities, women and disadvantaged individuals on federally-assisted transportation construction projects.

**Anacostia Business Opportunity Workforce Development Center (BOWDC)** – DDOT manages the BOWDC, which is located in Historic Anacostia on the Project corridor,<sup>50</sup> in partnership with the DC Department of Employment Services (DOES). Funded by the Federal Highway Administration, the BOWDC, is a centralized hub providing local residents and certified DBE firms with information on business opportunities with DDOT, assistance for entrepreneurs interested in DBE certification, and employment/training opportunities for residents on locally and federally funded projects.

**Technical Assistance** – DDOT sponsors Vendor Fairs/Procurement Information Fairs for major projects, inviting all certified local business firms, DBE, SBE and Veteran-owned businesses. DDOT’s Office of Civil Rights administers programs that assist DDOT-certified DBE firms in the transportation construction industry. The DBE/Supportive Services Program provides a directory of DBEs, notice of procurement and training opportunities, training, consulting, and assistance in obtaining financing.

<sup>48</sup> Greater detail is presented in the Benefit-Cost Analysis Technical Memorandum in Appendix B.

<sup>49</sup> These new jobs reflect the 25% increase in baseline job growth for the Project corridor identified in the District of Columbia Transit Improvements Alternatives Analysis Return on Investment Report (May 2005). Greater detail on the development impacts is presented in the Benefit-Cost Analysis Technical Memorandum in Appendix B.

<sup>50</sup> The BOWDC is located at 2311 Martin Luther King, Jr. Avenue SE. It is shared with the Anacostia Waterfront Business Development Center that coordinates projects related to the Anacostia Waterfront Initiative.

*Equal Opportunity and Sound Labor Practices* – DDOT enforces Equal Opportunity and Sound Labor Practices through its Office of Civil Rights. Federal aid contractors are required to perform “good faith efforts” for hiring qualified minorities, women and veterans.

## Innovation

The Project will incorporate the following innovative elements:

- Wireless vehicle technology that allows vehicles to operate up to one mile without overhead wires (see propulsion description in *Section I.*, above);
- Co-locating streetcar stops with bike sharing stations (see description in *Environmentally Friendly Features*, above); and
- Using streetcar power substations as hubs for electric vehicle charging stations (see description in *Environmentally Friendly Features*, above).

## Partnership

### Stakeholder Collaboration

DDOT works with DC Surface Transit, Inc. (DCST) to implement and promote new local mass transit services that enhance adjacent business districts. DCST is a non-profit corporation created to promote surface transit in the District of Columbia. Its membership includes six business improvement districts, the Washington Convention and Sports Authority, and Destination DC. DCST has been active in promoting the Anacostia Line and other lines of the DC Streetcar System, providing outreach to community business associations, developers and landowners along the planned corridors.

DDOT partners with the District Department of Employment Services in managing a neighborhood Business Opportunity Workforce Development Center (BOWDC) located on the Anacostia Streetcar Phase 2 corridor. As described above, the BOWDC is a centralized hub that assists local residents and certified DBE firms in taking advantage of opportunities with federally funded transportation projects.

### Disciplinary Integration

Two inter-disciplinary initiatives of the District of Columbia and other agencies include the Anacostia Streetcar Phase 2 project as an integral component.

*Anacostia Waterfront Initiative (AWI)* – The *AWI Framework Plan* (2003) brings together 20 federal and District of Columbia agencies in a partnership that coordinates planning, conservation and development along the Anacostia River and adjacent neighborhoods. One of the five central themes of AWI is to better connect communities to the river and its network of parks. The *Anacostia Waterfront Transportation Master Plan* (2007 Update) includes the Anacostia Streetcar line along MLK Jr. Avenue to Downtown Anacostia, where improved pedestrian and bicycle facilities provide better links to the adjacent waterfront area. At the southern terminus of the Phase 2 project, improved pedestrian facilities will provide links to the planned Poplar Point community facilities and mixed-use development. (AWI links and planning documents are available at [www.t2gsupportdc.com](http://www.t2gsupportdc.com))

*Martin Luther King, Jr. Avenue Great Streets Initiative* – The Initiative is a multidisciplinary approach to corridor improvement composed of public realm investments, strategic land use plans, public safety strategies, and economic development assistance, and is a partnership between multiple District government departments and offices. It selected six target corridors for improvement, including the MLK Jr. Avenue corridor. The resulting *Martin Luther King, Jr. Avenue Great Streets Framework Plan* (2006, see [www.t2gsupportdc.com](http://www.t2gsupportdc.com)) covers the entire MLK Jr. Avenue corridor and includes recommendations for improvements to the roadway, pedestrian facilities, bicycle facilities, transit facilities, and vehicle/parking facilities. The plan supports accommodation of the Anacostia Streetcar along MLK Jr. Avenue through Downtown Anacostia. The comprehensive roadway/streetscape improvement will be implemented simultaneously with construction of the streetcar Project.

## Benefit-Cost Summary

The total Project benefits yield a benefit cost ratio of 1.37 at a 7% discount rate. At a 3% discount rate, the ratio is 1.96 (see Table 9). It should be noted, however, that the Project enables many Livability benefits that cannot be accurately presented in a benefit-cost framework, but are described in more detail in Section IV of the application. The estimation of each of the benefit types is described in the Long-term Outcomes section of the application. For more details on the methodology and assumptions, please see the Benefit-Cost Analysis Technical Memorandum in Appendix B.

**Table 9: Benefit-Cost Analysis Summary (millions of 2009\$)**

Category	20-year Total	
	Discounted @3%	Discounted @7%
<b>Recurring Benefits</b>		
Operation (sustained)	\$ 18.38	\$ 11.24
Transportation		
Travel Cost Savings (new)	\$ 0.74	\$ 0.45
Development		
Commercial Productivity Gains (new)	\$ 61.45	\$ 34.92
Compact Development (new)	\$ 24.01	\$ 12.82
Residential Premium (new)	\$ 2.98	\$ 1.92
Environmental (new)	\$ 0.17	\$ 0.10
Safety (new)	\$ 0.61	\$ 0.37
Residual Value of Streetcar System (new)	\$ 3.15	\$ 0.92
<b>Total New Recurring Benefits (less Operation)</b>	<b>\$ 93.11</b>	<b>\$ 51.51</b>
<b>One-Time Benefits</b>		
Project Construction	\$ 12.48	\$ 10.93
Development Construction	\$ 67.96	\$ 44.95
<b>Total One-Time Benefits</b>	<b>\$ 80.44</b>	<b>\$ 55.88</b>
<b>Project Costs</b>		
Total Project Capital Costs	\$ 31.81	\$ 27.85
Total Project Operating Costs	\$ 15.91	\$ 9.73
<b>Total Project Costs</b>	<b>\$ 47.72</b>	<b>\$ 37.58</b>
<b>Benefit-Cost Ratio</b>		
<b>Recurring Benefits/Project Costs</b>	<b>1.95</b>	<b>1.37</b>

Source: AECOM Calculations

## V. PROJECT READINESS AND NEPA

### Schedule

Figure 3 shows the current project implementation schedule. DDOT has scheduled project design and construction to occur over a three-year time period with the system in operation by 2013. This schedule includes completing the NEPA process in early 2011 and final design activities by 2012.

DDOT believes that the timeframe is reasonable and that it can achieve this schedule:

- DDOT has a total of 9 streetcar project staff and has procured a special Streetcar Program Management Team to oversee implementation of streetcar projects. (See description of Streetcar Program Management Team at [www.t2gsupportdc.com](http://www.t2gsupportdc.com) )
- DDOT already owns and manages the city streets upon which the streetcar alignment is proposed; no acquisition of property will be needed to implement the Project.



project corridor for agency representatives of FTA, FHWA, and the National Capital Planning Commission (NCP) in Spring 2010. DDOT held a consultation meeting with FTA regarding initiation of the NEPA process for the Anacostia Streetcar Initial Line Phase 2 Extension project on May 27, 2010 and submitted additional project documentation to FTA, including a draft financial plan, on July 12, 2010. DDOT has also met with the District of Columbia State Historic Preservation Officer regarding anticipated Section 106 review of the project in coordination with the NEPA process. A Section 4(f) review of the Project will also be initiated if needed. NCP sent a letter via electronic correspondence to DDOT confirming that it had no objections to review of the proposed streetcar project through the Environmental Assessment, Section 106 and Section 4(f) processes (as needed) under NEPA. The District of Columbia is not subject to the federal Coastal Zone Management Program. Other permits will be identified during the NEPA process.

#### Local Environmental Approvals

The Project will comply with the District of Columbia Environmental Policy Act (DCEPA). Projects that have been reviewed and cleared through the federal NEPA process (FONSI or EIS) are exempt from preparation of an Environmental Impact Screening Form as part of the DCEPA.

#### **Legislative Approvals and Letters of Support**

No legislative approvals are needed to implement the Project. Local elected officials, agencies, and organizations have provided letters of support for the Project; these are provided in Appendix C.

#### **State and Local Planning**

The Anacostia Streetcar Phase 2 project (TIP ID #2620) is included in the FY 2010-2015 TIP for the Metropolitan Washington Region, as part of funding for implementation of several corridors of the Streetcar System Plan (see [www.t2gsupport.dc.com](http://www.t2gsupport.dc.com)). The Anacostia Phase 2 project is currently included in the Air Quality Conformity Inputs for the 2010 Regional Constrained Long Range Transportation Plan (CLRP) and 2011-2016 TIP updates. Once the conformity process is completed and subject to public review, the Project will be added to the 2010 CLRP and 2011-2016 TIP in late 2010.

The Anacostia Streetcar Phase 2 project is an integral component of multiple District of Columbia plans (see Table 4 above).

#### **Technical Feasibility**

The Anacostia Streetcar Phase 2 project has emerged from the planning and conceptual design conducted for the project. See studies included in Table 4 above. The Project is currently in the process of advancing through the NEPA and Preliminary Engineering phase of development. DDOT will serve as the direct point of contact for the FTA and will be the agency that is ultimately responsible for the success of the project (see Section II., Project Parties, above). Through a combination of direct and indirect reporting arrangements, DDOT intends to take advantage of the depth of its organization and provide the skills necessary to successfully manage the project through the design and construction process. DDOT will be supported by its Streetcar Program Management Team (see [www.t2gsupportdc.com](http://www.t2gsupportdc.com)).

A Design-Build contractor will be selected for final design, construction, and management support services to DDOT, including public involvement and technical coordination for utility agreements and permitting. DDOT has utilized a similar approach to complete design and construction of other large scale transportation projects including the 11<sup>th</sup> Street Bridge reconstruction project. DDOT is in the process of identifying and selecting an operator who will be responsible for operation & maintenance.



## Financial Feasibility

The financial plan establishes a viable and complete financing package to fund the construction, operating, and maintenance needs of the project and demonstrates strong local financial participation. Overall, the strategy assumes that \$18.115 million of the project's construction cost would be funded by the TIGER II Discretionary Grant, with the remainder covered by local funds. The project's annual operating needs would be funded with General Fund revenues from the District of Columbia.<sup>53</sup>

### Capital Costs

Capital Costs were developed first for each major work element of the Anacostia Streetcar Phase 2 project, including guideway, station stops/terminals, yards/shops/support facilities, sitework and special conditions, systems, vehicles, professional services (including environmental, project development, project administration, construction management, and insurance), contingency, and finance charges. The total estimated capital cost for the project is \$36.23 million in Year 2010 dollars. Capital cost estimates were developed in FY09 dollars and escalated to FY10.<sup>54</sup> Table 10 summarizes capital costs for each project element in base year (2010) and year-of-expenditure (inflated) dollars.

**Table 10: Anacostia Streetcar Phase 2 Extension Project Estimated Capital Costs (millions of 2010 Dollars)**

Capital Cost Item	FY 2012	FY 2013	Total
Guideway & Track Elements	\$ 2.22	\$ 2.22	\$ 4.44
Station Stops/Terminals	\$ 0.52	\$ 0.52	\$ 1.03
Expansion of Yards/Shops/Support Facilities	\$ 0.08	\$ 0.08	\$ 0.15
Sitework & Special Conditions	\$ 1.52	\$ 1.52	\$ 3.04
Systems	\$ 2.83	\$ 2.83	\$ 5.66
Right-of-Way	\$ ----	\$ ----	\$ ----
Vehicles	\$ 5.96	\$ 5.96	\$ 11.92
Professional Services	\$ 2.71	\$ 2.71	\$ 5.42
Contingency	\$ 2.15	\$ 2.15	\$ 4.30
Finance	\$ 0.13	\$ 0.13	\$ 0.27
<b>TOTAL</b>	<b>\$ 18.11</b>	<b>\$ 18.11</b>	<b>\$ 36.23</b>

### Capital Funding Sources

This plan anticipates a TIGER II grant award of \$18.115 million for the Project. The remainder of funding for the project will be provided by DDOT capital funds. DDOT will apply General Obligation (GO) bond debt to fund the local share of project capital expenses. This debt is routinely issued by DC Office of the Chief Financial Officer (OFCO) to fund transportation and other capital expenses and will be within the District's General Obligation debt limitation of 12 percent. DDOT's specific FY 2011 local capital budget is \$192.7 million. In the FY 2011 local capital budget \$36.4 million (65%) of the GO Bond funds are allocated to the streetcar program. The portion of General Obligation debt proceeds applied to the Anacostia Streetcar Phase 2 project will be a relatively small percentage of the debt issue, and bond proceeds allocated to the project will not change or reduce DDOT's commitment to funding other transportation projects included in the DDOT capital improvement program. Presently, DC General Obligation debt has an AAA rating from Standard & Poors, an AA2 rating from Moody's Investor Services, and an AA rating from Fitch Ratings.

<sup>53</sup> The operations of the initial DC Streetcar lines in Anacostia and H Street & Benning Rd will follow a similar operating, funding and management structure as the DC Circulator, which is funded exclusively with local general fund dollars. DDOT sends these funds to WMATA as part of its subsidy to the Authority as a reimbursable project. WMATA utilizes the funds to handle a third-party operating contract on the District's behalf for a management fee. In 2010, private transit operator First Transit won the public bidding process, to operate the DC Circulator. Marketing of the service is handled by DDOT's private partner, District of Columbia Surface Transit, Inc. (DCST).

<sup>54</sup> The assumed annual inflation rate averages 2.75 percent during the construction period, based on the forecast rate of U.S. national RS Means Construction Cost Index projected by Moody's Economy.com in June 2009.



Table 11 demonstrates that a successful TIGER II Grant, coupled with DDOT funding, will meet all capital funding requirements for the project.

**Table 11: Anacostia Streetcar Phase 2 Project Capital Sources and Uses of Funds (millions of 2010 Dollars)**

Uses of Funds	FY 2012	FY 2013	Total
Anacostia Streetcar Phase 2	\$ 18.11	\$ 18.11	\$ 36.23
<b>Total Uses of Funds</b>	<b>\$ 18.11</b>	<b>\$ 18.11</b>	<b>\$ 36.23</b>
<b>Sources of Funds:</b>			
USDOT TIGER II Grant	\$ 9.058	\$ 9.057	\$ 18.115
DDOT Capital Funds	\$ 9.058	\$ 9.057	\$ 18.115
<b>Total Sources of Funds</b>	<b>\$ 18.11</b>	<b>\$ 18.11</b>	<b>\$ 36.23</b>
<b>Net Cash Flow</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

### Operating and Maintenance (O&M) Costs and Funding

O&M costs for the proposed service are based on costs per revenue vehicle hour derived from similar streetcar services operating in the United States. These unit costs take into account annual recurring costs associated with labor, material and supplies, utilities, and fuel, and include costs for rail vehicle operations, vehicle maintenance, non-vehicle maintenance, and administrative activities. DDOT estimates costs for operating and maintenance expenses of \$211.23 per revenue hour for the total estimated annual revenue hours of 6,448. DDOT anticipates a total of \$1.36 million in O&M costs per year in FY 2010 dollars.

O&M Funding Sources applied to support the project include:

#### DDOT Annual Funding Subsidy

The financial plan assumes that DDOT will fund operations and maintenance expenses of the Project by applying District of Columbia General Fund revenues, which comprise a broad mix of sources, including taxes (more than 86 percent of General Fund revenues). Tax revenues include property taxes, sales and use taxes, income and franchise taxes, gross receipts taxes, and other taxes. District of Columbia tax revenue has grown from \$2.8 billion in FY98 to \$5.3 billion in FY08, an annualized growth rate of 6.6 percent. Despite the recent economic downturn, District of Columbia General Fund tax revenues are projected to remain close to \$5.0 billion annually. District of Columbia General Fund tax revenues are projected to decline by 6.9 percent in FY09 and 1.3 percent in FY10, and grow only 1.7 percent in FY11. The annualized growth rate from FY98 to projected FY11 General Fund tax revenues is 4.5 percent. In addition, the broad bases of General Fund tax revenues result in little diminution of revenues despite the economic downturn.

The sum total of District of Columbia transit expenditures is an annual payment to WMATA that subsidizes the following five programs: Metrobus operations; Metrorail operations; MetroAccess paratransit services; debt service; and D.C. specific projects, including streetcar services. District of Columbia transit expenditures have grown from \$148.5 million in FY02 to \$214.9 million in FY08, an annualized growth rate of 5.4 percent. Despite the recent economic downturn and the projected decline in General Fund tax revenues, District of Columbia transit expenditures are budgeted to grow to \$230.5 million in FY09 and \$243.7 million in FY10. The sustained annual historic and budgeted growth in transit expenditures despite historic and projected declines in District of Columbia General Fund tax revenues in FY02, FY09, and FY10 demonstrates the District's commitment to continue to fund transit programs. Moreover, the projected annual operating and maintenance cost of the Anacostia Streetcar Phase 2 project in FY09 dollars is approximately \$1.3 million. This is less than 1 percent of the District's total transit expenditures of \$230.5 million in FY09, a *de minimis* share.



Transit-Related Revenues

DDOT’s annual subsidy to cover O&M costs of the Project may be offset in part by passenger fare revenue. This financial plan, however, does not consider fare revenue in calculating the DDOT subsidy. Further financial evaluation of fare revenue will be conducted during the NEPA process.

Evidence of Stable and Reliable Financial Commitments and Contingency Reserves

The District of Columbia in its FY 2011 budget act allocated \$36,448,000 in GO Bonds to its streetcar project on H Street and Benning Road. The appropriated funds are for planning and capital improvements. In the event the District wins a TIGER II Grant, DDOT, has the authority to reprioritize its capital programming, through the reprogramming process to accelerate the funding of the Anacostia Streetcar Phase 2 project consistent with the financial plan outlined above. See letter from DDOT Director, Gabe Klein, in Appendix A.

Evidence of Grantee’s Ability to Manage Grants

As described above under *Section II, Project Parties*, the grantee, DDOT, is a state department of transportation that delivers an annual work program of \$140M, which includes major structural and civil engineering work. In 2009-2010, DDOT is managing ARRA grant-funded projects worth \$94.9 million. Overall, DDOT has an annual operating budget of over \$127 million and 1,121 employees.

**VI. FEDERAL WAGE RATE CERTIFICATION**

DDOT, as an applicant for TIGER II funding, certifies that it will comply with the requirements of subchapter IV of chapter 31 of title 40, United States Code (Federal wage rate requirements), as required by the FY 2010 Appropriations Act. The certification is included in Appendix D.

**VII. CHANGES TO PRE-APPLICATION INFORMATION SUBMITTED**

DDOT has changed the amount of funds requested and the total project capital cost to reflect higher vehicle costs. Table 12 summarizes the changes:

**Table 12: Changes to Pre-Application**

Application Item	Pre-application	Final Application
TIGER II Funds Requested	\$ 16,025,000	\$ 18,115,000
Local Matching Funds	\$ 16,025,000	\$ 18,115,000
Total Project Capital Cost	\$ 32,050,000	\$ 36,230,000

Note: All costs in 2010 dollars

Since submission of the pre-application in June 2010, DDOT has learned that there is a possibility of procuring streetcar vehicles with wireless propulsion technology for the project. As described above, DDOT has been working to identify a streetcar technology that can operate both with and without overhead wires. DDOT has done extensive research on the current state of the electric-powered streetcar vehicle industry and published a Request for Information (RFI) in May 2010 for streetcar vehicles that can travel up to one mile without overhead wires and operate in local weather and topographical conditions. To showcase the performance of new hybrid streetcar vehicles, DDOT is proposing to use wireless technologies along the Anacostia Streetcar Phase 2 project. The cars will be electrically powered via technology that allows the vehicle to operate for limited distances without an overhead power supply. DDOT believes that this component of the project can serve as an important regional and national showcase for wireless streetcar technology. It will enable testing of the technology during non-revenue service as well as normal revenue-service operation. Several local governments in the Washington, DC region, as well as nationally in cities such as San Antonio, Seattle and Portland, are planning streetcar projects and are potentially interested in wireless vehicle technologies.



District Department of Transportation

# USDOT TIGER II Discretionary Grants Application for Capital Funding

Anacostia Streetcar Initial Line  
Phase 2 Extension

## Appendices - Supporting Documents

- A. Financial Commitments
- B. Benefit-Cost Analysis Technical Memorandum
- C. Letters of Support
- D. Federal Wage Rate Certification

d.

## Appendix A

Financial Commitments



GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION



OFFICE OF THE DIRECTOR

August 17, 2010

Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing on behalf of the Government of the District of Columbia to express strong support for the District of Columbia government's request for federal funding under the Transportation Investment Generating Economic Recovery, or "TIGER II Discretionary Grant", for streetcar construction extending the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia.

The DC Streetcar Program is one of the main priority projects for the District Department of Transportation. Currently the District of Columbia is investing \$34 million to construct the first phase of the line immediately to the southwest, from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station. The District of Columbia in its FY 2011 budget act allocated \$36,448,000 in general obligation bonds (GO Bonds) to its streetcar project on H Street and Benning Road. All the funds appropriated and planned are for planning and capital improvements.

In the event that the District wins a TIGER II Grant, DDOT, has the authority to reprioritize its capital programming, through the reprogramming process to accelerate the funding of the Anacostia Extension. Please accept this letter as proof that the District of Columbia Government would be able to meet its obligation for local match dollars to the U.S. Department of Transportation TIGER II Discretionary Grant.

Sincerely,

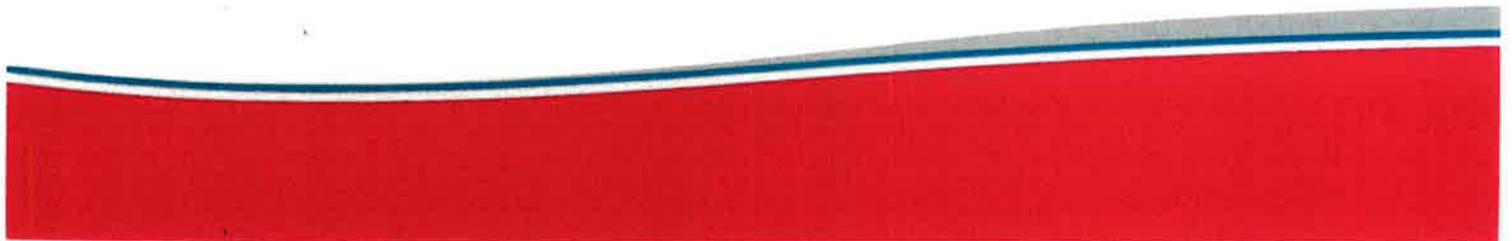
A handwritten signature in black ink, appearing to read "Gabe Klein", with a long horizontal line extending to the right from the end of the signature.

Gabe Klein  
Director  
District Department of Transportation

d.

## Appendix B

Benefit-Cost Analysis Technical Memorandum



# **Benefit-Cost Analysis Technical Memorandum**

## **TIGER II Grant Application Anacostia Streetcar Initial Line Phase 2 Extension**

Prepared By:



**AECOM Transportation  
3101 Wilson Boulevard, Suite 400  
Arlington, VA 22201**

For:



**The District of Columbia Department of Transportation**

**August 2010**



## Table of Contents

1.0	Introduction .....	1
2.0	Employment and Earnings Impacts from Construction of the DC Streetcar Extension .....	2
3.0	Employment and Earnings Impacts from Operation of the Anacostia Streetcar Phase II .....	4
4.0	Commercial Productivity Benefits Associated with the Anacostia Streetcar Phase II .....	7
5.0	Compact Development Benefits .....	8
6.0	Residential Property Productivity .....	9
8.0	Efficiency and Transportation Impacts .....	13
9.0	Environmental Benefits .....	15
10.0	Safety Benefits .....	16
11.0	Summary of Benefits and Costs .....	17

## List of Tables

Table 2-1:	Anacostia Streetcar Phase II Construction and Professional Services Expenditures (in millions of 2009\$) .....	2
Table 2-2:	RIMS II Construction Multipliers for the Washington, DC MSA .....	3
Table 2-3:	Construction Impacts for the Washington, DC MSA (in millions of 2009\$) .....	3
Table 3-1:	RIMS II Transit and Ground Passenger Transportation Multipliers for the Washington, DC MSA .....	5
Table 3-2:	Annual Operations Impacts for the Washington, DC MSA (in millions of 2009\$) .....	6
Table 4-1:	Commercial Productivity Benefits (millions of 2009\$) .....	8
Table 5-1:	Compact Development Benefits (millions of 2009\$) .....	9
Table 6-1:	New Residential Property Value Benefits (millions of 2009\$) .....	10
Table 7-1:	Development Growth in 2030 Attributable to the Streetcar Project (Square Feet) .....	11
Table 7-2:	Value of Development Construction by 2030 (in 2009\$) .....	11
Table 7-3:	Annual Value of Development Construction, 2013-2029 (in 2009\$) .....	12
Table 7-4:	RIMS II Construction Multipliers for the Washington, DC MSA .....	12
Table 8-1:	Annual Travel Cost Savings for the Project (in 2009\$) .....	14
Table 8-2:	Transportation Benefits for the Project (in millions of 2009\$) .....	14
Table 9-1:	Annual Environmental Benefits for the Project (in 2009\$) .....	15
Table 9-2:	Total Environmental Benefits for the Project (in millions of 2009\$) .....	16
Table 10-1:	Annual Safety Benefits (in 2009\$) .....	16
Table 10-2:	Total Safety Benefits (in millions of 2009\$) .....	17
Table 11-1:	Summary of Project Benefits (in millions of 2009\$) .....	17
Table 11-2:	Benefit Cost Ratio (in millions of 2009\$) .....	18

## 1.0 Introduction

The Anacostia Streetcar Initial Line Phase II Project ("the Project" or the "Anacostia Streetcar Phase 2 Project") will generate economic impacts through its construction and through its daily operation once opened. These economic impacts include:

- **Construction benefits.** Construction of the project will expand payrolls for the duration of the project's construction cycle. These impacts are a net gain from the perspective of the Washington, DC Metropolitan Statistical Area (MSA).
- **Operating benefits.** Since the project is an extension of streetcar line currently under construction, there will be hiring associated with the operation of the project and local purchases of goods and services necessary to operate the project. Unlike the one-time construction impacts, these sustained operations jobs and local purchases required to operate the project are recurring impacts.
- **Development benefits.** The development projections for the project were estimated in square feet based on the *District of Columbia Transit Improvements Alternatives Analysis Return on Investment Report* (May 2005) which examined the development potential of the broader corridor. These development estimates translate into construction jobs in the corridor as well as productivity gains for workers due to higher densities along the project corridor.
- **Compact development benefits.** The presence of more dense or compact development that occurs within a ¼ mile of the Project also results in a further reduction of Vehicle Miles Traveled (VMT) in the project corridor as residents and employees in the area are able to conduct more personal business (retail, restaurants, services, etc.) within the corridor without getting in their cars.
- **Residential property value benefits.** Studies have shown that an increase in property values near transit lines can range from 2% to over 30%; a 6.4% increase in the property values of new development is assumed for the analysis.
- **Efficiency or transportation benefits.** The project will reduce the auto operating costs for many passengers in the Washington, DC MSA. In addition, the project provides capacity relief to existing WMATA bus routes operating in the DC Streetcar extension service area. These impacts are direct economic savings for users; however, unlike the construction and operating impacts, the transportation benefits do not generate multiplier (indirect and induced) impacts.
- **Environmental benefits.** The project would reduce the auto VMT traveled in the Washington, DC MSA. This reduction in VMT decreases the amount of Carbon Monoxide (CO), Nitrogen Oxide (NO<sub>x</sub>), Volatile Organic Compounds (VOC), Particulate Matter (PM-10), and Carbon Dioxide (CO<sub>2</sub>) emissions in the region.
- **Safety benefits.** The project would reduce the auto VMT traveled in the Washington, DC MSA and decrease the occurrence of auto crashes involving fatalities, injuries, and property damage only.

The construction, local operating purchases, and new hiring for the development and operations associated with the project represent the direct effects of the Anacostia Streetcar Phase II project on the Washington, DC MSA. The earnings of these newly-hired construction and operations and maintenance workers will translate into a proportional increase in consumer demand as these workers purchase goods and services in the region. A further increase of new employment across a variety of industrial sectors and occupational categories is expected as employers hire to meet this increase in local consumer demand. This latter hiring represents the project's indirect and induced impacts.

The direct, indirect, and induced economic impacts associated with the construction and operation of the Anacostia Streetcar Phase II project, including the development impacts, are measured using regional multipliers from the Bureau of Economic Analysis (BEA) within the U.S. Department of Commerce. Derived from the Regional Input-Output Modeling System, the RIMS II multipliers measure the total change (direct + indirect + induced effects) in employment and earnings that result

from an incremental change to a particular industry. Since the project will be constructed and operated in the District of Columbia, Washington, DC MSA multipliers are used.<sup>1</sup> The multipliers are tailored by BEA to reflect the industrial structure of the counties in the region. The multipliers are based on the 2002 Input-Output Table for the nation and 2007 regional accounts data; they represent the most updated version available at the time this analysis was prepared.

## 2.0 Employment and Earnings Impacts from Construction of the DC Streetcar Extension

Construction of the Anacostia Streetcar Phase II project represents a large capital investment in the District of Columbia and the larger MSA. This spending will increase employment and earnings in the region for the duration of the construction process. The new construction jobs and wages created are temporary, lasting only as long as the construction occurs.

### Construction Expenditures

The estimated construction cost for Phase II is currently \$23.4 million in 2009 dollars and are detailed in Exhibit 2-1 below. Of these costs, \$18.1 million are for construction activities and \$5.3 million are for professional services. The cost estimate was prepared by AECOM and is a conceptual estimate based on preliminary design elements.

It is important to note that the \$23.4 million construction cost does not include any costs for vehicles, right-of-way, or financing because these expenditures do not have significant economic impacts for the Washington, DC region. Vehicle and land purchases do not generate employment and earnings impacts for the city because the existing vehicle technology can only be purchased outside the region and no labor is associated with any land costs. Similarly, the financing costs associated with the project will occur outside of the region. The financing costs are the transaction and debt service costs paid to the bank or agency providing the money for the project (likely located outside of the region).

**Table 2-1: Anacostia Streetcar Phase II Construction and Professional Services Expenditures (in millions of 2009\$)**

	2012	2013	Total
Guideway & Track Elements	\$ 2.16	\$ 2.16	\$ 4.32
Stations, Stops, Terminals Intermodal	\$ 0.51	\$ 0.51	\$ 1.01
Support Facilities: Yards, Shops, Admin Buildings	\$ 0.08	\$ 0.08	\$ 0.16
Sitework and Special Conditions	\$ 1.48	\$ 1.48	\$ 2.96
Systems	\$ 2.75	\$ 2.75	\$ 5.51
Professional Services	\$ 2.64	\$ 2.64	\$ 5.27
Unallocated Contingency	\$ 2.09	\$ 2.09	\$ 4.18
<b>Total Construction and Professional Services</b>	<b>\$ 11.71</b>	<b>\$ 11.71</b>	<b>\$ 23.42</b>

Source: AECOM

Note: Annual expenditures may not sum to totals due to rounding.

<sup>1</sup> Washington, DC MSA multipliers are utilized in the analysis because workers spend the majority of their wages in the county in which they reside. Therefore, regional (DC MSA) multipliers are used in the analysis because it is assumed that the new employees would reside throughout the MSA, not just in the District of Columbia. The Washington, DC MSA includes the following areas: District of Columbia; Calvert, MD; Charles, MD; Frederick, MD; Montgomery, MD; Prince George's, MD; Arlington, VA; Clarke, VA; Fauquier, VA; Loudoun, VA; Stafford, VA; Warren, VA; Alexandria (Independent City), VA; Fairfax, Fairfax City + Falls Church, VA; Prince William, Manassas + Manassas Park, VA; Spotsylvania + Fredericksburg, VA; Jefferson, WV.

## Construction Impacts

The economic impacts from the construction of the Anacostia Streetcar Phase II project are estimated for the Washington, DC MSA based on the construction and professional services expenditures in the region and the construction RIMS II multipliers for the region. Table 2-2 shows the Final Demand construction and professional services RIMS II multipliers for the Washington, DC MSA. These multipliers are described below the table.

**Table 2-2: RIMS II Construction Multipliers for the Washington, DC MSA**

Industry	Final Demand Multipliers	
	Earnings (dollars)	Employment (jobs)
Construction	0.5566	14.3762
Professional, scientific, and technical services	0.7095	14.3611

Source: Bureau of Economic Analysis, U.S. Department of Commerce

The **Final Demand Earnings Multiplier** represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the construction and professional, scientific, and technical services industries.

The **Final Demand Employment Multiplier** represents the total change in number of jobs that occurs in all industries for each \$1 million of output delivered to final demand by the construction and professional, scientific, and technical services industries.

Applying the Final Demand Multipliers for construction and professional services to the construction and professional services expenditures in the MSA provides an estimate of the net employment and earnings impacts generated by the construction of Phase II. The results are summarized in Table 2-3 below. The impacts shown in the table are one-time impacts that last for the duration of the project's construction. One job is defined as a full- or part-time job for one person of one year's duration. As an example, a job for one person that had a duration of two years would be defined as two person-year jobs.

**Table 2-3: Construction Impacts for the Washington, DC MSA (in millions of 2009\$)<sup>2</sup>**

	2012	2013	Total
Total Employment	162	162	324
Direct Employment	91	91	181
Earnings (2009\$)	\$ 6.92	\$ 6.92	\$ 13.84
Discounted Earnings @ 3% (2009\$)	\$ 6.33	\$ 6.15	\$ 12.48
Discounted Earnings @ 7% (2009\$)	\$ 5.65	\$ 5.28	\$ 10.93

Source: AECOM

**Notes:**

To use the final demand multiplier for employment, the construction costs were deflated to 2007 dollars using the GDP Deflator because the RIMS II multipliers are based on 2007 data.

The direct employment impacts were estimated using the construction and professional services expenditures RIMS II multipliers for the Washington, DC MSA. Given the multiplier relationships, the final-demand employment multiplier divided by the direct-effect employment multiplier yields an estimate of the initial (or direct) employment per \$1 million final demand. Please see BEA RIMS II Workshop Presentation, Slide 71,

<http://uwf.edu/auber/conf/Pensacola07/presentations/AUBER%20RIMS%20Presentation.ppt>

The direct employment impacts shown are included in the total employment estimates; they are not additive.

Annual impacts may not sum to total impacts due to rounding.

In the case of economic impacts generated by capital expenditures for the project, there are no long-term effects. Construction-related impacts last for the duration of the project's construction cycle. For

<sup>2</sup> Please note that these construction benefits are not included in the Benefit-Cost Analysis ratio shown in section 9.0 of this report.

the region, the effects of Anacostia Phase II construction would result in just under \$14 million in earnings (2009 dollars), \$10.9 million in discounted earnings (2009 dollars), and 324 person-year jobs for the 2012-2013 construction period. The current year earnings are discounted to a net present value using 3 percent and 7 percent discount rates. By stating the economic impact measures in net present value, it is possible to compare these benefits to the project costs.

The construction impacts presented in this section are based on a capital cost estimate that was developed from conceptual design and the most accurate information available in August 2010. The impacts shown are based on assumptions about the cost of the streetcar extension and timing of the construction. As the design and development work progresses, the cost estimate and schedule will be refined, and these changes will impact the economic impacts presented in this section. In general, construction costs and economic impacts have a direct relationship; as costs increase, impacts increase—that is, they are expenditure driven. However, as construction schedules are delayed, the discounting impacts on earnings are greater.

### **3.0 Employment and Earnings Impacts from Operation of the Anacostia Streetcar Phase II**

The proposed Anacostia Streetcar Phase II project will sustain direct transit jobs as a result of the DC Department of Transportation expenditures in the District of Columbia and the Washington, DC MSA. Since the operating funds (less fare revenues) for the project are coming from local sources, the transit jobs created as a result of the project are considered sustained jobs because the funding would be spent in the District of Columbia even without the implementation of the project. Because the Streetcar's operation will be funded by District's general revenues, the expenditures to operate the streetcar represent money coming from District residents (taxes collected for general revenues) and going to District government services. As a result, they do not represent an increase in income or wealth locally, just a redistribution.

Thus, while the operating impacts are estimated for this analysis, they are reported separately as they sustain employment and earnings in the District, but they do not expand the economy of the District or broader region.

#### **Operations Expenditures**

The operating costs for the Anacostia Streetcar Phase II that generate economic impacts in the Washington, DC MSA are assumed to include employee compensation and local purchases of goods and services that support the streetcar operation. The new hiring for operations (associated with both transit personnel and operating expenditures) that result from the project will directly benefit the regional economy. Earnings from newly-hired streetcar workers and workers from supporting industries will translate into a proportional increase in consumer demand as they purchase goods and services in the region, spurring a further increase of new employment across a variety of industrial sectors and occupational categories. This latter hiring represents the project inducing indirect impacts.

The annual salary and wage requirements for the Phase II were estimated to be \$0.69 million, including maintenance/mechanics, operators, and administrative staff. The wage and salary estimates were developed by AECOM based on the revenue hours of service and costs per revenue hour for the current streetcar project. The new employment levels for the extension were estimated by dividing the annual salary and wage estimate by the 2009 average wage for WMATA employees, \$66,000, resulting in the hiring of 10.5 new employees.<sup>3</sup> The increased transit employment would result in positive economic impacts for the Washington, DC MSA due to the direct hiring of streetcar

---

<sup>3</sup> The 2009 average annual WMATA was published by WMATA on their website, [http://www.wmata.com/about\\_metro/news/pressroom/scoopsite\\_report.cfm?scoopid=62](http://www.wmata.com/about_metro/news/pressroom/scoopsite_report.cfm?scoopid=62)

employees and indirectly as these transit workers spend their earnings in the regional economy, thus creating additional consumer demand and jobs to meet that demand.

It is important to note that these wages exclude benefits and overtime pay. Historically, overtime pay has been a large part of a WMATA employee's take home pay, especially for mechanics and operators. Therefore, the exclusion of these wages generates a more conservative estimate of earnings impacts that result from the operation of the streetcar extension.

The total other non-personnel operating costs were estimated to be \$321,400 based on the annual revenue vehicle hours for the streetcar extension. Of these costs, 71 percent are assumed to include purchases of goods and services in the Washington, DC area.<sup>4</sup> The annual purchase of local goods and services to support the Anacostia Streetcar Phase II project were estimated to be \$228,388 and may include the following: professional/technical/temporary services, custodial services, paratransit services, contract maintenance, utilities, property and equipment leasing, and advertising.

### Operations Impacts

Because direct employment and earnings are known for Phase II, the analysis uses the RIMS II Direct Effect Multipliers for the Washington, DC MSA to generate estimates of the employment and earnings impacts attributable to personnel hired to operate and maintain the streetcar extension. The multipliers applied in this section of the analysis are for the industry labeled "Transit and Ground Passenger Transportation" and are shown below in Table 3-1. These multipliers are described below the table.

**Table 3-1: RIMS II Transit and Ground Passenger Transportation Multipliers for the Washington, DC MSA**

Industry	Final Demand Multipliers		Direct Effect Multipliers	
	Earnings (dollars)	Employment (jobs)	Earnings (dollars)	Employment (jobs)
Transit and ground passenger transportation	0.5460	25.3058	1.8214	1.3617

Source: Bureau of Economic Analysis, U.S. Department of Commerce

The **Direct Effect Earnings Multiplier** represents the total dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the transit and ground passenger transportation industry.

The **Direct Effect Employment Multiplier** represents the total change in number of jobs in all industries for each additional job in the transit and ground passenger transportation industry. One job is defined as a full- or part-time job for one person of one year's duration.

The economic impacts from the non-personnel operating costs of the Anacostia Streetcar Phase II project are estimated for the Washington, DC MSA based on the non-personnel operating expenditures in the region and the final demand transit and ground passenger transportation RIMS II multipliers for the region. Table 3-1 also contains the final demand transit and ground passenger transportation RIMS II multipliers for the Washington, DC MSA.

<sup>4</sup> The percentage of costs/purchases occurring in the Washington, DC MSA is based on WMATA's actual 2008 system-wide non-personnel related costs. AECOM analyzed these costs and identified those costs that occur in the Washington, DC region (services, utilities, property and equipment leasing, advertising, and fuel). These locally purchased goods and services represented 71 percent of WMATA's 2008 system-wide non-personnel related costs.

The **Final Demand Earnings Multiplier** represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the transit and ground passenger transportation industry.

The **Final Demand Employment Multiplier** represents the total change in number of jobs that occurs in all industries for each \$1 million of output delivered to final demand by the transit and ground passenger transportation industry.

The economic effects of the new employment and earnings associated with the operation of the streetcar extension and the local non-personnel operating purchases are summarized in Table 3-2. These are recurring impacts that last as long as the streetcar extension is in operation. The impacts shown in the table below summarize the impacts for 20- and 50-year periods and assume that the extension is operating for a full year in 2014 (the first year of operation).

**Table 3-2: Annual Operations Impacts for the Washington, DC MSA (in millions of 2009\$)<sup>5</sup>**

Impacts	20-year Total (2014-2033)	50-year Total (2014-2063)
<b><i>Personnel Expenditures</i></b>		
Earnings	\$ 25.31	\$ 63.28
Discounted Earnings@ 3%	\$ 16.73	\$ 28.93
Discounted Earnings @ 7%	\$ 10.23	\$ 13.32
Total Employment (1-year duration)	287	717
Direct Employment (1-year duration)	211	526
<b><i>Non-Personnel Local Expenditures</i></b>		
Earnings	\$ 2.49	\$ 6.24
Discounted Earnings@ 3%	\$ 1.65	\$ 2.85
Discounted Earnings @ 7%	\$1.01	\$ 1.31
Total Employment (1-year duration)	111	278
Direct Employment (1-year duration)	82	204
<b>Total Operating Impacts</b>		
Earnings	\$ 27.80	\$ 69.51
Discounted Earnings@ 3%	\$ 18.38	\$ 31.78
Discounted Earnings @ 7%	\$ 11.24	\$ 14.64
Total Employment (1-year duration)	398	995
Direct Employment (1-year duration)	292	731

Source: AECOM

Notes:

The direct employment impacts shown are included in the total employment estimates; they are not additive. Annual impacts may not sum to total impacts due to rounding.

For the Washington, DC MSA, the effects of operating Phase II of the Anacostia Streetcar would result in sustaining \$27.8 million in earnings (2009 dollars), \$11.24 in discounted earnings (2009 dollars) and 398 person-year jobs for the first 20 years (2014-2033) and sustaining \$69.5 million in earnings (2009 dollars), \$14.6 million in discounted earnings (2009 dollars), and 995 jobs for the first 50 years (2014-2063). The current year earnings are discounted to a net present value using a 3.0 and 7.0 percent discount rate. By stating the economic impact measures in net present value, it is possible to compare these benefits to the project costs.

The operations impacts presented in this section are based on early planning assumptions. The impacts shown are based on assumptions about timing of the opening of the project as well as the

<sup>5</sup> Please note that these operating benefits are not included in the Benefit-Cost Analysis ratio shown in section 11.0 of this report.

number of revenue vehicle hours required.<sup>6</sup> If there are delays in opening of the project or reductions in service levels, the economic impacts shown in this section also would be delayed or reduced. As schedules are delayed, the discounting impacts on earnings are greater.

#### **4.0 Commercial Productivity Benefits Associated with the Anacostia Streetcar Phase II**

The commercial development impact for the project is based on the District of Columbia Transit Improvements Alternatives Analysis *Return on Investment Report* (May 2005) which examined the development potential of the broader corridor. According to this report, residential and commercial development attributable to the introduction of streetcar service is 25 percent higher than the baseline forecast within a ¼ mile of the project corridor.<sup>7</sup> The report also states that the development is assumed to be new to the region (i.e., the development would not have occurred elsewhere in the region). This finding is based on interviews with developers who reported that if premium transit (streetcar as opposed to BRT) were inevitable, levels of investment would increase, retaining tenants would be easier, project acceleration would occur, and the scale of development would change.

The commercial productivity gains are based on the increased commercial development density that occurs along the ¼ mile Project corridor due to the streetcar's implementation relative to the baseline projection for density. As businesses and households become "agglomerated" each has access to more specialized workers, consumer goods, and services; this access to specialized goods and services and a wider range of labor allows businesses to operate more productively, and increases the output per worker relative to what they could achieve in the absence of the higher degree of specialization. The productivity gains are small as the increase in density is limited in its scope relative to the large District metropolitan economy. In order to avoid overestimation, the productivity gain associated with the higher density development within a ¼ mile of the Project is only applied to workers in the ½ mile corridor—those in closest proximity to where the productivity gains are generated. A Transit Cooperative Research Program (TCRP) study indicated that a 5% increase in effective density translates into a 0.09% increase in productivity.<sup>8</sup>

To estimate these productivity benefits, the new commercial development employment expected to locate within the ¼-mile corridor area was added to the baseline Traffic Analysis Zone (TAZ) employment for the ½-mile project corridor.<sup>9</sup> The total employment (baseline + new) by type (office, retail, industrial, and other) was then multiplied by the output per worker by type of employment (Final Demand Employment Multiplier/Direct-Effect Employment Multiplier) to determine the total output of all workers along the corridor.<sup>10</sup> Based on the increase in commercial development density for the ¼ mile corridor, the increase in productivity attributable to the project was estimated and is summarized in Table 4-1.

<sup>6</sup> The Operating Plan for the Project includes 6,448 annual revenue service hours.

<sup>7</sup> The baseline development growth is provided by MWCOG TAZ data, Round 7a MWCOG co-operative forecasts.

<sup>8</sup> TCRP J-11 (7) – *Economic Impact of Public Transportation Investment*, p. 54.

[http://www.apta.com/resources/reportsandpublications/Documents/economic\\_impact\\_of\\_public\\_transportation\\_investment.pdf](http://www.apta.com/resources/reportsandpublications/Documents/economic_impact_of_public_transportation_investment.pdf)

<sup>9</sup> Analysis assumes that the ½ mile corridor shares in productivity benefits of the increase in commercial development density within a ¼ mile of the alignment. It is important to note that the analysis assumes NO additional growth in development occurs beyond the ¼ mile area.

<sup>10</sup> RIMS II Multipliers used: Retail trade (retail employment); Warehousing and storage (industrial); Average of Securities, commodity contracts, investments; Professional, scientific, and technical services; Management of companies and enterprises; and Ambulatory health care services (office); and Average of retail, industrial, and office (other)

**Table 4-1: Commercial Productivity Benefits (millions of 2009\$)**

Benefits	20-year Total (2014-2033)	50-year Total (2014-2063)
Productivity Increase	\$ 98.75	\$ 289.89
Discounted @ 3%	\$ 61.45	\$ 121.77
Discounted @ 7%	\$ 34.92	\$ 49.78

Sources: AECOM Calculation using MWCOG TAZ data, RIMS II Multipliers for Washington, DC MSA, TCRP J-11 (7) Report

A sensitivity analysis was conducted on the commercial productivity benefits by estimating the benefits using an alternative methodology. In the sensitivity analysis, the wages associated with the new commercial employment within a ¼ mile of the Project alignment were assumed to generate a 7 percent profit for employers along the corridor. This assumes that the employers would not hire new employees unless they knew that they would receive the cost of the employees' wage back plus profit. The sensitivity analysis resulted in an estimate of the productivity (profit) benefits of \$34.92 million using a 7 percent discount rate, which is within the range of the productivity benefits estimated by the increased output per worker, as shown in Table 4-1.

## 5.0 Compact Development Benefits

The presence of more dense or compact development that occurs within a ¼ mile of the Project also results in a further reduction of VMT in the ½ mile project corridor as residents and employees in the area are able to conduct more personal business (retail, restaurants, services, etc.) within the corridor without getting in their cars. This reduction in VMT is estimated based on the *Moving Cooler* Report finding that development that occurs in an area with compact development (> 5.0 dwelling units/acre) will reduce overall urban light-duty VMT by 12.6% by 2050, which translates into an annual VMT reduction of 0.34% through 2050.<sup>11</sup>

To estimate the compact development benefits for the Project, the total VMT for the ½ mile areas was estimated by the travel demand model for 2015. The analysis conservatively assumes that VMT remains constant at the 2015 level for the entire 20-year analysis period (2014-2033). The VMT in each year for the 20-year period is reduced by 0.34%. The reduced VMT is then translated into transportation benefits (travel cost savings), environmental benefits (reduced emissions), and safety (reduced accidents), which are summarized above in Table 5-1.<sup>12</sup>

<sup>11</sup> Moving Cooler, Technical Appendix B, p. B-22. <http://www.movingcooler.info/>

<sup>12</sup> The transportation, environmental, and safety benefits are estimated in the same manner described in the transportation, environmental, and safety benefits sections of this technical memorandum.

**Table 5-1: Compact Development Benefits (millions of 2009\$)**

	20-year Total (2014- 2033)	50-year Total (2014- 2063)
<b>Transportation Benefits</b>	<b>\$ 29.06</b>	<b>\$ 163.83</b>
Discounted @ 3%	\$ 17.42	\$ 58.98
Discounted @ 7%	\$ 9.30	\$ 19.27
<b>Environmental Benefits</b>	<b>\$ 2.35</b>	<b>\$ 13.27</b>
Discounted @ 3%	\$ 1.41	\$ 4.78
Discounted @ 7%	\$ 0.75	\$ 1.56
<b>Safety Benefits</b>	<b>\$ 8.64</b>	<b>\$ 48.72</b>
Discounted @ 3%	\$ 5.18	\$ 17.54
Discounted @ 7%	\$ 2.77	\$ 5.73
<b>Total Compact Development Benefits</b>	<b>\$ 40.05</b>	<b>\$ 225.82</b>
<b>Discounted @ 3%</b>	<b>\$ 24.01</b>	<b>\$ 81.30</b>
<b>Discounted @ 7%</b>	<b>\$ 12.82</b>	<b>\$ 26.50</b>

Sources: AECOM Calculation using *Moving Cooler* Technical Appendix B and sources/methodology described in Transportation, Environmental, and Safety Benefits in the sections below.

## 6.0 Residential Property Productivity

Once the streetcar begins operation, residential communities along the corridor will enjoy greater access to the broader metropolitan economy. As a result, renters and purchasers will be willing to pay a premium for the locations where access is improved relative to the baseline. This premium applies to both existing properties as well as new properties coming onto the market; the logic is that new construction is built to a higher value than it would in the absence of the access improvement. Studies of new fixed guideway transit systems in other cities in the U.S. have shown that an increase in property values near transit lines can range from 2% to over 30%; a 6.4% increase in the property values of new development is applied in the analysis.<sup>13</sup> The value is in the low part of the range identified in past studies to be conservative, because the cited range in property value impacts includes other transit modes such as heavy rail that generally have greater impacts on property values greater than streetcar.

As a result, the Project is expected to attract new residential development within a ¼ mile of the alignment as well as raise the value of existing residential properties along the alignment.<sup>14</sup> Ideally the analysis would utilize land records to apply the premium to the existing residential base (1,067 households in 2010);<sup>15</sup> however, review of the property records identified many incomplete records and non-market price transactions (e.g. family \$1 transactions). As a consequence, the analysis conservatively applies the premium to the estimate of new residential development attributable to the streetcar project only. As described previously, this new residential housing is based on growth that is in addition to the baseline TAZ forecasts of households. Although this underestimates the impact of the streetcar on land values, it provides an indication of the streetcar's value to this revitalizing community.

<sup>13</sup> Capturing Value from Transit (Center for Transit Oriented Development, November 2008) and Robert Cervero and M. Duncan. "Real Estate market Impacts of TOD," 2001.

<sup>14</sup> The productivity gains associated with commercial development take this increase in property value into account, and are thus excluded.

<sup>15</sup> MWCOG 2010 TAZ data, Round 7a MWCOG co-operative forecasts.

To estimate the increase in residential property productivity, the amount of new residential development is expected to be 25 percent higher than the baseline forecast within a ¼ mile of the project corridor due to the introduction of streetcar service.<sup>16</sup> The value of this new residential construction is estimated by using RS Means unit costs (costs per square foot). This value then is conservatively projected to increase by 6.4 percent due to the Project. This residential property productivity benefit is summarized above in Table 6-1.

**Table 6-1: New Residential Property Value Benefits (millions of 2009\$)**

	20-year Total (2014- 2033)	50-year Total (2014- 2063)
Residential Property Value Benefit	\$ 4.27	\$ 4.27
Discounted @ 3%	\$ 2.98	\$ 2.98
Discounted @ 7%	\$ 1.92	\$ 1.92

Source: AECOM Calculation using MWCOG TAZ data, DCAA Return on Investment Report, May 2005, RS Means 2009 Square Foot Costs

## **7.0 Employment and Earnings Impacts from Construction of the New Development along the Project Corridor**

Since the project is the extension of a streetcar corridor currently under construction, the development impact for the project is based on the District of Columbia Transit Improvements Alternatives Analysis *Return on Investment Report* (May 2005) which examined the development potential of the broader corridor. According to this report, residential and commercial development attributable to the introduction of streetcar service is 25 percent higher than the baseline forecast within a ¼ mile of the project corridor. The report also states that the development is assumed to be new to the region (i.e., the development would not have occurred elsewhere in the region). This finding is based on interviews with developers who reported that if premium transit (streetcar as opposed to BRT) were inevitable, levels of investment would increase, retaining tenants would be easier, project acceleration would occur, and the scale of development would change.

### **Development Growth Attributable to the Project**

The growth in the residential and commercial development in the corridor attributable to the streetcar project were estimated by increasing the forecasted household and employment growth in ¼ mile area around the corridor extension between 2010 and 2030 by 25 percent. The 25 percent increase in households and employment then were multiplied by an assumed square feet (SF) per household or employee to obtain estimates of additional residential and commercial development space added to the market as a result of the streetcar investment. Table 7-1 below summarizes the total development increases in the project corridor attributable to the streetcar project by 2030.

<sup>16</sup> The development impact for the project is based on the District of Columbia Transit Improvements Alternatives Analysis *Return on Investment Report* (May 2005) which examined the development potential of the broader corridor. For more details see Section 7.0 of this memo.

**Table 7-1: Development Growth in 2030 Attributable to the Streetcar Project (Square Feet)**

	Households	Industrial Employment	Retail Employment	Office Employment	Other Employment
Household and Employment Growth Attributable to Project	297	162	151	278	417
Assumed SF per Household or Employee	1,500	900	400	300	1,000
<b>Total Development in SF Attributable to Project by 2030</b>	<b>445,666</b>	<b>145,627</b>	<b>60,236</b>	<b>83,350</b>	<b>416,761</b>

Sources: MWCOC (household and employee baseline growth between 2010 and 2030), DCAA *Return on Investment Report*, May 2005 (percentage growth attributable to project and assumed square feet per household or employee)

Because streetcar is a fixed investment, it is viewed as a permanent commitment by the city and a positive investment opportunity for developers given that premium transit service will be available to the corridor.

### Development Construction Impacts

The construction of the new residential and commercial development attributable to the project that occurs within a ¼ mile of the project corridor will generate employment and earnings impacts for the regional Washington, DC economy. This spending will increase employment and earnings in the region for the duration of the construction period (2013-2029).

To estimate the impacts of the development construction, the value of annual construction was estimated by multiplying the development in square feet shown above in Table 7-1 by the average construction cost per square foot by type of development as summarized below in Table 7-2.

**Table 7-2: Value of Development Construction by 2030 (in 2009\$)**

	2009 Cost per SF	RS Means Description	Total Construction Value by 2030
Residential	\$ 159.17	Apartment, 4-7 story	\$ 70,935,829
Industrial	\$ 89.40	Warehouse	\$ 13,019,050
Retail	\$ 112.15	Retail Store	\$ 6,755,490
Office	\$ 167.10	Office, 5-10 story	\$ 13,927,814
Other	\$ 162.30	Jr. High School	\$ 67,640,241
<b>Total</b>			<b>\$ 172,278,423</b>

Sources: RS Means *2009 Square Foot Costs* and DCAA *Return on Investment Report*, May 2005 (type of construction cost to use for residential, industrial, retail, office, and other)

The analysis assumes that the development construction begins in 2013 (the year prior to project opening) and continues through 2029 so that the development attributable to the project is complete by 2030 and can accommodate the 2030 forecasted households and employment. The construction growth is estimated to be equal in each year between 2013 and 2029 and is shown below in Table 7-3.<sup>17</sup> The analysis assumes that the development attributable to the project is completed by 2029.

<sup>17</sup> The annual value of construction is equal to the total value of development construction attributable to the project divided by 17 years (2013 through 2029).

**Table 7-3: Annual Value of Development Construction, 2013-2029 (in 2009\$)**

	Annual Construction Value (2013-2029)
Residential	\$ 4,172,696
Industrial	\$ 765,826
Retail	\$ 397,382
Office	\$ 819,283
Other	\$ 3,978,838
<b>Total</b>	<b>\$ 10,134,025</b>

Sources: AECOM calculation based on RS Means *2009 Square Foot Costs* and DCAA *Return on Investment Report*, May 2005 (type of construction cost to use for residential, industrial, retail, office, and other)

The economic impacts from the construction of development attributable to the project are estimated for the Washington, DC MSA based on the annual construction expenditures in the region and the construction RIMS II multipliers for the region. Table 7-4 shows the construction Final Demand RIMS II multipliers for the Washington, DC MSA. These multipliers are described below the table.

**Table 7-4: RIMS II Construction Multipliers for the Washington, DC MSA**

Industry	Final Demand Multipliers	
	Earnings (dollars)	Employment (jobs)
Construction	0.5560	14.3762

Source: Bureau of Economic Analysis, U.S. Department of Commerce

The **Final Demand Earnings Multiplier** represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the construction industry.

The **Final Demand Employment Multiplier** represents the total change in number of jobs that occurs in all industries for each \$1 million of output delivered to final demand by the construction industry.

Applying the Final Demand Multipliers for construction to the annual development construction expenditures in the MSA provides an estimate of the net employment and earnings impacts generated by the construction of the development attributable to the Anacostia Streetcar Phase II project. Consistent with the construction schedule, Table 7-5 outlines the job creation and earnings associated with the construction period. As shown, the project will begin to support the Washington, DC regional economy by 2013.

**Table 7-5: Economic Impacts from Development Construction (in millions of 2009\$)<sup>18</sup>**

	Total (2013-2029)
Earnings	\$ 95.89
Earnings Discounted @ 3%	\$ 67.96
Earnings Discounted @ 7%	\$ 44.95
Total Employment (1-year duration)	2,384
Direct Employment (1-year duration)	1,393

Source: AECOM and BEA RIMS II multipliers

**Notes:**

To use the final demand multiplier for employment, the construction costs were deflated to 2007 dollars using the GDP Deflator because the RIMS II multipliers are based on 2007 data.

One job is defined as a full- or part-time job for one person of one year's duration.

The direct employment impacts were estimated using the construction RIMS II multipliers for the Washington, DC MSA. Given the multiplier relationships, the final-demand employment multiplier divided by the direct-effect employment multiplier yields an estimate of the initial (or direct) employment per \$1 million final demand. Please see BEA RIMS II Workshop Presentation, Slide 71,

<http://uwf.edu/auber/conf/Pensacola07/presentations/AUBER%20RIMS%20Presentation.ppt>

The direct employment impacts shown are included in the total employment estimates; they are not additive.

In the case of economic impacts generated by capital expenditures for the project, there are no long-term effects. Construction-related impacts last for the duration of the project's construction cycle. For the region, the effects of the development construction attributable to the project would result in just under \$96 million in earnings (2009 dollars), \$45 million in discounted earnings (2009 dollars), and 2,384 person-year jobs for the 2013-2029 construction period. The current year earnings are discounted to a net present value using a 3.0 and 7.0 percent discount rate. By stating the economic impact measures in net present value, it is possible to compare these benefits to the project costs.

The impacts shown are based on assumptions about the cost and timing of the development construction. As the project and development work progress, the development cost estimates and schedule will be refined, and these changes will impact the economic impacts presented in this section. In general, construction costs and economic impacts have a direct relationship; as costs increase, impacts increase—that is, they are expenditure driven. However, as construction schedules are delayed, the economic impacts are delayed and discounting impacts on earnings are greater.

## **8.0 Efficiency and Transportation Impacts**

The project provides transportation benefits to users in terms of travel cost savings that result from increases in mobility and reductions in congestion.<sup>19</sup> The travel cost benefits are monetized using outputs from the travel demand model and operating costs associated with auto and transit travel.

The project attracts current auto users to transit. For these new riders, this translates into a reduced operating cost in terms of fuel, maintenance, depreciation, and tires. For autos, these savings vary by the size of the car. The average auto operating cost per mile is 54 cents, according to AAA's 2009 Edition of "Your Driving Costs."<sup>20</sup> The average weekday opening year new transit riders diverted from personal auto trips to the project (excluding the Anacostia Phase 1 streetcar line under construction) is 93 riders.<sup>21</sup> The number of new transit riders is annualized using a factor of 300. The travel cost

<sup>18</sup> Please note that these construction benefits are not included in the Benefit-Cost Analysis ratio shown in section 8.0 of this report.

<sup>19</sup> The travel demand model indicated that there are no measurable travel time savings benefits so these benefits are not included in the benefit-cost analysis.

<sup>20</sup> <http://www.aaaexchange.com/Assets/Files/200948913570.DrivingCosts2009.pdf>

<sup>21</sup> It is important to note that the new riders reflect the ridership associated with 2015 demographics, trip patterns, and development patterns. These new riders do not reflect long-term future demographic and/or development

savings is monetized by multiplying the annual number of new riders by the average auto trip length, average auto operating cost per mile and subtracting the cost of the new transit trip.

In addition to new riders, the project attracts existing transit riders who were walking to the Anacostia Metrorail station. Since these passengers will pay to ride the streetcar, these new transit trip expenses must be included in the travel cost savings calculation. The additional cost associated with these streetcar trips are monetized by multiplying the annual number of walkers by the average increase in transit fares for existing transit riders. Table 8-1 below summarizes the annual travel cost savings associated with the project.

**Table 8-1: Annual Travel Cost Savings for the Project (in 2009\$)**

	Annual New Riders	Average Auto Trip Length (Miles)	Auto Operating Cost per Mile	Auto Travel Cost Savings	Annual Transit Trip Expenses	Annual Travel Cost Savings
<b>New Riders</b>	27,900	11.4	\$ 0.54	\$ 171,752	\$ 78,354	\$ 93,339
<b>Walkers</b>	36,000	na	na	\$ 0	\$37,522	(\$ 37,522)
<b>Total</b>						\$ 55,876

Source: AECOM

Note: The average transit trip cost for new riders is assumed to be \$2.81 in 2009\$ (the average fare increase for new transit riders estimated by the travel demand model, escalated to 2009\$ using US CPI). The average fare increase for people who were previously walking to the Anacostia Metrorail station is assumed to be \$1.04 in 2009\$ (the average fare increase for existing transit riders due to change in transit mode estimated by the travel demand model, escalated to 2009\$).

The total transportation benefits are summarized in Table 8-2 for the 20-year and 50-year periods following completion of the project. These are recurring impacts that last as long as the streetcar extension is in operation. It is important to note that these benefits assume the opening year travel demand outputs (travel time savings and new riders) are the same for each year in the future. This assumption is very conservative because these outputs reflect the 2015 operating environment and do not include long-term future demographic and/or development growth patterns; most notably, it excludes the significant development growth that is expected to occur along the project corridor.

**Table 8-2: Transportation Benefits for the Project (in millions of 2009\$)**

	20-year Total (2014-2033)	50-year Total (2014-2063)
<b>Travel Cost Savings</b>	\$ 1.12	\$ 2.79
Discounted @ 3%	\$ 0.74	\$ 1.28
Discounted @ 7%	\$ 0.45	\$ 0.59

Source: AECOM

For the Washington, DC MSA the effects of operating the Anacostia Streetcar Phase II project would result in \$1.1 million in earnings (2009 dollars) and \$0.5 million in discounted 2009 earnings for the first 20 years (2014-2033), and \$2.8 million in earnings (2009 dollars), \$0.6 million in discounted earnings (2009 dollars) for the first 50 years (2014-2063). The current year earnings are discounted to a net present value using a 3 and 7 percent discount rate. By stating the economic impact measures in net present value, it is possible to compare these benefits to the project costs.

The transportation benefits presented in this section are based on early operating planning assumptions. The impacts shown are based on assumptions about the timing of the opening of the project as well as the frequency of service and operating speeds. If there are delays in the opening of

---

growth patterns; most notably, it excludes the significant development growth that will likely occur along the project corridor.

the project or reductions in service levels, the transportation benefits shown in this section also would be delayed or reduced. If benefits were to be delayed, the discounted present value of the earnings would be less as a result.

In addition to travel cost savings, the project provides capacity relief for bus routes in the project corridor. Most of the riders on the streetcar are existing riders on parallel bus routes in the corridor, particularly Routes 90 and 92. With the project, the peak hour load per vehicle on 90 and 92 decreases from 61 passengers per bus during the peak hour to 55. This reduction in peak hour load provides the opportunity to increase capacity on these routes or to supplement the number of buses available for other more congested areas and routes without significantly impacting the bus operating costs.

## 9.0 Environmental Benefits

The Anacostia Streetcar Phase II project would reduce the auto VMT traveled in the Washington, DC MSA by diverting 27,900 annual auto trips to the streetcar and the WMATA transit system.<sup>22</sup> This reduction in auto trips in the region results in the reduction of 315,600 VMT annually.<sup>23 24</sup> This reduction in VMT decreases the amount of Carbon Monoxide (CO), Nitrogen Oxide (NOx), Volatile Organic Compounds (VOC), Particulate Matter (PM-10), and Carbon Dioxide (CO2) emissions as detailed in the Environmental Sustainability Section of the Anacostia Streetcar Phase II TIGER II Application. The economic benefit of the decreased emissions is estimated by applying the economic cost of air emissions to the reduction of CO, NOx, VOC, PM-10, and CO2.<sup>25</sup> The annual benefits are summarized in Table 9-1 below and the total benefits for the 20-year and 50-year analysis periods are summarized in Table 9-2.

**Table 9-1: Annual Environmental Benefits for the Project (in 2009\$)**

	Annual Reduction (tons per year)	Annual Benefit (2009\$)
CO	0.4032	\$0
NOx	0.3893	\$ 1,587
VOC	0.0184	\$ 32
PM-10	0.0348	\$ 5,951
CO2	150.49	\$ 5,061
<b>Total</b>	---	<b>\$ 12,632</b>

Sources: AECOM and NHTSA's Rulemaking on Corporate Average Fuel Economy for MY2011 Passenger Cars and Light Trucks, escalated to 2009\$ using CPI.

Note: Totals may not sum due to rounding

<sup>22</sup> Auto trip reductions reflect the new transit riders diverted from autos produced by the travel demand model.

<sup>23</sup> It is important to note that the VMT reduction is based on the ridership associated with 2015 demographics, trip patterns, and development patterns. These new riders do not reflect long-term future demographic and/or development growth patterns; most notably, it excludes the significant development growth that will likely occur along the project corridor.

<sup>24</sup> VMT reduction reflects the auto diversions multiplied by the average trip length for these diversions (11.4 miles). Both auto diversions and average trip lengths were provided by the travel demand model.

<sup>25</sup> The economic costs of air emissions are taken from Chapter VIII of the Final Regulatory Impact Analysis of the National Highway Traffic Safety Administration's rulemaking on Corporate Average Fuel Economy for MY 2011 Passenger Cars and Light Trucks.

**Table 9-2: Total Environmental Benefits for the Project (in millions of 2009\$)**

	20-year Total (2014-2033)	50-year Total (2014-2063)
Travel Environmental Benefits	\$ 0.25	\$ 0.63
Discounted @ 3%	\$ 0.17	\$ 0.29
Discounted @ 7%	\$ 0.10	\$ 0.13

Source: AECOM Calculation

## 10.0 Safety Benefits

The Anacostia Streetcar Phase II project would reduce the auto VMT traveled in the Washington, DC MSA by diverting 27,900 annual auto trips to the streetcar and the WMATA transit system.<sup>26</sup> This reduction in auto trips in the region removes 315,600 VMT annually.<sup>27</sup> <sup>28</sup> This reduction in VMT decreases the occurrence of auto crashes involving fatalities, injuries, and property damage only.

To estimate the reduction in fatal, injury, and property damage only accidents, the reduced VMT is multiplied by fatal, injury, and property damage only crash rates developed by the USDOT Bureau of Transportation Statistics (BTS).<sup>29</sup> The economic benefit of the decreased accident occurrence is estimated by applying the value of a statistical life as published by the USDOT Office of the Secretary and the economic cost of motor vehicle crashes as developed by Blincoe, L., et. al.<sup>30</sup> <sup>31</sup> The annual benefits are summarized in Table 10-1 below and the total benefits for the 20-year and 50-year analysis periods are summarized in Table 10-2.

**Table 10-1: Annual Safety Benefits (in 2009\$)**

	Annual Reduction (occurrences)	Annual Benefit (2009\$)
Fatalities	0.004	\$ 23,729
Injuries	0.249	\$ 20,722
Property Damage Only	0.617	\$ 1,942
<b>Total</b>		<b>\$ 46,393</b>

Sources: AECOM, BTS 2008 Motor Vehicle Safety Data Table 2-17, USDOT OST Economic Value of a Statistical Life, and *The Economic Cost of Motor Vehicle Crashes* (Blincoe, L. et al, 2002), all values escalated to 2009\$ using US CPI.

<sup>26</sup> Auto trip reductions reflect the new transit riders diverted from autos produced by the travel demand model.

<sup>27</sup> Auto trip reductions reflect the new transit riders diverted from autos produced by the travel demand model. It is important to note that the VMT reduction is based on the ridership associated with 2015 demographics, trip patterns, and development patterns. These new riders do not reflect long-term future demographic and/or development growth patterns; most notably, it excludes the significant development growth that will likely occur along the project corridor.

<sup>28</sup> VMT reduction reflects the auto diversions multiplied by the average trip length for these diversions (11.4 miles). Both auto diversions and average trip lengths were provided by the travel demand model.

<sup>29</sup> 2008 BTS Motor Vehicle Safety Data Table 2-17,

[http://www.bts.gov/publications/national\\_transportation\\_statistics/html/table\\_02\\_17.html](http://www.bts.gov/publications/national_transportation_statistics/html/table_02_17.html)

<sup>30</sup> USDOT Office of the Secretary, "Treatment of the Economic Value of a Statistical Life in Departmental Analyses – 2009 Annual Revision," March 18, 2009 Memorandum:

<http://ostpxweb.dot.gov/policy/reports/VSL%20Guidance%20031809%20a.pdf>

<sup>31</sup> Values drawn from Blincoe, L. et al (2002), *The Economic Cost of Motor Vehicle Crashes*, 2000 (Table 2). Updated to 2009\$ using US CPI.

**Table 10-2: Total Safety Benefits (in millions of 2009\$)**

	20-year Total (2014-2033)	50-year Total (2014-2063)
Travel Safety Benefits	\$ 0.93	\$ 2.32
Discounted @ 3%	\$ 0.61	\$ 1.06
Discounted @ 7%	\$ 0.37	\$ 0.49

Source: AECOM Calculation

## 11.0 Summary of Benefits and Costs

Table 11-1 summarizes the economic benefits associated with the project for the Washington, DC Metropolitan Statistical Area (MSA). Impacts are calculated for 20- and 50-year periods at both a 3 percent and a 7 percent discount rate. The project's recurring new and sustained economic benefits total \$62 million at a 7 percent discount rate (the sustained operating benefits + the new benefits shown in Table 11-1), of which \$52 million are new benefits for the region for the 20-year period (2014-2033). Similarly, project's new and sustained benefits total \$94 million at a 7 percent discount rate (the sustained operating benefits + the new benefits shown in Table 11-1), of which \$79 million are new to the region for the 50-year period (2014-2063).

Of these benefits, only the new benefits less the operating benefits are included in the project's benefit-cost ratio. Table 11-2 below summarizes the project's benefits and costs for the 20-year and 50-year periods discounted at both 3 percent and 7 percent.

**Table 11-1: Summary of Project Benefits (in millions of 2009\$)**

	20-year Total		50-year Total	
	Discounted @ 3%	Discounted @ 7%	Discounted @ 3%	Discounted @ 7%
<b>Recurring Benefits</b>				
Operation (sustained)	\$ 18.38	\$ 11.24	\$ 31.78	\$ 14.64
Transportation (new)				
Travel Cost Savings	\$ 0.74	\$ 0.45	\$ 1.28	\$ 0.59
<b>Development</b>				
Commercial Productivity Gains (new)	\$ 61.45	\$ 34.92	\$ 121.77	\$ 49.78
Compact Development (new)	\$ 24.01	\$ 12.82	\$ 81.30	\$ 26.56
Residential Property Values (new)	\$ 2.98	\$ 1.92	\$ 2.98	\$ 1.92
Environmental (new)	\$ 0.17	\$ 0.10	\$ 0.29	\$ 0.13
Safety (new)	\$ 0.61	\$ 0.37	\$ 1.06	\$ 0.49
Residual Value of Streetcar System	\$ 3.15	\$ 0.92	na	na
<b>Total Recurring New Benefits (Less Operations)</b>	<b>\$ 93.11</b>	<b>\$ 51.51</b>	<b>\$ 208.67</b>	<b>\$ 79.47</b>

	20-year Total		50-year Total	
	Discounted @ 3%	Discounted @ 7%	Discounted @ 3%	Discounted @ 7%
<b>One-Time Benefits (new)</b>				
Construction of the Project	\$ 12.48	\$ 10.93	\$ 12.48	\$ 10.93
Construction of Development	\$ 67.96	\$ 44.95	\$ 67.96	\$ 44.95
<b>Total One-Time Benefits</b>	<b>\$ 80.44</b>	<b>\$ 55.88</b>	<b>\$ 80.44</b>	<b>\$ 55.88</b>

**Table 11-2: Benefit Cost Ratio (in millions of 2009\$)**

	20-year Total		50-year Total	
	Discounted @ 3%	Discounted @ 7%	Discounted @ 3%	Discounted @ 7%
<b>New Benefits</b>				
Transportation	\$ 0.74	\$ 0.45	\$ 1.28	\$ 0.59
Development	\$ 88.44	\$ 49.67	\$ 206.04	\$ 78.27
Environmental	\$ 0.17	\$ 0.10	\$ 0.29	\$ 0.13
Safety	\$ 0.61	\$ 0.37	\$ 1.06	\$ 0.49
Residual Value of Project	\$ 3.15	\$ 0.92	na	na
<b>Total Benefits</b>	<b>\$ 93.11</b>	<b>\$ 51.51</b>	<b>\$ 208.67</b>	<b>\$ 79.47</b>
<b>Project Costs</b>				
Capital	\$ 31.81	\$ 27.85	\$ 31.81	\$ 27.85
Operating	\$ 15.91	\$ 9.73	\$ 27.52	\$ 12.68
<b>Total Project Cost</b>	<b>\$ 47.72</b>	<b>\$ 37.58</b>	<b>\$ 59.33</b>	<b>\$ 40.52</b>
<b>Benefit-Cost Ratio</b>	<b>1.95</b>	<b>1.37</b>	<b>3.52</b>	<b>1.96</b>

d.

## Appendix C

### Letters of Support

#### District of Columbia Officials and Agency Representatives

- Mayor Adrian M. Fenty, District of Columbia
- Councilmember Tommy Wells, Ward 6, District of Columbia Council
- Valerie Joy-Santos, Deputy Mayor, Office of the Deputy Mayor for Planning and Economic Development
- Harriet Tregoning, Director, Office of Planning
- Christophe A.G. Tulou, Acting Director, Department of the Environment
- Leila Finucane Edmunds, Director, Department of Housing and Community Development

#### U.S. House of Representatives

- Congresswoman Elenor Holmes Norton, District of Columbia

#### Partner Organizations

- DC Surface Transit
- Joseph P. Walsh, Director, Department of Employment Services

#### Project Corridor Organizations

- Mentoring Today
- Thurgood Marshall Academy Public Charter High School



**ADRIAN M. FENTY**  
MAYOR

August 16, 2010

The Honorable Ray LaHood  
Secretary  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Secretary LaHood:

On behalf of the residents of the District of Columbia, I write to express my strong support for the District of Columbia's TIGER II planning grant proposal for the Anacostia Streetcar Initial Line Phase Two. The phase two project of the Anacostia Streetcar line will connect residents to: existing employment opportunities, a historic business corridor and an existing Metrorail station. Upon completion, this project will increase transportation choices for residents in the eastern part of the District and support connections to nearby neighborhoods, in addition to future federal employment centers such as the St. Elizabeths Campus.

The Anacostia area has a higher than average percentage of households that use transit to access employment and activity centers across the region. Currently, the area is underserved by both Metrobus and Metrorail and it is my hope that the proposed streetcar project will increase transit options and provide a more comfortable mode of public transportation for the residents of the District of Columbia. Streetcar stops along the line will help anchor a re-emerging historic business district with new employment centers and residential communities—thereby making the District a more livable city.

Most importantly, the extension of the Anacostia line of DC Streetcar will provide District residents with increased access to vital city services and, in coordination with programmed pedestrian improvements, will provide a neighborhood transit service that is integrated into a walkable environment. The totality of these efforts will reduce vehicular emissions and increase environmental sustainability.

The District is eager to continue its working relationship with the Federal Transit Administration to improve transportation options in the District of Columbia. Should you have any questions or concerns, please feel free to contact Gabe Klein, Director of the District Department of Transportation, at (202) 671-3238.

Sincerely,

A handwritten signature in blue ink, appearing to read "Adrian M. Fenty".

Adrian M. Fenty  
Mayor, District of Columbia



COUNCIL OF THE DISTRICT OF COLUMBIA  
THE JOHN A. WILSON BUILDING  
1350 PENNSYLVANIA AVENUE, NW  
WASHINGTON, D.C. 20004

**TOMMY WELLS**  
Councilmember - Ward 6  
Chairperson  
Committee on Human Services

**Committee Member**  
Health  
Government Operations & Environment  
Public Works & Transportation

August 16, 2010

Secretary Ray LaHood  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am pleased to provide my strong support for the District of Columbia's TIGER II planning grant application submitted by the District Department of Transportation (DDOT) for the Anacostia Initial Line Phase Two project that will connect the streetcar currently under construction to the Anacostia Metrorail station and the businesses and employment centers of the Historic Anacostia Corridor.

The corridor has a high percentage of transit-dependent households and is currently underserved. Adding additional high-capacity streetcars to this area will help serve the needs of the residents and meet the future demand of federal employment centers such as the St. Elizabeths Campus—the future headquarters for the US Department of Homeland Security. This streetcar extension will directly link residents to the Anacostia Metrorail line, which provides access to transit options and employment opportunities on the other side of the Anacostia River.

In addition to direct connectivity improvement, the Anacostia Streetcar line will also have a significant impact on development and growth on the Historic Anacostia Corridor. As you well know, fixed rail projects stimulate economic development along their routes. Such development exponentially increases the livability and walkability of the surrounding neighborhood by bringing vital amenities and services to the area.

I fully support DDOT's efforts to reconnect the District through the Anacostia Streetcar Initial Line and hope you respond favorably to this application.

Sincerely,

Tommy Wells  
Councilmember, Ward 6

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
Executive Office of the Mayor  
Office of the Deputy Mayor for Planning and Economic Development



August 19, 2010

Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to express strong support for the District of Columbia government's request for federal funding for streetcar construction. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia. It is our understanding that the District of Columbia is investing \$38.7 million to construct the first phase of the line immediately to the southwest, from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station.

The proposed line will effectively connect residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Its implementation will catalyze commercial and residential development through neighborhoods that have experienced underinvestment for several decades. This project's goals are congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

Experience has shown that transit systems are most powerful when they are well connected to other transit and activity centers. The phase of the Anacostia Streetcar line under consideration will improve connectivity between several neighborhoods and the Anacostia Metro Station, which is a major regional transfer point, serving 24 bus routes. The line will also provide a foundation for future extensions of the streetcar line to serve the St. Elizabeths Campus, the new headquarters of the Department of Homeland Security, and connect to areas of the District of Columbia across the Anacostia River.

As one of two initial projects in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

ADRIAN M. FENTY, MAYOR • VALERIE-JOY SANTOS, DEPUTY MAYOR

Sincerely,



**Valerie-Joy Santos**  
**Deputy Mayor**

District of Columbia Office of Planning



Office of the Director

August 18, 2010

Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to express strong support for the District of Columbia government's request for federal funding for streetcar construction. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia. The District of Columbia plans to invest \$38.7 million to construct the first phase of the line immediately to the southwest, from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station.

The proposed line will connect residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Its implementation will catalyze commercial and residential development through neighborhoods that have experienced under-investment for several decades, and that currently have the city's highest unemployment rate. This project's goals are congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

Experience has shown that transit systems are most powerful when they are well connected to other transit and activity centers. The phase of the Anacostia Streetcar line under consideration will improve connectivity between several neighborhoods and the Anacostia Metro Station, which is a major regional transfer point, serving 24 bus routes. The line will also provide a foundation for future extensions of the streetcar line to serve the St. Elizabeths Campus, the new headquarters of the Department of Homeland Security (a new employment center with 14,000 employees and 2000 daily visitors), and connect to areas of the District of Columbia across the Anacostia River.



As one of two initial projects in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

Sincerely,

A handwritten signature in cursive script, appearing to read "Harriet Tregoning".

Harriet Tregoning  
Director  
Office of Planning

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**

**District Department of the Environment**



August 18, 2010

Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to express strong support for the District of Columbia government's request for \$16,025,000 of federal funding for streetcar construction. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia. The District of Columbia is investing \$38.7 million to construct the first phase of the line from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station.

The proposed line will allow the District to make a major step forward in strengthening our integrated network of mass transit by connecting residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Implementation will deliver considerable environmental benefits for our city and communities east of the Anacostia River, in addition to the important benefits of spurring economic development and enhancing livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

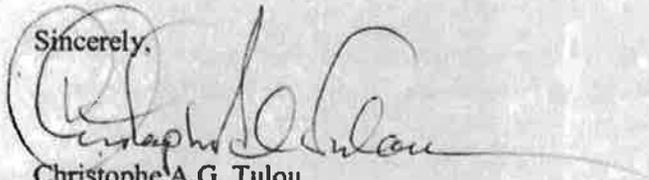
The District Department of the Environment (DDOE) is fully committed to working with our sister agency the District Department of Transportation (DDOT) to maximize and leverage the potential environmental benefits of this project. With an estimated reduction in over 300,000 vehicle miles traveled each year, the District will see reduction of criteria pollutants and over 150 tons of carbon dioxide (streetcar expansion is a key component of our draft climate action plan for the city). The significant redevelopment of the Martin Luther King streetscape will also deliver considerable benefits through installation of pervious pavement, preserved and enhanced tree canopy, and other cutting-edge



stormwater management practices to directly improve the quality of the waters in the Anacostia River. Installation of Capital Bikeshare stations and electric vehicle recharging stations, collocated with the streetcar stops, will further leverage environmental benefits from the streetcar development by encouraging use of alternative transportation.

DDOE looks forward to working with USDOT, DDOT and other partners to bring a cutting-edge streetcar system to Anacostia and the Nation's Capital that is a model of integrated transportation and environmental management. As one of two initial projects in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

Sincerely,

A handwritten signature in cursive script, appearing to read "Christophe A.G. Tulou". The signature is written in dark ink and is positioned above the typed name.

Christophe A.G. Tulou  
Acting Director  
District Department of the Environment

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
Department of Housing and Community Development

Office of the Director



Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to express strong support for the District of Columbia government's request for federal funding for streetcar construction. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia, where the Department of Housing and Community Development (DHCD) moved in 2009 and the city is making significant investments to preserve affordable housing for existing residents. It is our understanding that the District of Columbia is investing \$38.7 million to construct the first phase of the line immediately to the southwest, from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station.

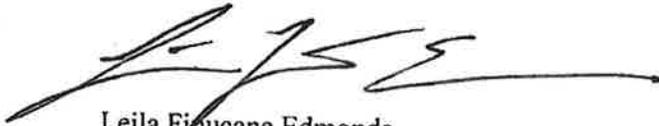
The proposed line will effectively connect residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Its implementation will further stabilize neighborhoods that have experienced under-investment for several decades, but in which DHCD is targeting new resources to acquire and rehabilitate vacant properties. For example, Historic Anacostia is one of three District neighborhoods targeted by DHCD under our \$9.5 million award from the highly competitive HUD NSP II Program. This project's goals are congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities, such as promoting equitable and affordable housing. Indeed, the District has also submitted an application for the Department of Housing and Urban Development's Community Challenge Planning Grant to enhance access to Anacostia's historic assets to generate additional resources for affordable housing and job creation.

Experience has shown that transit systems are most powerful when they are well connected to other transit and activity centers. The phase of the Anacostia Streetcar line under consideration will improve connectivity between several neighborhoods and the Anacostia Metro Station, which is a major regional transfer point, serving 24 bus routes. Many of these routes are used by

DHCD's almost 150 employees daily to get to and from work and I firmly believe that the streetcar would also make it more convenient for the public to visit our Housing Resource Center located at the corner of MLK and Good Hope Road at the foot of the new 11<sup>th</sup> Street Bridge.

As one of two initial projects in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Edmonds', with a long horizontal flourish extending to the right.

Leila Finucane Edmonds  
Director

**ELEANOR HOLMES NORTON**  
DISTRICT OF COLUMBIA

**COMMITTEE ON  
TRANSPORTATION AND  
INFRASTRUCTURE**

SUBCOMMITTEES:

CHAIRWOMAN  
ECONOMIC DEVELOPMENT,  
PUBLIC BUILDINGS, AND EMERGENCY  
MANAGEMENT  
AVIATION  
WATER RESOURCES AND ENVIRONMENT



**Congress of the United States  
House of Representatives  
Washington, D.C. 20515**

**COMMITTEE ON  
OVERSIGHT AND  
GOVERNMENT REFORM**

SUBCOMMITTEES:

FEDERAL WORKFORCE, POSTAL  
SERVICE, AND DISTRICT OF COLUMBIA  
INFORMATION POLICY, CENSUS, AND  
NATIONAL ARCHIVES

**COMMITTEE ON  
HOMELAND SECURITY**

SUBCOMMITTEES:

TRANSPORTATION SECURITY AND  
INFRASTRUCTURE PROTECTION  
EMERGENCY COMMUNICATIONS,  
PREPAREDNESS, AND RESPONSE

August 19, 2010

Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to express strong support for the District of Columbia government's request for federal funding for streetcar construction. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia. It is our understanding that the District of Columbia is investing \$38.7 million to construct the first phase of the line immediately to the southwest, from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station.

The proposed line will effectively connect residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Its implementation will catalyze commercial and residential development through neighborhoods that have experienced under-investment for several decades. This project's goals are congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

Experience has shown that transit systems are most powerful when they are well connected to other transit and activity centers. The phase of the Anacostia Streetcar line under consideration will improve connectivity between several neighborhoods and the Anacostia Metro Station, which is a major regional transfer point, serving 24 bus routes. The line will also provide a foundation for future extensions of the streetcar line to serve the St. Elizabeths Campus, the new headquarters of the Department of Homeland Security, and connect to areas of the District of Columbia across the Anacostia River.

As one of two initial projects in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of

National Press Building  
529 14th Street, N.W., Suite 908  
Washington, D.C. 20045  
(202) 783-5065  
(202) 783-5211 (FAX)

2136 Rayburn House Office Building  
Washington, D.C. 20515  
(202) 725-8050  
(202) 725-3602 (FAX)  
(202) 725-1904 (TDD)  
[www.norton.house.gov](http://www.norton.house.gov)

2041 Martin Luther King Avenue, S.E.  
Suite 228  
Washington, D.C. 20020-5234  
(202) 678-3400  
(202) 678-8844 (FAX)

the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eleanor H. Norton". The signature is fluid and cursive, with a prominent initial "E".

Eleanor Holmes Norton



DC Surface Transit,  
Inc.

Board of Directors

President

Mr. Richard H. Bradley  
Downtown BID

Vice-President

Ms. Leona Agouridis  
Golden Triangle BID

Secretary/Treasurer

Mr. Jim Bracco  
Georgetown BID

Members

Ms. Kristen Barden  
Adams Morgan  
Partnership BID

Mr. Carlton Diehl

Ms. Virginia I. Laytham  
Clyde's Restaurant  
Group

Ms. Patty Brosmer  
Capitol Hill BID

Mr. Joseph D.  
Sternlieb

Mr. Michael Stevens  
Capitol Riverfront BID

Mr. Greg O'Dell  
Washington Sports and  
Convention Authority

August 20, 2010

The Honorable Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

On behalf of DC Surface Transit, Inc. (DCST), I am writing to express strong support for the District of Columbia government's request for federal funding for streetcar construction. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia.

DCST is a nonprofit corporation created to promote convenient and affordable surface transit in the District of Columbia. Our membership includes six business improvement districts, the Washington Convention and Sports Authority and Destination DC.

The proposed line will effectively connect residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Its implementation will catalyze commercial and residential development through neighborhoods that have experienced under-investment for several decades. This project's goals are congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

As one of two initial projects in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

Sincerely,

Richard H. Bradley

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
Department of Employment Services

ADRIAN M. FENTY  
MAYOR



JOSEPH P. WALSH  
DIRECTOR

August 19, 2010

Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to express strong support for the District of Columbia government's request for federal funding for the District of Columbia's Tiger II planning grant proposal for the Anacostia Streetcar Initial Line Phase Two. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia. The phase two project of the Anacostia Streetcar line will connect residents to existing employment while generating potential partnership for new jobs during the construction of phase two of the Initial Line. Upon completion, this project will increase transportation choices for residents in the eastern part of the District.

The proposed line will effectively connect residential areas with downtown Anacostia and the waterfront parkland system along the Anacostia River. A new streetcar system will catalyze commercial and residential development through neighborhoods that have experienced under-investment for several decades. This project's goals are congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

Experience has shown that transit systems are most powerful when they are well connected to other transit and activity centers. The phase of the Anacostia Streetcar line under consideration will improve connectivity between several neighborhoods and the Anacostia Metro Station, which is a major regional transfer point, serving bus routes. The line will also provide a foundation for future extensions of the streetcar line to serve the St. Elizabeth's Campus, the new headquarters of the Department of Homeland Security, and connect to areas of the District of Columbia across the Anacostia River.

As one of the major sections in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

Sincerely,

  
Joseph P. Walsh  
Director

# mentoring today



*Featured in the 2009/10 Catalogue for Philanthropy  
"One of the best small charities in the Greater Washington region."*

July 30, 2010

Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to express strong support for the District of Columbia government's request for \$16,025,000 of federal funding for streetcar construction. The funds would be used to build the second phase of our city's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia. It is our understanding that the District of Columbia is investing \$38.7 million to construct the first phase of the line immediately to the southwest, from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station.

The proposed line will effectively connect residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Its implementation will catalyze commercial and residential development through neighborhoods that have experienced underinvestment for several decades. This project's goals are congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

Experience has shown that transit systems are most powerful when they are well connected to other transit and activity centers. The phase of the Anacostia Streetcar line under consideration will improve connectivity between several neighborhoods and the Anacostia Metro Station, which is a major regional transfer point, serving 24 bus routes. The line will also provide a foundation for future extensions of the

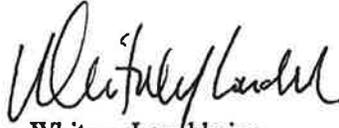
streetcar line to serve the St. Elizabeths Campus, the new headquarters of the Department of Homeland Security, and connect to areas of the District of Columbia across the Anacostia River.

As one of two initial projects in our streetcar network plan, a great deal is riding on the success of the Anacostia Streetcar line. Passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line. We must ensure its success, and we request the Federal government's assistance in achieving that goal.

Sincerely,



Penelope Spain  
Chief Executive Officer



Whitney Loughheim  
Chief Operating Officer



Public Charter High School

August 12, 2010

Mr. Ray LaHood  
Secretary  
Office of the Secretary  
U.S. Department of Transportation  
1200 New Jersey Ave, SE  
Washington, DC 20590

Dear Secretary LaHood:

I am writing to provide information regarding the benefits to our school and the Anacostia community of the District of Columbia Anacostia Streetcar line. Our understanding is that federal funds would be used to build the second phase of DC's new Anacostia Streetcar line, from the Anacostia Metro Station to downtown Anacostia. It is also our understanding that the District of Columbia is investing \$38.7 million to construct the first phase of the line immediately to the southwest, from the US Naval Support Facility (Joint Base Anacostia-Bolling) to the Anacostia Metro Station.

The proposed line will effectively connect residential areas and federal facilities with downtown Anacostia and the waterfront parkland system along the Anacostia River. Its implementation will catalyze commercial and residential development through neighborhoods that have experienced under-investment for several decades. This project's goals appear to be congruent with the current federal policy focus to fund transit projects that encourage economic development, help protect the environment and enhance livability in our communities. With Metrorail and existing bus lines running at capacity, premium surface transit solutions represent the only feasible way to continue smart growth development patterns while taking cars off the road.

Experience has shown that transit systems are most powerful when they are well connected to other transit and activity centers. The phase of the Anacostia Streetcar line under consideration will improve connectivity between several neighborhoods and the Anacostia Metro Station, which is a major regional transfer point, serving 24 bus routes. The line will also provide a foundation for future extensions of the streetcar line to serve the St. Elizabeths Campus, the new headquarters of the Department of Homeland Security, and connect to areas of the District of Columbia across the Anacostia River.

The project is one of two initial projects in the District's streetcar network plan, so passengers and the general population will judge the feasibility of the entire proposed 37-mile network plan based on the relative success of this line.

Thank you for attending to this information regarding the project.

Sincerely,

A handwritten signature in black ink, appearing to read "David Schlossman", with a long, sweeping horizontal stroke at the end.

David Schlossman, COO  
202-276-4722  
dschlossman@tmapchs.org

d.

## Appendix D

Financial Wage Rate Certification



**GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION**



**Federal Wage Rate Certification**

The District of Columbia Department of Transportation (DDOT), as an applicant for the federal TIGER II Discretionary Grant funding certifies that it will comply with the requirements of subchapter IV of chapter 31 of title 40, United States Code (Federal wage rate requirements), as required by the FY 2010 Appropriations Act.

A handwritten signature in black ink, appearing to be 'Gabe Klein', written over a horizontal line.

(Gabe Klein, DDOT Director)

A handwritten date '8/19/10' in black ink, written over a horizontal line.

(Date)