Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

FY 2015-16 PROJECT DESCRIPTION FORM (6L)

Basic Project Information

Submitting Agency: Washington Metropolitan Area Transit Authority (Metro)

Project Title: 8-Car Train Power Upgrades (6L)

Project Type *(check one)*:
Roadway ( ) Transit (X)

VA State Route Number : Northern Virginia Connector (I-66/Rt 29/Rt 50), Seminole Corridor

NVTA Corridor Number (1-8): Corridor 6 (I-66/Rt 29/Rt 50)

1. **Project Description:** This project incrementally improves the power system to increase power supply capacity to support the future expanded use of eight car trains. The increase from six to eight cars increases power requirements of each train as well as the load put on the traction-power system. This work will include tie breaker equipment and installation, as well as power cabling work. This work will continue the upgrade of traction power along the Orange Line in Virginia, a busy Metrorail corridor.

2. **Requested NVTA Funds:** $8,994,785 (FY2016)

3. **Phase(s) of Project Covered by Requested NVTA Funds:** FY2016 8-Car Train Power Upgrades Located in Virginia

Description	Cost
Tie Breaker Equipment Purchase for the following locations: Greenwich Street (WFC), Ogden Street (Dunn Loring), and Prosperity Ave (Dunn Loring)	$5,282,000
Tie Breaker Installation (Greenwich St, Ogden St, and Prosperity Ave)	
Traction power cable replacement/additions at 6 locations	$3,713,000
FY16 total	$8,995,000

4. **Total Cost to Complete Project:** $8,994,785 (FY2016)

5. **Project Milestone -Study Phase:** N/A

6. **Project Milestone -Preliminary Engineering (30% Design):** N/A

7. **Project Milestones -Final Design:** N/A

8. **Project Milestones -Right-of-Way:** N/A

9. **Project Milestone – Construction:** The 8-Car power project is a system wide project that will require improvements across all of Metro's rail lines. The upgrades for this larger project will be done over the next several years. The project milestones listed below are for the locations on the Orange, Blue and Yellow lines in Virginia.

8-Car Power Upgrades Located in Virginia.

Description	
Award contract for power upgrades in Virginia	August 2015
Begin Installation	February 2016
Complete Installation	June 2016

10. **Project Milestone – Mass Transit Vehicle Acquisition:** N/A

11. **Is Project in Transaction 2040:**
    Yes (X) No ( )

12. **Project in 2010 CLRP**: N/A.

13. **Project Leverages other Funding:** (please state amount)
    - Local (X)
    - State ( )
    - Federal ( )
    - Other:

Stated Benefits

- **What Regional benefit(s) does this project offer?**
  Currently, both train and station platforms are overcrowded during the rush hours, reducing the reliability of Metrorail service as well as comfort and convenience for customers. Meanwhile, the region is projected to continue to grow. Over the next three decades, the Washington region is forecasted to experience increased growth, including a 25 percent increase in population and a 35 percent increase in employment1. Suburban growth will add pressure to the core of the Metrorail system, which is already strained. Metro is planning to alleviate the increasingly crowded Metrorail system and plan for future growth through the Momentum strategic plan. One of the key capital initiatives of this plan is to run 100 percent eight-car trains continuously.

- **How does the project reduce congestion?**
  The Metro system, which now delivers 1.2 million customer trips daily, anchors the region's growth and economic competitiveness. In Virginia Metro's Orange Line moves up to 15,400 passengers per hour past I-66 bottlenecks2. Moving the Metrorail system to a continuous 100 percent eight-car train operation will reduce overcrowding in the Metrorail system and enable Metro to better accommodate new customers.

- **How does project increase capacity? (Mass Transit Projects only)**
  With Metro operating 100 percent eight-car trains (longest possible), trains entering the region's core (downtown DC and eastern Arlington County) could accommodate approximately 35,000 more passengers per hour during rush hour3. This is the equivalent of building 18 new lanes on highways into Washington, D.C.

  In order to implement 100 percent eight-car trains, certain preliminary improvements to the system must be made, including the traction power system. The existing Metrorail traction power system consists of mainline and rail yard traction power substations (TPSS) and tie breaker stations (TBS), as well as associated cabling and third rails. These elements together are currently able to continuously power the standard six-car train (with some eight-car trains serving particular lines during limited periods of the week).

- **How does project improve auto and pedestrian safety?**
  Reduced congestion on Metrorail will increase its attractiveness, resulting in a higher transit mode share and reduced vehicle-miles of auto travel (VMT). As a general rule, lower VMT results in fewer auto crashes, thereby improving safety.

[1] Source: MWCOG Population and Employment Projections, Round 8.3
[2] Source: WMATA, MWCOG 2011 Aerial Traffic Congestion Survey
[3] Source: Momentum: The Next Generation of Metro

- **List internet links below to any additional information in support of this project:**
  Momentum Strategic Plan - http://www.wmata.com/momentum/momentum-full.pdf

  Specific benefits of full 8-car trains can be found here:
  http://www.wmata.com/momentum/metro2025-1-longest-trains.pdf

  Proposed Fiscal Year 2015 Annual Budget -
  http://www.wmata.com/about_metro/docs/Proposed%20Fiscal%20Year%202015%20Annual%20Budget.pdf