XIV

NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

M E M O R A N D U M

TO: Chairman Martin E. Nohe and Members
Northern Virginia Transportation Authority

FROM: Monica Backmon, Executive Director

DATE: January 4, 2017

SUBJECT: Regional Funding Project 996-80821 (WMATA – Blue Line Traction Power Upgrades)

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1. **Purpose.** Seek Northern Virginia Transportation Authority approval of attached Standard Project Agreement (SPA) 996-80821.

2. **Suggested motion.** *I move approval of the proposed Standard Project Agreement 996-80821 (WMATA – Blue Line Traction Power Upgrades), in accordance with NVTA's approved FY2017 Project Description Form; and subject to the special provisions noted in the staff report; and authorize the Executive Director to sign on behalf of the Authority.*

3. **Background.**
   a. The Authority previously approved this project for funding as part of its FY2017 Program using FY2017 70% regional revenues on July 14, 2016.
   b. The attached SPA presented by the Washington Metropolitan Area Transit Authority (WMATA) is consistent with the project previously approved by the Authority.
   c. The attached SPA has been reviewed by the Council of Counsels, noting that there were no legal issues.

4. **Special Provisions.** At the request of the NVTA staff, the WMATA Board adopted two resolutions in support of receiving project funding for 8-car traction power upgrades subject to certain future decisions by the WMATA Board. The NVTA's reimbursement of project expenses is conditional upon these future WMATA Board decisions, specifically:
   a. WMATA Resolution 2015-66 notes WMATA's application for NVTA FY2017 funding for Blue Line traction power is subject to a future decision by WMATA as to whether the project will receive necessary matching funding in WMATA's FY2017 Annual Work Plan. WMATA additionally acknowledged in this resolution that no NVTA funds will be released to WMATA for the funding of this project unless and until such time as WMATA formally approves the project as part of the WMATA FY2017 Annual Work Plan that includes necessary matching funding for the project.
   b. WMATA Resolution 2016-48 notes WMATA's conditional approval of the attached SPA subject to approval of a WMATA FY2017-2022 Capital Improvement Program

(CIP) that includes the necessary matching funding. Resolution 2016-48 also modified the FY2017-2022 CIP to accept the NVTA award for Blue Line traction power upgrades and dedicate $44.7million of matching funds from the District of Columbia and the State of Maryland in FY2018 and FY2019.

c. Prior to processing a WMATA request for reimbursement in accord with the attached SPA, NVTA staff will verify that the matching funds noted above are included in the WMATA FY2018 Annual Work Plan and subsequent WMATA Work Plans, as well as in the WMATA 2018-2023 CIP and subsequent WMATA CIPs until project completion.
d. The reimbursement review noted above is required by NVTA Resolution 14-8, which is titled; Northern Virginia Transportation Authority ("NVTA") Policy for Use of 70% Funds under 2013 Va. Acts Ch. 766 Regarding Funding of Projects Undertaken by NVTA or on its Behalf with the District of Columbia, Virginia, any other State or a Political Subdivision thereof, or The United States of America.

Attachments:

Attachment 1 - SPA for NVTA Project Number 996-80821
Attachment 2 - Resolution 14-08

Coordination:

Council of Counsels
WMATA Office of Government Relations
WMATA Office of Planning

Standard Project Agreement for Funding and Administration
between
Northern Virginia Transportation Authority
and
Washington Metropolitan Area Transit Authority (WMATA)
(Recipient Entity)

Project Name: Blue Line Traction Power Upgrades - 8FF

NVTA Project Number: 996-80821

This Standard Project Agreement for Funding and Administration ("this Agreement") is made and executed in duplicate on this_____ day of _____, 20__, as between the Northern Virginia Transportation Authority ("NVTA") and Washington Metropolitan Area Transit Authority (WMATA) ("Recipient Entity").

WITNESSETH

WHEREAS, NVTA is a political subdivision of the Commonwealth of Virginia created by the Northern Virginia Transportation Authority Act ("the NVTA Act"), Chapter 25 of Title 33.2 of the Code of Virginia, as amended;

WHEREAS, Section 33.2-2500(4) of the Code of Virginia authorizes NVTA to enter into project agreements with certain statutorily designated entities for the provision of transportation facilities and services to the area embraced by NVTA;

WHEREAS, Section 33.2-2509 of the Code of Virginia authorizes NVTA to use funds from a fund established pursuant to that Code section (the "NVTA Fund") in order to assist in the financing, in whole or in part, of certain regional transportation projects in accordance with Code Section 33.2-2510;

WHEREAS, the NVTA Fund provides for the deposit therein of certain dedicated revenues and other funds appropriated by the Virginia General Assembly;

WHEREAS, Section 33.2-2510 of the Code of Virginia authorizes the use of funds from the NVTA Fund and the use of proceeds from NVTA debt issuances ("NVTA Bond Proceeds") to be used by NVTA solely for transportation purposes benefitting those counties and cities embraced by NVTA;

WHEREAS, the Project set forth and described on Appendix A to this Agreement ('the Project") satisfies the requirements of Virginia Code Section 33.2-2510;

WHEREAS, the Project is to be financed, as described in Appendix B, in whole or in part, by funds from the NVTA Fund and/or from NVTA Bond Proceeds, is located within a locality embraced by NVTA's geographical borders, or is located in an adjacent locality, but only to the extent that any such extension is an insubstantial part of the Project and is essential to the viability of the Project within the localities embraced by NVTA;

WHEREAS, WMATA formally requested that NVTA provide funding to the Project by timely submitting an application for NVTA funding in response to NVTA's call for projects;

WHEREAS, NVTA has reviewed WMATA's application for funding and has approved WMATA's administration and performance of the Project's described scope of work;

WHEREAS, based on the information provided by WMATA, NVTA has determined that the Project complies with all requirements of the NVTA Act related to the use of moneys identified in Virginia Code Sections 33.2-2510(A),(C)1 and all other applicable legal requirements;

WHEREAS, the funds to be provided by NVTA described in Appendix B have been duly authorized and directed by WMATA to finance the Project;

WHEREAS, NVTA agrees that WMATA will design and/or construct the Project or perform such other specific work for the Project and WMATA agrees that it will perform such work on the terms and conditions set forth in this Agreement and the Appendices appended thereto;

WHEREAS, both parties have concurred in the WMATA's administration, performance, and completion of the Project on the terms and conditions set forth in this Agreement and its Appendices and in accordance with all applicable federal, state, and local laws and regulations; and

WHEREAS, NVTA's governing body and WMATA's governing body have each authorized that their respective designee(s) execute this agreement on their respective behalf(s) as evinced by copies of each such entity's clerk's minutes which are appended hereto as Appendix E;.

NOW THEREFORE, in consideration of the promises made mutual covenants, and agreements contained herein, the parties hereto agree as follows:

A. Recipient Entity's Obligations

WMATA shall:

I. Complete or perform all said work as described in Appendix A, advancing such work diligently and ensuring that all work is completed in accordance with all applicable federal, state, and local laws and regulations, and all terms and conditions of this Agreement.

2. Ensure that all work performed or to be performed under this Agreement is in accordance with the Project Description Sheets attached to Appendix A and complies with Va. Code Ann. Sections 33.2-2510(A), (C)1.

3. Perform or have performed, and remit all payment requisitions and other requests for funding for design and engineering, including all environmental work, right-of-way acquisition, construction, contract administration, testing services, inspection services, or capital asset acquisitions for the Project, as is required by this Agreement and that may be necessary for completion of the Project.

4. Not use the NVTA funds specified on Appendix B to pay any Project cost if the NVTA Act does not permit such Project cost to be paid with NVTA funds.

5. Recognize that, if the Project contains "multiple phases" (as such "multiple phases" are defined for the Project on Appendix A), for which NVTA will provide funding for such multiple phases (as set forth on Appendix B), NVTA may not provide funding to WMATA to advance the Project to the next phase until the current phase is completed. In any circumstance where WMATA seeks to advance a Project to the next phase using NVTA funds, WMATA shall submit a written request to NVTA's Executive Director explaining the need for NVTA's funding of an advanced phase. NVTA's Executive Director will thereafter review the circumstances underlying the request in conjunction with Appendix B and NVTA's current and projected cash flow position and make a recommendation to NVTA whether to authorize the requested advance phase funding. Nothing herein, however, shall prohibit WMATA from providing its own funds to

advance a future phase of the Project and from requesting reimbursement from NVTA for having advance funded a future phase of the Project. However, WMATA further recognizes that NVTA's reimbursement to WMATA for having advance funded a Project phase will be dependent upon NVTA's cash flow position at the time such a request for reimbursement is submitted and to the extent that any such advanced funding is consistent with Appendix B.

6. Acknowledge that NVTA's Executive Director will periodically update NVTA's project cash flow estimates with the objective toward keeping those estimates accurate throughout the life of the Project. WMATA shall provide all information required by NVTA so as to ensure and facilitate accurate cash flow estimates and accurate updates to those cash flow estimates throughout the life of the Project as described in Appendix B.

7. Provide to NVTA requests for payment consistent with Appendix B and the most recently approved NVTA cash flow estimates that include NVTA's standard payment requisition(s), containing detailed summaries of actual project costs incurred with supporting documentation as determined by NVTA and that certify all such costs were incurred in the performance of work for the Project as authorized by this Agreement. Each payment requisition shall be in substantially the same form as set forth in Appendix C of this Agreement. If approved by NVTA, WMATA can expect to receive payment within twenty (20) days upon receipt by NVTA. Approved payments may be made by means of electronic transfer of funds from NVTA to or for the account of WMATA.

8. Promptly notify NVTA's Executive Director of any additional project costs resulting from unanticipated circumstances and provide to NVTA detailed estimates of additional costs associated with those circumstances. WMATA understands that it will be within NVTA's sole discretion whether to provide any additional funding to the Project in such circumstances and that NVTA will do so only in accordance with NVTA's approved Project Selection Process and upon formal action and approval by NVTA. WMATA shall timely provide to NVTA a

complete and accurate update to Appendix B, if NVTA approves funding of any additional Project costs for the Project under this Paragraph.

9. Release or return any unexpended funds to NVTA no later than 90 days after final payment has been made to the contractors.

10. Review and acknowledge the requirements of NVTA Resolution No. 14-08 adopted January 23, 2014; to wit that, if applicable to WMATA's Project: a) Prior to any NVTA funds being released for a project that may be part of a larger project, projects, or system undertaken with an extra-territorial funding partner, all such extra-territorial funding partners must commit to pay their appropriate, respective proportionate share or shares of the larger project or system cost commensurate with the benefits to each on a basis agreed upon by the NVTA member localities; b) any such funds released by NVTA for such project will be in addition to the funds that the NVTA member locality is to receive from or be credited with by the extra-territorial funding partner for the project or system; and c) there shall be no funding made available by NVTA until such time as all extra-territorial funding partners for such project or system pay or officially commit to fund their appropriate, respective proportionate shares of such large project or system commensurate with the benefits to each on a basis agreed upon with NVTA.

11. Should WMATA be required to provide matching funds in order to proceed or complete the funding necessary for the Project, WMATA shall certify to NVTA that all such matching funds have been either authorized and/or appropriated by WMATA's governing body or have been obtained through another, independent funding source;

12. Maintain complete and accurate financial records relative to the Project for all time periods as may be required by the Virginia Public Records Act and by all other applicable state or federal records retention laws or regulations, unless superseded by the laws that govern WMATA and provide copies of any such financial records to NVTA, free of charge, upon request.

13. Maintain all original conceptual drawings and renderings, architectural and engineering plans, site plans, inspection records, testing records, and as built drawings for the Project for the time periods required by the Virginia Public Records Act and any other applicable records retention laws or regulations, unless superseded by the laws that govern WMATA; and provide to NVTA copies of all such drawings and plans free of charge, upon request.

14. Reimburse NVTA for all NVTA funds (with interest earned at the rate earned by NVTA) that WMATA misapplied or used in contravention of Sections 33.2-2500 *et. seq.* of the Virginia Code ("the NVTA Act") Chapter 766 of the 2013 Virginia Acts of Assembly ("Chapter 766"), or any term or condition of this Agreement.

15. Name NVTA and its Bond Trustee or require that all WMATA 's contractors name NVTA or its Bond Trustee as an additional insured on any insurance policy issued for the work to be performed by or on behalf of WMATA for the Project and present NVTA with satisfactory evidence thereof before any work on the Project commences or continues.

16. Give notice to NVTA that WMATA may use NVTA funds to pay outside legal counsel services (as opposed to utilizing the services of its own in-house counsel or NVTA's in-house legal counsel) in connection with the work performed under this Agreement WMATA so as to ensure that no conflict of interest may arise from any such representation.

17. Provide certification to NVTA, that upon final payment to all contractors for the Project, WMATA will use the Project for its intended purposes for the duration of the Project's useful life. Under no circumstances will NVTA be considered responsible or obligated to operate and/or maintain the Project after its completion.

18. Comply with all requirements of the Virginia Public Procurement Act and other applicable Virginia Code provisions, or local ordinances which govern the letting of public contracts, unless superseded by the laws that govern WMATA.

19. Acknowledge that if the Project is being funded in whole or in part by NVTA Bond Proceeds, comply with the tax covenants attached as Appendix D.

20. Acknowledge that if WMATA expects and/or intends that the Project is to be submitted for acceptance by the Commonwealth into its system that WMATA agrees to comply with the Virginia Department of Transportation's ("VDOT's") "Standards, Requirements and Guidance."

21. Recognize that WMATA is solely responsible for obtaining all permits and permissions necessary to construct and/or operate the Project, including but not limited to, obtaining all required VDOT and local land use permits, applications for zoning approvals, and regulatory approvals.

22. Recognize that if WMATA is funding the Project, in whole or in part, with federal and/or state funds, in addition to NVTA funds and/or NVTA Bond Proceeds that WMATA will need to comply with all federal and Commonwealth funding requirements, including but not limited to, the completion and execution of VDOT's Standard Project Administration Agreement and acknowledges that NVTA will not be a party or signatory to that Agreement; nor will NVTA have any obligation to comply with the requirements of that Agreement.

23. Provide a certification to NVTA no later than 90 days after final payment to the contractors that WMATA adhered to all applicable laws and regulations and all requirements of this Agreement.

B. NVTA's Obligations

NVTA shall:

I. Provide to WMATA the funding authorized by NVTA for design work, engineering, including all environmental work, all right-of-way acquisition, inspection services, testing services, construction, and/or capital asset acquisition(s) on a reimbursement basis as set forth in this Agreement and as specified in the Project Budget and Cash Flow contained in

Appendix B to this Agreement or the most updated amendment thereto, as approved by NVTA.

2. Assign a Program Coordinator for the Project. NVTA's Program Coordinator will be responsible for monitoring the Project on behalf of NVTA so as to ensure compliance with this Agreement and all NVTA's requirements and with overseeing, managing, reviewing, and processing, in consultation with NVTA's Executive Director and its Chief Financial Officer ("CFO") , all payment requisitions submitted by WMATA for the Project. NVTA's Program Coordinator will have no independent authority to direct changes or make additions, modifications, or revisions to the Project Scope of Work as set forth on Appendix A or to the Project Budget and Cash Flow as set forth on Appendix B.

3. Route to NVTA's assigned Program Coordinator all WMATA 's payment requisitions, containing detailed summaries of actual Project costs incurred which are in substantially the same form as shown on Appendix C submitted to NVTA for the Project. After submission to NVTA, NVTA's Program Coordinator will conduct an initial review of all payment requisitions and supporting documentation for the Project in order to determine the submission's legal and documentary sufficiency. NVTA's Program Coordinator will then make a recommendation to the NVTA's CFO and Executive Director whether to authorize payment, refuse payment, or seek additional information from WMATA. If the payment requisition is sufficient as submitted, payment will be made within twenty (20) days from receipt. If the payment requisition is deemed insufficient, within twenty (20) days from receipt, NVTA's Program Coordinator will notify WMATA in writing and set forth the reasons why the payment requisition was declined or why and what specific additional information is needed for processing the payment request. Payment will be withheld until all deficiencies identified by NVTA have been corrected. Under no circumstances will NVTA authorize payment for any work performed by or on behalf of WMATA that is not in conformity with the requirements of the NVTA Act, Chapter 766, or this Agreement.

4. Route all WMATA 's supplemental requests for funding from NVTA under Paragraphs A.5 and A.8 of this Agreement to NVTA's Executive Director. NVTA's Executive Director will initially review those requests and all supporting documentation with NVTA's CFO. After such initial review, NVTA's Executive Director will make a recommendation to NVTA's Finance Committee for its independent consideration and review. NVTA's Finance Committee will thereafter make a recommendation on any such request to NVTA for final determination by NVTA.

5. Conduct periodic compliance reviews scheduled in advance for the Project so as to determine whether the work being performed remains within the scope of this Agreement, the NVTA Act, Chapter 766, and other applicable law. Such compliance reviews may entail review of WMATA 's financial records for the Project and on -site inspections.

6. Acknowledge that if, as a result of NVTA's review of any payment requisition or of any NVTA compliance review, NVTA staff determines that WMATA has misused or misapplied any NVTA funds in derogation of this Agreement or in contravention of the NVTA Act, Chapter 766 or applicable law, NVTA staff will promptly advise NVTA's Executive Director and will advise WMATA 's designated representative in writing. WMATA will thereafter have thirty (30) days to respond in writing to NVTA's initial findings. NVTA's staff will review WMATA 's response and make a recommendation to NVTA's Finance Committee. NVTA's Finance Committee will thereafter conduct its own review of all submissions and make a recommendation to NVTA. Pending final resolution of the matter, NVTA will withhold further funding on the Project. If NVTA makes a final determination that WMATA has misused or misapplied funds in contravention of this Agreement, the NVTA Act, Chapter 766, or other applicable law, NVTA will cease further funding for the Project and will seek reimbursement from WMATA of all funds previously remitted by NVTA (with interest earned at the rate earned by NVTA) which were misapplied or misused by WMATA . Nothing herein shall, however, be construed as denying, restricting or limiting the pursuit of either party's legal rights or available legal remedies.

7. Make guidelines available to WMATA to assist the parties in carrying out the terms of this Agreement in accordance with applicable law.

8. Upon recipient's final payment to all contractors, retain copies of all contracts, financial records, design, construction, and as-built project drawings and plans for the Project for the time periods required by the Virginia Public Records Act and as may be required by other applicable records retention laws and regulations.

9. Be the sole determinant of the amount and source of NVTA funds to be provided and allocated to the Project and the amounts of any NVTA funds to be provided in excess of the amounts specified in Appendix B.

C. Term

1. This Agreement shall be effective upon adoption and execution by both parties.

2. WMATA may terminate this Agreement, for cause, in the event of a material breach by NVTA of this Agreement. If so terminated, NVTA shall pay for all Project costs incurred through the date of termination and all reasonable costs incurred by WMATA to terminate all Project related contracts. The Virginia General Assembly's failure to appropriate funds to NVTA as described in paragraph F of this Agreement or repeal of the legislation establishing the NVTA fund created pursuant to Chapter 766 shall not be considered material breaches of this Agreement by NVTA. Before initiating any proceedings to terminate under this Paragraph, WMATA shall give NVTA sixty (60) days written notice of any claimed material breach of this Agreement; thereby allowing NVTA an opportunity to investigate and cure any such alleged breach.

3. NVTA may terminate this Agreement, for cause, resulting from WMATA's material breach of this Agreement. If so terminated, WMATA shall refund to NVTA all funds NVTA provided to WMATA for the Project (including interest earned at the rate earned by NVTA). NVTA will provide WMATA with sixty (60) days written notice that NVTA is exercising its rights to terminate this Agreement and the reasons for termination. Prior to termination, WMATA may

request that NVTA excuse WMATA from refunding all funds NVTA provided to WMATA for the Project based upon WMATA's substantial completion of the Project or severable portions thereof; and NVTA may, in its sole discretion, excuse WMATA from refunding all or a portion of the funds NVTA provided to WMATA for the Project. No such request to be excused from refunding will be allowed where WMATA has either misused or misapplied NVTA funds in contravention of applicable law.

4. Upon termination and payment of all eligible expenses as set forth in Paragraph C.3 above, WMATA will release or return to NVTA all unexpended NVTA funds with interest earned at the rate earned by NVTA no later than sixty (60) days after the date of termination.

D. Dispute

In the event of a dispute under this Agreement, the parties agree to meet and confer in order to ascertain if the dispute can be resolved informally without the need of a third party or judicial intervention. NVTA's Executive Director and WMATA's Chief Executive Officer or Chief Administrative Officer shall be authorized to conduct negotiations on behalf of their respective entities. If a resolution of the dispute is reached via a meet and confer dispute resolution method, it shall be presented to NVTA and to WMATA's governing body for formal confirmation and approval. If no satisfactory resolution can be reached via the meet and confer method, either party is free to pursue whatever remedies it may have at law, including all judicial remedies.

E. NVTA's Financial Interest in Project Assets

WMATA agrees to use the real property and appurtenances and fixtures thereto, capital assets, equipment and all other transportation facilities that are part of the Project and funded by NVTA under this Agreement ("Project Assets") for the designated transportation purposes of the Project under this Agreement and in accordance with applicable law throughout the useful life of each Project Asset. NVTA shall retain a financial interest in the value of each of the of the Project Assets, whether any such Project Asset may have depreciated or appreciated, throughout its respective useful life proportionate to the amount of the cost of the Project Asset funded by NVTA under this

Agreement. In the event that WMATA fails to use any of the Project Assets funded under this Agreement for the transportation purposes as authorized by this Agreement or applicable law throughout its respective useful life, WMATA shall refund to NVTA with interest at the rate earned by NVTA the amount attributable to NVTA's proportionate financial interest in the value of said Project Asset. If WMATA refuses or fails to refund said monies to NVTA, NVTA may recover its proportionate financial interest from WMATA by pursuit of any remedies available to NVTA, including but not limited to NVTA's withholding of commensurate amounts from future distributions of NVTA funds to WMATA.

F. Appropriations Requirements

1. Nothing herein shall require or obligate any party to commit or obligate funds to the Project beyond those funds that have been duly authorized and appropriated by their respective governing bodies.

2. The parties acknowledge that all funding provided by NVTA pursuant to Chapter 766 is subject to appropriation by the Virginia General Assembly. The parties further acknowledge that: (i) the moneys allocated to the NVTA Fund pursuant to Va. Code Ann. Sections 58.1-638, 58.1-802.2, and 58.1-1742 and any other moneys that the General Assembly appropriates for deposit into the NVTA Fund are subject to appropriation by the General Assembly and (ii) NVTA's obligations under this Agreement are subject to such moneys being appropriated for deposit in the NVTA Fund by the General Assembly.

G. Notices

All notices under this Agreement to either party shall be in writing and forwarded to the other party by U.S. mail, care of the following authorized representatives:

1) to: NVTA, to the attention of its Executive Director;
3040 Williams Drive, Suite 200
Fairfax, VA 22031

2) to WMATA, to the attention of General Manager/
600 Fifth Street NW
Washington, DC 20001 (address)

H. Assignment

This Agreement shall not be assigned by either party unless express written consent is given by the other party.

I. Modification or Amendment

This Agreement may be modified, in writing, upon mutual agreement of both parties.

J. No Personal Liability or Creation of Third Party Rights

This Agreement shall not be construed as creating any personal liability on the part of any officer, employee, or agent of the parties; nor shall it be construed as giving any rights or benefits to anyone other than the parties hereto.

K. No Agency

WMATA _____ represents that it is not acting as a partner or agent of NVTA; and nothing in this Agreement shall be construed as making any party a partner or agent with any other party.

L. Sovereign Immunity

This Agreement shall not be construed as a waiver of either party's sovereign immunity rights.

M. Incorporation of Recitals

The recitals to this Agreement are hereby incorporated into this Agreement and are expressly made a part hereof. The parties to this Agreement acknowledge and agree that such recitals are true and correct.

N. Mutual Preparation and Fair Meaning

The parties acknowledge that this Agreement has been prepared on behalf of all parties thereto and shall be construed in accordance with its fair meaning and not strictly construed for or against either party.

O. Governing Law

This Agreement is governed by the laws of the Commonwealth of Virginia.

IN WITNESS WHEREOF, each party hereto has caused this Agreement to be executed as of the day, month, and year first herein written by their duly authorized representatives.

Northern Virginia Transportation Authority

By:_____

Date:_____

Washington Metropolitan Area Transit Authority (WMA (Name of Recipient Entity)

By: Paul J. Wiedefeld

Date: 12/13/16

Appendix A –Narrative Description of Project (Attach Project Description Form)

NVTA Project Title: Blue Line Traction Power Upgrades – 8FF (include alpha-numeric project id)

Recipient Entity: Washington Metropolitan Area Transit Authority (WMATA)

Project Manager Contact Information: Kelly Reahl, 202-309-9295

Table A-1 Project Changes

The actual project submitted for NVTA funding – traction power upgrades on the Blue Line – is accurately described in the Approved NVTA Project Description Form. However, the project phases have shifted from FY17-FY18 to FY18-FY19. Expenditures by project phase and month have been adjusted accordingly. The overall project cost and the NVTA share have not changed. The most recent cash flow/expenditures model is attached as Appendix B.

As has been noted previously, upgrading traction power is one of several related components necessary to operate full eight-car trains. The other improvements required for full eight-car service include acquisition of new rolling stock (in excess of maintaining the current fleet and replacing aging railcars); expanded rail yards and maintenance facilities; automatic train control systems; and expanded stations in the system's core. Identification of and preliminary planning for all these components began with multiple studies culminating in *Momentum,* Metro's ten-year strategic plan adopted by the Board in 2013. They were then studied in greater detail in the *Eight-Car Train Implementation Plan,* completed in May 2014.

The NVTA traction power upgrades project **is required** to safely and consistently operate eight-car consists on the Blue Line. And as required, the District of Columbia and Maryland have agreed to match the NVTA traction power upgrades for the Blue Line. However, as noted, traction power upgrades **alone** will not expand system capacity. At NVTA staff's request, prior to the Authority's adoption of the FY17 Program, an estimate for the incremental number of new railcars that would be required to run eight-car trains was provided, as well as a rough cost estimate for the acquisition of those cars. That estimate was twelve cars for active service and two for spares, at an estimated cost of $26,481,098.

Though Metro's jurisdictional partners have not agreed to provide funding for "expansion" railcars in the current CIP, the 7000-series railcar procurement does include 28 railcars more than is necessary for fleet replacement/state of good repair, currently scheduled for delivery in FY22 and FY23. Some portion of those 28 railcars could be used for eight-car consists on the Blue Line, but they may also be used for other purposes. The final use and disposition of those railcars will be subject to Board action and an updated rail fleet management plan.

The railcar cost estimate should be treated as an informational element, rather than as a component of the traction power upgrades project. Project costs should be described accordingly. Supporting explanatory materials are attached as Appendix F.

Table A-2 Project Milestone Changes
Only Complete if Different from the Approved NVTA Project Description Form Attached The project schedule and milestones have shifted in accordance with the Board's action on related budget items. A table listing the revised milestones is attached after this page, and before the NVTA Project Description. These changes are also reflected in the cash-flow model attached as Appendix B.

Signature: _____
General Manager/Chief Executive Officer

Date: 12/13/16

Revised: 4/14/2016

Project Milestones	Timeframe
WMATA in-house design and development	November 2015 - August 2016
Anticipated contract release date	February 2017
Anticipated proposals due	March 2017
Anticipated Notice to Proceed	June 2017
Equipment fabrication	July 2017 - March 2018
Begin installation	January 2018
Finish installation	February 2019
Project close-out	March 2019

Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

Project Description Form – 8FF

Basic Project Information

Submitting Jurisdiction/Agency: Washington Metropolitan Area Transit Authority

Project Title: Blue Line Traction Power Upgrades

Project Location: This project is one portion of Metro's system-wide traction power upgrade initiative, and is focused on the Metrorail Blue Line. The project components being submitted for NVTA funding include five Tie-Breaker Stations (TBS) and one DC Switchgear (DC Gear) installation in Northern Virginia, along the Blue Line corridor between the Pentagon Station and the Franconia-Springfield Station. Please see the attached project location maps.



This work is a subset of traction power upgrades along the entire corridor. The full Blue Line traction power upgrade project consists of seven Tie-Breaker Stations (TBS), four Traction Power Sub-Stations (TPSS), and two Direct-Current Switchgear (DC Gear) installations.

Project Description: Traction power upgrades incrementally improve the output of the Metrorail power system, increasing power supply in order to support consistent deployment of eight-car trains. Increasing from six to eight cars per train results in an increase in the traction power needed by each train, as well as the load put on the traction power system. This portion of Metro's system-wide traction power upgrade project will focus on the Blue Line, and includes the purchase and installation of tie breaker equipment, power substations, and direct-current gear. Metro is applying for NVTA FY17 funds to support the fabrication and installation of five Tie-Breaker Stations (TBS) and one Direct-Current Switchgear (DC Gear) installation in Northern Virginia, between the Pentagon and Franconia-Springfield Metrorail Stations.

Project Analysis Summary*

NVTA Quantitative Score	65.61		Rank	4
Congestion Reduction Relative to Cost Ratio (NVTA Share)	1.29	hours saved/$	Rank	3
Congestion Reduction Relative to Cost Ratio (Total Cost)	0.25	hours saved/$	Rank	10

*Detailed scoring information can be found at: http://www.thenovaauthority.org/planning-programming/fy2017-program/

Project Milestones

Project Milestones by Project Phase:

- **WMATA In-house Design & Development:** November 2015 – March 2016
- **Anticipated Contract Release Date:** April 2016
- **Anticipated Bid Opening:** May 2016
- **Anticipated Notice to Proceed:** June 2016
- **Equipment Fabrication:** June 2016 – December 2016
- **Begin Installation:** December 2016
- **Finish Installation:** November 2017

Project Cost

Requested NVTA FY2017 Funds: $17,443,951

Total Cost to Complete Project: Revised from $62,144,466 to $88,625,564 to include cost of additional rolling stock.

Project Phases	Requested NVTA FY2017 Funds	Other Sources of Funding	Total Cost by Phase
Inside Engineering	$1,141,148 (FY2017) $726,057 (FY2018)	$2,585,845	$4,453,050 (FY2017-18)
Escort Support	$1,141,098 (FY2017) $1,347,168 (FY2018)	$4,434,255	$6,922,521 (FY2017-18)
Construction	$3,838,467 (FY2017) $4,798,083 (FY2018)	$30,892,275	$39,528,825 (FY2017-18)
Contract Administration	$2,880,408 (FY2017) $1,571,522 (FY2018)	$6,788,140	$11,240,070 (FY2017-18)
Other (Acquisition of rolling stock)		~~$0~~ $26,481,098	~~$0~~ $26,481,098
TOTAL	**$17,443,951**	**~~$44,700,515~~** **$71,181,613**	**~~$62,144,466~~** **$88,625,564**

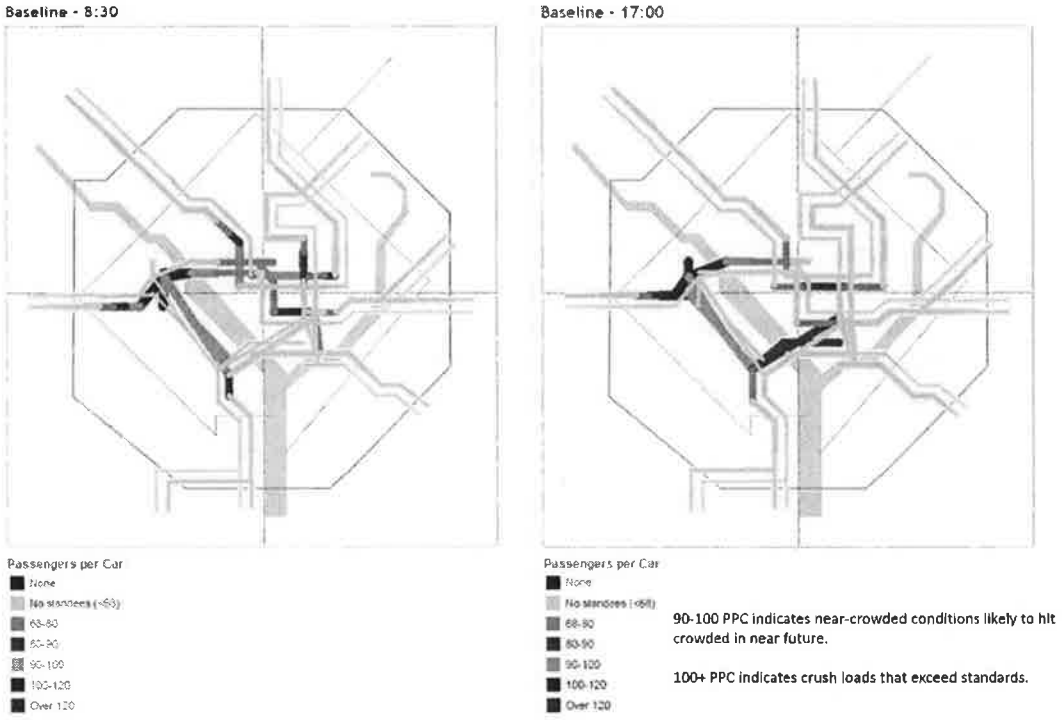
Project Impacts

What regional benefit(s) does this project offer? Both trains and station platforms are overcrowded during peak travel periods, particularly in the system's core. This severe and worsening capacity constraint adds unexpected dwell time, reduces reliability and on-time performance, and negatively impacts the

customer experience and perceptions of Metrorail service. This situation is particularly pressing on the Blue Line, which had its service headways reduced following integration of Silver Line service through the Rosslyn Tunnel. Absent additional service capacity, this situation will only worsen as the region continues to grow. The National Capital Region is forecasted to experience a 30-percent increase in population and a 39-percent increase in jobs over the next 30 years. Comparatively rapid growth in suburban areas will add pressure to the Metrorail system's core, which is already strained. In order to accommodate forecasted growth and alleviate the system's crowding/capacity issues, Metro and its jurisdictional partners adopted the *Momentum* strategic plan. *Momentum* recommends funding and implementation of seven key capital investments by 2025, including the traction power and rolling stock needed to deploy eight-car trains on a continuous basis. Successful implementation of the eight-car service strategy will reduce severe crowding of trains and platforms, make the system safer to use, improve the rail customer experience, and reduce road congestion throughout the region by making the Metrorail system an even more attractive, comfortable, timely, and safe alternative to driving.

How will the project reduce congestion? The Metro System serves approximately 1.2 million trips every day, and over 700,000 of those boardings are on Metrorail. Metrorail is the indispensable backbone of the region's transportation network and anchors the region's growth and economic competitiveness. On an average weekday, over 78,000 people board the system at stations along the corridor between Rosslyn and Franconia-Springfield; 78,000 people who might otherwise add their trips to the region's already overburdened roads and highways, particularly those connecting Northern Virginia and the District of Columbia. Implementing full eight-car train service on the Blue Line will not only alleviate intense rush-hour crowding on trains and platforms, it may also draw drivers from congested corridors like I-95, I-395, US 1, and I-66.

Running 100-percent eight-car trains consistently throughout Metrorail's peak travel periods will also greatly reduce the excessive crowding currently experienced by Blue Line customers. Under current capacity and power constraints, Metro can only deploy eight-car trains for 50% of peak-hour Blue Line trips. This has produced intense crowding in the morning and evening peak periods, with every peak train carrying near Metro's established threshold for crowded conditions of 100 people per car (PPC) between Arlington and Rosslyn, then exceeding that threshold into crush loads of 115 PPC through the Rosslyn Tunnel and Foggy Bottom Station. The figure below illustrates crowded Metrorail segments during peak periods. Metro may not be able to increase service frequency on the Blue Line without additional tunnel and track infrastructure that alleviates congestion on the shared Blue/Orange/Silver corridor, but the ability to operate eight-car trains for each peak-period trip will help alleviate excessive crowding on trains and platforms. That congestion relief will in turn help reduce dwell times at stations.



Reference:
https://public.tableau.com/views/CNEWSAlphaEffectsonLineLoad/EffectofCNEWS?:embed=y&:display_count=yes&:showTabs=y

How will the project increase capacity? With Metro operating 100-percent eight-car trains (the longest consist possible), trains entering the region's core (downtown DC and eastern Arlington County) could accommodate approximately 35,000 more passengers per hour during rush hour. 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. The traction power elements currently in place along the Blue Line corridor are capable of continuously powering six-car trains, as well as occasional eight-car consists during limited periods, but do not produce or conduct enough power to operate eight-car trains on a continuous and consistent basis.

How will the project improve auto and pedestrian safety? Reduced congestion and additional capacity on Metrorail will increase its attractiveness to choice riders, 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.

How will the project improve regional connectivity? As a capacity upgrade to an existing rail corridor, this project will not expand *physical* access to additional activity centers. However, by expanding capacity,

reducing congestion, and providing a more comfortable customer experience, it will create more room and reason for new riders to use the corridor, and in doing so expand their access and mobility to all the activity centers along the corridor between Springfield, Rosslyn, Downtown DC, and Largo Town Center.

How will the project improve bicycle and pedestrian travel options? Metro allows customers to bring bicycles on board trains outside of peak travel hours, and provides bike parking at most stations. Reducing crowding on trains and platforms opens additional capacity to bike-and-ride passengers, which in turn greatly expands their travel shed. That travel shed can be expanded even farther via Metrobus connections at Blue Line stations. In general, providing more customer carrying capacity on Metrorail expands accessibility and travel options for bicyclists and pedestrians, as well as providing a safer option for longer trips.

How will the project improve the management and operation of existing facilities through technology applications? One component of the eight-car train program is returning Metrorail operations to Automated Train Control (ATC), which is proven to provide more efficient and timely travel, smoother stops, and safer spacing between trains.

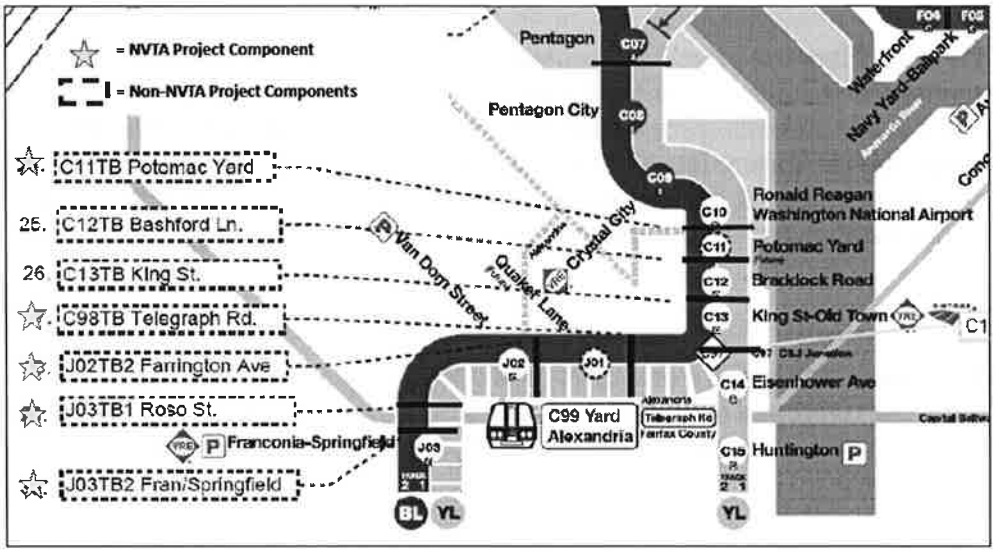
Additional Information in Support of This Project

Momentum Strategic Plan - http://www.wmata.com/momentum/momentum-full.pdf

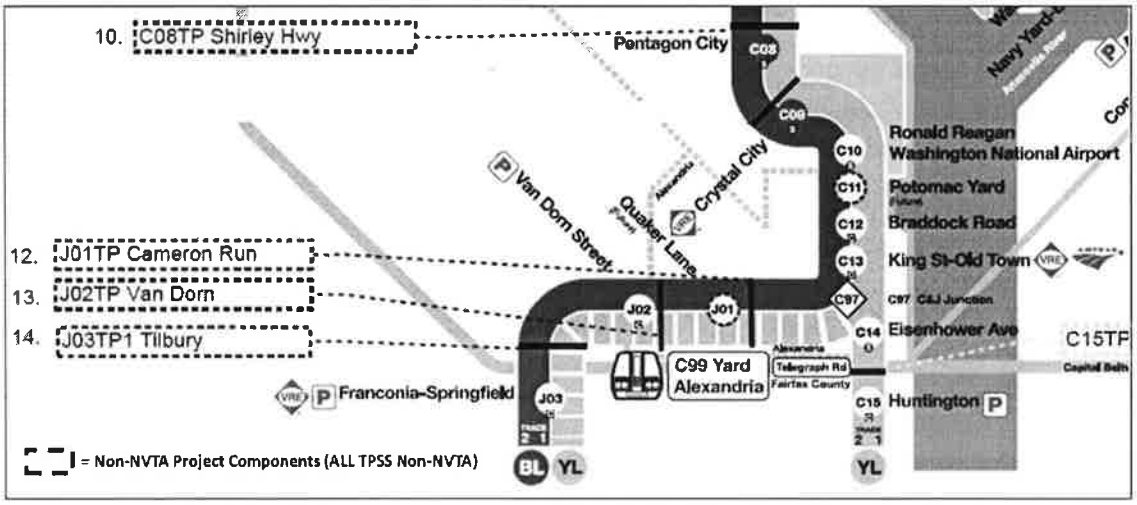
Specific benefits of full 8-car trains can be found here: http://www.wmata.com/momentum/metro2025-1-longest-trains.pdf

Fiscal Year 2016 Annual Budget - http://www.wmata.com/about_metro/docs/Proposed%20Fiscal%20Year%202015%20Annual%20Budget.pdf

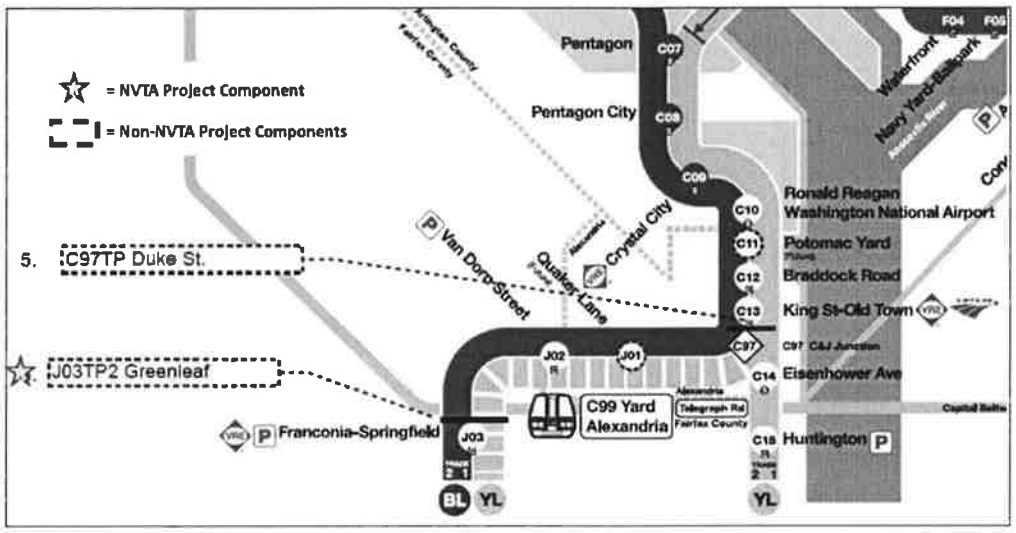
Blue Line Traction Power Upgrades
Tie-Breaker Station (TBS) Locations



Blue Line Traction Power Upgrades
Traction Power Sub-station (TPSS) Locations



Blue Line Traction Power Upgrades
Direct-Current Switch Gear (DC Gear) Locations



Blue Line Traction Power Upgrades
Eight-Car Trains and Traction Power Components











APPENDIX B-PROJECT BUDGET & CASH FLOW
PROJECT IDENTIFICATION AND PROPOSED FUNDING

NVTA Project Title: Blue Line Traction Power Upgrades - 8FF
Recipient Entity: WMATA
Project Contact Information: Kelly Reahl, 202-309-9295

NVTA Use:	
Date Received:	
Funding Program:	
Project #:	
Ledger Account #:	
Revision Date:	
Recv'd Certificate of Ins:	

TABLE B-1 PROJECT COSTS & FUNDING SOURCE

Project Cost Category	Total Project Costs	Approved NVTA Project Funds	Amount of Other Sources of Funds	List of Other Sources of Funds *(For each cost category include all other funding sources; list each source of funds on a separate line for each cost category)*
Inside Engineering	$ 4,453,050.00	$ 1,867,205	$ 2,585,845	DC and MD system performance funds (local match)
Escort Support	$ 6,922,521	$ 2,488,266	$ 4,434,255	DC and MD system performance funds (local match)
Construction	$ 39,528,825	$ 8,636,550	$ 30,892,275	DC and MD system performance funds (local match)
Contract Administration	$ 11,240,070	$ 4,451,930	$ 6,788,140	DC and MD system performance funds (local match)
Total Estimated Cost	$ 62,144,466	$ 17,443,951	$ 44,700,515	

TABLE B-2 PROJECT CASH FLOW PER FISCAL YEAR AND COST CATEGORY *FOR NVTA FUNDS ONLY*

Project Cost Category	Total FY2017 Project Funds	Total FY2018 Project Funds	Total FY2019 Project Funds	Total FY2020 Project Funds	Total FY2021 Project Funds	Total FY2022 Project Funds
Inside Engineering		$ 933,602	$ 933,603			
Escort Support		$ 1,236,330	$ 1,251,936			
Construction		$ 4,318,275	$ 4,318,275			
Contract Administration		$ 2,225,965	$ 2,225,965			
Total Estimated Cost	$ -	$ 8,714,172	$ 8,729,779	$ -	$ -	$ -

Please Note: If additional years are needed, please submit a separate form with additional columns

TABLE B-3 MONTHLY/QUARTERLY PROJECT CASH FLOW *FOR NVTA FUNDS ONLY*

Month	FY2017 Monthly Cash Flow	FY2018 Quarterly Cash Flow	FY2019 Quarterly Cash Flow	FY2020 Quarterly Cash Flow	FY2021 Quarterly Cash Flow	FY2022 Quarterly Cash Flow
July		$ 263,296	$ 969,975			
August		$ 263,296	$ 969,975			
September		$ 263,296	$ 969,975			
October		$ 880,476	$ 969,975			
November		$ 880,476	$ 969,975			
December		$ 880,476	$ 969,976			
January		$ 880,476	$ 969,976			
February		$ 880,476	$ 969,976			
March		$ 880,476	$ 969,976			
April		$ 880,476				
May		$ 880,476				
June		$ 880,476				
Total per Fiscal Year	$ -	$ 8,714,172	$ 8,729,779	$ -	$ -	$ -

Please Note: If additional years are needed, please submit a separate form with additional columns
The Total Amounts in Table B-2 and Table B-3 must agree to the total NVTA Funds listed in Table B-1
The total of each Fiscal Year must match in Table B-2 and Table B-3

This attachment is certified and made an official attachment to the Standard Project Agreement document by the parties of this agreement.

Recipient Entity	**Northern Virginia Transportation Authority**	**Northern Virginia Transportation Authority**
Signature	Signature	Signature
Managing Director, OMBS	NVTA Executive Director	NVTA Chief Financial Officer
Title	Title	Title
12/13/2016		
Date	Date	Date

Thomas Webster
Print name of person signing

Revised: 4/13/2016

APPENDIX D-Tax Covenants

TAX COVENANTS
(For Bond Funded Projects Only)

The Recipient Entity will not permit more than five percent of the total amount of NVTA Bond Proceeds or the Financed Property to be used directly or indirectly (i) for a Private Business Use or (ii) to make or finance loans to Nongovernmental Persons. Any transaction that is generally characterized as a loan for federal income tax purposes is a "loan" for purposes of this paragraph. In addition, a loan may arise from the direct lending of NVTA Bond Proceeds or may arise from transactions in which indirect benefits that are the economic equivalent of a loan are conveyed, including any contractual arrangement which in substance transfers tax ownership and/or significant burdens and benefits of ownership.

The Recipient Entity agrees not to requisition or spend NVTA Bond Proceeds for any Project Cost not constituting a Capital Expenditure.

Except as may be described in Appendix B, the Recipient Entity neither has on the date of this Agreement nor expects to have after this date any funds that are restricted, segregated, legally required or otherwise intended to be used, directly or indirectly, for the purposes for which the Recipient Entity is receiving NVTA Bond Proceeds.

The Recipient Entity acknowledges that it may have to provide detailed information about the investment of the amount of any requisition unless (i) payments are remitted directly by NVTA to the contractors/vendors or (ii) the Recipient Entity remits payment to the contractors/vendors within five banking days after the date on which NVTA advances the amount of the requisition. NVTA may request the detailed information in order to compute the rebate liability to the U.S. Treasury on NVTA's bonds or other debt financing pursuant to Section 148 of the Internal Revenue Code of 1986, as amended (the "Code").

"Capital Expenditure" means any cost of a type that is properly chargeable to capital account (or would be so chargeable with (or but for) a proper election or the application of the definition of "placed in service" under Treas. Reg. § 1.150-2(c)) under general federal income tax principles, determined at the time the expenditure is paid.

"Federal Government" means the government of the United States and its agencies or instrumentalities.

"Financed Property" means the property financed by the NVTA Bond Proceeds.

"General Public Use" means use of Financed Property by a Nongovernmental Person as a member of the general public. Use of Financed Property by a Nongovernmental Person in a Trade or Business is treated as General Public Use only if the Financed Property is intended to be available and in fact is reasonably available for use on the same basis by natural persons not

engaged in a Trade or Business. Use under arrangements that convey priority rights or other preferential benefits is not use on the same basis as the general public.

"Governmental Person" means any Person that is a state or local governmental unit within the meaning of Section 141 of the Code (or any instrumentality thereof).

"NVTA Bond Proceeds" means, as used herein, the sale proceeds of any NVTA bonds or other debt instrument and the investment earnings on such proceeds, collectively.

"Nongovernmental Person" mean any Person other than a Governmental Person. For the purposes hereof, the Federal Government is a Nongovernmental Person.

"Person" means any natural person, firm, joint venture, association, partnership, business trust, corporation, limited liability company, corporation or partnership or any other entity (including the Federal Government and a Governmental Person).

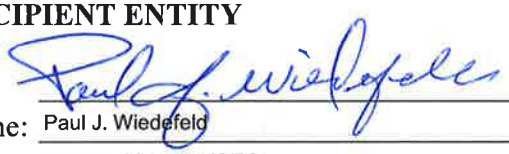
"Private Business Use" means a use of the NVTA Bond Proceeds directly or indirectly in a Trade or Business carried on by a Nongovernmental Person other than General Public Use. For all purposes hereof, a Private Business Use of any Financed Property is treated as a Private Business Use of NVTA Bond Proceeds. Both actual and beneficial use by a Nongovernmental Person may be treated as Private Business Use under Section 141 of the Code. In most cases, however, Private Business Use results from a Nongovernmental Person having special legal entitlements to use the Financed Property under an arrangement with the Recipient Entity. Examples of the types of special legal entitlements resulting in Private Business Use of Proceeds include (i) ownership for federal tax purposes of Financed Property by a Nongovernmental Person and (ii) actual or beneficial use of Financed Property by a Nongovernmental Person pursuant to a lease, a Service Contract, an incentive payment contract or certain other arrangements such as a take-or-pay or other output-type contract. Private Business Use of the Financed Property may also be established on the basis of a special economic benefit to one or more Nongovernmental Persons even if such Nongovernmental Persons do not have a special legal entitlement to the use of the Financed Property. Any arrangement that is properly characterized as a lease for federal income tax purposes is treated as a lease for purposes of the Private Business Use analysis. An arrangement that is referred to as a management or Service Contract may nevertheless be treated as a lease, and in determining whether a management or service contract is properly characterized as a lease, it is necessary to consider all of the facts and circumstances, including (i) the degree of control over the property that is exercised by a Nongovernmental Person, and (ii) whether a Nongovernmental Person bears risk of loss of the Financed Property. Private Business Use of Financed Property that is not available for General Public Use may also be established on the basis of a special economic benefit to one or more Nongovernmental Persons even if such Nongovernmental Persons do not have a special legal entitlement to the use of the Financed Property. In determining whether special economic benefit gives rise to Private Business Use, it is necessary to consider all of the facts and circumstances, including one or more of the following factors: (i) whether the Financed Property is functionally related or physically proximate to property used in the Trade or Business of a Nongovernmental Person, (ii) whether only a small number of Nongovernmental Persons receive the economic benefit, and

(iii) whether the cost of the Financed Property is treated as depreciable by the Nongovernmental Person.

"Service Contract" means a contract under which a Nongovernmental Person will provide services involving all, a portion or any function of any Financed Property. For example, a Service Contract includes a contract for the provision of management services for all or any portion of Financed Property. Contracts for services that are solely incidental to the primary governmental function or functions of Financed Property (for example, contracts for janitorial, office equipment repair, billing, or similar services) are not included in this definition. Additional contracts not included in this definition are (i) a contract to provide for services by a Nongovernmental Person in compliance with Revenue Procedure 97-13, 1997-1 C.B. 632, as modified by Revenue Procedure 2001-39, I.R.B. 2001-28, (ii) a contract to provide for services by a Nongovernmental Person if the only compensation is the reimbursement of the Nongovernmental Person for actual and direct expenses paid by the Nongovernmental Person to unrelated parties and (iii) a contract to provide for the operations by a Nongovernmental Person of a facility or system of facilities that consists predominately of public utility property (within the meaning of Section 168(i)(10) of the Code), if the only compensation is the reimbursement of actual and direct expenses of the Nongovernmental Person and reasonable administrative overhead expenses of the Nongovernmental Person.

"Trade or Business" has the meaning set forth in Section 141(b)(6)(B) of the Code, and includes, with respect to any Nongovernmental Person other than a natural person, any activity carried on by such Nongovernmental Person. "Trade or Business" for a natural person means any activity carried on by such natural person that constitutes a "trade of business" within the meaning of Section 162 of the Code.

RECIPIENT ENTITY

By: 

Name: Paul J. Wiedefeld

Title: General Manager/CEO

Date: 12/13/16

Appendix E -Authorization of designee(s)

Attach this page to the recipient governing body's authorization for their respective designee(s) to execute the Standard Project Agreement and Tax Covenant (if applicable) on their behalf(s) as evinced by entity's clerk's minutes.

Submission of the original signed or certified copy of the governing body's authorization is required

Revised: 2/17/2016

CERTIFICATION

I hereby certify that at its December 17, 2015 meeting, in a motion by Ms. Tregoning, seconded by Mr. Euille, the voting recorded as follows: Mr. Downey– Aye, Mr. Goldman – Aye, Mr. Euille – Aye, Mr. Bulger – Aye, Ms. Tregoning – Aye, Mr. Corcoran – Aye, Ms. Harley– Aye, and Mr. Dormsjo – Aye, the Washington Metropolitan Area Transit Authority Board of Directors approved the attached 2015-66 Resolution,

"SUBJECT: **Supporting Application Northern Virginia Transportation Authority Fiscal Year 2017 Program Funds to Support Traction Power Upgrades on the Blue Line"**

Given under my hand this 16th day of December 2016.

Jennifer Ellison
Board Corporate Secretary

Washington Metropolitan Area Transit Authority

600 Fifth Street, NW
Washington, DC 20001
202/962-1234

By Metrorail:
Judiciary Square—Red Line
Gallery Place-Chinatown—Red, Green and Yellow Lines
By Metrobus:
Routes D1, D3, D6, P6, 70, 71, 80, X2

A District of Columbia, Maryland and Virginia Transit Partnership

PRESENTED AND ADOPTED: December 17, 2015

SUBJECT: SUPPORTING APPLICATION NORTHERN VIRGINIA TRANSPORTATION AUTHORITY FISCAL YEAR 2017 PROGRAM FUNDS TO SUPPORT TRACTION POWER UPGRADES ON THE BLUE LINE

2015-66

RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

WHEREAS, The Northern Virginia Transportation Authority (NVTA) is authorized to fund certain transportation capital improvement projects within Northern Virginia's Planning District Eight; and

WHEREAS, Certain projects within the Washington Metropolitan Area Transit Authority's (WMATA) annual capital program are qualified uses for NVTA funding, such that WMATA may be the sponsoring entity for an NVTA-funded project; and

WHEREAS, The NVTA is currently in the process of receiving and evaluating potential projects for its Fiscal Year (FY) 2017 funding cycle; and

WHEREAS, The NVTA requires jurisdictions and agencies to include a Board resolution supporting an application for FY2017 funds; and

WHEREAS, WMATA is required to submit this resolution as soon as possible to support its application; and

WHEREAS, Resolution 2015-34 establishes a policy regarding the use of NVTA funding to satisfy Northern Virginia localities' contributions to WMATA capital programs; and

WHEREAS, WMATA intends to apply for $17.4 million for Metrorail traction power upgrades on the Blue Line in Virginia to improve service reliability and support full deployment of eight-car trains during peak periods; and

WHEREAS, Resolution 2015-34 requires Board of Directors approval to allow the General Manager/Chief Executive Officer (GM/CEO) to negotiate and execute a Standard Project Agreement between WMATA and NVTA; now, therefore be it

RESOLVED, That the Board of Directors supports WMATA's application to NVTA for FY2017 funding for Blue Line traction power upgrades, subject to a future decision by

Motioned by Ms. Tregoning, seconded by Mr. Euille
Ayes: 8 – Mr. Downey, Mr. Goldman, Mr. Euille, Mr. Bulger, Ms. Tregoning, Mr. Corcoran, Ms. Harley and Mr. Dormsjo

this Board as to whether the project will receive necessary matching funding in WMATA's FY2017 Annual Work Plan; and be it further

RESOLVED, That the Board of Directors acknowledges that, in accordance with NVTA Resolution No. 14-08 (adopted January 23, 2014), no NVTA funds will be released to WMATA for the funding of these projects unless and until such time as the Board formally approves such projects as part of WMATA's FY2017 Annual Work Plan; and be it further

RESOLVED, That subject to future Board of Directors action approving a FY2017 Annual Work Plan that includes necessary matching funding for the project, the GM/CEO is authorized to negotiate and execute a Standard Project Agreement upon award of the requested funding by NVTA; and be it finally

RESOLVED, That in order to meet the submission deadline established by NVTA, this Resolution shall be effective immediately.

Reviewed as to form and legal sufficiency,

Mark R. Pohl
Acting General Counsel

WMATA File Structure No.:
4.3.2 Jurisdictional Funding Agreements

CERTIFICATION

I hereby certify that at its November 17, 2016 meeting, in a motion by Mr. Goldman, seconded by Mrs. Hudgins, the voting recorded as follows: Mr. Evans – Aye, Ms. Harley – Aye, Mr. Corcoran – Aye, Mr. Strickland – Aye, Mr. Price – Aye, Mr. Goldman – Aye, Mrs. Hudgins – Aye, and Ms. Carmody – Aye, the Washington Metropolitan Area Transit Authority Board of Directors approved the attached 2016-48 Resolution,
"SUBJECT: **Amendment to Fiscal Year 2017-2021 Capital Improvement Program.**"

Given under my hand this 16th day of December 2016.

Jennifer Ellison
Board Corporate Secretary

Washington Metropolitan Area Transit Authority

600 Fifth Street, NW
Washington, DC 20001
202/962-1234

By Metrorail:
Judiciary Square—Red Line
Gallery Place-Chinatown—Red, Green and Yellow Lines
By Metrobus:
Routes D1, D3, D6, P6, 70, 71, 80, X2

A District of Columbia, Maryland and Virginia Transit Partnership

PRESENTED AND ADOPTED: November 17, 2016

SUBJECT: AMENDMENT TO FISCAL YEAR 2017-2021 CAPITAL IMPROVEMENT PROGRAM

2016-48

RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

WHEREAS, The Washington Metropolitan Area Transit Authority (WMATA) has identified certain capital program investment areas that are ahead of schedule and will incur higher than expected expenses in Fiscal Year (FY) 2017, as well as other program areas that are behind schedule and will incur lower than expected expenses; and

WHEREAS, The Railcar Acquisition program, which has an approved FY2017 budget of $203.8 million, requires additional budget authority due to the accelerated delivery of new 7000 series railcars above the rate assumed in the FY2017 capital budget; and

WHEREAS, The Fixed Rail program, which has an approved FY2017 budget of $78.9 million, requires additional budget authority due to the ongoing SafeTrack program that was initiated in June 2016 (after the FY2017 budget was adopted) to accelerate track work to address safety recommendations and rehabilitate the Metrorail system to improve safety and reliability; and

WHEREAS, The Propulsion program, which has an approved FY2017 budget of $39.8 million, and the Signals & Communication program, which has an approved FY2017 budget of $64.5 million, are not expected to fully achieve their planned expenditures in FY2017, due to schedule delays; and

WHEREAS, The Platforms & Structures program, which has an approved FY2017 budget of $46.4 million, is expected to expend more budget than originally planned as a result of negotiated contract modifications; and

WHEREAS, In July 2016, WMATA was awarded $17.4 million from the Northern Virginia Transportation Authority (NVTA) to support Metrorail traction power upgrades on the Blue Line in Northern Virginia, and a Special Project Agreement (SPA) must be executed between WMATA and NVTA before the funds can be released; and

WHEREAS, In accordance with Board Resolution 2015-66, the General Manager/Chief Executive Officer (GM/CEO) is authorized to execute a SPA for the NVTA funding, subject

Motioned by Mr. Goldman, seconded by Mrs. Hudgins
Ayes: 8 – Mr. Evans, Ms. Harley, Mr. Corcoran, Mr. Strickland, Mr. Price, Mr. Goldman, Mrs. Hudgins and Ms. Carmody

to approval of an FY2017-2022 Capital Improvement Program (CIP) that includes the necessary matching funding for the project; and

WHEREAS, The FY2017-2022 CIP includes $62.1 million in planned expenditures on Blue Line traction power upgrades in FY2018 and FY2019 within the Propulsion program, with these expenditures planned to be funded through future state/local System Performance funds; now, therefore be it

RESOLVED, That the FY2017 CIP budget for Railcar Acquisition is amended to increase total budget authority for the program by $90.0 million to $293.8 million to support accelerated delivery of new 7000 series railcars; and be it further

RESOLVED, That the FY2017 CIP budget for Fixed Rail is amended to increase total budget authority for the program by $60.0 million to $138.9 million to support ongoing SafeTrack efforts; and be it further

RESOLVED, That the additional budget authority for these programs shall be funded in FY2017 through the utilization of WMATA's short-term lines of credit (LOC) and/or other short-term debt instruments as shall be deemed appropriate by the GM/CEO and the Chief Financial Officer (CFO), and subject to any required Board of Directors approvals; and be it further

RESOLVED, That the short-term financing utilized in FY2017 shall be paid off in FY2018 through additional jurisdictional contributions and/or through the issuance of long-term debt; and be it further

RESOLVED, That the FY2017 CIP budget is amended to reprogram $13.0 million of total budget authority into Platforms & Structures, increasing the total budget for that program to $59.4 million, and that the FY2017 budgets for Propulsion and for Signals & Communication are reduced by $7.0 million (to $32.8 million) and $6.0 million (to $54.8 million), respectively, such that the net funding impact of the reprogramming action on the FY2017 CIP is zero; and be it further

RESOLVED, That the Financial Plan for the FY2017-2022 CIP shall be modified to incorporate $17.4 million of NVTA funding for traction power upgrades and $44.7 million of matching funds from the District of Columbia and the State of Maryland in FY2018 and FY2019, with total system performance funding in the same period reduced by the same total amount of $62.1 million, such that total state and local contributions within the CIP Financial Plan remain unchanged; and be it finally

RESOLVED, That because the requested budget amendment will impact the upcoming FY2018-2023 CIP to be presented to the Board of Directors for consideration in December 2016, and to ensure that 7000 series railcar deliveries and SafeTrack activities may continue without interruption, this Resolution shall be effective immediately.

Reviewed as to form and legal sufficiency,

Patricia Y. Lee
General Counsel

WMATA File Structure Nos.:
4.2.3 Budget Reprogramming
4.4.2 Grant Applications

Appendix F – Background Context: Traction Power, Rolling Stock, and 8-Car Trains

Phillips, Mark E.

From: Keith Jasper <Keith.Jasper@thenovaauthority.org>
Sent: Tuesday, August 23, 2016 11:08 AM
To: Phillips, Mark E.
Subject: RE: FY17 project Appendix B

Mark,

Thanks for reaching out. You are correct – the SPA Appendix B should not include the rolling stock as that is not funded through this project. For clarification purposes, we should consider adding a statement in Appendix A regarding the linkage between this project and the all 8-car trains project, which could include general schedule information. We are interested to understand corresponding information for the Orange Line also.

What's your schedule for progressing the SPA packet?

Keith

From: Phillips, Mark E. [mailto:MEPhillips@wmata.com]
Sent: Tuesday, August 23, 2016 10:32 AM
To: Keith Jasper <Keith.Jasper@thenovaauthority.org>
Subject: FY17 project Appendix B

Good morning, Keith. I have a somewhat random question for you. For the BL traction power project, will NVTA require us to include/project funding and acquisition schedule for rolling stock? I know the Authority requested we add that to the total project cost in order to have an informed vote, but it isn't really part of the discrete traction power capital project. I'm not sure I can separate out the spending/schedule for 14 cars from the overall 7000-series acquisition program. I think the SPA and Appendix B should focus on the discrete and specific project being funded, the purchase and installation of additional traction power components.

Thank you,

Mark Phillips
Regional Planning Group
WMATA Office of Planning
600 Fifth Street NW, 6F-08
Washington, DC 20001

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Phillips, Mark E.

From: Keith Jasper <Keith.Jasper@thenovaauthority.org>
Sent: Tuesday, May 03, 2016 4:34 PM
To: Phillips, Mark E.
Cc: Davis, Allison; Potts, Gregory W.
Subject: RE: Rolling stock for BL 100% 8-cars

Thanks Mark, this is really helpful. So $26,481,098 is the estimated total cost for 100% 8-car trains on the entire Blue Line (including 15% spares, no additional facilities), which we should add to the $62,144,466 total cost for the traction power upgrades project (regardless of funding sources)? Total project cost = $88,625,564.

Look forward to seeing you tomorrow.

Keith

From: Phillips, Mark E. [mailto:MEPhillips@wmata.com]
Sent: Tuesday, May 03, 2016 4:06 PM
To: Keith Jasper
Cc: Allison Davis; Gregory Potts
Subject: Rolling stock for BL 100% 8-cars

Hello, Keith. I'm responding to your earlier request for additional information on the rolling stock requirements for deploying 100% 8-car trains on the Blue Line, related to our application for traction power support. As we mentioned on the phone earlier, this estimate is based off the incremental increase in rail cars needed to hit 100% during peak hours, recognizing that we already schedule 50% 8-car trains on Blue during peak hours. Directly from our rail scheduling department, that schedule requires a total of 12 trains (due to end-to-end travel times, it takes 12 trains cycling through both directions to meet the 12-minute headways). 6 of those 12 trains are already 8-car consists. Deploying all 12 in 8-car consists will require 12 additional rail cars at $1,891,507 each, or $22,698,084. If you want to include spares, I can apply the current 15% spare ratio for an additional two cars, or 14 total cars at $26,481,098. I think we all agree not to include costs for additional O&M facilities as they're already included in the system-wide fleet management plan, CNI, and CIP, all of which are being updated.

Thank you,

Mark Phillips
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SAFETY, SERVICE AND FINANCIAL RESPONSIBILITY

FY2017 APPROVED BUDGET

EFFECTIVE JULY 1, 2016











FOCUSING ON THE CUSTOMER

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

Chapter 4 - FY2017 Capital Budget



7000 Series Railcars at Metro Center

Uses of Funds

The FY2017-2022 CIP includes $6 billion for safety-related and state of good repair investments. The approved FY2017 budget represents $950 million of this total. Approved FY2017 CIP investments are summarized in two tables. First, the investments are displayed by asset category, and then they are listed in detail by subcategory. In addition, the FY2017 capital budget includes $52.0 million in reimbursable projects that are listed later in this chapter.

Safety-Related Investments

The FY2017-2022 CIP proposes more than $1 billion in funding of safety-related investments, including full funding of all current NTSB recommendations and SMI requirements. The approved FY2017 budget contains $302 million for safety related investments, including but not limited to the following significant investments:

- Continuation of the replacement of the three hundred 1000-series railcars with the new 7000-series.
- Completion of the design work for the above ground elements of the new 700 MHz radio system and installation of cable trays along the Red Line.
- Completion of the project to replace all the Generation 2 track circuits in the rail system, which is a National Transportation Safety Board Recommendation and Safety Management Inspection corrective action.
- Installation of event recorders and reliability improvements to the Vehicle Monitoring Systems (VMS) on legacy fleets
- Development of automated processes to record maintenance and inspection activities for tunnel ventilation systems, drainage pumping stations, and other critical systems

State of Good Repair Investments

In addition to the safety investments, the FY2017-2022 CIP proposes nearly $5.0 billion in funding to repair and replace assets to bring them into a state of good repair.

Key state of good repair investments in this six year plan include:

- Continuation of on-going rehabilitation and replacement of track and rail structures to achieve a state of good repair and a steady state of maintenance
- Replacement, rehabilitation, and repair of railcars, in addition to the NTSB-directed replacement of the three hundred 1000-series railcars, including:
  - Replacement of the 4000-series railcars (100)
  - Replacement of the 5000-series railcars (192)
  - Purchase of additional 7000-series railcars (28)
  - Initiation of the replacement of the 2000/3000-series railcars
- Continuation of the railcar scheduled preventive maintenance and component replacement program that promotes a state of good repair and improves the safety and reliability of the vehicles
- Replacement, rehabilitation and repair of buses
  - Replacement of approximately 100 buses per year
  - Rehabilitation of approximately 100 buses per year
  - Continuous scheduled preventive maintenance on the entire bus fleet
- Procurement of approximately 180 MetroAccess vehicles per year
- Replacement of approximately 88 escalators
- Rehabilitation of approximately 188 escalators
- Rehabilitation of approximately 97 elevators
- Major investment in the replacement or refurbishment of fare gates and fareboxes
- Completion of the Orange/Blue line rehabilitation effort

The proposal includes $825 million for state of good repair investments in FY2017, including but not limited to the following significant investments:

- Continued rail line segment rehabilitation on the Orange/Blue Lines
- Increased investment in railcar rehabilitation program to rebuild railcar components to sustain the railcar lifecycle and improve reliability.
- Continued rehabilitation of Alexandria, Brentwood, and New Carrollton rail yards
- Full rehabilitation of 12 Metro stations and smaller scale rehabilitations of another 12 Metro stations
- Replacement of 22 escalators and rehabilitation of an additional 18 escalators
- Rehabilitation of 12 elevators
- Replacement of approximately 86 buses and the rehabilitation of another 100 buses
- Advancing the replacement of Southern Avenue and Royal Street bus garages with new facilities at Andrews Federal Campus and Cinder Bed Road
- Implementation of fare collection equipment replacement/refurbishment

Finacial Plan by Investment Category

(dollars in millions)	FY2017 -2022 Total	FY2018 Plan	FY2019 Plan	FY2020 Plan	FY2021 Plan	FY2022 Plan	6 Year Total
Railcar Investments	$353.6	$385.7	$371.4	$229.5	$221.2	$260.9	$1,822.3
Rail Systems Investments	$104.3	$162.0	$160.6	$140.1	$109.0	$111.8	$787.8
Track and Structures Rehabilitation Investments	$89.3	$107.9	$113.7	$116.8	$117.3	$120.7	$665.7
Stations and Passenger Facilities Investments	$133.0	$234.3	$179.6	$184.4	$124.2	$141.2	$996.7
Bus and Paratransit Investments	s$218.1	$259.1	$172.5	$218.1	$222.6	$217.5	$1,308.1
Business Support Investments	$51.6	$66.5	$59.7	$63.5	$56.4	$55.5	$353.2
Contingency	-	$13.2	$13.2	$13.2	$13.2	$13.2	$66.2
Total Capital Programs	**$950.0**	**$1,228.7**	**$1,070.9**	**$965.6**	**$863.9**	**$920.9**	**$6,000.0**

Appendix A - Capital Improvement Plan

FY2017-2022 Multi-Year Investments (dollars in millions)

Investment by Program	FY2017 Budget	FY2018 Plan	FY2019 Plan	FY2020 Plan	FY2021 Plan	FY2022 Plan	6 Year Total
Railcars							
1000 Series Rail Car Replacement	202.2	168.1	7.2	5.1	32.6	30.0	445.3
2000/3000 Series Rail Car Replacement	0.4	2.1	4.2	29.7	69.7	88.0	194.1
4000 Series Rail Car Replacement	-	96.0	54.0	2.4	1.3	21.4	175.1
Rail Car Acquisition (220 Railcars)	-	-	204.0	90.4	14.3	9.3	317.9
Test Track & Railcar Commissioning Facility	1.2	-	-	-	-	-	1.2
Railcar Acquisition	**203.8**	**266.2**	**269.4**	**127.6**	**117.9**	**148.7**	**1,133.6**
Railcar Rehabilitation Program	50.0	67.5	68.7	70.0	71.3	72.6	400.0
Rail Car Safety & Reliability Enhancements	5.0	6.5	4.3	3.9	3.9	3.9	27.6
Rail Preventive Maintenance	60.0	20.9	20.9	20.9	20.9	20.9	164.5
Railcar Maintenance/Overhaul	**115.0**	**94.9**	**93.9**	**94.8**	**96.1**	**97.5**	**592.1**
Rail Shop Repair Equipment	-	-	-	-	2.8	5.7	8.5
Rail Yard Facility Repairs	29.0	18.0	-	-	-	-	47.0
Rail Yard Hardening and Bus Security	1.5	1.5	-	-	-	-	3.0
7000 Series Rail Car HVAC Maintenance Facility	1.7	2.8	4.2	3.2	0.6	5.4	17.9
Storm Water Facility Assessment	0.2	2.3	3.8	3.8	3.8	3.8	17.8
Facilities Consolidation	2.4	-	-	-	-	-	2.4
Railcar Maintenance Facilities	**34.8**	**24.6**	**8.0**	**7.0**	**7.2**	**14.8**	**96.6**
Railcar Investments	**353.6**	**385.7**	**371.4**	**229.5**	**221.2**	**260.9**	**1,822.3**
Rail Systems							
Rail Power System Upgrades	17.5	33.8	29.4	29.8	33.4	40.5	184.4
AC Power Systems State of Good Repair	3.7	4.1	3.5	3.9	5.4	5.4	26.0
Traction Power State of Good Operations	18.6	10.3	11.3	11.7	10.3	9.3	71.3
Propulsion	**39.8**	**48.1**	**44.2**	**45.4**	**49.0**	**55.1**	**281.7**
Radio & Cellar Infrastructure Replacement Program	30.1	72.9	89.0	65.8	32.7	25.5	316.1
National Transportation Safety Board Recommendations	19.9	20.1	5.0	5.0	5.0	2.0	57.0
Automatic Train Control State of Good Repair	14.5	20.9	22.4	23.8	22.3	29.1	133.1
Signals & Communications	**64.5**	**113.8**	**116.5**	**94.7**	**60.0**	**56.7**	**506.1**
Rail Systems Investments	**104.3**	**162.0**	**160.6**	**140.1**	**109.0**	**111.8**	**787.8**
Track & Structures Rehabilitaion							
Track Welding Program	6.5	7.5	7.7	7.0	7.9	7.5	44.2
Replacement of Rail Track Signage	0.6	1.9	1.8	1.9	1.8	1.9	9.9
Track Grout Pad Rehabilitation	3.8	3.9	4.9	5.0	5.2	5.4	28.2
Track Structural Rehabilitation	2.4	2.5	2.6	2.6	2.7	2.8	15.6
Third Rail Rehabilitation and Replacement	-	7.2	7.6	7.6	8.2	8.5	39.1
Track Rehabilitation	52.4	56.7	65.8	65.1	65.5	66.0	371.5
General Project Administration and Planning	3.0	3.0	3.5	3.5	3.5	3.5	20.0
Wayside Work Equipment	3.6	5.0	3.2	2.5	-	-	14.2
System-wide Infrastructure Rhb	0.2	-	-	-	-	-	0.2
Transit Asset Management System	3.9	-	-	-	-	-	3.9

FY2017-2022 Multi-Year Investments
(dollars in millions)

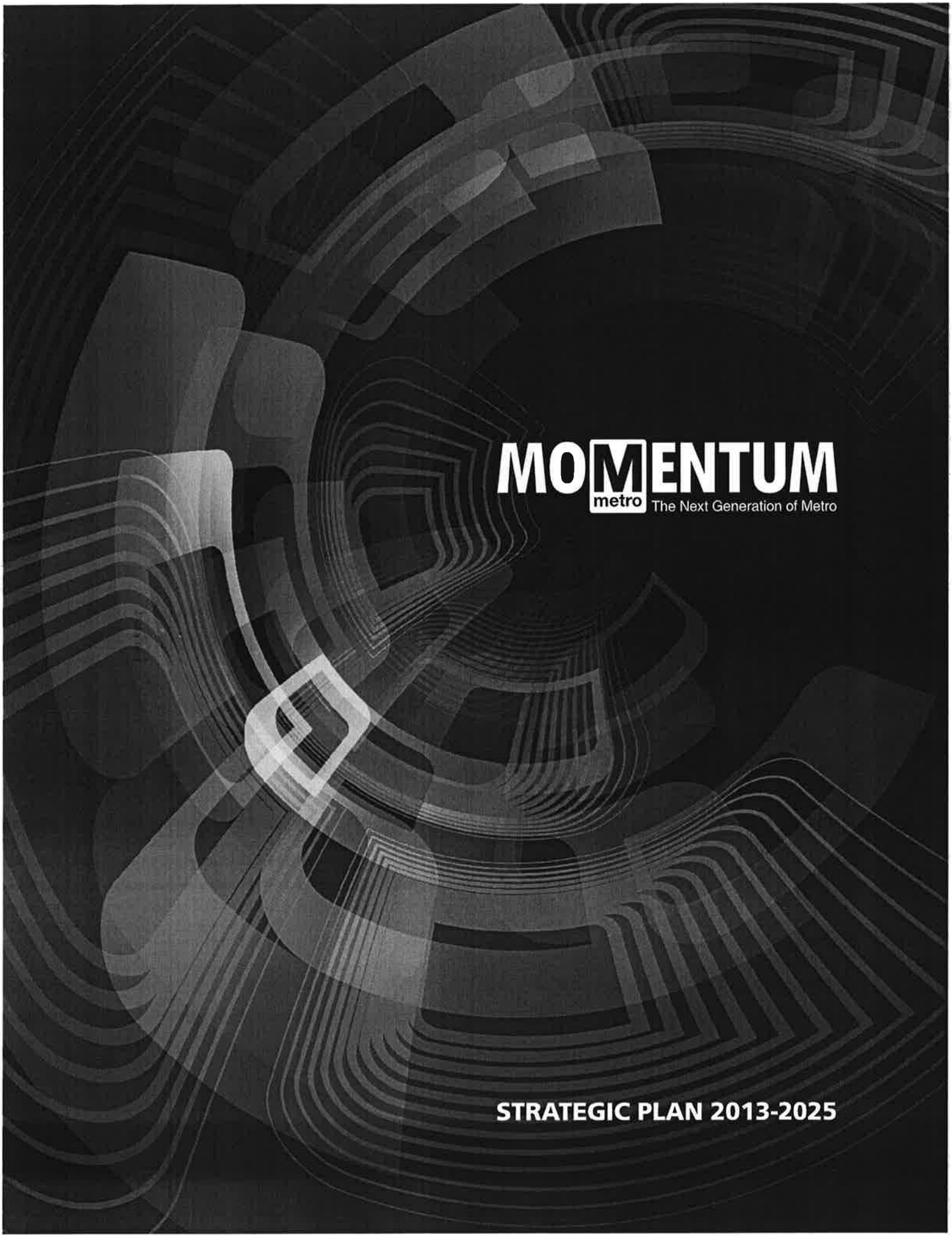
Investment by Program	FY2017 Budget	FY2018 Plan	FY2019 Plan	FY2020 Plan	FY2021 Plan	FY2022 Plan	6 Year Total
General Engineering	1.5	-	-	-	-	-	1.5
Emergency Construction	1.0	1.2	1.2	1.2	1.2	1.2	7.0
Fixed Rail	**78.9**	**88.8**	**98.2**	**96.4**	**96.0**	**96.7**	**555.1**
Station/Tunnel Leak Mitigation	7.1	5.5	8.6	10.1	10.4	13.2	55.0
Bush Hill Aerial Structure Rehabilitation	2.0	4.2	-	-	-	-	6.2
Farragut North Beam Rehabilitation	1.3	-	-	-	-	-	1.3
Structures	**10.4**	**9.7**	**8.6**	**10.1**	**10.4**	**13.2**	**62.5**
Track Maintenance Equipment	-	9.4	6.9	10.2	10.8	10.7	48.0
Track Maintenance Equip	**-**	**9.4**	**6.9**	**10.2**	**10.8**	**10.7**	**48.0**
Track and Structures Rehabilitation Investments	**89.3**	**107.9**	**113.7**	**116.8**	**117.3**	**120.7**	**665.7**
Stations and Passenger Facilities							
Bicycle & Pedestrian Facilities: Capacity Improvements	1.7	2.0	2.0	2.0	2.0	2.0	11.7
Station Rehabilitation Program	10.9	11.8	11.8	11.7	11.8	11.8	69.8
Station Entrance Canopies	6.8	14.7	16.0	7.4	10.5	-	55.4
Red Line Rehabilitation Stage Two	-	4.5	9.5	33.6	11.0	26.5	85.0
Orange/Blue Line Rehabilitation Stage One	27.0	60.6	-	-	-	-	87.6
Accessible Station Signage	-	0.1	0.1	0.1	0.1	0.1	0.4
Platforms & Structures	**46.4**	**93.6**	**39.3**	**54.7**	**35.4**	**40.4**	**309.8**
Elevator Rehabilitation	8.6	8.6	8.2	8.2	8.2	8.2	50.2
Escalator Rehabilitation	7.7	12.5	12.3	12.3	12.3	12.3	69.5
Elevator/Escalator Repairables	3.6	5.6	5.6	5.6	5.6	5.6	31.6
Escalator Replacement	27.7	34.9	36.4	36.0	24.0	32.0	191.1
Vertical Transportation	**47.5**	**61.6**	**62.6**	**62.2**	**50.2**	**58.2**	**342.3**
Integrating regional NEXTFARE System	0.8	0.5	0.1	0.1	-	-	1.5
Fare Collection Modernization	9.5	33.8	49.8	35.2	9.7	11.9	150.0
Fare Collection	**10.3**	**34.3**	**49.9**	**35.4**	**9.7**	**11.9**	**151.5**
Fire Systems	6.0	5.7	4.0	2.0	-	-	17.7
Station Cooling Program	4.1	6.6	7.0	10.8	8.6	6.6	43.6
Station Lighting Improvements	4.4	5.3	8.1	8.2	8.2	9.2	43.5
Raising Vent Shafts Vicinity Federal Triangle & Protecting System Core	6.0	10.1	-	-	-	-	16.1
Improving Drainage	3.5	4.5	-	-	-	-	8.0
System wide Fire Alarm System Upgrade Project to meet NFPA72	0.4	4.4	4.6	4.7	4.7	4.8	23.6
Station Systems	**24.4**	**36.7**	**23.7**	**25.6**	**21.5**	**20.6**	**152.5**
Parking Garage Rehabilitation	4.4	8.1	4.2	6.4	7.4	10.2	40.6
Parking Facilities	**4.4**	**8.1**	**4.2**	**6.4**	**7.4**	**10.2**	**40.6**
Stations and Passenger Facilities Investments	**133.0**	**234.3**	**179.6**	**184.4**	**124.2**	**141.2**	**996.7**
Bus and Paratransit							
Bus Replacement	66.6	67.9	50.8	102.7	102.7	102.9	493.6
Bus Acquisition	**66.6**	**67.9**	**50.8**	**102.7**	**102.7**	**102.9**	**493.6**
Automatic Vehicle Location Eqt	2.3	-	-	-	-	-	2.3
Bus Repair Equipment	2.3	3.8	3.8	4.5	5.0	5.0	24.4

FY2017-2022 Multi-Year Investments (dollars in millions)

Investment by Program	FY2017 Budget	FY2018 Plan	FY2019 Plan	FY2020 Plan	FY2021 Plan	FY2022 Plan	6 Year Total
Bus Rehabilitation Program	35.0	46.1	43.4	44.7	46.0	47.4	262.5
Bus Camera Installation & Replacement	0.9	4.2	5.1	3.4	3.6	3.6	20.8
Bus Repairables	5.6	6.5	6.5	6.5	7.0	7.5	39.6
Bus Preventive Maintenance	35.0	10.2	10.2	10.2	10.2	10.2	86.0
Bus Maintenance/Overhaul	**81.0**	**70.8**	**69.0**	**69.2**	**71.9**	**73.7**	**435.6**
Underground Storage Tank Replacement	1.2	2.8	4.4	4.7	4.9	4.9	22.8
Bladensburg Shop Reconfigure	1.7	-	-	-	-	-	1.7
Southern Avenue Bus Garage Replacement	25.0	68.7	13.4	5.0	1.2	2.7	116.0
Royal Street Bus Garage Replacement (Cinder Bed Road)	20.0	16.3	0.5	-	-	-	36.9
Shepherd Parkway Bus Facility	2.0	4.8	1.5	-	-	-	8.3
Bus Garage Facility Repairs	3.2	-	-	-	-	-	3.2
CTF Electrical Upgrade	0.4	-	-	-	-	-	0.4
Pollution Prevention for Track Fueling Areas	0.2	3.4	3.3	3.8	3.8	3.8	18.2
Bladensburg Garage	1.5	3.1	15.1	18.3	23.9	14.6	76.5
Bus Maintenance Facilities	**55.0**	**99.1**	**38.3**	**31.8**	**33.8**	**25.9**	**284.0**
Bus Priority Corridor Network	3.1	-	-	-	-	-	3.1
Bus Planning	0.1	0.5	0.7	0.7	0.7	0.8	3.6
Bus Customer Facility Improvements	1.0	1.7	1.8	1.7	2.0	1.9	10.0
New Project - Traffic Signal Prioritization	2.5	7.6	-	-	-	-	10.1
Bus Passenger Facilities/Systems	**6.7**	**9.8**	**2.5**	**2.4**	**2.7**	**2.6**	**26.8**
MetroAccess Fleet Acquisition	8.8	11.4	12.0	11.9	11.5	12.4	68.0
Paratransit	**8.8**	**11.4**	**12.0**	**11.9**	**11.5**	**12.4**	**68.0**
Bus and Paratransit Investments	**218.1**	**259.1**	**172.5**	**218.1**	**222.6**	**217.5**	**1,308.1**
Business Support							
Bus & Rail Asset Management Software	2.6	2.2	2.9	4.3	3.4	3.4	18.8
Bus Operations Support Software	0.6	2.0	1.4	4.9	1.6	1.6	12.1
IT Capital Program Business Process Reengineering and Program Support	3.1	5.3	6.9	6.9	6.9	6.9	36.1
Data Centers and Infrastructures	3.5	3.8	3.8	3.8	3.7	3.7	22.2
Document Management System	1.0	1.0	1.0	1.0	1.0	1.0	6.0
Enterprise Geographic Information System	0.4	0.9	0.9	0.9	0.9	0.9	4.6
Sensitive Data Protection Technology	0.5	1.2	1.3	2.2	1.5	1.5	8.3
Management Support Software	14.5	17.3	11.8	9.8	7.5	7.5	68.4
Metro IT One Stop and Office Automation	0.6	0.8	0.9	0.9	0.9	0.9	5.1
Police Dispatch and Records Management	2.0	1.3	1.3	2.0	1.5	1.5	9.7
Network and Communications	3.2	4.8	4.9	5.9	6.1	6.3	31.2
Customer Electronic Communications & Outreach	1.0	1.5	1.5	1.5	1.5	1.5	8.5
Rail Operations Support Software	2.0	3.4	3.7	4.6	4.4	4.4	22.5
Data Governance and Business Intelligence	0.5	0.9	1.1	1.1	1.1	1.0	5.6
Rail Mileage Based Asset Management	0.2	0.1	-	-	-	-	0.3
Safety Measurement System	2.4	2.2	2.1	0.1	0.7	-	7.4
Rail Scheduling System Upgrade	1.2	2.3	-	-	-	-	3.5

FY2017-2022 Multi-Year Investments
(dollars in millions)

Investment by Program	FY2017 Budget	FY2018 Plan	FY2019 Plan	FY2020 Plan	FY2021 Plan	FY2022 Plan	6 Year Total
Wireless Communication Infrastructure	1.5	1.7	-	-	-	-	3.2
IT	**40.8**	**52.7**	**45.5**	**49.8**	**42.7**	**42.1**	**273.5**
Police Emergency Management Equipment	0.1	0.2	0.2	0.2	0.2	0.2	1.0
Police Portable Radio Replacement	0.0	0.9	0.8	0.1	0.0	0.0	2.0
Support Equipment - MTPD	0.7	1.4	1.0	1.0	1.0	1.0	6.1
Police Substation District 2	0.1	-	-	-	-	-	0.1
Special Operations DivisionFac	0.2	-	-	-	-	-	0.2
MTPD	**1.0**	**2.5**	**2.0**	**1.3**	**1.3**	**1.2**	**9.4**
Service Vehicle Replacement & Leasing	2.7	1.8	2.3	1.9	2.0	4.8	15.5
Materials Handling Equipment	-	0.5	0.6	0.6	0.6	0.6	2.9
Currency Processing Machines	-	0.6	0.6	0.9	0.9	-	3.0
Environmental Compliance Project	1.0	1.6	2.3	1.9	2.0	2.0	10.8
Core & System Capacity Project Development	0.6	1.0	-	0.1	-	-	1.7
Credit Facility	3.0	1.8	1.8	1.8	1.8	1.8	12.0
Roof Rehabilitation and Replacement	1.8	4.0	4.5	4.4	5.2	3.0	22.9
Rehabilitation of Non-Revenue Facilities	0.1	-	-	0.8	-	-	0.9
Sustainability Investments - Pilot Program	0.6	-	-	-	-	-	0.6
Support Equipment/Services	**9.8**	**11.4**	**12.1**	**12.4**	**12.5**	**12.1**	**70.3**
Business Support Investments	**51.6**	**66.5**	**59.7**	**63.5**	**56.4**	**55.5**	**353.2**
Contingency	-	13.2	13.2	13.2	13.2	13.2	66.2
Total Capital Programs	**950.0**	**1,228.7**	**1,070.9**	**965.6**	**863.9**	**920.9**	**6,000.0**


MOMENTUM
metro
The Next Generation of Metro
STRATEGIC PLAN 2013-2025

Metro 2025

Momentum includes a set of seven pivotal investments, called Metro 2025, that are essential to implement immediately so that the system can keep up with today's demands and continue to support the region's economic competitiveness and quality of life.

Table 1: Summary of Metro 2025 Capital Initiatives

Summary of Metro 2025 Initiatives	Description	Regional Benefits
Eight-Car Trains During Peak Periods p. 55-56	Operate all eight-car trains (longest possible) during rush hour by acquiring additional railcars, power capacity, and railcar storage	Trains will carry 35,000 more passengers per hour during rush hour – the equivalent of building 18 new lanes of highways into Washington, D.C.
Core Station Improvements p. 57-58	Expand or enhance high-volume rail transfer stations in the Metro system core to ease congestion for existing customers and to accommodate more riders in the future. Build new underground pedestrian connections between select stations such as the Farragut Stations or Metro Center/Gallery Place	Brighter, safer, and easier to navigate stations that will serve more people than today. Customers will be able to walk between stations rather than transfer on trains, which will be more convenient, save time and relieve crowding at the major transfer stations
Metrobus Priority Corridor Network (PCN) p. 59-60	Enhance and make bus service faster by completing the PCN, which outlines a variety of improvements that allow buses to bypass traffic congestion	Buses will move 50 percent faster, save each passenger on these routes an average of 3-4 minutes per trip, and remove an additional 100,000 trips from roadways each day
New Blue Line Connections p. 61-62	Seek to restore peak period Blue Line service between Pentagon and Rosslyn stations	Five more trains per hour during the peak period between Pentagon and Rosslyn stations, which would provide capacity for at least 4,000 more passengers per direction per hour. This would reduce crowding and wait times by an average of three minutes per trip for around 16,000 trips.
Next Generation Communications p. 63-64	Become a one-stop shop for all regional transit trip planning, and payment for the region's 15 transit systems. Upgrade communications systems for better, more accurate, and audible information for riders	Regardless of the regional provider, customers will be able to plan, pay for, and take a transit trip seamlessly and effortlessly all across the region. Information, everywhere, all the time, will allow travelers to know where buses and trains are and how to time their trips, as well as receive real-time travel and consumer information while in stations
Bus Fleet Expansion p. 65-66	Expand bus fleet and storage/maintenance facilities along growing corridors	Enables Metro to serve 40,000 additional bus trips per day. Allows Metrobus to maintain existing levels of service. Places Metrobus on a course to help relieve Metrorail congestion on some of its busiest segments.
Pocket Tracks p 67-68	Build new rail infrastructure, such as pocket tracks and crossovers, to improve service for customers and provide more flexibility in the system	Customers will benefit from a rail system that is more flexible and better able to respond to service disruptions. The infrastructure has the potential to reduce operating costs to local jurisdictions.

Order of Magnitude Cost Estimate ($2012)	FY2014-2019 Investments	Timeline for Implementation
$2 Billion	$100 Million	
$1 Billion	$100 Million	
$600 Million	$85 Million	
$1 Billion	$1 Million	
$400 Million	$60 Million	
$450 Million	$85 Million	
$500 Million	None	

Eight-Car Trains During Peak Periods

Summary

This program will maximize the capacity of the existing Metrorail system by enabling operations of 100 percent eight-car trains during peak periods. Metro will upgrade, replace or expand:

- The rail car fleet
- Traction power substations
- Power cabling
- Third rail
- Train control systems
- Storage tracks and maintenance bays in the yards

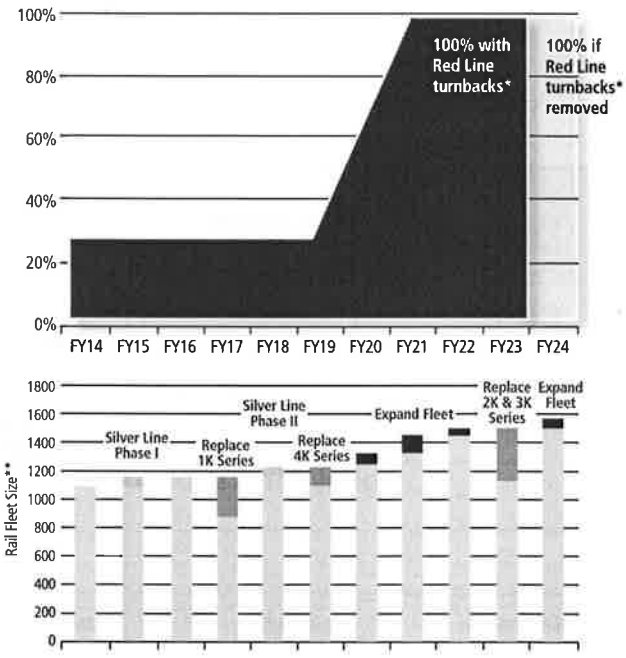
Purpose and Need

The Metro system's core is the destination or transfer point for 80 percent of all rail riders system-wide. Crowded conditions during peak periods exist currently and, without rail fleet expansion, most rail lines will be even more congested by 2025. Operating 100 percent eight-car trains during peak periods and increasing the capacity of transfer stations (under a related initiative) will provide adequate capacity through 2025.

Benefits

- Allows lines to carry 35,000 more customers per hour during the peak period
- Accelerates the modernization of the rail fleet
- Attains adequate system capacity through 2040
- Provides passengers with comfortable rides, including more seating
- Satisfies latent travel demand with the increased capacity
- Enhances reliability of traction power and related systems
- Allows comprehensive heavy repair and overhaul of aging rail cars in a new central facility

Figure 21: Projected Timeline to Operate 100 Percent Eight-Car Trains in the Peak Period



* Currently, during peak periods on the Red Line, Metro operates two routes: Shady Grove-Glenmont and Grosvenor-Silver Spring. Grosvenor-Silver Spring makes use of pocket tracks at these stations to "turn back" trainsand create a shorter route, utilizing fewer railcars. Addtional railcars, shown in FY24, would be needed to remove the turnback and operate the full Red Line route between Shady Grove-Glenmont with all eight-car trains.

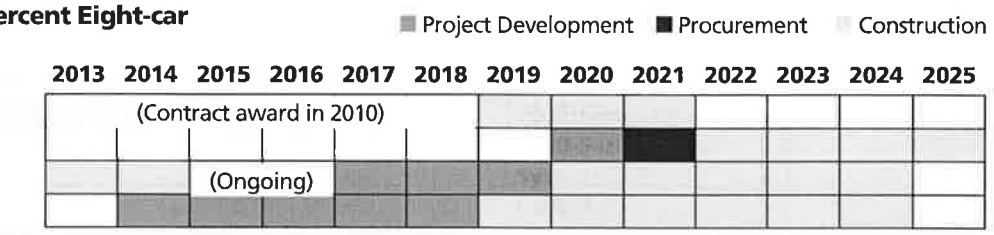
** Does not include 50 railcar contingency.

Note: Prior to commencement of 100 percent eight car train operations during the peak period, power system and storage/maintenance facilities improvements are required. They are expected as shown in the timeline below.

Considerations

- Upgrade of systems and expansion of facilities should be complete prior to delivery of the new rail cars.
- Improvements of core stations must be concurrent with this program (under a related initiative).

Figure 22: 100 Percent Eight-car Trains Timeline



- The long timeframe for developing the heavy repair and overhaul facility requires start in FY2014.
- Dulles Yard expansion should be part of MWAA contract for the initial yard.

Status of Ongoing Projects

- 7000-series cars are being fabricated with options for additional cars, though not enough to attain 100 percent eight-car trains. An 8000-series car must be developed to supply the remainder.
- A survey of traction power conditions (2013) is identifying upgrades of traction power, cabling, third rail and train control.
- 100 percent Eight-car Train Program (2013) is being finalized that will detail all elements of the program.
- Rail Yard Plan (2013) will further define storage and maintenance needs.

FY2014-2019 Investments

These investments are already included and funded in Metro's current six-year Capital Improvement Program (CIP):

- Engineering and design of maintenance/storage facilities
- Power upgrades

Total - $100 million

Order of Magnitude Cost Estimate

$2 billion ($2012)

- $610 million: 220 railcars (7000 series)
- $420 million: 140 railcars (8000 series)
- $370 million: traction power and related systems upgrade
- $600 million: storage and maintenance facilities expansion

Table 5: Metrorail System Peak Period Capacity

Without Fleet Expansion

	Peak Hour Passengers per Car (Maximum)				
	Location of Peak Direction Maximum Ridership (2012)	2012	2020	2025	2040
Red	Dupont Circle → Farragut West Gallery Place → Metro Center	✔	—	—	✘
Yellow	Pentagon → L'Enfant Plaza	✔	✔	✔	—
Green	Waterfront → L'Enfant Plaza Mt. Vernon Sq. → Gallery Place	✔	—	—	✘
Blue	Pentagon → Foggy Bottom	✔	—	—	✘
Orange/Silver	Court House → Foggy Bottom	—	✘	✘	✘

With Fleet Expansion to 100% Eight-Car Trains by 2020

	Peak Hour Passengers per Car (Maximum)				
	Location of Peak Direction Maximum Ridership (2012)	2012	2020	2025	2040
Red	Dupont Circle → Farragut West Gallery Place → Metro Center	✔	✔	✔	—
Yellow	Pentagon → L'Enfant Plaza	✔	✔	✔	✔
Green	Waterfront → L'Enfant Plaza Mt. Vernon Sq. → Gallery Place	✔	✔	✔	—
Blue	Pentagon → Foggy Bottom	✔	—	—	—
Orange/Silver	Court House → Foggy Bottom	—	—	—	✘

✔ **Acceptable (average passengers per car (PPC <100)** — **Crowded (PPC between 100 and 120)** ✘ **Extremely crowded (PPC >120)**