



Finance and Capital Committee

Information Item III-A

February 10, 2022

Capital Program Update and Work Session

Washington Metropolitan Area Transit Authority

Board Action/Information Summary

☐ Action ☒ Information

MEAD Number:
202342

Resolution:
☐ Yes ☒ No

TITLE:

Capital Improvement Program Work Session

PRESENTATION SUMMARY:

Staff will provide an overview of the proposed FY2023 to FY2028 Capital Improvement Program, including progress on the maintenance backlog and state of good repair needs.

PURPOSE:

Committee work session on the proposed FY2023 to FY2028 Capital Improvement Program.

DESCRIPTION:

Please see the attachment for a list of major vendors associated with the Metro Capital Improvement Program

With the help of Dedicated Funding backed debt, Federal Passenger Rail Infrastructure Improvement Act (PRIIA) Funding, and local government contributions, Metro has embarked on an aggressive rehabilitation program to improve state of good repair, safety, and reliability across all modes of service. Progress is being made, and there is both more to do and on-going effort required to maintain a safe, reliable, and efficient system.

Key Highlights:

- Metro's Capital Improvement Program (CIP) continues Metro and the region's focus on investing in safety, state of good repair and reliability programs and projects.
- Over the past 10 years, Metro's capital program has increased from investing approximately \$700 million per year to investing over \$1.8 billion in FY2022.
- The Proposed FY2023-2028 Six-Year CIP planned investment totals \$12.4 billion and the FY2023 Capital Budget investment budget is \$2.3 billion.
- Metro made progress in addressing previously unmet capital programs and projects over the past two years.
- If executed as planned, the Six-Year CIP will continue to reduce the backlog of unmet capital programs and projects.
- Federal funding and continued Jurisdictional investments help address increased costs and continuing investments but are not sufficient to eliminate the need for dedicated funding debt in the Six-Year CIP.

Background and History:

In 2018, the Compact Signatories – the State of Maryland, the District of Columbia, and the Commonwealth of Virginia – passed legislation creating a cumulative \$500 million in annual dedicated funding for Metro. This funding stream provided Metro the ability to issue the debt needed to fund overdue capital needs. These needs, the ‘backlog’ of projects previously unfunded, were impacting safety and reliability of Metro’s services. Today, the backlog has been reduced, and is declining rather than growing. Metro plans to invest approximately \$3.2 billion on projects and programs related to the backlog from FY2022 through FY2027, while also investing approximately \$1.2 billion per year to maintain assets and prevent accumulation of additional unfunded needs.

In the Fall, Congress passed the Infrastructure, Investment, and Jobs Act (IIJA) sometimes called the Bipartisan Infrastructure Law (BIL) establishing a new authorization for Passenger Rail Infrastructure Investment Act (PRIIA) funding and increased authorization for federal formula programs.

Metro presented a proposed FY2023 Capital Budget and a Six-Year CIP in November 2021 and the Board authorized public hearing in December 2021. The Six-Year CIP anticipates continued Jurisdictional funding, including up to three percent increases in Jurisdictional Capital Allocated Contributions, and continuation of state and Federal PRIIA funding through the planning period. In addition to these baseline assumptions, Metro anticipates leveraging Dedicated Funding backed debt to address additional funding needs and continue to address previously unfunded needs in the CIP.

Discussion:

The proposed six-year \$12.4 billion CIP focuses investment in ongoing safety and state of good repair programs and projects, prioritized system preservation and renewal projects identified in Metro’s Capital Needs Forecast and asset management and reliability plans. Capital delivery has improved in the recent past, with Metro delivering the single largest annual capital investment - \$1.84 billion– in FY2021.

The Capital Improvement Program is implemented across six investment categories:

- Railcars and Railcar Facilities
- Rail Systems
- Track and Structure Rehabilitation
- Bus, Bus Facilities, and Paratransit
- Stations and Passenger Facilities
- Operations and Business Support

During the on-going Covid-19 pandemic low ridership period, significant progress was made on capital improvements in FY2021.

In addition to Metro-identified priorities, several Jurisdictional projects are included in the reimbursable projects program, including the Potomac Yard infill station and support for the Silver Line Metrorail extension.

State of Good Repair

Work continues to reduce overdue and ongoing state of good repair needs. When

measured in FY2016 the backlog was estimated at \$7.1 billion and that was reduced to about \$5.0 billion by FY2018. Further reductions to the state of good repair backlog are projected through the continued federal and regional investment in the CIP. Planned capital investments will reduce the state of good repair backlog to about \$3.2 billion by FY2028 and to about \$1.2 billion by FY2032. These projections assume continued investments in projects and programs that prevent adding items to the backlog.

Metro is improving the planning in its CIP by progressing from reactive to proactive capital planning. As efforts progress, it is anticipated that the program will advance to predicting capital needs. The capital program is anticipated to improve from addressing a backlog, to repairing immediate needs, to addressing needs before infrastructure fails.

Monitoring continues on the availability and sufficiency of funding provided for the CIP. Dedicated Funding, PRIIA, and Jurisdictional Contributions are enabling the ongoing reduction of the backlog of unmet capital programs and projects. Without these funding sources, Metro's reliance on Dedicated Funding Debt increases, exhausting that source of funds more quickly. Should funding become insufficient in the future, it is anticipated that the state of good repair backlog would begin to increase, reversing the progress made to date in the capital program.

Capital Program Risks and Considerations

The Capital program faces traditional funding and execution risks in addition to those related to the pandemic. The risks include additional labor costs associated with Covid compliance for personal health and safety as well as supply chain interruptions, inflation and market escalations.

Risks to capital funding sources include uncertainty of the federal funding and the long-term dedicated funding debt capacity. Continuation of state of good repair projects to sustain state of good repair and reliability and prevent future backlogs, require on-going funding at an order of magnitude of \$1.5 billion on average per year. Additional unfunded or underfund needs include, but are not limited to, Zero Emission bus implementation; the Next Generation Signal System; Blue/Orange/Silver Line capacity and reliability improvements; and Railcar fleet and facility improvements for future rail system capacity and frequency improvements.

FUNDING IMPACT:

There is no funding impact to providing this information item.

TIMELINE:

Previous Actions	November 2021 – Proposed CIP and Capital Program Update December 2021- Authorize Public Hearing
Anticipated actions after presentation	March 2022 – Approve FY2023 Capital Budget and Six-Year Capital Improvement Program

RECOMMENDATION:

Information item only.

Proposed Capital Improvement Program Work Session

Finance and Capital Committee
February 10, 2022



Purpose

- Committee work session on Proposed Capital Improvement Program



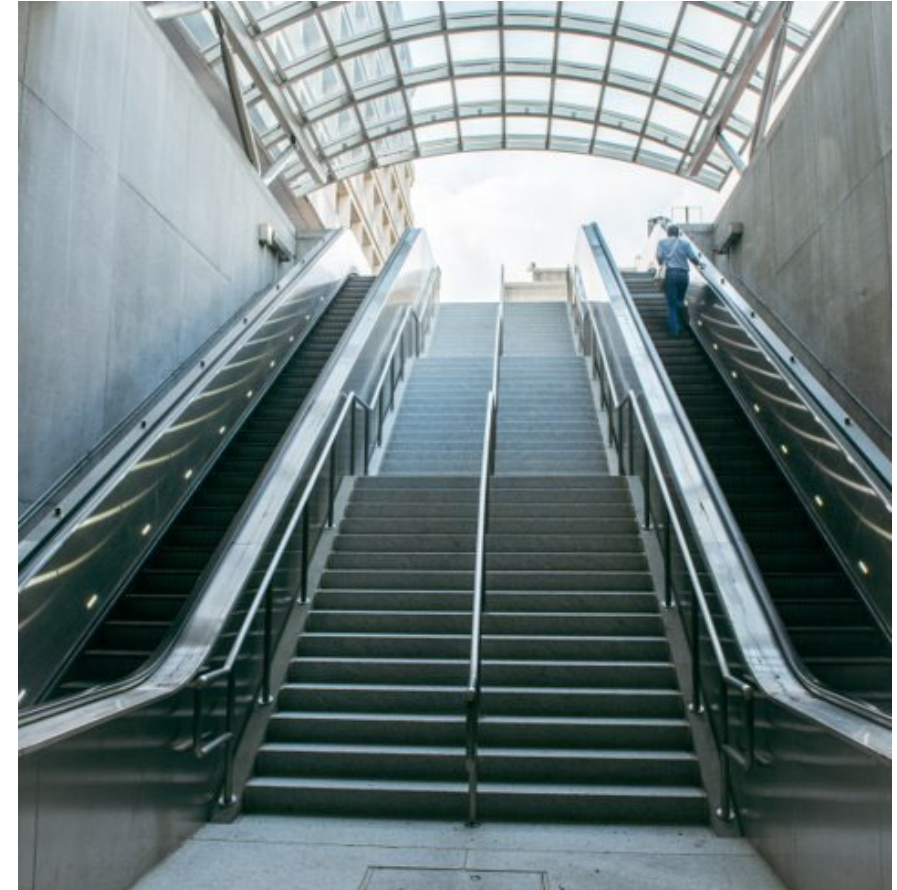
Bladensburg Temporary Parking Facility

Highlights from the past year



\$12 Billion Safety & State of Good Repair CIP

- Improve system safety, state of good repair, and reliability
- Rehabilitate, replace, and modernize the system
- Integrate resilience and sustainability
- Accelerate delivery of projects to address critical, long-standing needs
- Maintain fiscal accountability and commitments to region
 - 3% aggregate cap on jurisdictional capital assistance
 - Dedicated funding supported debt



Judiciary Square New
Stairs and Escalators

Capital Program Development & Structure

10-Year Capital Plan (FY2023-FY2032)

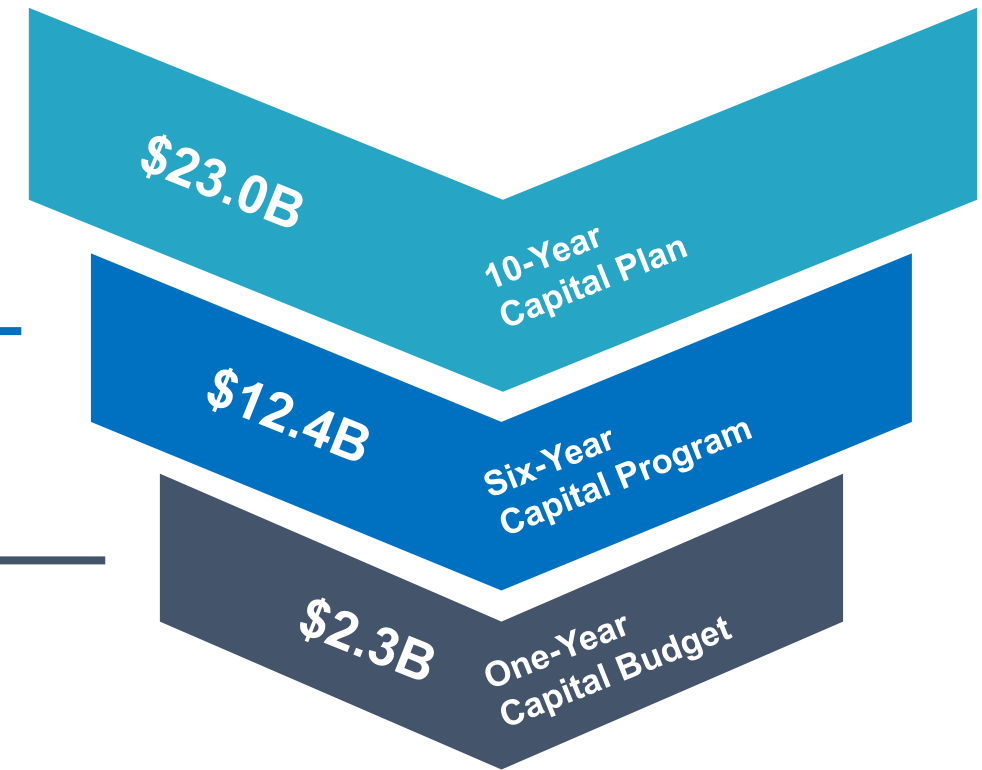
Identifies viable initiatives to address needs identified for next ~10 years; financially unconstrained

Six-Year Capital Improvement Program (CIP) (FY2023-FY2028)

Capital investments planned for, or continuing in, six-year capital program

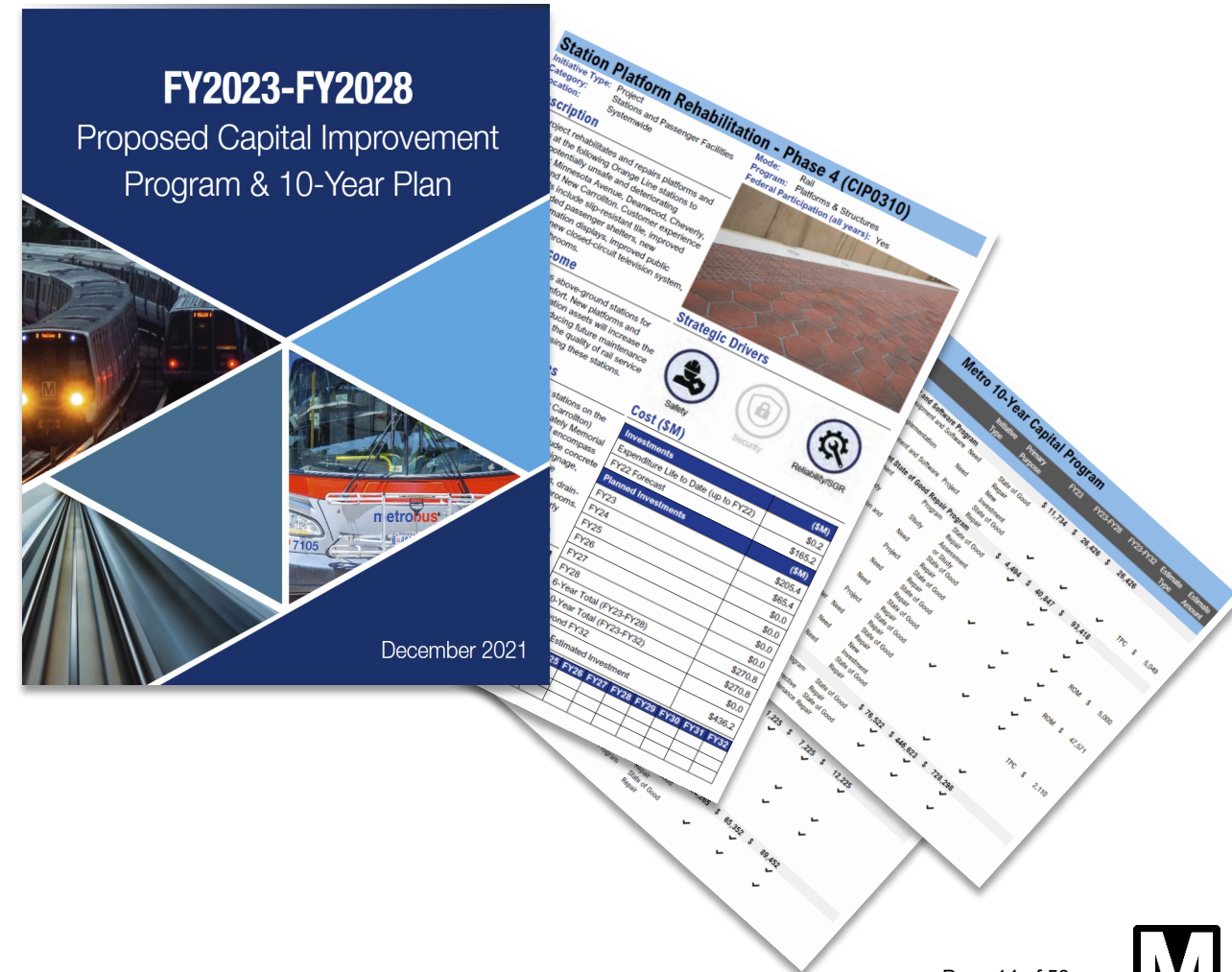
One-Year Capital Budget (FY2023)

Investment forecast for capital projects and programs in current budget year



Proposed Capital Program Publication

- Proposed Capital Program published in December 2021 – [FY2023-FY2028-Proposed-Capital-Budget](#)
- Publication includes 10-Year Capital Plan, Six-Year CIP, Annual Capital Budget, and detailed CIP investment pages



FY2023 Proposed Capital Program

Capital Investment Categories (\$M)	FY2023 Budget	FY2024 – FY2028 Plan*	Six-Year Total
Railcars and Railcar Facilities	\$303	\$2,129	\$2,432
Rail Systems	\$203	\$1,448	\$1,651
Track and Structure Rehabilitation	\$459	\$1,299	\$1,758
Stations and Passenger Facilities	\$525	\$2,170	\$2,694
Bus, Bus Facilities, and Paratransit	\$441	\$1,819	\$2,260
Operations and Business Support	\$380	\$1,249	\$1,629
Total Capital Investments	\$2,311	\$ 10,113	\$12,425



Chevy Chase Historic Bus Terminal

Railcars & Railcar Facilities

Vehicle Acquisition & Rehabilitation

8000-Series Railcar Acquisition • 7000-Series Railcar Acquisition
• Railcar Preventive Maintenance •
7000- & 6000-Series Railcar Scheduled Rehabilitation

Railcar Facilities & Systems

Railcar Heavy Repair & Overhaul Facility •
Railyard Rehabilitation • Railcar Wash Rehabilitation



Proposed Program *Railcars & Railcar Facilities*

\$2.4B

FY2023-FY2028
Proposed
Capital Program

\$303M

FY2023
Proposed
Capital Budget

Rail Systems

Train Control

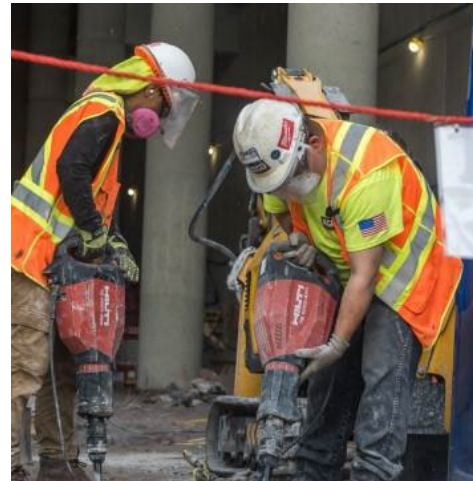
Train Control Room (TCR) Rehabilitation • Track Circuit
Cable Testing & Replacement • Switch Machine Replacement •
New Carrollton Railyard Rehabilitation •
Next Generation Train Control

Power Improvements

Traction Power State of Good Repair and Infrastructure Upgrades
• Rail Power System Rehabilitation

Other Rail Systems Investments

Radio Infrastructure Replacement •
Emergency Trip Station (ETS) System Replacement •
Braking Energy Recovery Installation



Proposed Program Rail Systems

\$1.7B

FY2023-FY2028
Proposed
Capital Program

\$203M

FY2023
Proposed
Capital Budget

Track & Structures Rehabilitation

Track Equipment & Infrastructure
Track Rehabilitation • Track Maintenance
Equipment Replacement

Tunnel Investments
Yellow Line Portal Tunnel Remediation • Water Leak Mitigation • Tunnel Ventilation Improvements • Tunnel Shaft Rehabilitation

Bridges & Aerials
Structural Rehabilitation Bridges (Phase 1: Rockville Canopy + 9 High Priority Bridges; Phase 2: 7 High Priority Bridges; Phase 3: 7 Additional Priority Bridges)



**Proposed Program
Track & Structures
Rehabilitation**

\$1.8B
FY2023-FY2028
Proposed
Capital Program

\$459M
FY2023
Proposed
Capital Budget

Stations & Passenger Facilities

Fire Life Safety Improvements

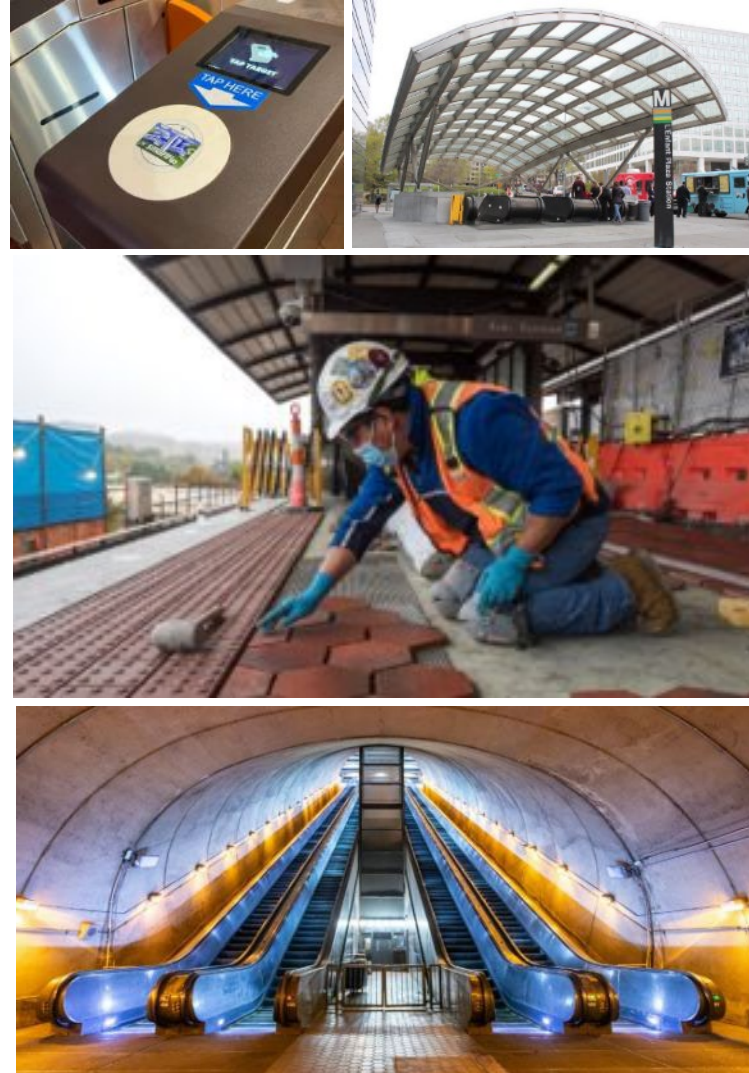
Station Fire Control Infrastructure • Standpipe Systems •
Tunnel Smoke Detection System Implementation

Station Infrastructure Improvements

Escalator Rehabilitation & Replacement • Station Platform
Rehabilitation • New Potomac Yard Metrorail Station •
Elevator Rehabilitation • Station Entrance Escalator
Canopies • Parking Garage & Surface Lot
Rehabilitation • Station Platform Canopy Rehabilitation

Station Systems Improvements

Passenger Information Displays • Lighting •
Station Cooling Systems • Public Address (PA) System •
Intercom System • Drainage Pumping Stations
Rehabilitation • Sewage Ejector Replacement •
Faregate Replacement • Fare Vending Machine Replacement



Proposed Program Stations & Passenger Facilities

\$2.7B

FY2023-FY2028
Proposed
Capital Program

\$525M

FY2023
Proposed
Capital Budget

Bus, Bus Facilities & Paratransit

Vehicle Acquisition & Rehabilitation

- Bus Acquisition • Bus Rehabilitation
- Electric Bus Acquisition & Evaluation
- MetroAccess Fleet Acquisition



Bus Garage Rehabilitation & Replacement

- Northern & Bladensburg Garage Replacement and Electrification
- Montgomery & Four Mile Run Bus Garage Rehabilitation
- Planning for Western Garage Replacement



Bus Station & Terminal Improvements

- Metrobus Shelter Replacement • Bus Stop Accessibility •
- Metrobus Closed Circuit Television (CCTV) • Customer Information
- Electronic Display Signs (CIEDS) • Historical Bus Terminals •
- Bus Priority Program



Proposed Program *Bus, Bus Facilities & Paratransit*

\$2.3B

FY2023-FY2028
Proposed
Capital Program

\$441M

FY2023
Proposed
Capital Budget

Operations & Business Support

Facility Improvements

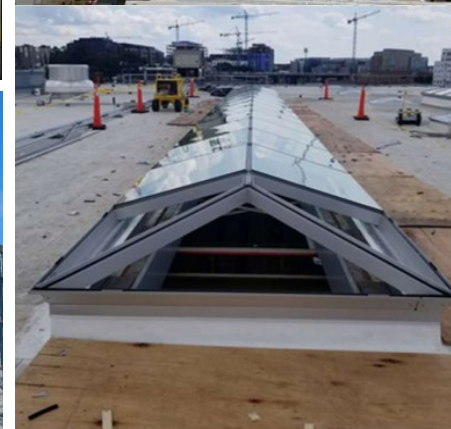
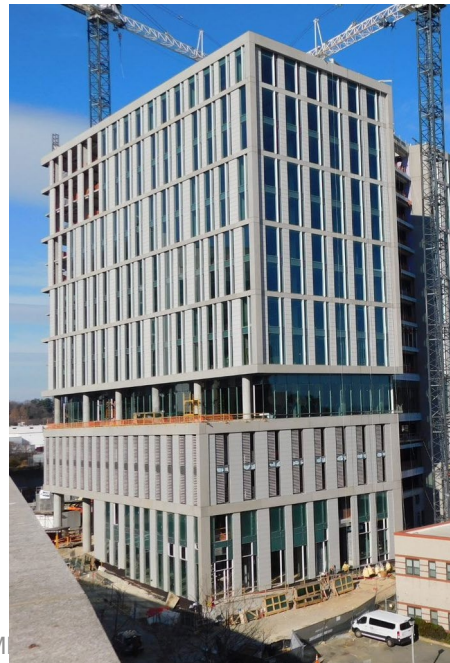
- DC, MD & VA Office Consolidation
- Data Center IT Infrastructure & Equipment

Hardware & Software Investments

- Enterprise Resource Planning (ERP) System Replacement
- Edge Device Replacement • Enterprise IT Infrastructure State of Good Repair

Other Support Investments

- Service Vehicle Replacement • Roof Rehabilitation & Replacement • Environmental Compliance Program



Proposed Program Operations & Business Support

\$1.6B

FY2023-FY2028
Proposed
Capital Program

\$380M

FY2023
Proposed
Capital Budget

Capital Program Overview (\$B)

Capital Program Portfolio

\$23.0B

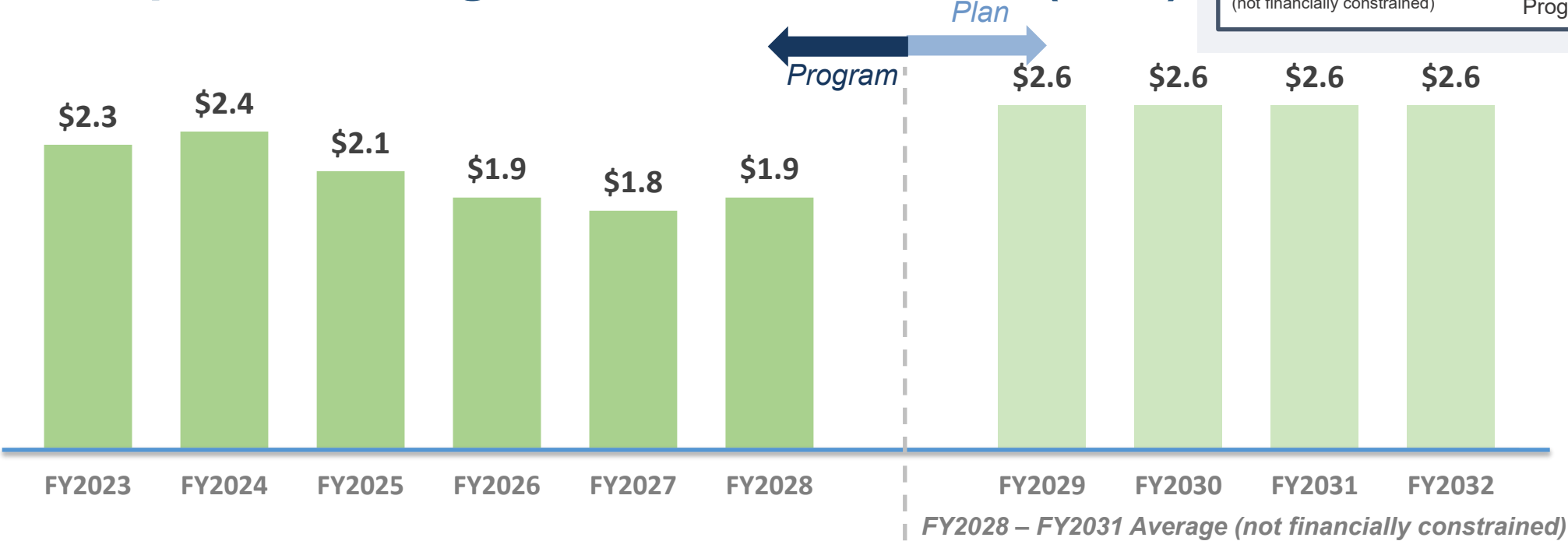
10-Year Capital Plan
(not financially constrained)

\$12.4B

Six-Year Capital Program

\$2.3B

FY2023 Capital Budget



10-Year Capital Plan

Six-Year Capital Improvement Program (CIP)
Total Investment \$12.4B

Capital Budget

Total 1-Year Investment \$2.3B

Total Investment \$23B

- Underfunded Investments and Projects Continuing Beyond the 10-Year Plan include:**
- Continued Required State of Good Repair and Safety Investments
 - 8000 Series Railcar Acquisition
 - Next Generation Signal System
 - Zero Emission Bus Implementation
 - Tunnel Ventilation Improvements
 - Railyard Optimization
 - Passenger Circulation Station Improvements
 - Third Rail Modernization

Capital Investment Categories & Funding Sources

Financial Plan by Investment Category

Capital Investment Categories (\$M)	FY2023 Budget	FY2024 – FY2028 Plan*	Six-Year Total
Railcars and Railcar Facilities	\$303	\$2,129	\$2,432
Rail Systems	\$203	\$1,448	\$1,651
Track and Structure Rehabilitation	\$459	\$1,299	\$1,758
Stations and Passenger Facilities	\$525	\$2,170	\$2,694
Bus, Bus Facilities, and Paratransit	\$441	\$1,819	\$2,260
Operations and Business Support	\$380	\$1,249	\$1,629
Total Capital Investments	\$2,311	\$ 10,113	\$12,425
Revenue Loss from Capital Projects	\$12	\$50	\$62
Debt Service - Dedicated Funding	\$101	\$1,424	\$1,525
Total Capital Program Cost	\$2,425	\$11,587	\$14,012

**FY2024-FY2028 Plan capital investment category allocation subject to change as project costs and schedules are refined.*

Capital Program Funding Sources

Funding Sources (\$M)	FY2023 Proposed Budget	FY2023- FY2028 Plan
Federal Grants		
Formula and Other Grants	\$343	\$2,149
PRIIA	\$149	\$149
Subtotal Federal Grants	\$491	\$2,298
State and Local Contribution		
District of Columbia	\$330	\$2,018
State of Maryland	\$313	\$1,924
Commonwealth of Virginia	\$291	\$1,793
Subtotal State and Local	\$934	\$5,735
Jurisdiction Reimbursable Projects	\$40	\$96
Metropolitan Washington Airports Authority	\$10	\$42
Debt and Other Fund Sources	\$949	\$5,840
Grand Total	\$2,425	\$14,012




Note: Does not reflect passage of Infrastructure Investment and Jobs Act

Infrastructure Investment & Jobs Act

Resources

- Continued regional funding & increased federal funding will support capital investment, safety and state of good repair
- Infrastructure Investment & Jobs Act
 - PRIIA
 - Reauthorized at \$150M per year
 - \$5M for OIG per year
 - Increased formula programs
 - Increased opportunity for competitive and discretionary grants
- Subject to appropriation & apportionment

Impact on the Capital Program

-  Allow Metro to continue to address state of good repair needs
-  Extend capacity to issue dedicated funding debt to fund capital investments
-  Address construction and equipment acquisition market changes

Fare
Modernization
Program



Addressing Overdue Needs and Sustaining Safety & SGR

Regional & Federal Investment Addressing Overdue Needs & Supporting Programs to Sustain Safety and SGR

ADDRESSING OVERDUE CAPITAL NEEDS

Substantial Progress (*Highlights*)

- Replacement of Legacy Railcars
- Track Rehab & SafeTrack
- Platform Program – 17 Stations Complete

More To Do to Catch Up (*Priority Needs*)

- Structures - Bridges, Platforms, Tunnels
- Systems - Train Control, Radio and Comms, Power
- Facilities - Bus Divisions, Rail Maintenance, Offices

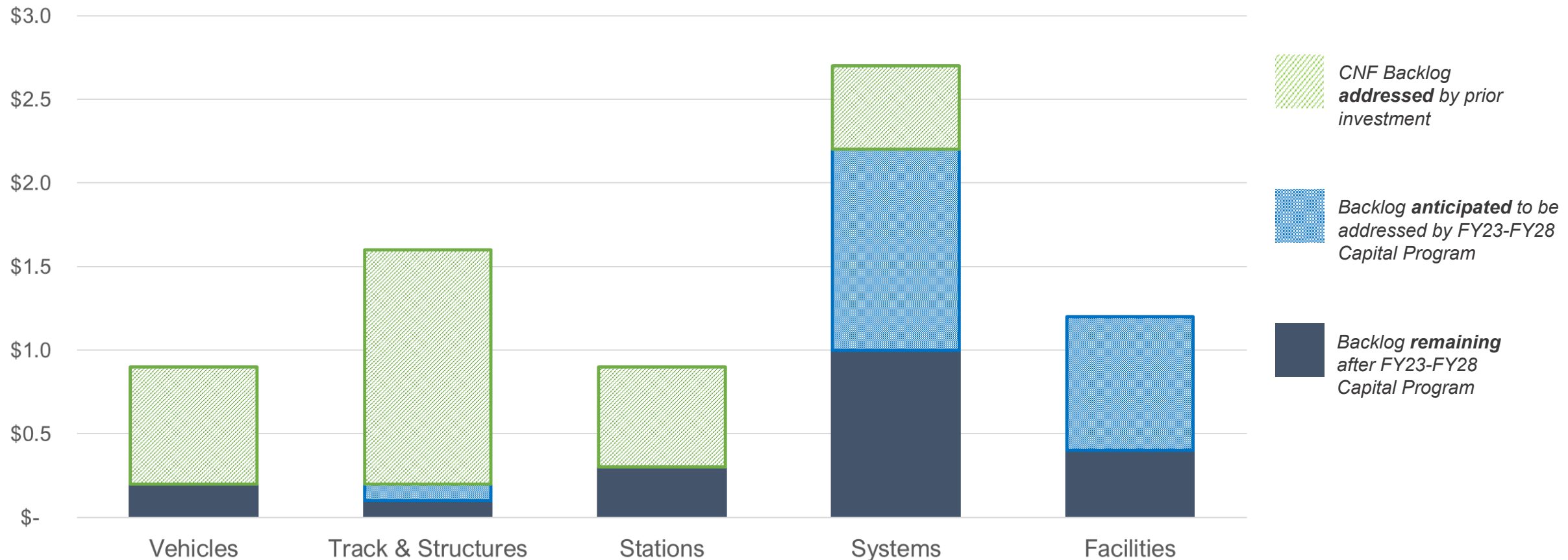
INVESTING IN ONGOING PROGRAMS TO SUSTAIN SAFETY & SGR

Recurring & Cyclical Maintenance, Rehabilitation & Replacement Programs

- | | | | |
|------------------------|--------------------------|--------------------|---------------------------|
| • Buses | • Track | • Traction Power | • Bus Customer Facilities |
| • Railcars | • Parking Facilities | • Signal Systems | • Bus, Rail & Admin |
| • Paratransit Vehicles | • Elevators & Escalators | • Lighting Systems | Maintenance Facilities |
| • Service Vehicles | • Mechanical Systems | • Cooling Systems | |

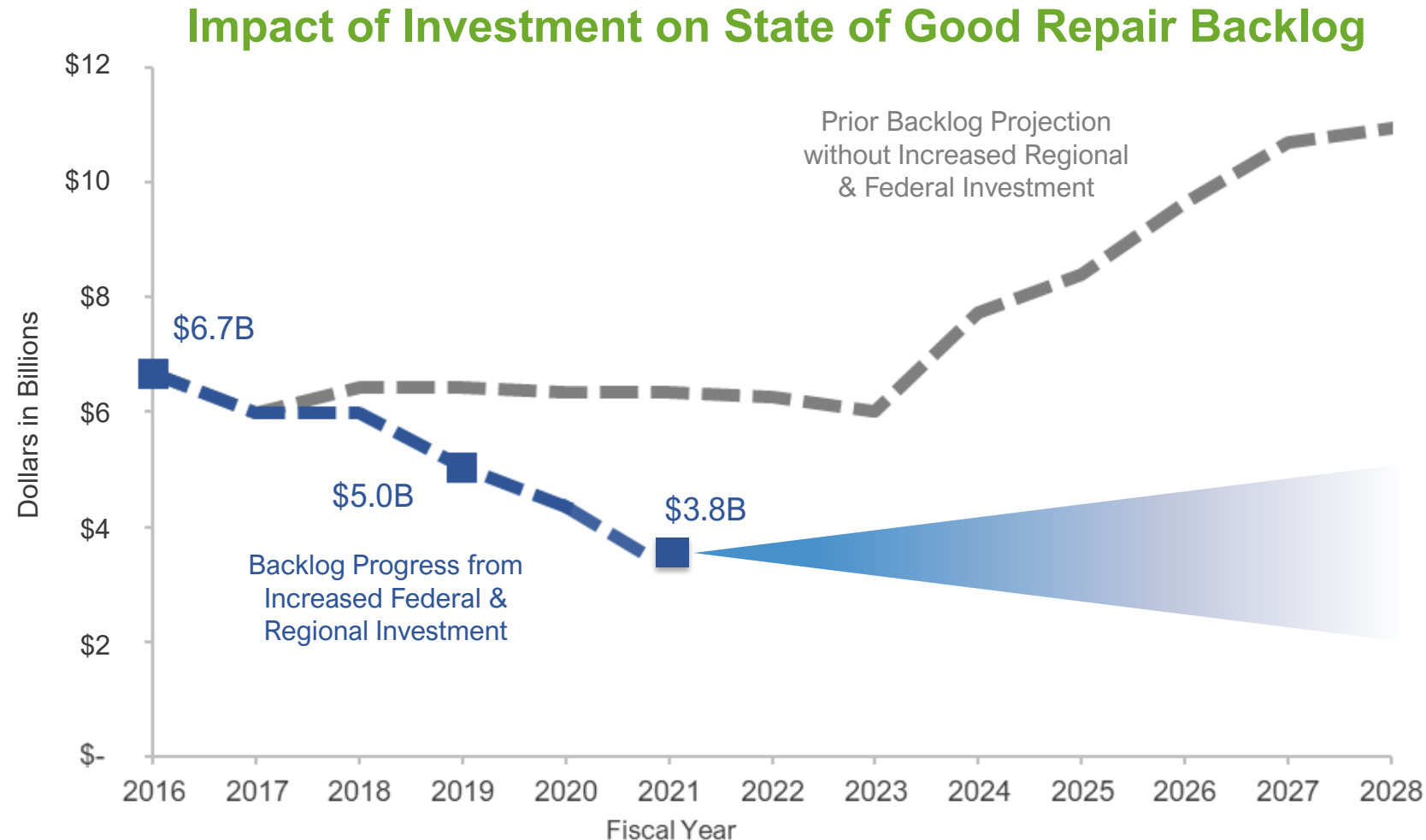
Significant Progress in Reducing SGR Backlog

SGR Backlog by Asset Type* (\$B)



*Backlog estimated at \$7 billion in 2016; graph displays reductions in backlog to date, backlog anticipated to be addressed by the FY23-FY28 Capital Program, and remaining estimated backlog at the end of the six-year period.

Risk Factors for Future SGR Progress



Factors Affecting Future Trend

- ↑ SGR Needs Not Known in 2016
 - Yellow Line Tunnel Liner
 - ~40 Bridges
 - ↑ Emerging Needs
 - Signal System Modernization
 - Tunnel Ventilation
 - ↑ Market Condition Changes
-
- ↓ Continued SGR Investment
 - ↓ Federal IIJA Funds

Capital Program Risks & Considerations

Supply Chain Delays, Inflation, and Construction Market Increases

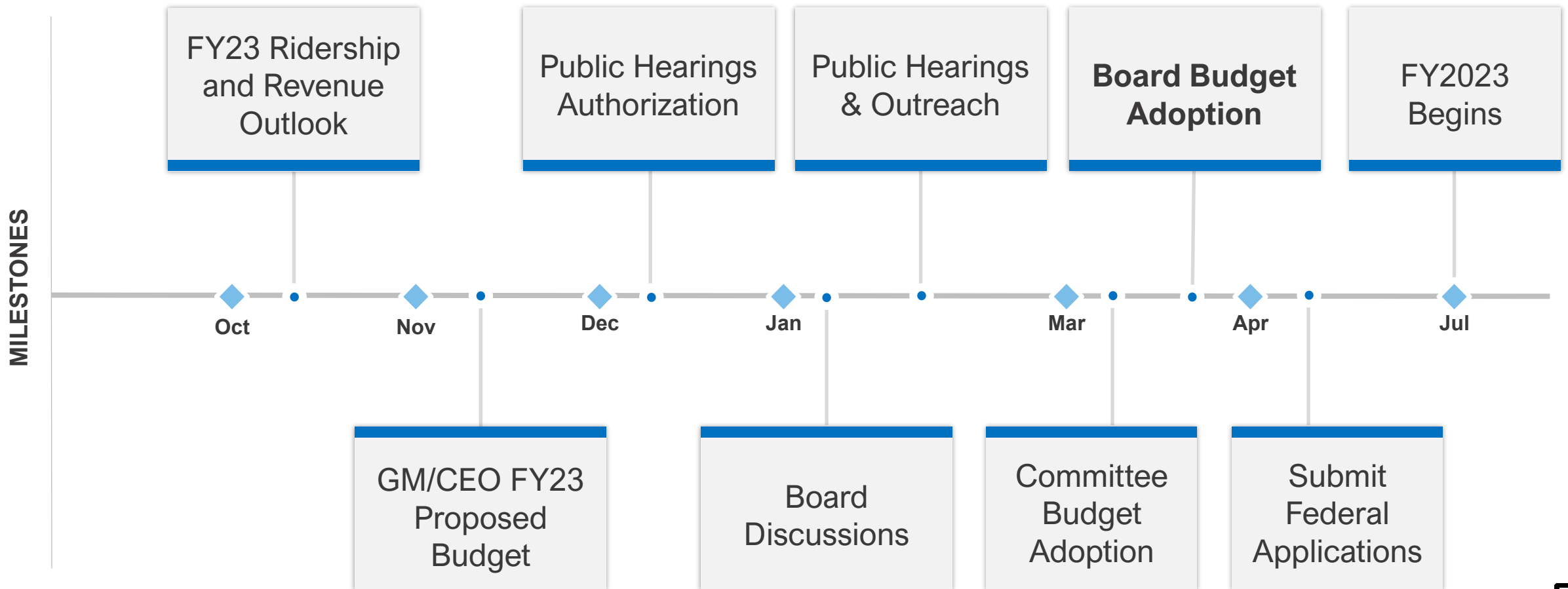
Capital Funding Opportunities and Uncertainty

Emergency Safety Requirements and Emerging State of Good Repair Needs

Long-Term Needs and Transformational Opportunities, e.g.

- Sustaining State of Good Repair
- Zero Emissions Vehicle Programs
- Rail Signaling System Modernization
- Rail System Capacity Improvements

Key Dates & Milestones





Appendix

Anticipated Capital Contributions – FY2023

Federal Funding

Federal Formula Programs	331,445,347
Federal RSI/PRIIA	148,500,000
Other Federal Grants	11,531,543
Total - Federal Grants	491,476,890

District of Columbia

Formula Match & System Performance	102,157,842
RSI/PRIIA	49,500,000
Dedicated Funding	178,500,000
Subtotal - District of Columbia	330,157,842

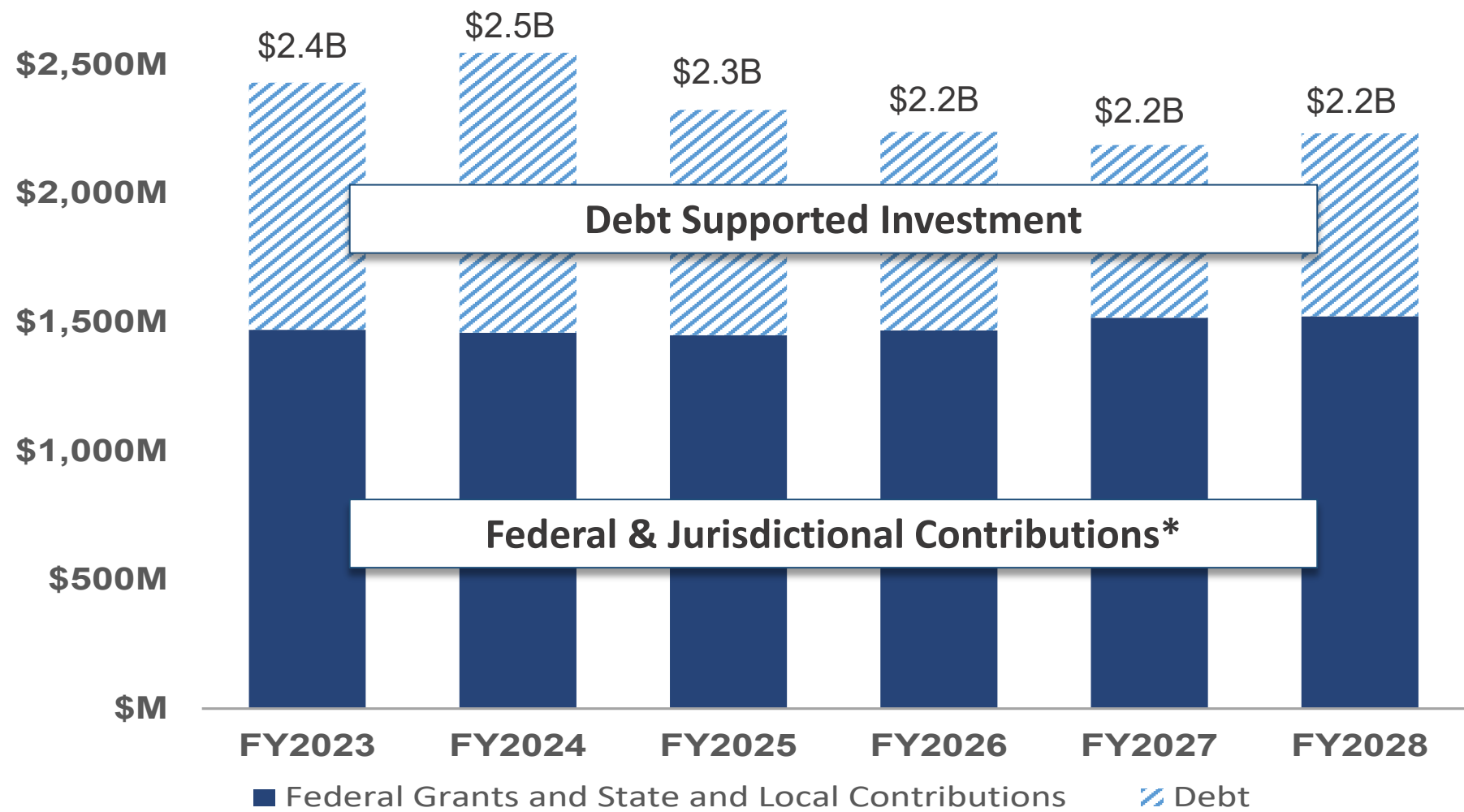
State of Maryland

Montgomery County	47,902,028
Prince George's County	48,572,081
Maryland RSI/PRIIA	49,500,000
Maryland Dedicated Funding	167,000,000
Subtotal - Maryland	312,974,109

Commonwealth of Virginia

City of Alexandria	13,005,424
Arlington County	23,652,841
City of Fairfax	743,237
Fairfax County	42,091,821
City of Falls Church	795,954
Loudoun County	5,800,347
Virginia RSI/PRIIA	49,500,000
Virginia Dedicated Funding - Unrestricted	122,883,455
Virginia Dedicated Funding - Restricted	31,616,545
Congestion Mitigation and Air Quality (CMAQ)	645,768
Subtotal - Virginia	290,735,393

Total Capital Cost Supported by Debt



* Jurisdictional Contribution, Dedicated Funding, Current Federal, and PRIIA Funding



The following parties may have an interest in the decisions made by the Board with regard to these topics:

A-Connection, Inc.	Gannett Fleming Engineers and Architects
AECOM USA Inc.	Gannett Fleming-Parsons Joint Venture
AECOM-STV JV	Gannett Fleming-Parsons Joint Venture II
Aldridge Electric, Inc.	GENFARE
Alstom Transportation Inc.	Glebe Electronic
American Truck & Bus, Inc.	Habor Roofing
ANC Sports Enterprises LLC	HARSCO Metro Rail LLC
Badger Mills Supply Company	Helix Electric, Inc.
Birlasoft Consulting Inc.	Hensel Phelps Construction Co.
Biswas Information Technology Solutions	Hitachi Railcars Inc.
BoxBoat Technologies	HNTB Corporation
Brian Hoskins Ford	Hogan Lovell Law Firm
C3M Power Systems, LLC	HR&A Advisors
CH2M HILL, Inc.	Ideal Electrical Supply Corp.
CHKAMER	immixTechnology, Inc.
Cintas Corporation	InfraStrategies LLC
City Construction	Jacobs Engineering Group, Inc.
Clark Construction Group, LLC	Johnson, Mirmiran & Thompson Inc
Clever Devices Ltd.	Jones Lang LaSalle
Concrete Protection & Restoration, Inc.	K&J Consulting Services Inc.
Consolidated Construction & Engineering	Kawasaki Rail Car Inc.
Copper River Information Technology	Kiewit Infrastructure Company
Criswell Chevrolet	Kimley-Horn and Associates, Inc.
Crowe Horwath LLP	Kone
Cubic Transportation System Inc	KORBATO
Cummins Power Systems LLC	LDA 2395 Mill Rd LLC
CW Professional Services LLC Advanced	LDA 300 7th St LLC
Digital Systems, Inc.	Limbach Company LLC
Dell Marketing LP	Los Alamos Technical Associates, Inc.
DHA/RK&K Joint Venture	Louis Berger (DC)
DHK	LTK Engineering
Diversified Property Services	Luminator Mass Transit, LLC
DJB Contracting	Lytx, Inc
EastBanc Technologies, LLC	M & M Welding & Fabricators
ECS Corporation	M.C. Dean, Inc.
Edward Kocharian & Co Inc.	Merak North America
Ensco Rail Inc.	Metro Paving Corporation
eVigilant Security	Motorola Solutions Inc.
F.H. Paschen, S.N. Nielsen & Assoc., LLC	Mott MacDonald I&E, LLC
Five Points Infrastructure Services, LLC	Mythics, Inc.

Networking for Future, Inc. (NFF, Inc.)
New Carrollton Parking LLC
New Flyer of America, Inc.
North Eastern Bus Rebuilders Inc.
Orion Management, LLC
Paramount Mechanical Corp.
Parkmobile USA, Inc.
Parsons Transportation Group Inc.
Patuxent Roofing and Contracting, Inc.
PLLC/Urban Engineers
Potomac Construction Co. Inc.
Potomac Yard Constructors
Power Test, Inc.
Precision Escalator Products
Racine Railroad Products
RailQuick
RK Chevrolet, Inc
Safeware Inc.
Schindler Elevator Corporation
Shred-IT USA LLC
Singleton Electric Company, Inc.
Software Information Resource
Corporation
Sonny Merryman
A Inc.

Source Inc.
Stand Steel
Stout & Teague Management Corp
Straffice America, LLC
Susan Fitzgerald & Associates, Inc.
Swingmaster Corp
SyApps LLC
Systems Technology Group
T/A TMG Construction
The Aftermarket Parts Company
The Matthews Group, Inc.
TMAKm Joint Venture
Transit Information Products
Transportation Management Service Inc.
Trapeze Software Group
Trigyn Technologies, Inc.
Urban Atlantic LLC
V Group Inc.
VHB - Vanasse Hangen Brustlin, Inc
Vivsoft Technologies LLC
W.M. Schlosser Co.
Whitaker Parking Systems Inc.
WSP US