



Finance and Capital Committee

Information Item III-B

November 16, 2023

Capital Program Preview

Washington Metropolitan Area Transit Authority

Board Action/Information Summary

<input type="radio"/> Action <input checked="" type="radio"/> Information	Document Number: 205643	Resolution: <input type="radio"/> Yes <input checked="" type="radio"/> No
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Presentation Name:

Capital Program Preview

Project Manager:

Jim Sullivan

Project Department:

Planning and Performance

Purpose/Key Highlights:

Staff will provide a preview of Metro's projected Six-Year Capital Program, which is designed to align with the strategic initiatives in Your Metro, The Way Forward Strategic Transformation Plan, while acknowledging the pressures on the capital program.

The Six-Year Program is being designed to stay within an approximately \$11 billion expense limit to align with anticipated support for the operating budget and inflationary impacts in the near term and the erosion of dedicated-funding backed debt capacity in the mid- and long term.

Interested Parties:

Not applicable to this information item.

Background:

Metro's Capital Improvement Program (CIP) continues to invest in the enhancement of Metrorail, Metrobus, and MetroAccess services as well as Metro's administrative buildings that support operations with the goal of providing excellent customer service through safe and efficient operation. The six-year CIP (encompassing the budget year and five planning years) is pivotal in ensuring the reliability and efficiency of the transit system. Funding for these critical initiatives is secured through various channels. Compact Signatories, including the State of Maryland, the District of Columbia, and the Commonwealth of Virginia, in addition to the local governments of northern Virginia and the Federal government continue to provide essential support. Funding sources include

Dedicated Funding, Federal Formula, Discretionary and PRIIA grants, capital contributions from local governments, and proceeds from debt issuances.

Looking ahead, Metro is adapting to evolving market conditions and funding constraints. The FY2025 to FY2030 Capital Program reflects this approach. With the funding provided by jurisdictional partners and the federal government, the estimated state of good repair backlog has declined from \$6.4 billion to \$4.1 billion (as of FY2024). Additional resources will be needed to continue this progress. This preview illustrates some of the tradeoffs that will have to be made to manage the program within existing funding resources, to address changing market conditions, and to support the operating budget.

Discussion:

The FY2025 to FY2030 Capital Program was anticipated to continue the trend towards reducing the state of good repair backlog while also providing budget authority for transformational investments. Given the current funding outlook and inflationary pressures, Metro's available funding is functionally reduced leading to:

- Longer time between rehabilitation and replacement cycles
- Reduced ability to address backlogged needs
- Reduced ability to advance transformational projects and regional initiatives

This preview provides an overview of the capital program that can be delivered with \$11 billion of anticipated funding over six years. This program will address ongoing contract commitments and essential state of good repair needs but will not address other state of good repair, modernization or expansion projects. It should be understood that in the context of this proposed budget, essential state of good repair projects does exclude some basic state of good repair projects, potentially stopping progress on the efforts to reduce state of good repair backlog, or worse, beginning to increase that backlog. Examples of the tradeoffs made by investment category are included in the presentation and some options for how to move forward will also be discussed.

Funding Impact:

There is no funding impact from providing this update.

Previous Actions:

October 2023 – Future Financial Planning – FY2025 Service, Fares and Capital Planning Update

Next Steps:

December 2023 – Present General Manager Proposed Budget and Six Year Capital Improvement Program

Recommendation:

Information Only

Capital Program Preview

Finance and Capital Committee
November 16, 2023



Metro's Capital Program

Metro advances capital projects and annual capital maintenance programs to restore, sustain, and modernize the system. The program also includes annual preventive maintenance transfers from the operating budget.

- Invest in the system to modernize and provide safe, efficient, and reliable service for customers, employees and the region
- Address the backlog of overdue state of good repair needs
- Sustain safety and reliability through recurring maintenance, rehabilitation, and replacement programs
- Maintain financial stewardship
- Support a sustainable and more equitable future for the region

Metro's Capital Program Structure



10-Year Capital Plan

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

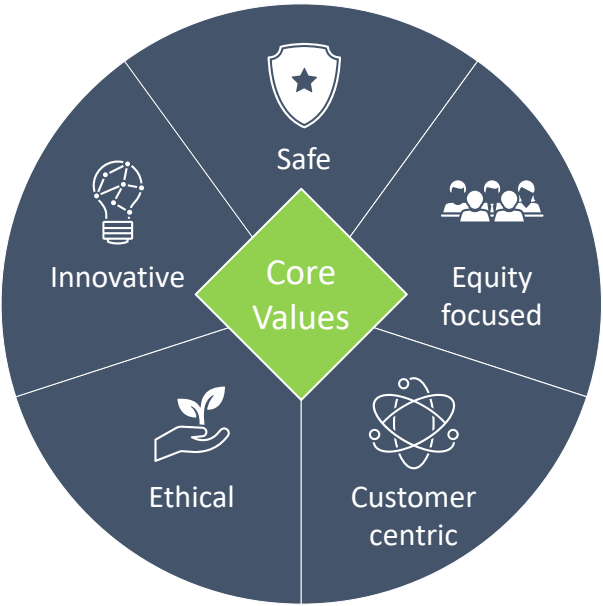
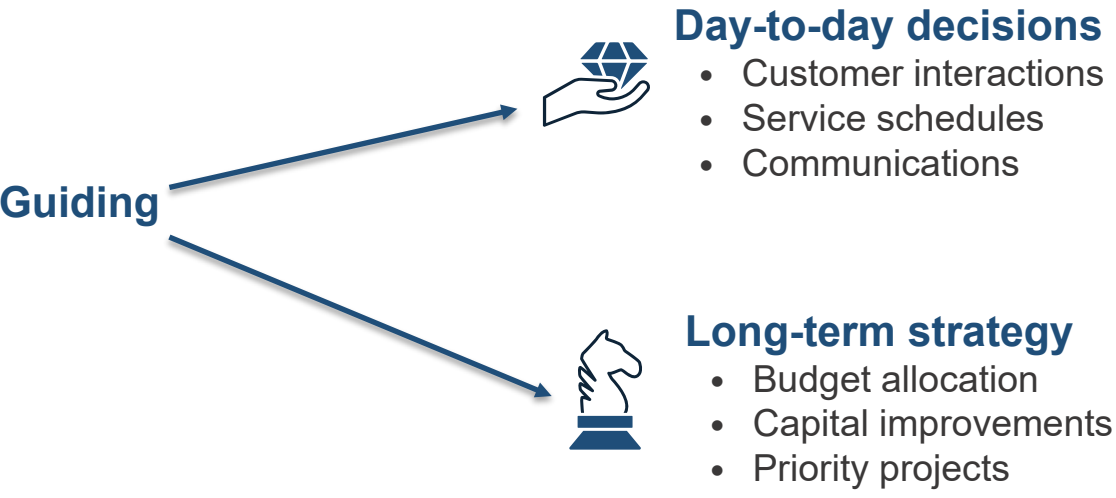
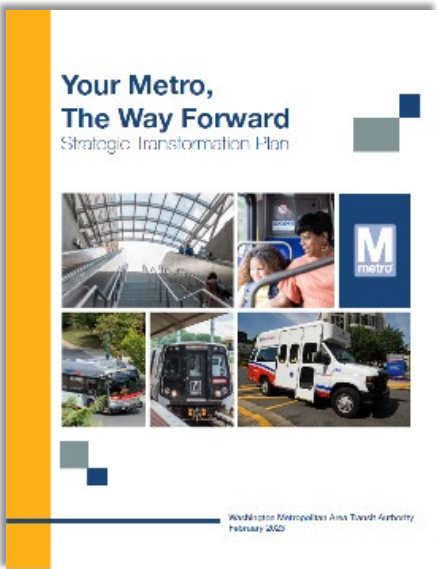
Six-Year Capital Improvement Program

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

One-Year Capital Budget

Expenditure forecast for capital projects and programs in current budget year

Strategic Transformation Plan: Guides Long-Term Strategy and Day-to-Day Decision Making of Metro Over the Next Five + Years



Metro’s capital initiatives advance the following goals:

Service Excellence

Talented Teams

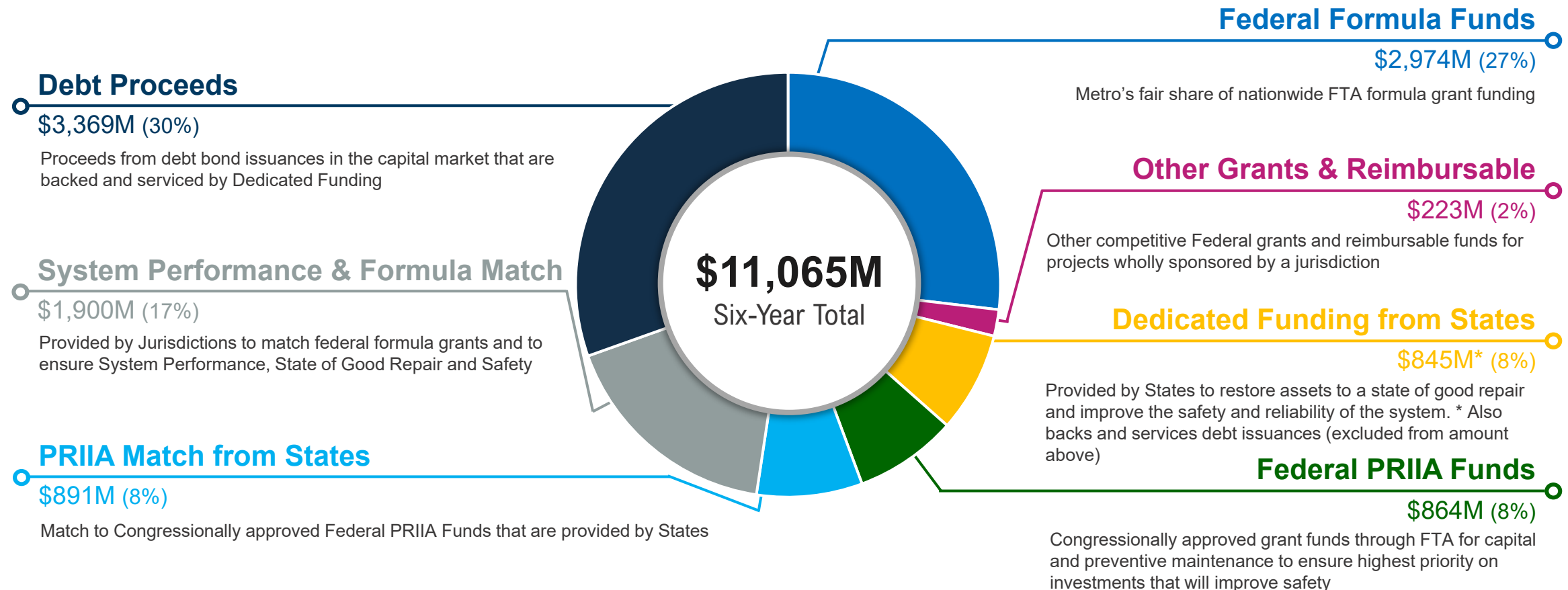
Regional Opportunity and Partnership

Sustainability



Estimated \$11 Billion Capital Funding Investment for FY2025 – FY2030

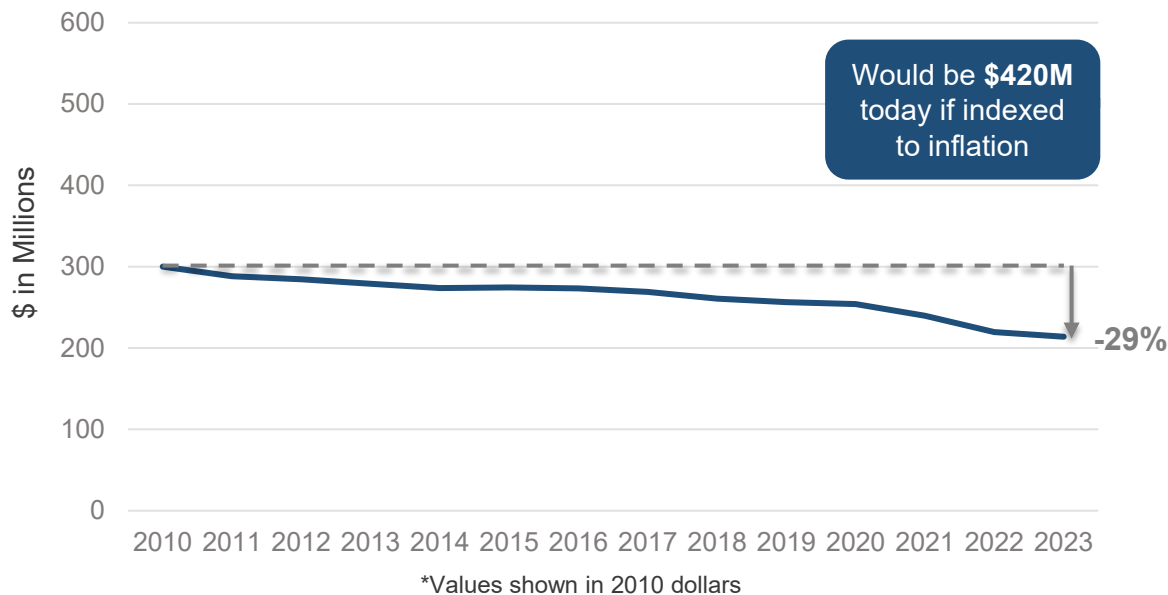
Declining capacity for capital projects, state of good repair programs, and preventive maintenance transfers



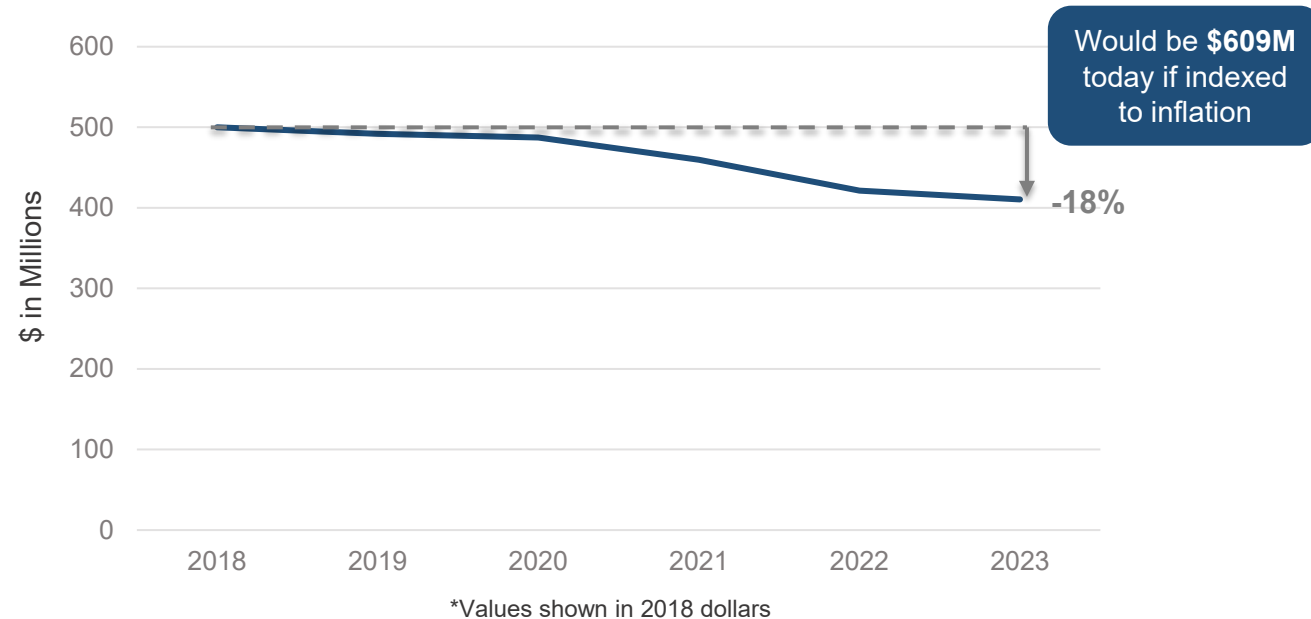
Value of Capital Funding Has Eroded Over Time

- PRIIA approved in 2010, Dedicated Funding agreements signed in April 2018
- Purchasing power of original PRIIA and Dedicated Funding levels has decreased by 29% and 18% respectively

\$300 million of original PRIIA worth \$214 million today



\$500 million of original Dedicated Funding worth \$410 million today



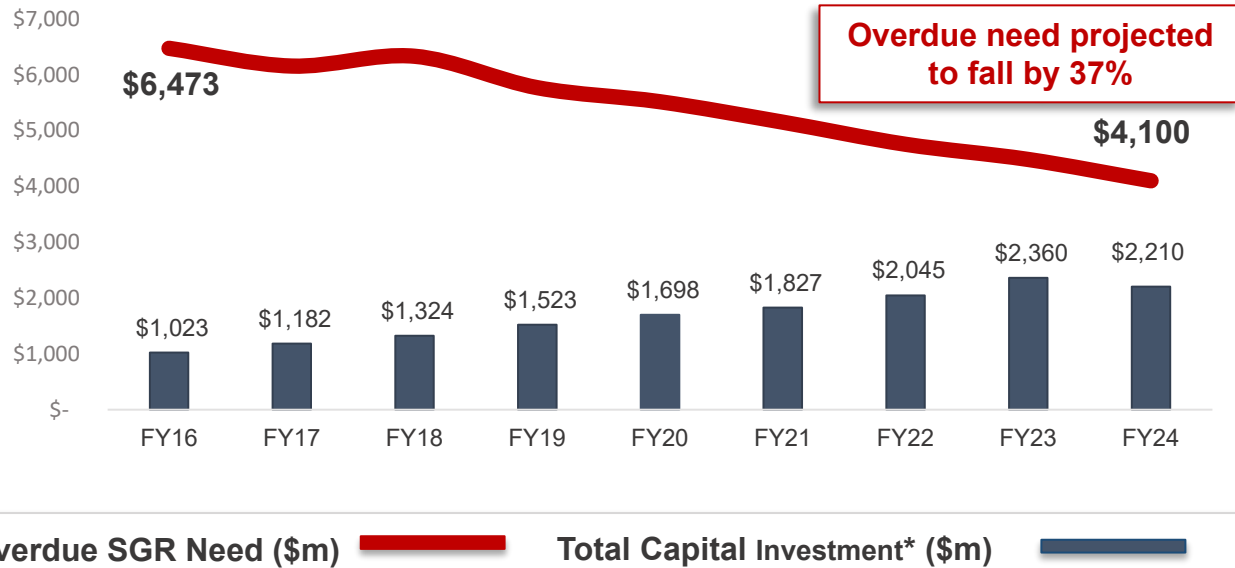
**PRIIA and Dedicated Funding would be worth an additional annual amount of \$229 million today.
If they had been indexed, the estimated cumulative value from start to 2030 would be ~\$3 billion of additional funding**

Debt Issuances to Support the Draft Capital Program

- Through FY2023, Metro has issued ~\$2.95 billion in debt proceeds, including premiums
- Metro currently holds AA credit rating for issuing Dedicated Funding backed-debt
- Remaining debt issuance capacity is estimated at ~\$3.4 billion
 - Debt issuance is ~30% of the \$11 billion of total funding capacity
 - Current estimate: Metro will not be able to issue new debt starting in FY2029
 - If FY2025 maximum Preventive Maintenance transfer, debt limit reached in FY2028

Overdue State of Good Repair Decreased, While Reliability and System Performance Increased

Overdue State of Good Repair Need (\$m) & Total Capital Investment



*Includes both state of good repair and other investments

Performance has improved:

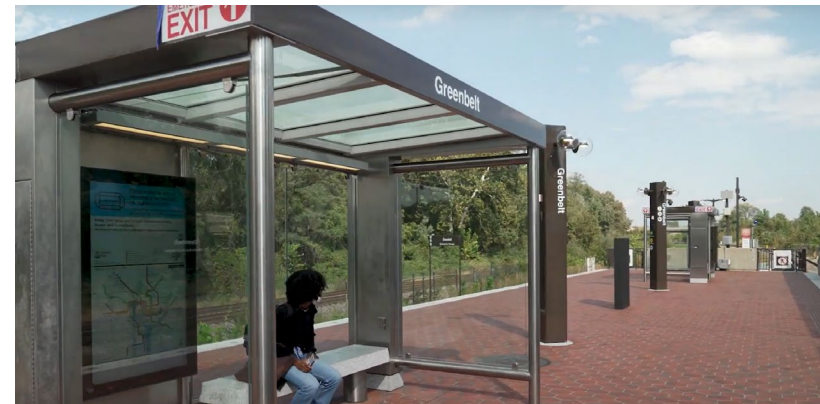
- Escalator unit failures have reduced by nearly **30%** system-wide
- Smoke/fire incidents decreased from an average of ~8 per month in 2016 to **~3 per month in 2023**
- Rail Customer Satisfaction has increased to **85%**; Bus Customer Satisfaction holding steady at **75%**
- Rail and Bus Ridership growing

Replacing Obsolete Infrastructure Advances State of Good Repair & Improves Reliability and Safety

BEFORE



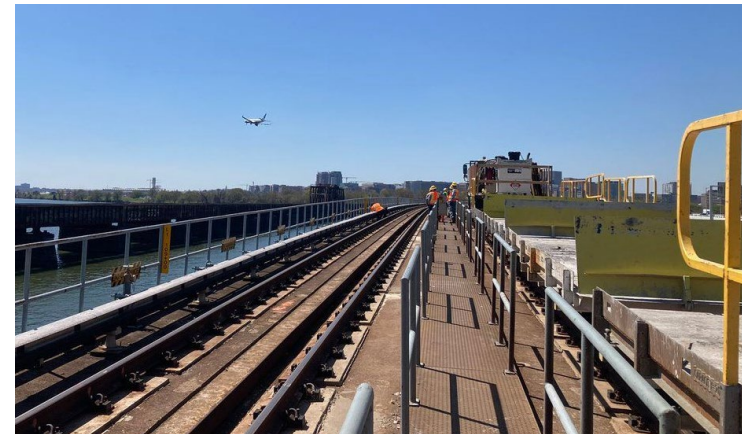
AFTER



Example: Platform Improvement Project

Replacing Obsolete Infrastructure Advances State of Good Repair & Improves Reliability and Safety

BEFORE



AFTER

Example: Yellow Line Tunnel and Bridge Rehabilitation

Replacing Obsolete Infrastructure Advances State of Good Repair & Improves Reliability and Safety



Replacing Obsolete Infrastructure Advances State of Good Repair & Improves Reliability and Safety

BEFORE

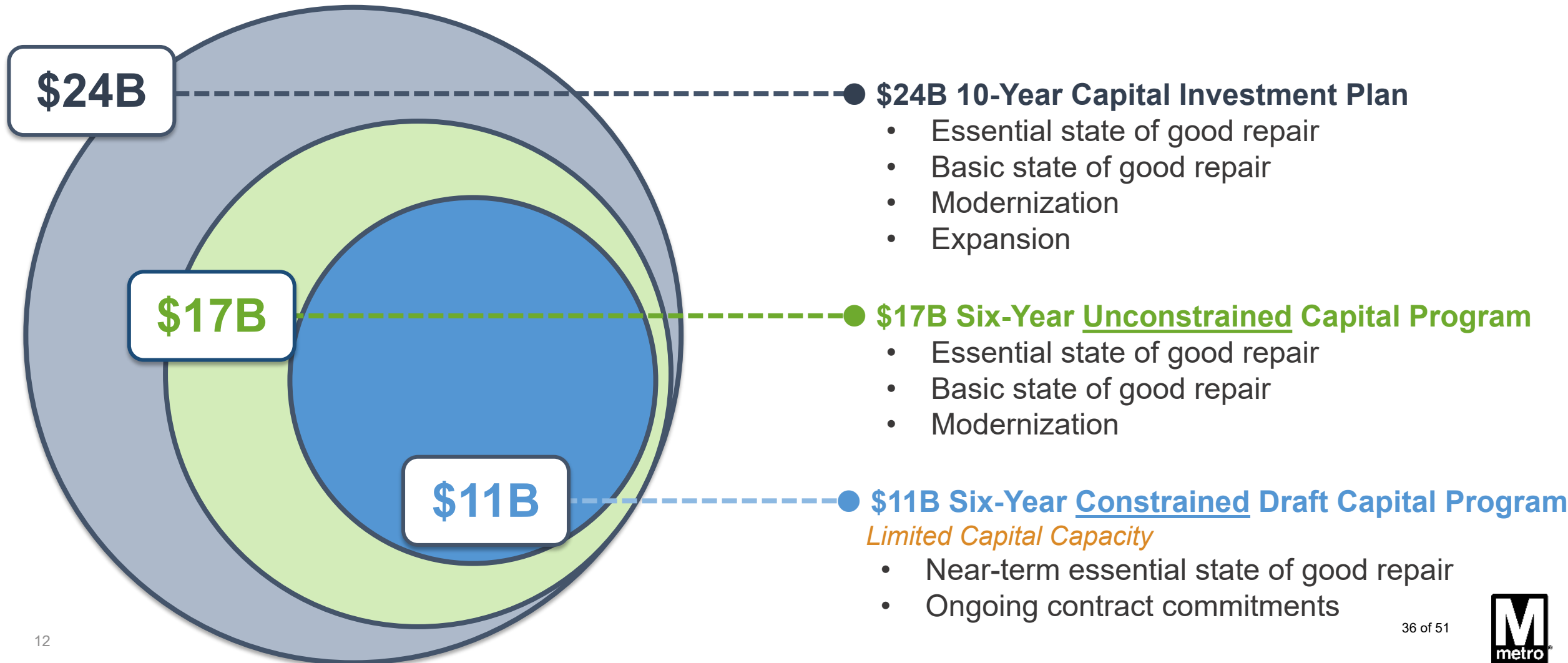


Example: Northern Bus Garage



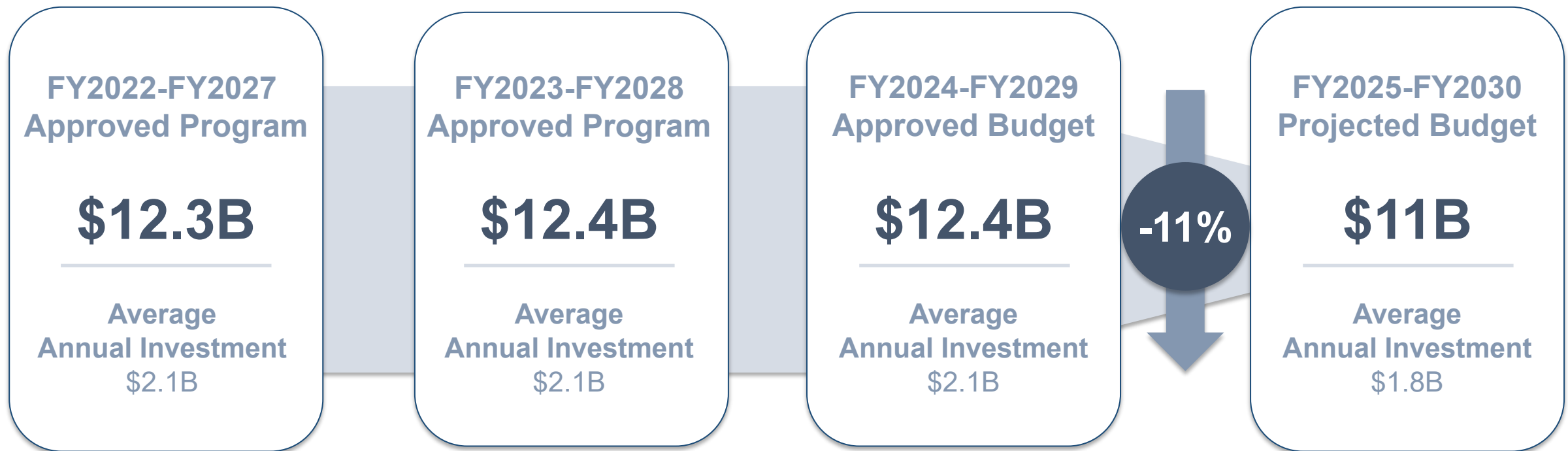
UNDER CONSTRUCTION

Funding Constraints Shrink Draft Capital Program Leaving State of Good Repair and Modernization Needs Unmet & Reducing Reliability



Without Additional Investment Projected Six-Year Capital Program is Shrinking

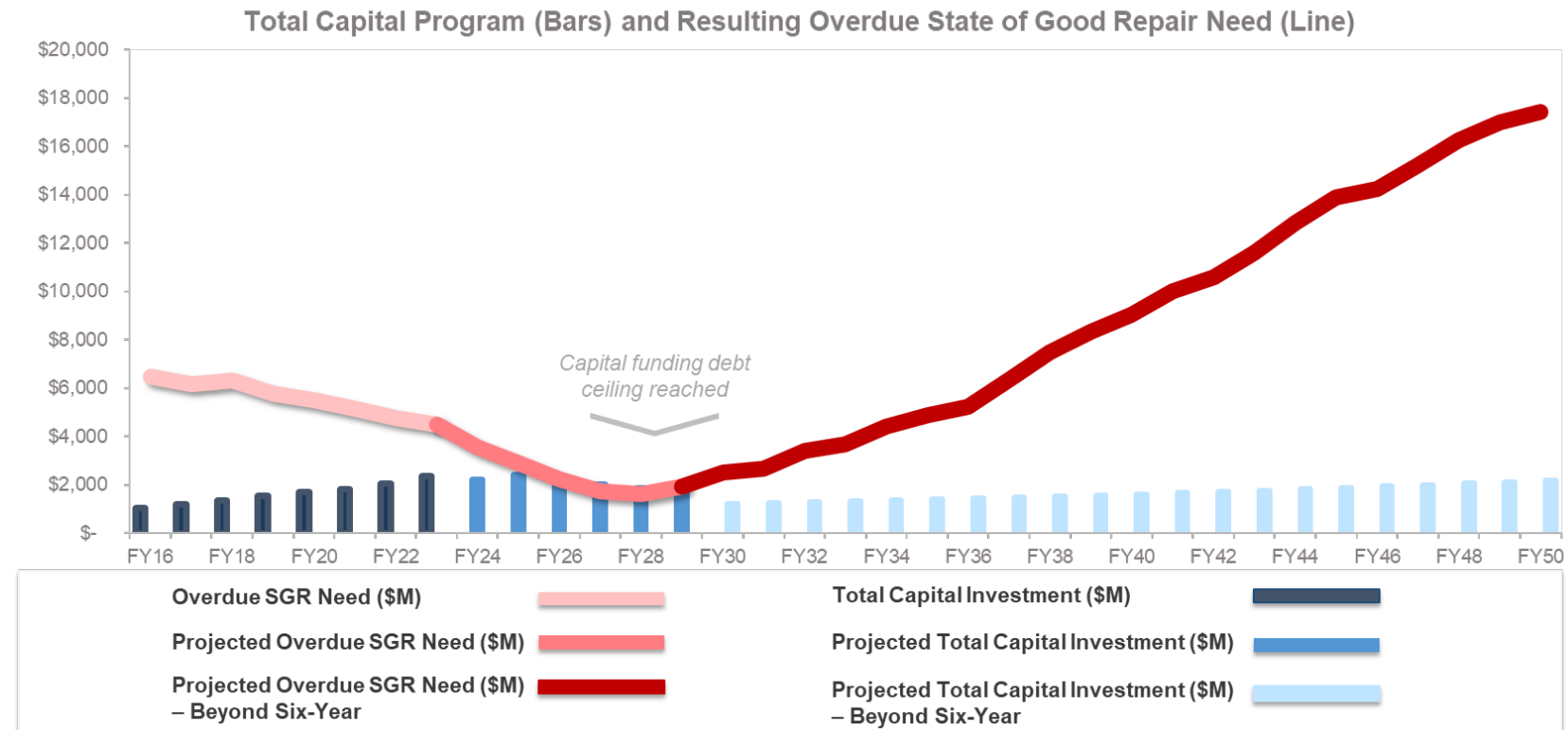
Transitioning to a more financially constrained Draft Capital Program



Does not account for inflation eroding investment purchasing power

Smaller Draft Capital Program will Reverse State of Good Repair Progress

- As backlog of state of good repair grows, performance and reliability decreases and risk increases
- Metro needs to maintain essential state of good repair programs to avoid asset failure as experienced prior to SafeTrack and Platform Improvement projects
- Declining reliability, worsening customer experience and increased safety risk



Stretch Capital Dollars

Reduce capital program costs and reallocate future funding to advance additional state of good repair (Power, Track, Signals, Vehicle Maintenance)

- Metro is identifying cost reduction opportunities in capital program management - administrative efficiencies **\$25M per year/\$150M over six years** including:
 - Reducing consultants and contracted project/program management support
 - Reducing capacity for development of potential future investments, examples: Bus Garage Modernizations, Station Entrance/Circulation Improvements
 - Right-sizing management of scheduled service disruptions to meet demand
- Parallel effort to change standards, requirements and practices that will result in additional savings over the long-term
 - Examples: Station signage, bus shelters

Constraining Bus, Bus Facilities & Paratransit to Fit Within a Smaller Draft Six-Year Program

Funding Constraints Limit Program to Near-Term Essential State of Good Repair Projects Forcing the Deferral of Future Reliability and Modernization Investments

☒ Included

- Maintain bus fleet at current fleet size
- MetroAccess vehicle replacement
- Replacing two bus garages (Bladensburg and Northern)
- Zero emission bus conversion at Cinder Bed
- Bus shelter replacements

☐ Excluded due to funding capacity

- Facility state of good repair and zero emission modernization of bus garages (Western, Four Mile, Landover, Montgomery)
- Better Bus: Visionary Network Redesign improvements (fleet and facilities)

Constraining Rail Vehicles & Infrastructure Investments to Fit Within A Smaller Draft Six-Year Program

Funding Constraints Limit Program to Near-Term Essential State of Good Repair Projects Forcing the Deferral of Future Reliability and Modernization Investments

☒ Included

- 8000 Series Railcars (legacy vehicle replacement)
- State of good repair investments in signaling system
- Planning and project engineering for advanced signaling system and platform screen doors
- Rail vehicle scheduled maintenance program (SMP) facility improvements
- High priority state of good repair for traction power
- High priority rail station state of good repair and improvements
- Fare systems modernization
- Critical structural and bridge rehabilitation
- Track rehabilitation
- Improvements for remote control of third rail power (tagging relay)
- Complete radio replacement and fiber installations
- Complete current tunnel grouting for water leak mitigation
- Stadium Armory (D&G) Bridge Pocket Track

☐ Excluded due to funding capacity

- Implementation of advanced signaling system and platform screen doors
- Medium and lower priority state of good repair for traction power assets
- Heavy Repair and Overhaul Facility (re-scoped)
- Emergency trip station replacements
- Further water leak mitigation in stations and tunnels
- Station public address and intercom system replacements
- Drainage pumping station rehabilitations
- Sewage ejector replacements
- Station platform and mezzanine light replacements
- Additional 8000 Series railcar fleet (fleet expansion)
- Station cooling system rehabilitations

Constraining Business & Operations Investments to Fit Within a Smaller Draft Six-Year Program

Funding Constraints Limit Program to Near-Term Essential State of Good Repair Projects Forcing the Deferral of Future Reliability and Modernization Investments

☒ Included

- Enterprise resource planning (ERP) software replacement
- Maintenance of technology software and hardware
- Paratransit scheduling software replacement
- Asset management software replacement
- Priority parking garage and surface lot rehabilitations
- Training facility improvements
- Essential non-revenue vehicle replacements
- Option for increased preventive maintenance transfer (operating budget) \$285M for FY2025

☐ Excluded due to funding capacity

- Revenue facility rehabilitation
- Supply chain management optimization
- Rehabilitation of parking garages and surface lots
- Demolition of Huntington Station parking garage

Protect Essential State of Good Repair to Maintain Safe Service

Example: Power Assets

Traction Power at Medical Center

☑ **Funded in draft Six-Year Capital Program**
Directly impacts reliability & safety of service

- Upgrade traction power substations and tie breaker stations
- **Impact of Failure** – revenue service implications: speed restrictions, single track, no rail service through segment



Station Power at Medical Center

☒ **Not Funded in draft Six-Year Capital Program**
Impacts reliability & safety of service **eventually**

- Defer station power equipment replacement
- **Potential Impacts of Failure** – loss of power to the station including to escalators and elevators, leading to temporary station closures, no revenue collection, need for bus bridges between stations, trains can pass through but likely not serve the station

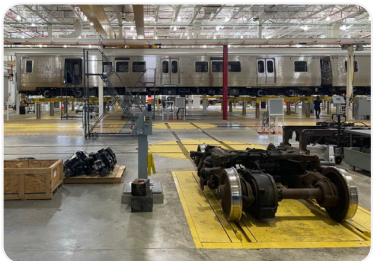


Capital Transfers Put Priority Investments at Risk

Reduced capacity for state of good repair and modernization projects

- Potential FY2025 preventive maintenance increase could be offset by reducing and re-scoping Heavy Repair and Overhaul
- Further decisions required if increased preventive maintenance transfer continue beyond FY2025

Potential Impact (FY2025 Decision)



Heavy Repair & Overhaul Facility

- Inefficiency increases ongoing operating budget costs
- Deferral adds complexity for operations and maintenance; continuing a decentralized approach in constrained facilities

Potential Future Impacts (FY2026 Decisions)



8000-Series Fleet of the Future

- If legacy fleets remain in service longer, reduces reliability and efficiency
- Delaying purchase option could be aligned with decrease in fleet size, limiting flexibility to increase rail service and reduces capacity



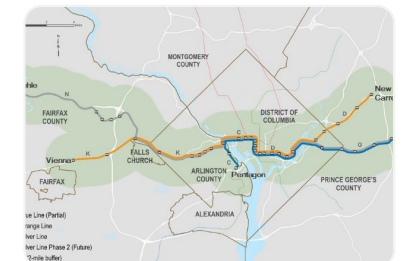
Zero-Emission Buses & Facilities

- If legacy buses remain in service longer, reduced reliability & environmental impacts
- Adds complexity to facility transition; limits flexibility
- Extends goal to achieve zero-emission bus fleet by 2042
- Potential smaller bus fleet and less peak service



Advanced Signaling System

- Deferring advances signaling investments forces use of older assets with parts that are no longer available



Blue, Orange, Silver Corridor Improvements

- Limits Metro's ability to increase capacity on busy sections of the system, run more frequent service, and support regional growth

PRELIMINARY RECOMMENDATION:

Reduce and Re-Scope Railcar Heavy Repair & Overhaul Facility to Accommodate \$285M Preventive Maintenance Transfer in FY2025

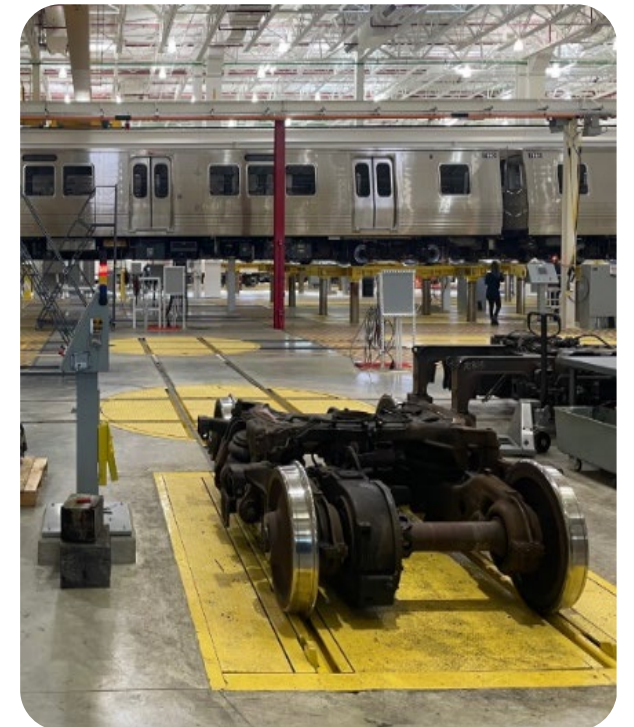
Invest in smaller scale railcar facility and equipment improvements for scheduled maintenance

Overview

- Given the size and composition of the fleet, constrained resource environment and the increased cost of the project; reduce, re-scope, and pursue alternate approach
- Requires other investments in facilities to address scheduled maintenance program needs
- Allows for potential increased FY2025 preventive maintenance transfer (\$285M) and reallocation of resources for other state of good repair activities

Consequences of Potential Deferral

- Maintenance work would be completed at different rail yards, adding complexity for operations and maintenance; less cost-efficient operations
- Would continue a decentralized approach in constrained facilities



Funding Constraints Put Railcar Acquisition Program at Risk

- Metro has 1,288 railcars; 360 rail vehicles (2000/3000-series) are at end of useful life
- 8000 series program to acquire up to 800 railcars for replacement and expansion
- Funding constraints limit capacity to acquire railcars
- Continued increased preventive maintenance transfer in FY2026 could impact award of Option 1

Contract	Status	Total Project Cost Estimates	# of Railcars
Base	Awarded, funded in draft Capital Program	\$905M	256
Option 1	Funded in draft Capital Program	\$324M	104
Options 2 - 5	Not in draft Capital Program	\$862M	440

Consequences of Potential Deferral: Reduces reliability, efficiency and capacity; potential decrease in fleet size, limiting flexibility to increase rail service

Funding Constraints Put Zero Emission Program at Risk

- Metro has a plan to fully convert its bus fleet and bus facilities to support a zero-emission fleet by 2042
 - Metro has 9 bus facilities and a fleet of approximately 1,600 buses
- Constrained \$11B draft capital program includes some electrification investments:
 - **\$283M** – electrification of 3 bus garages (Northern, Bladensburg, Cinder Bed Road)
 - **\$542M** (\$1.35M per bus) – purchase of 400 electric buses
- Funding constraints limit capacity to purchase electric buses and delays construction of facility infrastructure
- Continued increased preventive maintenance transfer in FY2026 could impact the transition to zero emission



Consequences of Potential Deferral: Delays facility transition; limits flexibility; extends goal to purchase only zero-emission buses by 2027 and convert entire fleet by 2042

FUTURE CONSIDERATIONS:

Advanced Signaling System & Blue/Orange/Silver Corridor

Without substantial additional investment, signal modernization and system expansion will not advance

- Planning and engineering work for advanced signaling and Blue/Orange/Silver corridor investments is progressing
- Project development is required to successfully compete for federal funding (i.e. core capacity)



Consequences of Potential Deferral: Signals - Forces use of older assets with parts that are no longer available;
B/O/S - Limits Metro's ability to increase capacity, run more frequent service, and support regional growth

Projected Six-Year Capital Program Summary

\$ in 000s

	\$17 Billion Unconstrained	\$11 Billion Constrained
Ongoing Projects		
Bus, Bus Facilities & Paratransit (Northern, Bladensburg, Cinder Bed)	\$913,398	\$ 913,398
Business & Operations Support (Enterprise Resource Planning Software replacement, parking garage rehabilitation, office building construction)	\$629,190	\$629,190
Rail Systems (train control room rehabilitations, radio system replacement, traction power rehabilitation, fiber installation)	\$984,302	\$984,302
Railcar and Railcar Facilities (8000 series railcar purchase, 7000 series railcar purchase, railyard rehabilitations)	\$1,845,752	1,220,142
Stations and Passenger Facilities (fare system modernization, elevator/escalator rehabilitations/replacements, platform edge lighting, station power rehabilitations)	\$931,650	\$931,650
Track and Structures Rehabilitation (bridge rehabilitations, tunnel shaft rehabilitations, tunnel water leak mitigations)	\$219,966	\$219,966
Studies, Assessments, Preliminary Designs and Engineering	\$18,723	\$18,723
Ongoing Projects Subtotal	\$5,542,981	\$4,917,371
Ongoing Programs		
Bus, Bus Facilities & Paratransit (Vehicle rehabilitations and replacements)	\$1,369,544	\$1,369,544
Business & Operations Support (software maintenance, capital execution and program support)	\$1,422,054	\$1,272,054
Rail Systems (Switch machine replacements, signaling and traction power cable testing and replacement)	\$219,863	\$219,863
Railcar and Railcar Facilities (vehicle rehabilitations, shop equipment replacements)	\$734,664	\$734,664
Stations and Passenger Facilities (escalator/elevator rehabilitations, stations and facilities rehabilitations)	\$233,345	\$233,345
Track and Structures Rehabilitation (track rehabilitation)	\$729,935	\$729,935
Preventive Maintenance Transfers from Operating Budget to Capital Program	\$718,605	\$718,605
Ongoing Programs Subtotal	\$5,458,010	\$5,278,010
New Initiatives and Projects		
Bus, Bus Facilities & Paratransit (Western, Landover, Montgomery, Four Mile)	\$512,208	\$ -
Business & Operations Support (major software replacements, revenue collection facility rehabilitation, training facility rehabilitation)	\$776,052	\$161,311
Rail Systems (advanced signaling system implementation, traction power rehabilitation)	\$1,507,302	\$232,437
Railcar and Railcar Facilities (railyard state of good repair, railyard optimization, 8000 series railcar purchase)	\$545,509	\$ 200,000
Stations and Passenger Facilities (sewage ejector replacements, station lighting, intercom, public address system replacements)	\$1,060,195	\$39,943
Track and Structures Rehabilitation (bridge rehabilitation, tunnel shaft rehabilitation)	\$1,433,990	\$139,799
Studies and Assessments	\$24,219	\$1,250
New Initiatives & Projects Subtotal	\$5,859,475	\$774,740