

METRO

Capital Program Overview

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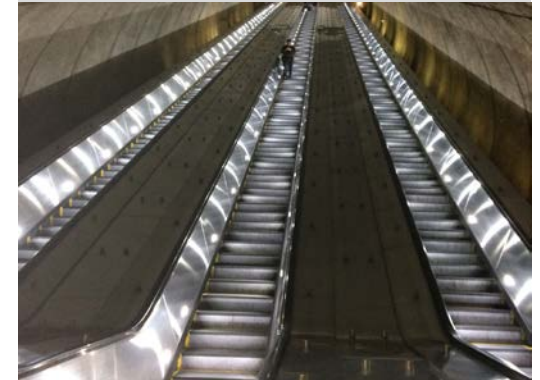
Who is Metro?

- Third largest heavy rail transit system in the U.S.
- Sixth largest bus network in the U.S.
- Metro moves 4 times more people each year than BWI, DCA and IAD airports combined
- 28% of the regions property tax base is located within a half-mile of a Metrorail station
- 54% of regions jobs are within a half-mile radius of all Metro stations and Metrobus stops

Metrorail Station Components



Chiller at Navy Yard



Station Escalators



Station Canopy Rendering

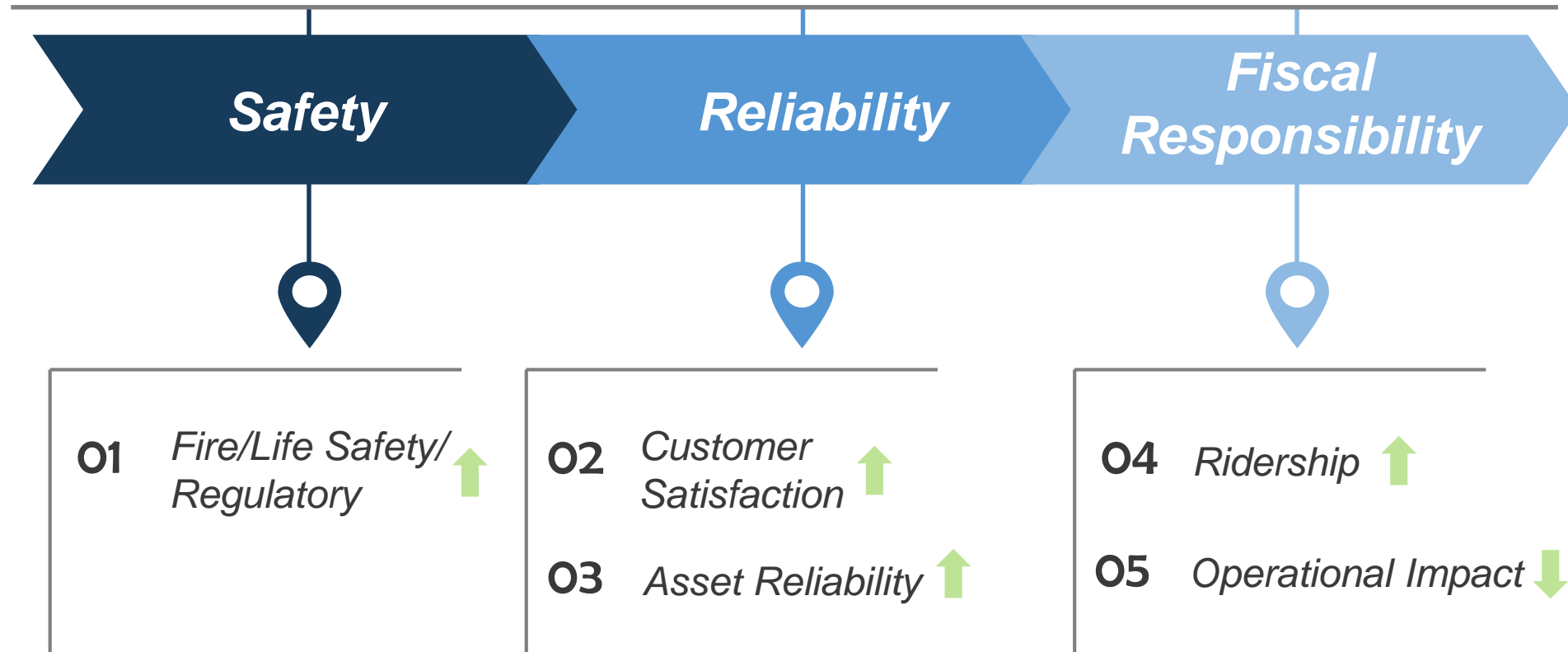


Platform Rehabilitation

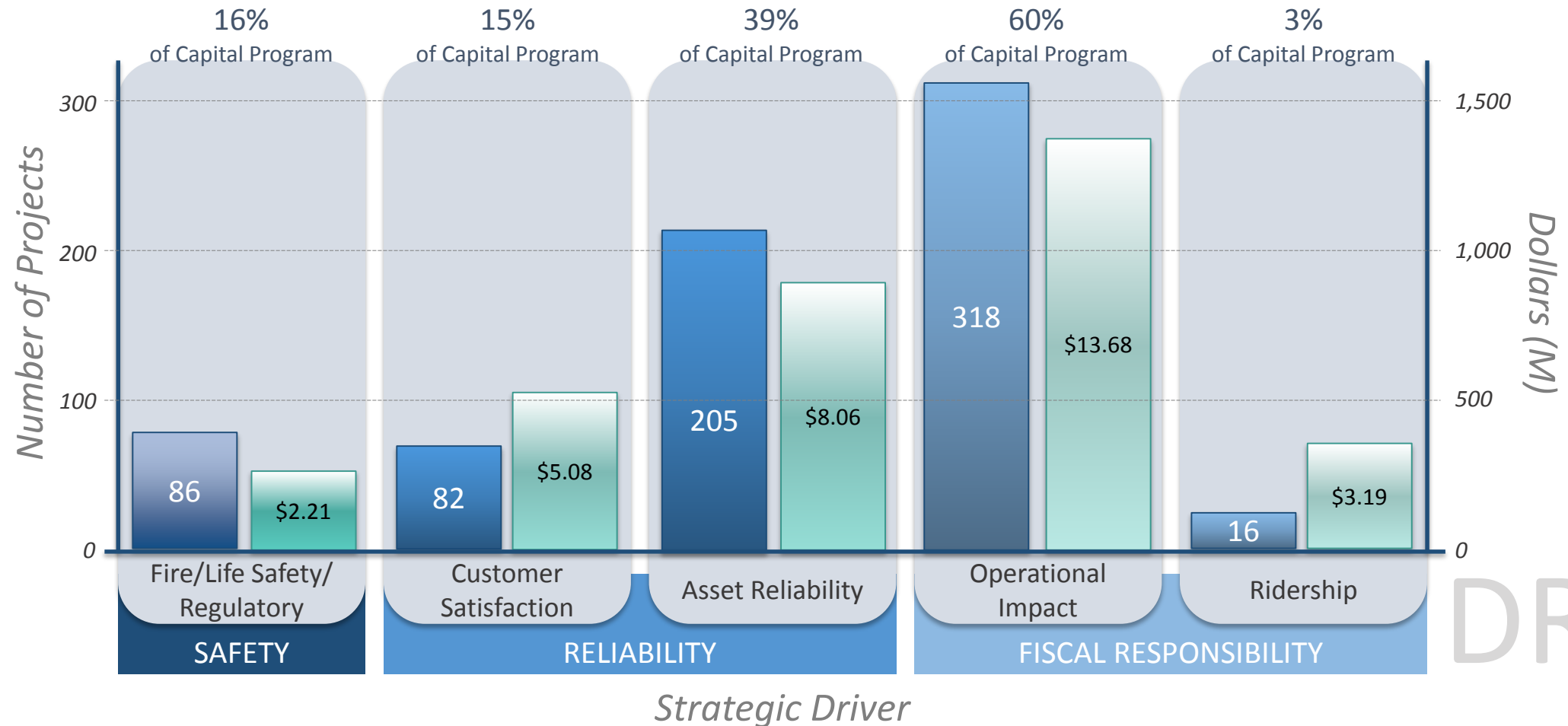


Pentagon City Station Lighting

The Five Strategic Drivers



Sample Strategic Driver Categorization - FY2020 Program

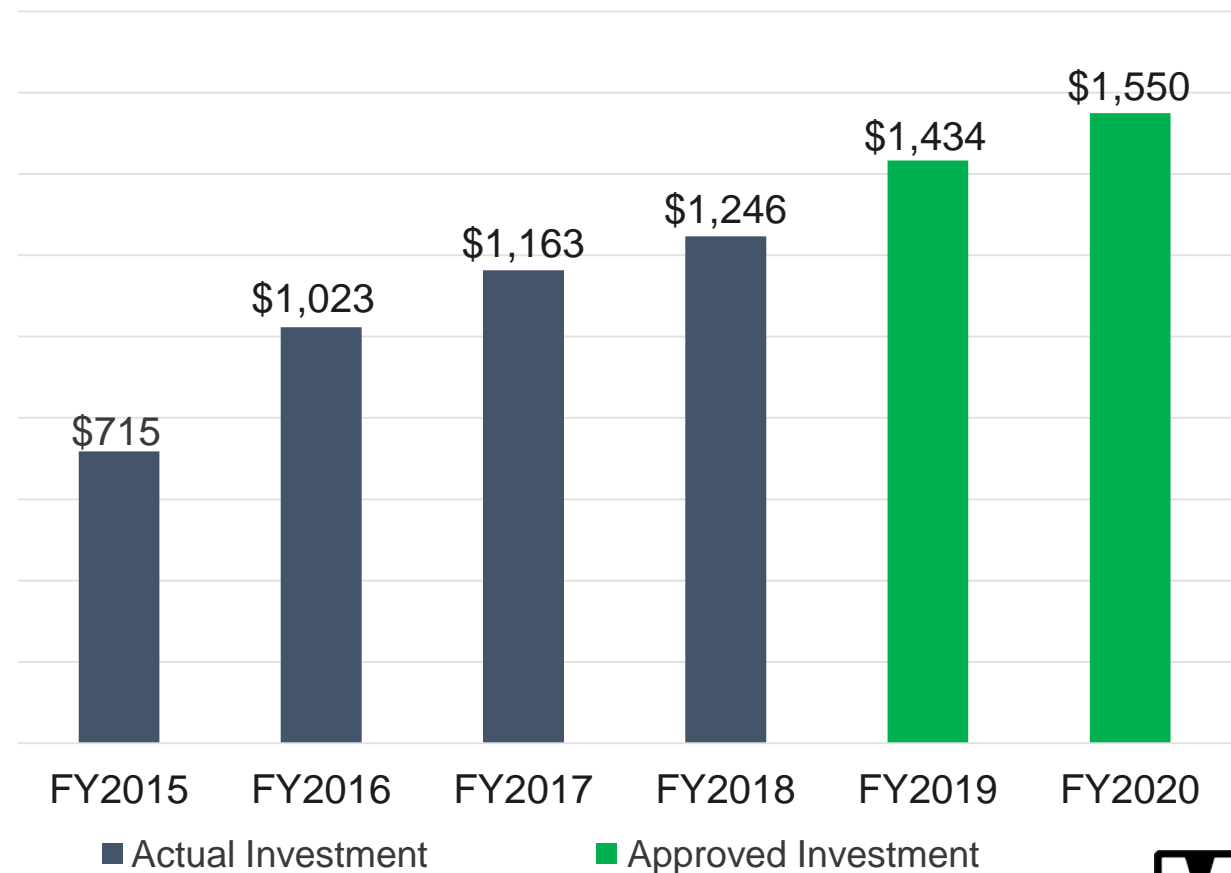


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Capital Program Investment Priorities

- Improve safety, service reliability and financial stability by increasing capital investment to:
 - Reduce state of good repair backlog
 - Proactively address ongoing asset lifecycle rehabilitation, replacement and preservation
 - Modernize & enhance system
- Invest federal, jurisdiction and dedicated funding wisely
- Strategically plan, develop and evaluate potential projects to prepare for future

Capital Investment, FY2015-2020, \$M



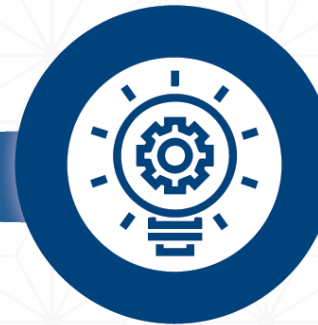
**WMATA's
\$25 Billion of
Capital Needs**



**Prioritize
safety & reliability
projects**



**Design & engineer
projects before
implementation**



**Successfully Advance
\$15 Billion of
Prioritized Projects
Over Next 10 Years**



Purpose: Employ Best Practices to Advance the Capital Program

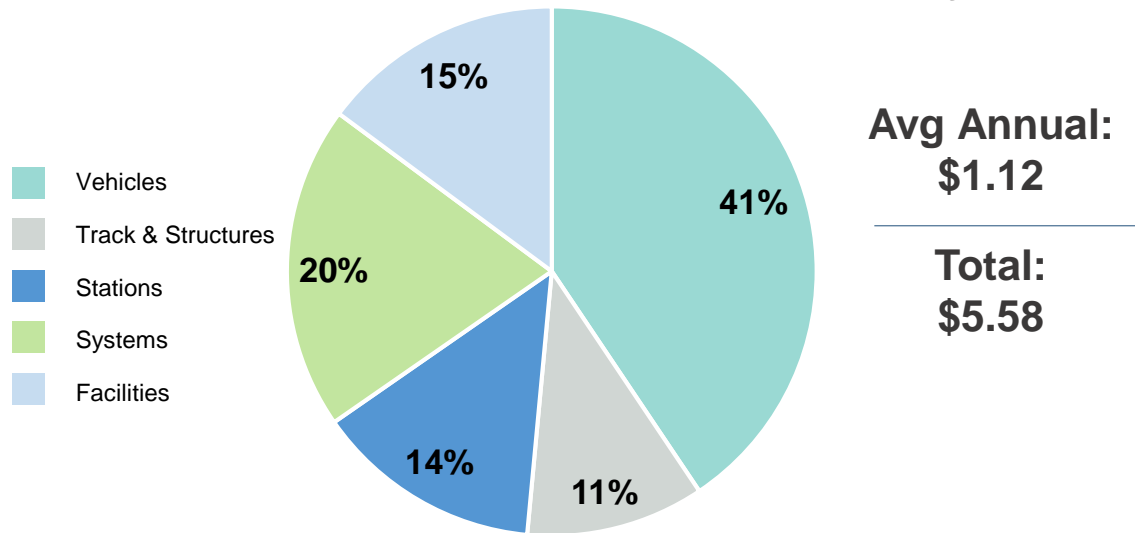
- Objectives:**
- **Effective & Efficiently Advance \$1.5 Billion Average Annual Program**
 - **Expand Competition to Attract Top Talent and Best Solutions**

Capital Program Planning and Management Process

PROGRAM PLANNING		PROGRAM DEVELOPMENT AND IMPLEMENTATION		
Asset Management	Needs Prioritization	Development and Evaluation	Project Development	Project Implementation
<ul style="list-style-type: none">• Asset Management Plans• Maintenance Schedules• Inspections & Condition Assessments	<ul style="list-style-type: none">• Capital Needs Inventory• Fleet Plans• Rehabilitation schedule• Business & Work Plans	<ul style="list-style-type: none">• Project Justification• Concept Planning• Feasibility & Alternatives Analysis• Draft Scope, Schedule, Cost Estimates• Assess Readiness	<ul style="list-style-type: none">• Concept Design• Define Scope, Schedule, Budget• Coordination & Outreach• Assess Risk• Advance Design• Begin Procurement	<ul style="list-style-type: none">• Complete Procurement• Complete Design• Begin Construction or Acquisition• Manage Risk & Change• Inspect, Accept & Begin Operation

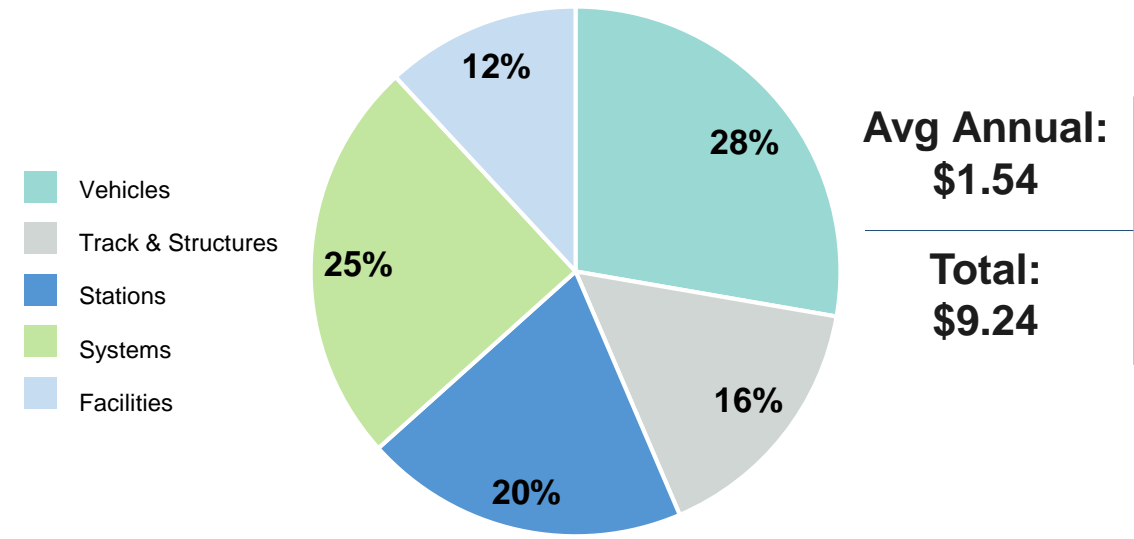
Capital Investment Focus: Remaining Backlog & Lifecycle Reinvestment

FY2015–2019 Capital Investment (5 yrs)



FY2020–2025 Capital Program (6 yrs)

(\$B)



Asset Category	FY2015-2019 Investment Focus
Vehicles	7000 Series Railcars Bus & Paratransit Acquisition Vehicle Maintenance & Rehabilitation
Track & Structures	SafeTrack Track Rehabilitation Leak and Drain Mitigation
Stations	Elevator/Escalator Rehabilitation & Replacement Parking Garage Rehabilitation
Systems	Power Lighting Cooling Rail Cellular Service & Station Wi-Fi Drainage/Pumping Systems
Facilities	Andrews Federal & Cinder Bed Road Bus Garages

Asset Category	FY2020-2025 – Major Planned Capital Investments
Vehicles	Complete 7000 Series Railcars 8000 Series Railcars Bus & Paratransit Acquisition Vehicle Maintenance & Rehabilitation
Track & Structures	Track Rehabilitation Leak and Drain Mitigation Bridge and Aerial Structures
Stations	Station Platform Rehabilitation Elevator/Escalator Rehabilitation & Replacement Parking Garage and Surface Lot Rehabilitation
Systems	Radio Power Lighting Cooling Train Control Systems Rehabilitation Fare Collection Systems Ventilation System Improvements
Facilities	Bladensburg and Northern Bus Garage Replacements Office Consolidation Heavy Overhaul Facility

Station Platform Improvement Project

Asset Condition	<ul style="list-style-type: none">• 45 outdoor station platforms• Concrete deteriorated over time – exposure to weather & de-icing agents• Temporary measures to stabilize deteriorating platforms• Inspections & assessments confirmed reconstruction required for safety
Program	<ul style="list-style-type: none">• Rehabilitate platforms at 20 outdoor stations
Priority/Outcome	<ul style="list-style-type: none">• Restore platforms to state of good repair, make safer and more accessible for customers with disabilities• Program will also renew other station elements during closure
Implementation	<ul style="list-style-type: none">• To expedite construction & minimize customer inconvenience Metro will fully close stations rather than overnight work or single tracking• During closures Metro will complete other track, bridge and systems projects to minimize future disruptions at these stations
Schedule & Investment	<ul style="list-style-type: none">• 2019: Braddock Road King Street Eisenhower Ave Huntington Van Dorn Street Franconia-Springfield• 2020: West Hyattsville Prince George's Plaza College Park-U of Md Greenbelt Vienna Dunn Loring West Falls Church East Falls Church• 2021: Cheverly Landover New Carrollton Addison Rd Arlington Cemetery Ronald Reagan Washington National Airport• FY2020-2025 Planned Capital Investment ~\$680M• Lifecycle rehabilitation and replacement ongoing requirement

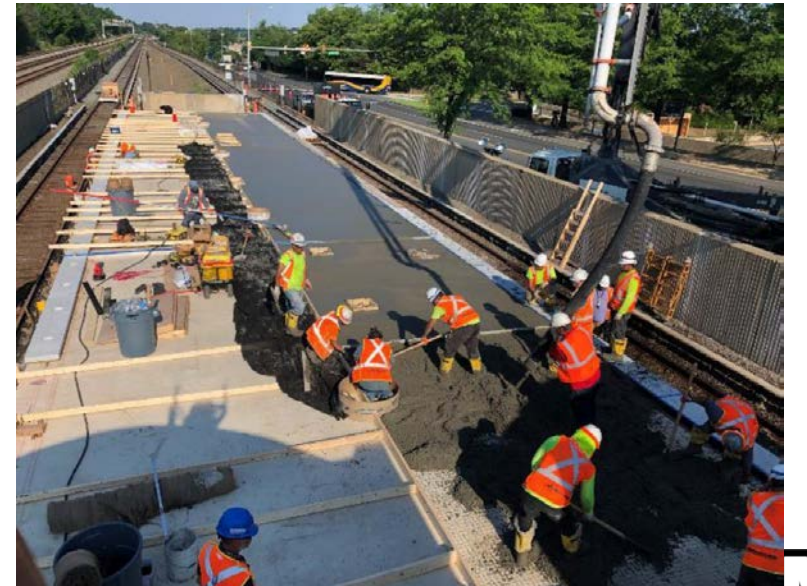


King Street Station



Braddock Road Station

Job Progress Photos



Station and Tunnel Lighting Improvements

Asset Condition	<ul style="list-style-type: none">• 40-year old, inefficient & deteriorated lighting• Low light levels on station platforms, passageways & tunnels impaired visibility, safety & security for customers & workers
Program	<ul style="list-style-type: none">• Replace station & tunnel lighting with new energy efficient and longer lasting LED lighting• Future work will include lighting on station exteriors and pathways
Priority/Outcome	<ul style="list-style-type: none">• Brighter stations & walkways for customers• Increased worker safety in stations & tunnels• Reduce energy use and lower future maintenance costs
Implementation	<ul style="list-style-type: none">• Light locations require service outages during installation• Incentive based contract resulting in improved productivity & accelerated project execution
Schedule & Investment	<ul style="list-style-type: none">• Underground station & tunnel LED lighting expected to be completed by 2021 – lifecycle rehabilitation and replacement ongoing requirement• FY2020-2025 Planned Capital Investment ~\$180M



Increased Brightness & Light Distribution

Station Cooling Program

Asset Condition	<ul style="list-style-type: none">Underground stations cooled by 52 chillers, 192 Air Condition Units (ACU), 104 Fan Coil Units (FCU), cooling towers, ducts & pipingOriginal assets beyond useful life are less safe, reliable, efficient, and are more costly to repair
Program	<ul style="list-style-type: none">Replace obsolete station cooling assetsSustain lifecycle rehabilitation & replacement program: components overhauled every 7-10 years & replaced at 15-20 years
Priority/Outcome	<ul style="list-style-type: none">Maintain reasonable air temperature in underground stations for customers & workers during summer monthsReduce energy use & lower future maintenance costs
Implementation	<ul style="list-style-type: none">Most work performed during cooler seasons to minimize customer impactLocation of equipment & piping can result in disruptions for adjacent properties during construction - Farragut North piping replacement required closure of lane on Connecticut Ave NWReplacement of 8 chillers at 5 locations in 2020
Schedule & Investment	<ul style="list-style-type: none">Station chiller state of good repair expected in 2020 – lifecycle overhaul & replacement ongoing requirementFY2020-2025 Planned Capital Investment ~\$50M

Chiller System



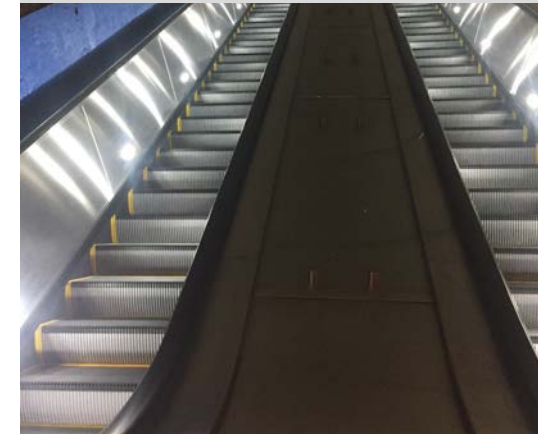
Connecticut Ave. Sawcut



Elevator & Escalator Rehabilitation & Replacement Program

Asset Condition	<ul style="list-style-type: none">Rehabilitates & replaces aged & poor performing elevators & escalatorsTotal elevators: 319; total escalators: 618
Program	<ul style="list-style-type: none">Elevators rehabilitated every ~12-15 yearsEscalators rehabilitated twice during lifecycle (~12-15 years after install & ~8-10 years later) and replaced every ~30 yearsNew equipment and include modern safety features & energy saving devices
Priority/Outcome	<ul style="list-style-type: none">Provide safe and reliable service delivery to customersMeet or exceed availability performance targets for escalators (92%) and elevators (97%)Bring elevators and escalators back to a state of good repair & extend the useful life while lowering maintenance costs
Implementation	<ul style="list-style-type: none">Escalators & elevators must be taken out of service during rehabilitation & replacement76 elevators rehabbed since 2014 & 125 escalators replaced since 2013
Schedule & Investment	<ul style="list-style-type: none">Significant reinvestment over the past six years brought elevators & escalators closer to state of good repair – lifecycle rehabilitation & replacement ongoing requirementFY2020-2025 Planned Capital Investment ~\$269M for rehabilitation of approximately 129 elevators and escalators, and 130 escalator replacements.

Cleveland Park Entrance Escalators



Judiciary Sq. Escalator Installation



Station Entrance Canopies

Asset Condition	<ul style="list-style-type: none"> Install canopies at station entrance sites Canopies are installed in part to protect and preserve escalator assets
Program	<ul style="list-style-type: none"> Install canopies to include the final design, fabrication and installation of specialty lighting Minimize escalator floor opening by extending plaza flooring
Priority/Outcome	<ul style="list-style-type: none"> Protect customers and escalators from rain, ice and snow; reduce slips, trips, and falls System improvements that extend the life of escalator assets, and will require ongoing lifecycle maintenance, rehabilitation and replacement Comply with current building codes regarding escalator coverage and improve escalator reliability Provide a recognizable symbol of Metro entrances for customers
Implementation	<ul style="list-style-type: none"> Each canopy installation unique and may include temporary work platforms, permits, etc. Most canopy construction does not impact customer station access Some installations require complex coordination and approval from the National Park Service (NPS) and the Commission of Fine Arts
Schedule & Investment	<ul style="list-style-type: none"> Program is ahead of schedule with construction on 7 to 8 sites at one time Five sites recently completed (Shady Grove, Metro Center, Brookland East, Deanwood, and Minnesota Ave.) Five in progress sites are projected for completion in 2019: Gallery Place West, Huntington South, Judiciary Square South, Smithsonian South and Dupont Circle North Eight additional sites (Capital South, Potomac Ave., Tenleytown, Archives, Arlington Cemetery North and South, Judiciary Square North, Smithsonian North and U Street) scheduled FY2020-2025 Planned Capital Investment ~\$39M

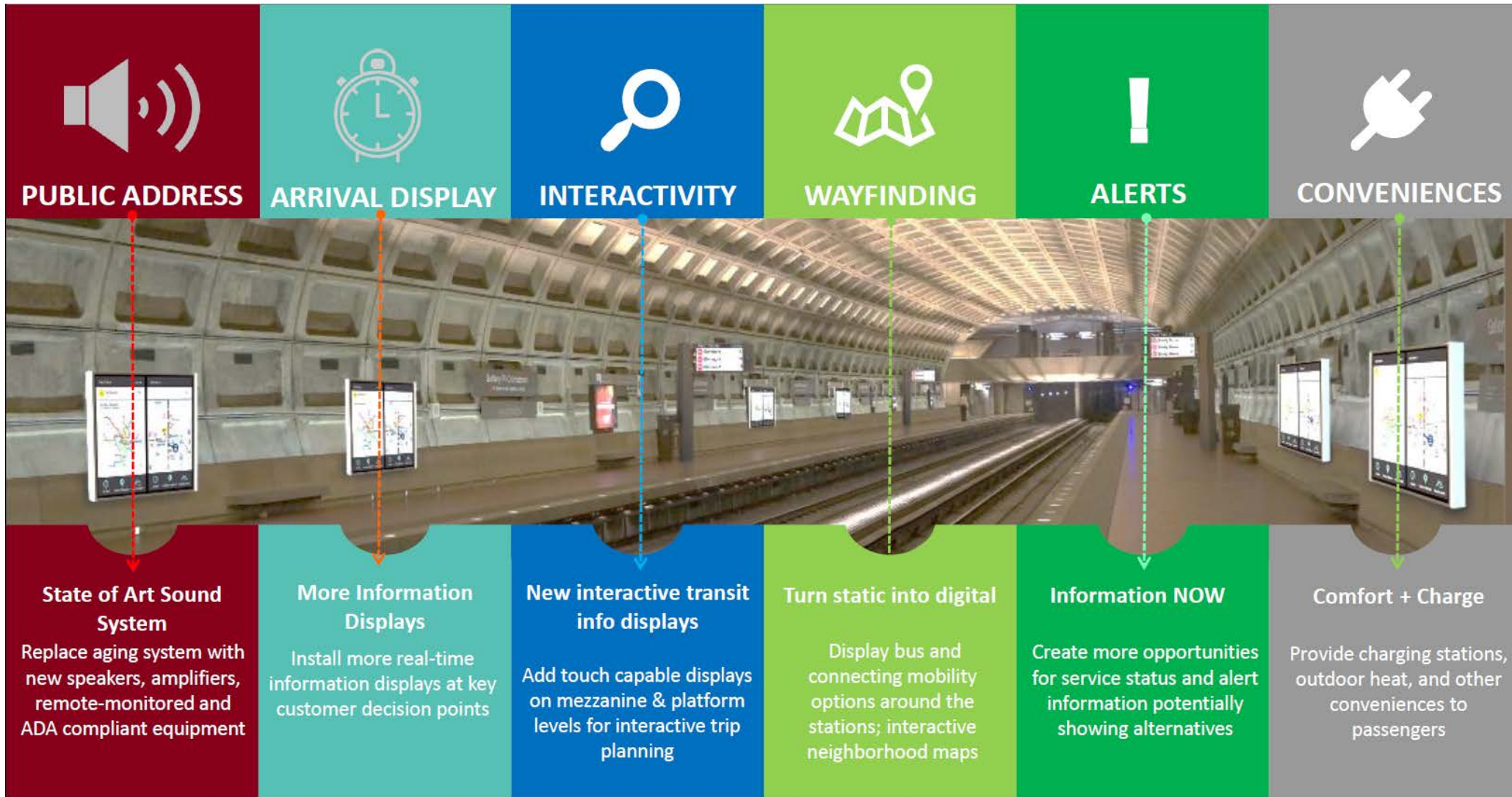
Shady Grove Entrance Canopy



Dupont Circle North Rendering



Customer Amenities Program



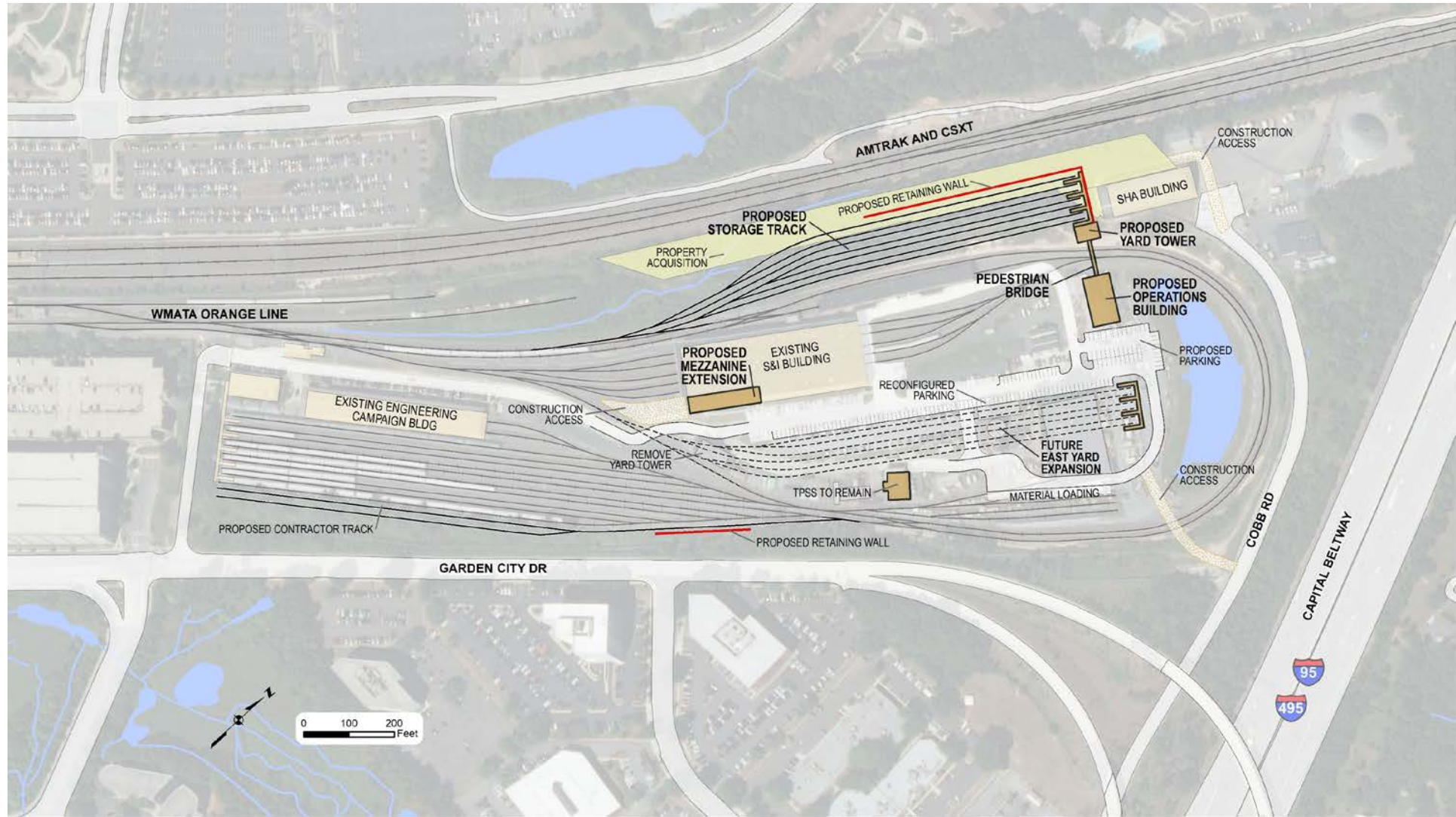
Major Design/Build Opportunities

- Reconstruction of Northern/Bladensburg Bus Garages
 - Currently in Procurement
- Rehabilitation of Station Platforms
 - Phase 1 – In Construction
 - Phase 2 – In Procurement
 - Phase 3 – Anticipated Advertisement before end of 2019
- New Heavy Rail Overhaul Facility/New Carrollton Yard Rehab – **July 2019**
- Gallery Place/Chinatown Station Tunnel – **EOY 2019**

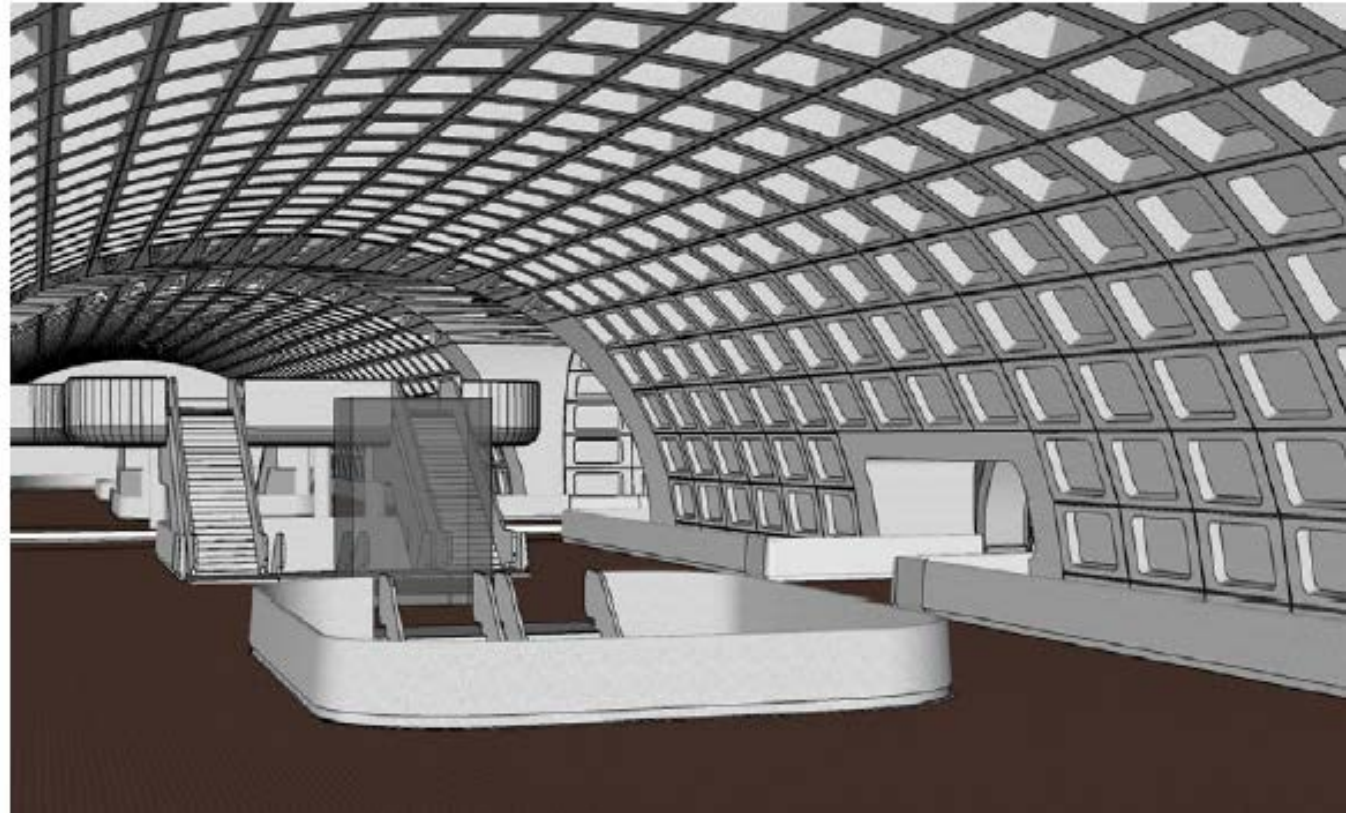
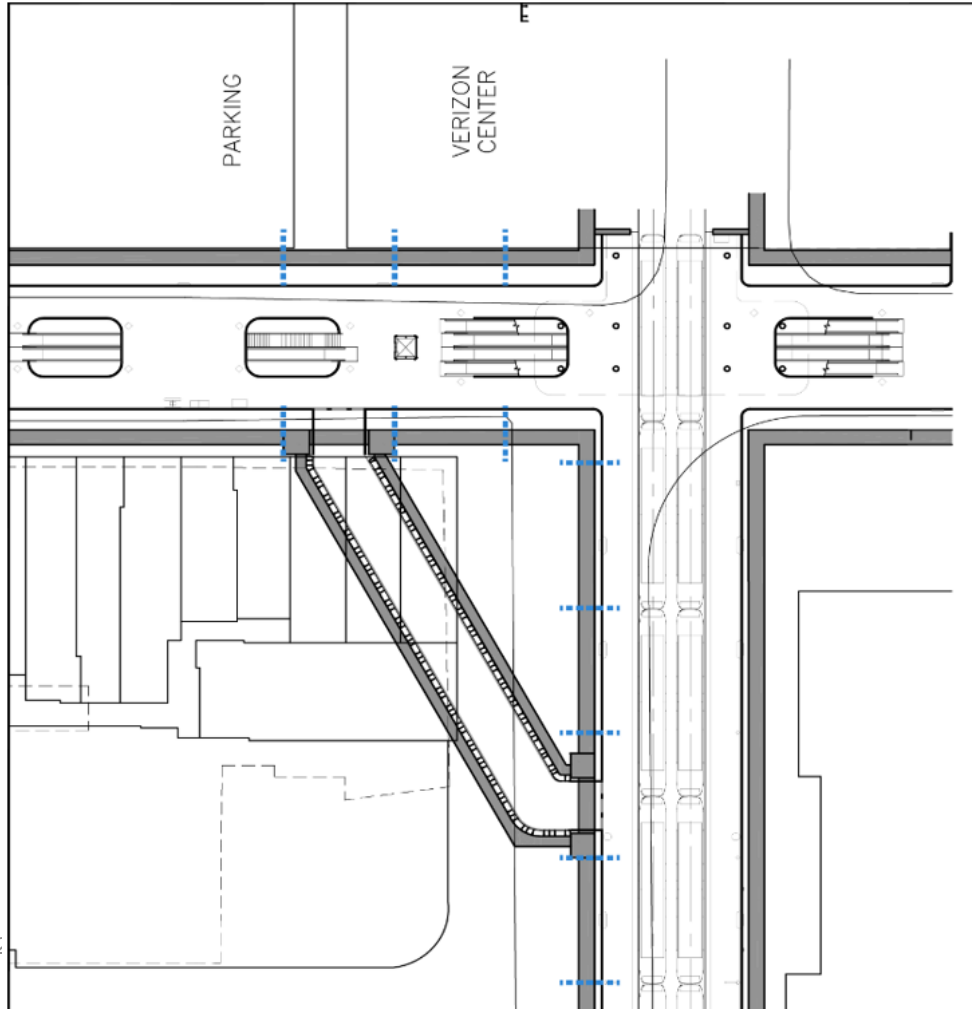
Proposed Heavy Repair & Overhaul (HRO) Facility



Proposed New Carrollton Yard Improvements



Gallery Place Tunnel Construction



ROPOLITAN AREA TRANSIT AUTHORITY

Capital Program Management Emphasis for FY2019-2020

- Deliver active **safety and reliability projects** efficiently and effectively and **accelerate** execution of priority projects
- Develop **pipeline of projects** prioritizing safety, reliability and state of good repair
- Publish and implement FTA-compliant **Transit Asset Management Plan**
- **Build capacity to manage** larger capital program and to plan and execute more capital projects
- Implement **improved capital planning and programming** practices including Development and Evaluation program
- Refresh prioritized **Capital Needs Forecast**, last updated in 2016, and incorporate additional asset condition data
- Formalize program management policies and procedures for FY2021-2026 and beyond
- Develop and report on additional capital program-wide **performance metrics**



Questions & Comments