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 region’s property tax base is located within a half-mile of a Metrorail station
- 54% of region’s jobs are within a half-mile radius of all Metro stations and Metrobus stops
Metrorail Station Components

- Platforms & Mezzanines
- Parking Garages & Lots
- Customer Information & Wayfinding
- Kiosks
- Lighting
- Kiss & Rides & Bus Loops
- Bicycle & Pedestrian Facilities
- Drainage & Flood Prevention
- Restrooms & Worker Breakrooms
- Stairs
- Fare Collection
- Elevators & Escalators
- Entrances & Passageways
- Canopies & Roofs
- Cooling

- Chiller at Navy Yard
- Station Escalators
- Station Canopy Rendering
- Pentagon City Station Lighting
- Platform Rehabilitation

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
The Five Strategic Drivers

1. Safety
   - Fire/Life Safety/Regulatory

2. Reliability
   - Customer Satisfaction
   - Asset Reliability

3. Fiscal Responsibility
   - Ridership
   - Operational Impact
Sample Strategic Driver Categorization - FY2020 Program

- **FISCAL RESPONSIBILITY**
  - Number of Projects: 318
  - Dollars (M): $13.68

- **RELIABILITY**
  - Number of Projects: 205
  - Dollars (M): $8.06

- **SAFETY**
  - Number of Projects: 86
  - Dollars (M): $2.21

- **Customer Satisfaction**
  - Number of Projects: 82
  - Dollars (M): $5.08

- **Operational Impact**
  - Number of Projects: 16
  - Dollars (M): $3.19

- **Ridership**
  - Number of Projects: 0

The chart shows the distribution of projects and dollars across different strategic drivers, with a focus on fiscal responsibility, reliability, and safety.
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

- **FY2015** Actual Investment: $715
- **FY2016** Actual Investment: $1,023
- **FY2017** Actual Investment: $1,163
- **FY2018** Actual Investment: $1,246
- **FY2019** Approved Investment: $1,434
- **FY2020** Approved Investment: $1,550
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

WMATA’s
$25 Billion of Capital Needs

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

Design & engineer projects before implementation

Successfuly Advance
$15 Billion of Prioritized Projects Over Next 10 Years

Prioritize safety & reliability projects
# Capital Program Planning and Management Process

<table>
<thead>
<tr>
<th>PROGRAM PLANNING</th>
<th>PROGRAM DEVELOPMENT AND IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asset Management</strong></td>
<td><strong>Project Development</strong></td>
</tr>
<tr>
<td>• Asset Management Plans</td>
<td>• Concept Design</td>
</tr>
<tr>
<td>• Maintenance Schedules</td>
<td>• Define Scope, Schedule, Budget</td>
</tr>
<tr>
<td>• Inspections &amp; Condition Assessments</td>
<td>• Coordination &amp; Outreach</td>
</tr>
<tr>
<td><strong>Needs Prioritization</strong></td>
<td><strong>Project Implementation</strong></td>
</tr>
<tr>
<td>• Capital Needs Inventory</td>
<td>• Assess Risk</td>
</tr>
<tr>
<td>• Fleet Plans</td>
<td>• Advance Design</td>
</tr>
<tr>
<td>• Rehabilitation schedule</td>
<td>• Begin Procurement</td>
</tr>
<tr>
<td>• Business &amp; Work Plans</td>
<td>• Manage Risk &amp; Change</td>
</tr>
<tr>
<td><strong>Development and Evaluation</strong></td>
<td><strong>Project Implementation</strong></td>
</tr>
<tr>
<td>• Project Justification</td>
<td>• Complete Procurement</td>
</tr>
<tr>
<td>• Concept Planning</td>
<td>• Complete Design</td>
</tr>
<tr>
<td>• Feasibility &amp; Alternatives Analysis</td>
<td>• Begin Construction or Acquisition</td>
</tr>
<tr>
<td>• Draft Scope, Schedule, Cost Estimates</td>
<td>• Manage Risk &amp; Change</td>
</tr>
<tr>
<td>• Assess Readiness</td>
<td>• Inspect, Accept &amp; Begin Operation</td>
</tr>
</tbody>
</table>
Capital Program Progress

Capital Investment Focus: Remaining Backlog & Lifecycle Reinvestment

FY2015–2019 Capital Investment (5 yrs)

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>FY2015-2019 Investment Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles</td>
<td>7000 Series Railcars</td>
</tr>
<tr>
<td>Track &amp; Structures</td>
<td>SafeTrack</td>
</tr>
<tr>
<td>Stations</td>
<td>Elevator/escalator Rehabilitation &amp; Replacement</td>
</tr>
<tr>
<td>Systems</td>
<td>Power</td>
</tr>
<tr>
<td>Facilities</td>
<td>Andrews Federal &amp; Cinder Bed Road Bus Garages</td>
</tr>
</tbody>
</table>

Avg Annual: $1.12
Total: $5.58

FY2020–2025 Capital Program (6 yrs)

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>FY2020-2025 – Major Planned Capital Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles</td>
<td>Complete 7000 Series Railcars</td>
</tr>
<tr>
<td>Track &amp; Structures</td>
<td>Track Rehabilitation</td>
</tr>
<tr>
<td>Stations</td>
<td>Station Platform Rehabilitation</td>
</tr>
<tr>
<td>Systems</td>
<td>Radio</td>
</tr>
<tr>
<td>Facilities</td>
<td>Bladensburg and Northern Bus Garage Replacements</td>
</tr>
</tbody>
</table>

Avg Annual: $1.54
Total: $9.24

Capital Investment Focus: Remaining Backlog & Lifecycle Reinvestment

FY2020–2025 Capital Program (6 yrs)

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>FY2020-2025 Capital Program (6 yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles</td>
<td>25%</td>
</tr>
<tr>
<td>Track &amp; Structures</td>
<td>12%</td>
</tr>
<tr>
<td>Stations</td>
<td>16%</td>
</tr>
<tr>
<td>Systems</td>
<td>28%</td>
</tr>
<tr>
<td>Facilities</td>
<td>20%</td>
</tr>
</tbody>
</table>

Total: $9.24
Avg Annual: $1.54
## Station Platform Improvement Project

### Asset Condition
- **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
- Rehabilitate platforms at **20 outdoor stations**

### Priority/Outcome
- 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
- 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
- **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
Job Progress Photos
### Station and Tunnel Lighting Improvements

#### Asset Condition
- 40-year old, inefficient & deteriorated lighting
- Low light levels on station platforms, passageways & tunnels impaired visibility, safety & security for customers & workers

#### Program
- 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
- Brighter stations & walkways for customers
- Increased worker safety in stations & tunnels
- Reduce energy use and lower future maintenance costs

#### Implementation
- Light locations require service outages during installation
- Incentive based contract resulting in improved productivity & accelerated project execution

#### Schedule & Investment
- Underground station & tunnel LED lighting expected to be completed by 2021 – lifecycle rehabilitation and replacement ongoing requirement
- FY2020-2025 Planned Capital Investment ~$180M
## Station Cooling Program

| Asset Condition | • Underground stations cooled by 52 chillers, 192 Air Condition Units (ACU), 104 Fan Coil Units (FCU), cooling towers, ducts & piping  
|                 | • Original assets beyond useful life are less safe, reliable, efficient, and are more costly to repair |
| Program         | • Replace obsolete station cooling assets  
|                 | • Sustain lifecycle rehabilitation & replacement program: components overhauled every 7-10 years & replaced at 15-20 years |
| Priority/Outcome| • Maintain reasonable air temperature in underground stations for customers & workers during summer months  
|                | • Reduce energy use & lower future maintenance costs |
| Implementation  | • Most work performed during cooler seasons to minimize customer impact  
|                | • Location of equipment & piping can result in disruptions for adjacent properties during construction - Farragut North piping replacement required closure of lane on Connecticut Ave NW  
|                | • Replacement of 8 chillers at 5 locations in 2020 |
| Schedule & Investment | • Station chiller state of good repair expected in 2020 – lifecycle overhaul & replacement ongoing requirement  
|                  | • FY2020-2025 Planned Capital Investment ~$50M |
### Elevator & Escalator Rehabilitation & Replacement Program

<table>
<thead>
<tr>
<th>Asset Condition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rehabilitates &amp; replaces aged &amp; poor performing elevators &amp; escalators</td>
<td>• Total elevators: 319; total escalators: 618</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Elevators rehabilitated every ~12-15 years</td>
<td>• Escalators rehabilitated twice during lifecycle (~12-15 years after install &amp; ~8-10 years later) and replaced every ~30 years</td>
</tr>
<tr>
<td>• Escalators rehabilitated twice during lifecycle (~12-15 years after install &amp; ~8-10 years later) and replaced every ~30 years</td>
<td>• New equipment and include modern safety features &amp; energy saving devices</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Priority/Outcome</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide safe and reliable service delivery to customers</td>
<td>• Meet or exceed availability performance targets for escalators (92%) and elevators (97%)</td>
</tr>
<tr>
<td>• Meet or exceed availability performance targets for escalators (92%) and elevators (97%)</td>
<td>• Bring elevators and escalators back to a state of good repair &amp; extend the useful life while lowering maintenance costs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Escalators &amp; elevators must be taken out of service during rehabilitation &amp; replacement</td>
<td>• 76 elevators rehabbed since 2014 &amp; 125 escalators replaced since 2013</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schedule &amp; Investment</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Significant reinvestment over the past six years brought elevators &amp; escalators closer to state of good repair – lifecycle rehabilitation &amp; replacement ongoing requirement</td>
<td>• FY2020-2025 Planned Capital Investment ~$269M for rehabilitation of approximately 129 elevators and escalators, and 130 escalator replacements.</td>
</tr>
</tbody>
</table>
# Station Entrance Canopies

<table>
<thead>
<tr>
<th>Asset Condition</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Install canopies at station entrance sites</td>
<td>• Install canopies to include the final design, fabrication and installation of specialty lighting</td>
</tr>
<tr>
<td>• Canopies are installed in part to protect and preserve escalator assets</td>
<td>• Minimize escalator floor opening by extending plaza flooring</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Priority/Outcome</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Protect customers and escalators from rain, ice and snow; reduce slips, trips, and falls</td>
<td>• Each canopy installation unique and may include temporary work platforms, permits, etc.</td>
</tr>
<tr>
<td>• System improvements that extend the life of escalator assets, and will require ongoing lifecycle maintenance, rehabilitation and replacement</td>
<td>• Most canopy construction does not impact customer station access</td>
</tr>
<tr>
<td>• Comply with current building codes regarding escalator coverage and improve escalator reliability</td>
<td>• Some installations require complex coordination and approval from the National Park Service (NPS) and the Commission of Fine Arts</td>
</tr>
<tr>
<td>• Provide a recognizable symbol of Metro entrances for customers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schedule &amp; Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Program is ahead of schedule with construction on 7 to 8 sites at one time</td>
</tr>
<tr>
<td>• Five sites recently completed (Shady Grove, Metro Center, Brookland East, Deanwood, and Minnesota Ave.)</td>
</tr>
<tr>
<td>• Five in progress sites are projected for completion in 2019: Gallery Place West, Huntington South, Judiciary Square South, Smithsonian South and Dupont Circle North</td>
</tr>
<tr>
<td><strong>Eight additional sites (Capital South, Potomac Ave., Tenleytown, Archives, Arlington Cemetery North and South, Judiciary Square North, Smithsonian North and U Street) scheduled</strong></td>
</tr>
<tr>
<td>• FY2020-2025 Planned Capital Investment ~$39M</td>
</tr>
</tbody>
</table>
Customer Amenities Program

**PUBLIC ADDRESS**
State of Art Sound System
Replace aging system with new speakers, amplifiers, remote-monitored and ADA compliant equipment

**ARRIVAL DISPLAY**
More Information Displays
Install more real-time information displays at key customer decision points

**INTERACTIVITY**
New interactive transit info displays
Add touch capable displays on mezzanine & platform levels for interactive trip planning

**WAYFINDING**
Turn static into digital
Display bus and connecting mobility options around the stations; interactive neighborhood maps

**ALERTS**
Information NOW
Create more opportunities for service status and alert information potentially showing alternatives

**CONVENIENCES**
Comfort + Charge
Provide charging stations, outdoor heat, and other conveniences to passengers
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 Carrolton 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

"WASHINGTON METROPOLITAN 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