



Washington Metropolitan Area Transit Authority

# Transit Asset Management Performance Targets for 2017

TPB Technical Committee

March 3, 2017

Item #10

# FTA's MAP-21 Final Rule Requires Metro to set performance targets for all four asset classes

- Rolling Stock: revenue fleets by mode
  - % of vehicles that meet or exceed Useful Life Benchmark (ULB)
- Equipment: non-revenue fleets by type (automobile, truck and steel wheel)
  - % of vehicles that meet or exceed ULB
- Facilities: all administrative, maintenance and passenger facilities used in Metro's service (where Metro has *direct capital responsibility*)
  - Percentage of facilities rated below 3 on the TERM scale
- Infrastructure: track segments, signal, and systems on guideway
  - Percentage of track segments, signal, and systems with performance restrictions (as of 9am first Wednesday of the month)

# TAM Performance Measures & Targets Work

## TIMELINE

JUN '16	JUL '16	AUG '16	SEP '16	OCT '16	NOV '16	DEC '16
Memo to Board on anticipated FTA TAM performance measures	FTA Transit Asset Management Final Rule published	TAM Performance Measure and Target work plan submitted to Chiefs and GM/CEO	Kick-off Meeting with TAM Performance Measure Stakeholders	Subject Matter Expert meetings on targets <b>Final Rule takes effect</b>	Target setting with Executives, for TAM measures & <i>Vital Signs</i> KPIs	<b>GM/CEO review &amp; approval of TAM Targets</b>

**JAN/FEB '17**

Targets submittal to MWCOG

Currently awaiting FY18 budget to determine target impacts for FY18

### Remainder of 2017:

- Develop FY18 Targets (est. May-June)
- MWCOG coordination on target-setting/ performance reporting
- Begin development of TAM plan
- Continue condition assessments
- Add inventory to NTD and develop SGR narrative report format

**2018:** TAM Plan submitted, reporting on State of Good Repair progress

# Approach to Vehicle targets

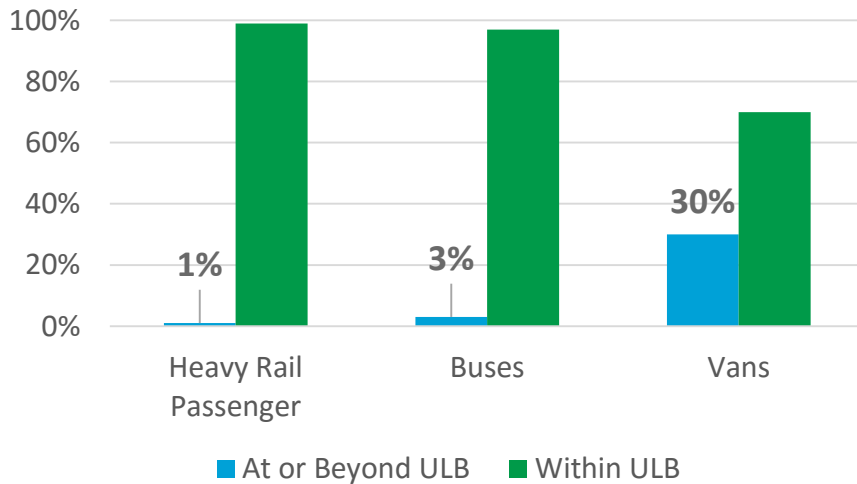
- Metro's ULBs take into consideration the age of an asset, related maintenance costs, reliability and its operating environment
  - A useful life benchmark is distinct from the term “useful life” or “minimum useful life” that applies to FTA's grant programs
  - Driven primarily by Metro's fleet management plans for revenue fleets, which include the impact of preventative and capital maintenance to meet or extend useful life
  - Board Policies also used for replacement life (Bus)
  - For service vehicles multiple economic studies by third parties determined the optimal replacement cycle for non-revenue fleets to minimize Metro's maintenance costs
- Vehicle targets reflect
  - ULB by fleet or vehicle type
  - Age of the current fleets
  - What is funded for replacement in FY17
  - Vehicle delivery schedules

# FY17 Revenue Vehicle targets

## KPI: Revenue vehicles met or exceeded ULB

FY17 Target

Revenue Vehicle Targets



### Includes FY17 Capital Plan:

- Complete replacement of 1000 Series rail cars
- Replace all remaining std. diesel buses
- Complete delivery of 207 new Access Vans

Vehicle Class	ULB	Target
Heavy Rail Passenger	<ul style="list-style-type: none"> <li>• 16 Years for 4000 Series*</li> <li>• 25 Years for 5000 Series*</li> <li>• 40 Years all other Series</li> </ul>	1%
Bus	<ul style="list-style-type: none"> <li>• 12 Years for Articulated</li> <li>• 15 Years for 30-40'</li> </ul>	3%
Vans	<ul style="list-style-type: none"> <li>• 4 Years</li> </ul>	30%

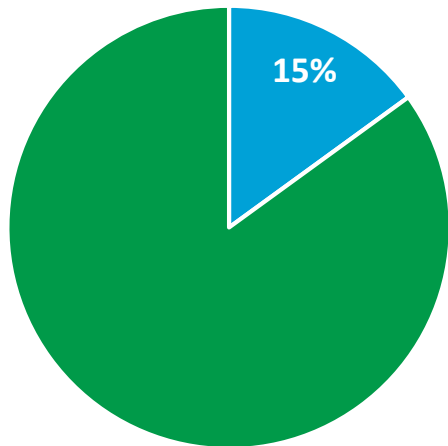
\*Note: Early retirement agreed with FTA.

# FY17 Equipment target

**KPI: Non-Revenue vehicles met or exceeded ULB**

**FY17 Target**

Equipment Target



■ At or Beyond ULB ■ Within ULB

**Includes FY17 Capital Plan:**

- Complete with the delivery of 177 replacement vehicles by the end of FY17

Vehicles by Class	ULB	Target
Automobiles (135)	Depends on vehicle type and service standards: <u>Rubber tire:</u> <ul style="list-style-type: none"> <li>• 5 Years</li> <li>• 6 Years</li> <li>• 8 Years</li> <li>• 12 Years</li> </ul> <u>Steel wheel:</u> <ul style="list-style-type: none"> <li>• 10 Years</li> <li>• 15 Years</li> <li>• 20 Years</li> <li>• 75 Years</li> </ul>	15%
Trucks and Other (1000)		
Steel Wheel (204)		

# Summary of approach to Facility target

- The SGR measure for facilities is condition-based and requires physical inspection
  - The Transit Asset Inventory and Condition Assessment (TAICA) program condition assessed a sample of critical facilities in 2016 at the component level
  - Work is ongoing to complete assessments of all Metro facilities in 2017
- Baseline for target setting is a mix of
  - TAICA scores rolled up using a risk-based weighting approach and
  - Age-based estimates that were adjusted by Metro's subject matter experts to match known physical conditions
- Facility targets reflect
  - Baseline analysis of current condition using FTA's 1 to 5 scale
  - Known capital programs to address facility conditions in FY17

# Using FTA's 5-point scale...

Condition	FTA Rating	Description
Excellent	5	<ul style="list-style-type: none"><li>• New asset</li><li>• No visible defects</li></ul>
Good	4	<ul style="list-style-type: none"><li>• Asset showing minimal signs of wear</li><li>• Some (slightly) defective or deteriorated components(s)</li></ul>
Adequate	3	<ul style="list-style-type: none"><li>• Asset has reached mid-life (3.5)</li><li>• Some defective or deteriorated components(s)</li></ul>
Marginal	2	<ul style="list-style-type: none"><li>• Asset reaching or just past the end of useful life (2.75 to 2.5)</li><li>• Increasing number of defective or deteriorated component(s) and increasing maintenance needs</li></ul>
Worn	1	<ul style="list-style-type: none"><li>• Asset is past useful life and is in need of immediate repair or replacement</li><li>• May have critically damaged components</li></ul>

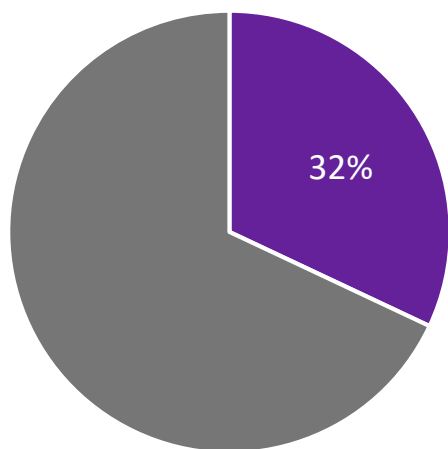


# FY17 Facility target

## KPI: Facilities below a 3.0 on TERM Condition Scale

FY17 Target

Facilities Target



■ Below 3.0 ■ Above 3.0

### Includes FY17 Capital Plan:

- Station Rehab and Elevator/Escalator program
- Parking Garage Rehab program
- Rehab New Carrollton and Alexandria Yards
- Replace Royal St. and Southern Ave. Bus Garages

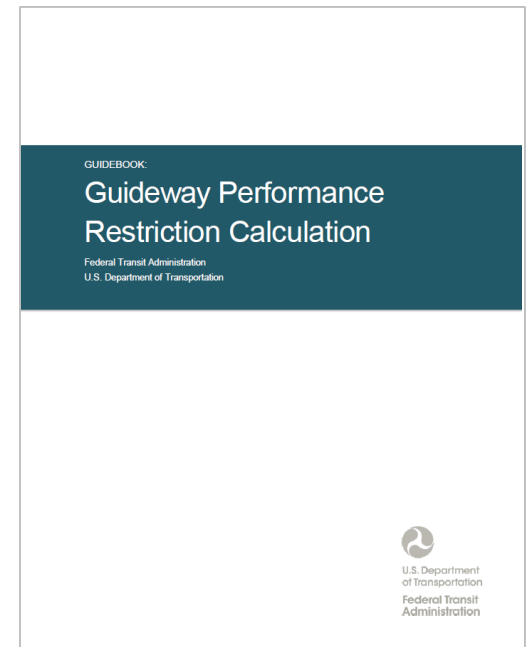
Facilities by Type	Target
Rail stations (91)	32%
Bus loops (3)	
Parking Garages & Lots (65)	
Maintenance Facilities (25)*	
Administrative Buildings (5)	

*\*Note: Complexes with multiple buildings have been rolled into one overall site score.*

# Summary of approach to Infrastructure target

- In order to calculate the Directional Route Miles (DRM) under “slow zones” Metro combined
  - 12 months of historic speed restriction incident reports (open at 9am on the first Wed of each month)
  - Known speed restrictions related to SafeTrack capital maintenance work
- Infrastructure target reflects
  - Planned SafeTrack work through FY17 (ending in June)
  - Unplanned speed restriction historical baseline with projection of average current levels\* to the end of FY17

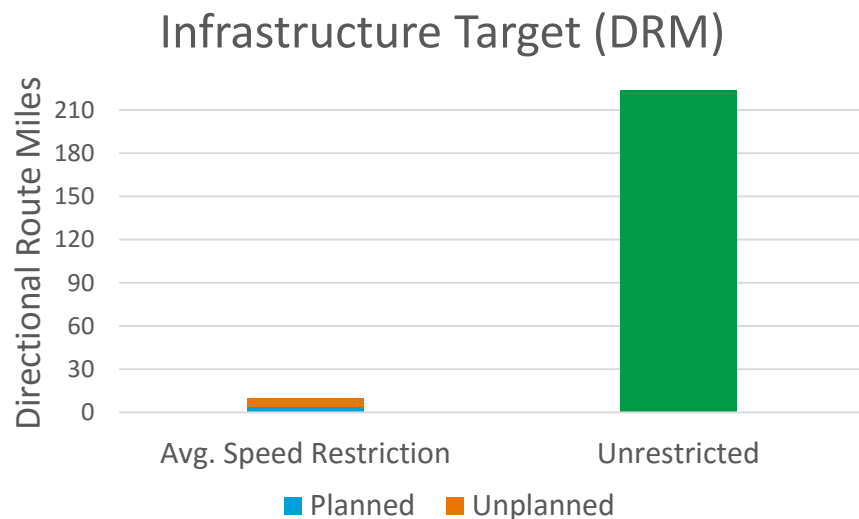
\*Note: FY17 planned and unplanned speed restrictions are high and expected to fall in FY18



# FY17 Infrastructure target

## KPI: Track segments with performance restrictions

### FY17 Target



#### Includes FY17 Capital Plan:

- SafeTrack program
- Traction Power SGR Program
- Third rail and AC Power Replacements
- Train Control SGR Program

Mode of Guideway	DRM of Guideway	Target*
Heavy Rail	Total System is 234 DRM: <ul style="list-style-type: none"> <li>• Average Unplanned Restriction is 5.85 DRM</li> <li>• Average Planned Restriction is 4.5 DRM</li> </ul>	5%

*\*Note: Only Annual Average is reported, but monthly snapshot data must be available for audit. Target is rounded to nearest integer.*

# Summary of FY17 Targets

Asset Class	Performance Measure	Targets
Rolling Stock	Percentage of vehicles that have met or exceeded their ULB	<ul style="list-style-type: none"> <li>• Rail cars = 1%</li> <li>• Buses = 3%</li> <li>• (MetroAccess) Vans = 30%</li> <li>• Non-Revenue = 15%</li> </ul>
Equipment		
Facility	Percentage of facilities rated below 3 on the TERM scale	<ul style="list-style-type: none"> <li>• 32%</li> </ul>
Infrastructure	Percentage of track segments, signal, and systems with performance restrictions	<ul style="list-style-type: none"> <li>• 5%</li> </ul>

# Next Steps

- Set FY18 Targets after adoption of FY18 budget – Spring 2017
  - Determine impacts of change in capital programs on facilities and infrastructure
  - Determine impacts of any change in vehicle delivery/retirement plans
- Complete TAICA condition ratings for all facilities – Summer 2017
  - Adjust weighting method for aggregate facility scoring based on complete data set
- Develop TAM Plan aligned with MAP-21 requirements and existing Metro TAM Policy – Fall 2017