

## APPENDIX

### Providers of Public Transportation – Individual Targets

The following letters, presentation slides, and other data were provided by the individual reporting entities, and are posted on the MWCOG website at the following URL address.

<https://www.mwcog.org/transportation/planning-areas/performance-based-planning-and-programming/transit-asset-management/>

District Department of Transportation (DDOT)

- Table

Fairfax County

- Presentation

Maryland Transit Administration (MTA)

- Presentation to the TPB Technical Committee, January 6, 2017

Montgomery County

- Table

Prince George's County

- Table

Virginia Department of Rail and Public Transportation (DRPT)

- Presentation to the TPB Technical Committee, February 3, 2017

Potomac and Rappahannock Transportation Commission (PRTC)

- Letter from Interim Executive Director Eric Marx, dated March 9, 2017

Virginia Railway Express (VRE)

- Letter from Deputy CEO and COO Rich Dalton, dated March 24, 2017

Washington Metropolitan Area Transit Authority (WMATA)

- Letter from General Manager and CEO Paul Wiedefeld, dated February 3, 2017
- Presentation to the TPB Technical Committee, March 3, 2017

### DC Streetcar Proposed Transit Asset Performance Targets

Asset Category	Asset Class	Performance Measure	Recommended Targets
Rolling Stock	Streetcar	Percentage of revenue streetcars that have met or exceeded their Useful Life Benchmark (ULB)	0%
Non-Revenue Equipment	Automobiles	Percentage of vehicles that have met or exceeded their ULB	0%
	Trucks/Service Vehicles (Rubber Tire)		0%
	Supportive Equipments		0%
	Steel Wheel Service Vehicles/Hi-Rail		0%
Facilities	Passenger Facilities	Percentage of facilities with a condition rating below 3 on FTA Transit Economics Requirements Model (TERM) scale	0%
	Maintenance Facilities		0%
	Administrative Facilities		0%
Infrastructure	Streetcar	Percentage of track segments, signal, and systems with performance restrictions	5%

### DC Circulator Proposed Transit Asset Performance Targets

Asset Category	Asset Class	Performance Measure	Recommended Targets
Rolling Stock	Bus	Percentage of revenue buses that have met or exceeded their ULB	40%
Non-Revenue Equipment	Automobiles	Percentage of vehicles that have met or exceeded their ULB	20%
	Trucks/Service Vehicles (Rubber Tire)		20%
	Supportive Equipments		20%
Facilities	Passenger Facilities	Percentage of facilities with a condition rating below 3 on FTA TERM scale	20%
	Maintenance Facilities		20%
	Administrative Facilities		20%

#### Notes:

1. The preliminary targets are based on the DC fiscal year (October 1 to September 30)
2. A new O&M facility for DC Circulator is expected to come online in FY17.
3. DC Circulator is in the process of replacing the oldest buses in the fleet. The targets are based on the current fleet information.

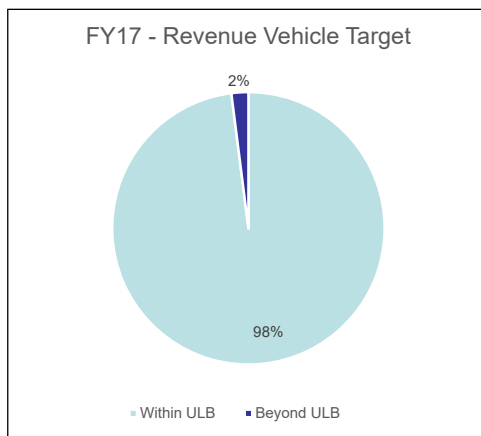


# Transit Asset Management (TAM)

## Performance Targets for FY 2017



## FY17 - Revenue Vehicles Targets



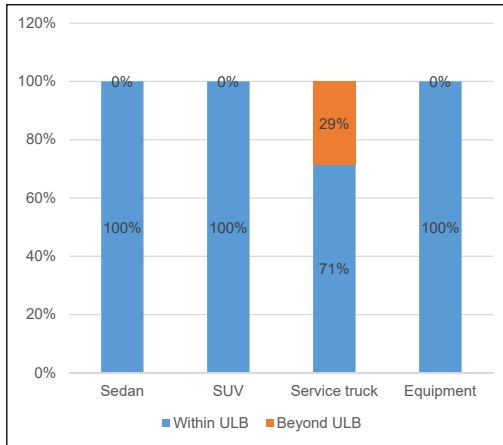
Vehicle Type	Useful Life Benchmark (ULB)	We are at	Target
Bus	12 years for Orion V 30' buses	2%	5%-10%
	15 years for 30', 35' & 40' buses		

Indicator showing Revenue vehicles met or exceeded Useful Life Benchmark (ULB).  
The target is 5%-10% due to the funding constraint and manufactures' production schedules.

FCDOT has based the performance measures on age (years) only.



## FY17 – Equipment Targets



Vehicle Type	Useful Life Benchmark (ULB)	We are at	Targets
Automobile	8 years for Sedan	0%	0%
	10 years for SUV	0%	0%
	11 years for Service truck	29%	14%
Equipment	10,000 hours	0%	0%

Indicator showing Non- revenue vehicles met or exceeded Useful Life Benchmark (ULB)

FCDOT has based the performance measures for Automobile on age (years) & Equipment on hours.



## Summary of approach to Facility Targets

- Facility performance measure was based on age (years) for each facility's component.
- Median value approach (Alternative 2) was taken for the Condition Assessment.
- FTA's five-point Transit Economic Requirement Model (TERM) rating scale was used for measuring the components.



## Assessment / TERM Rating Scale

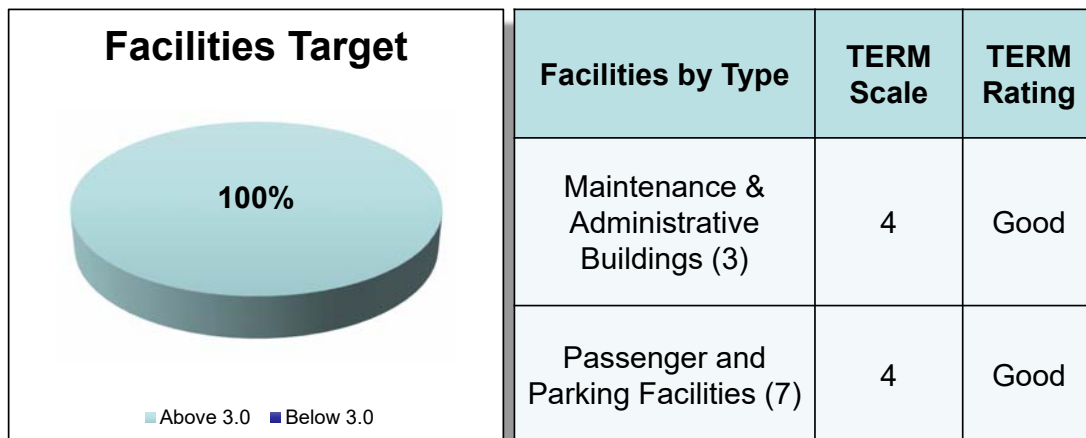
Rating	Condition	Description
5	Excellent	No visible defects, new or near new condition, may still be under warranty if applicable
4	Good	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional
3	Adequate	Moderately deteriorated or defective components; but has not exceeded useful life
2	Marginal	Defective or deteriorated component(s) in need of replacement; exceeded useful life
1	Poor	Critically damaged component(s) or in need of immediate repair; well past useful life

Department of Transportation

5



## FY17 – Facility Targets



**The overall facilities are at 4.0 “Good” on the TERM condition scale.**

**The percentage of facilities rated below 3.0 “Adequate” on the Term scale is 0%.**

Department of Transportation

6





## Summary of FY17 Targets

Asset Class	Performance Measure	Targets
Rolling Stock	Percentage of vehicles that have met or exceeded their ULB	<u>Revenue Vehicle</u> Buses = 5%-10%
Equipment		<u>Non-Revenue</u> Sedan = 0% SUV = 0% Service Trucks = 14%  Equipment = 0%
Facility	Both Maintenance Facilities and Passenger & Parking Facilities is at 4.0 "Good" on the TERM scale	Percentage of facilities rated below 3.0 on the TERM scale is 0%.



# Transit Asset Management Initial Performance Targets

**December 8, 2016**

Background



# Federal TAM Law

**MAP-21 required that every transit operator receiving federal funds must:**

- Establish TAM Performance Targets
- Coordinate these Performance Targets with the State and MPOs
- Develop a TAMP
- Report asset inventories, condition, and performance measures through the NTD

# TAM Final Rule

## Different Requirements for Transit Providers of Different Sizes

**Tier 1** = Providers with 101 or more revenue vehicles in service during peak regular operations

*MTA, Montgomery, and Prince George's counties are Tier 1*

**Tier 2** = Providers with 100 or fewer revenue vehicles in service during peak regular operations

*All other LOTS are considered Tier 2*

*Maryland 5310 providers are exempt because they provide "closed-door" service*

# Requirements for Tier 1 Providers

## **Tier 1 Providers will:**

- ✓ Set performance targets for their agency
- ✓ Develop and implement their own agency TAM Plan
- ✓ Report annually through the National Transit Database

## **MTA will:**

- ✓ Fulfill its own TAM requirements
- ✓ Provide oversight and technical support for [Montgomery](#) and [Prince George's](#) counties

# Requirements for Tier 2 Providers

## **Tier 2 Providers will:**

- ✓ Participate in a group TAM process
- ✓ Agree upon group performance targets
- ✓ Participate in the development of a group TAM Plan
- ✓ Implement the group TAM plan within their agency

## **MTA will:**

- ✓ Facilitate development of the group TAM Plan
- ✓ Submit reports to NTD on behalf of Tier 2 LOTS
- ✓ Provide oversight and technical support

*All LOTS other than  
Montgomery & Prince  
George's counties*

# Final Inventory Requirements

## **Revenue Vehicles**

All revenue vehicles [regardless of ownership or funding source](#)

## **Equipment (Including Non-Revenue Vehicles)**

All non-revenue vehicles and equipment over \$50,000 in value

Note MTA has more stringent criteria for LOTS, requiring all equipment over \$1,000 in value.

## **Facilities**

All administrative, maintenance, and passenger facilities [regardless of ownership or funding source](#)

## **Guideway**

All guideway infrastructure (track, structures, power, train control, etc.) [regardless of ownership or funding source](#)

# Final Performance Measures

## Revenue Vehicles

% of assets at or past their useful life benchmark

## Equipment (Non-Revenue Vehicles)

% of assets at or past their useful life benchmark

## Facilities

% of assets rated below condition “3” on the TERM scale

## Guideway

% of guideway directional route miles with performance restrictions



FTA default is  
an age-based  
analysis

Physical condition  
assessment is  
required (only for  
buildings w/  
direct federal or  
state funding)

*Performance Targets must be set by the federal deadline of January 1, 2017*

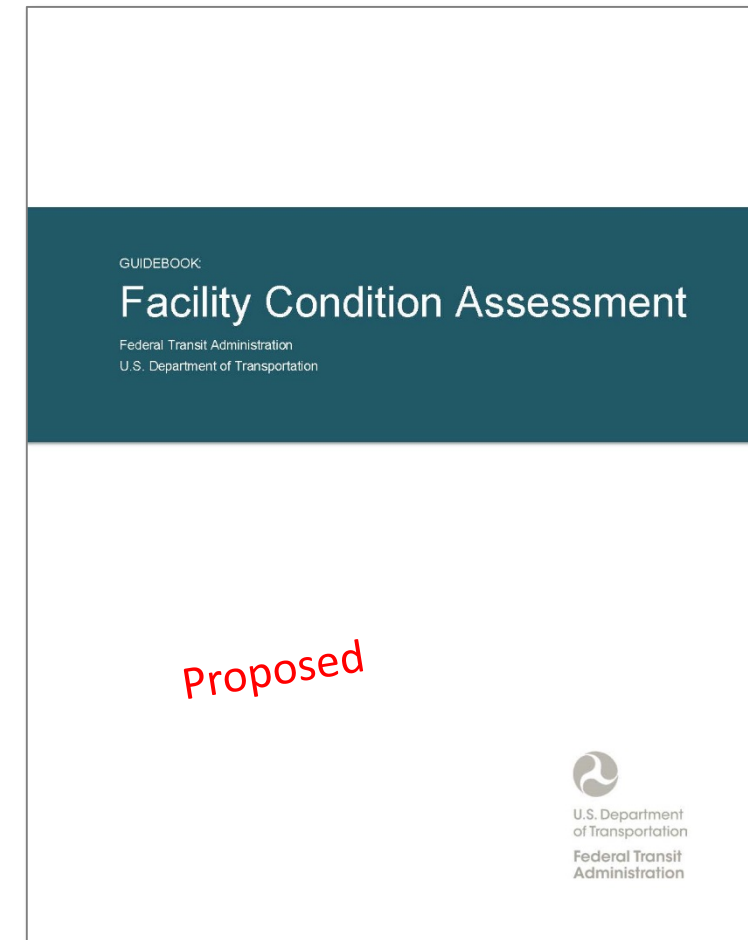
# TERM condition rating scale for Facilities

Condition	Ratings	Description
Excellent	5	No visible defects, new or near new condition, may still be under warranty
Good	4	Good condition, but no longer new, may have some slightly defective or deteriorated component(s), but is overall functional
Adequate	3	Moderately deteriorated or defective components but has not exceeded useful life
Marginal	2	Defective or deteriorated component(s) in need of replacement; exceeded useful life
Poor	1	Critically damaged component(s) or in need of immediate repair; well past useful life

# FTA Facility Condition Assessment Guide

- Background
- Definitions
- Data Requirements
- Methods for condition assessment

<https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Facility%20Performance%20Assessment%20Guidebook.pdf>





# Requirements for MPO Coordination



**For MTA and those LOTS operating in an urbanized area:**

- SGR performance targets shall be coordinated with the MPO
- The MPO Long & Short Range Transportation Plans shall include:
  - A description of the SGR TAM performance measures and targets
  - A report evaluating LOTS asset condition against these measures
  - A discussion of how the TIP/STIP will help achieve the SGR targets

# Requirements for NTD Reporting

## All transit agencies to report:

- Asset inventories
- Performance targets/actuals
- Facility Condition
- Narrative on changes to asset condition

*Tier 1's are responsible for their own NTD reporting.*

*MTA will submit NTD reports on behalf of all Tier 2's*

# Performance Measures In-Depth

# Performance Measures In-Depth

## Revenue Vehicles

% of assets at or past their useful life

*For each asset class*

- Automobile
- Bus
- Cutaway Bus
- Ferryboat
- Van

## Equipment (Including Non-Revenue Vehicles)

% of assets at or past their useful life

*For each asset class*

- Truck
- Other

## Facilities

% of assets rated below condition “3” on the TERM scale

*For each asset class*

- Admin Facility
- Maint Facility
- Passenger Facility

## Guideway

% of guideway directional route miles with performance restrictions

*For each asset class*

- Heavy Rail
- Light Rail
- Commuter Rail

# Performance Measure Challenges

## **Barriers to measuring performance today:**

- ✗ Incomplete asset inventories (the basis for calculating performance)
- ✗ Differences in federal, state, and local policies
  - Definitions (asset, equipment, etc.)
  - Useful life policies
- ✗ Incomplete guidance from FTA
  - Adopted facility condition assessment guide
  - Dealing with unique circumstances
- ✗ MTA and LOTS processes still under development

# Performance Measures In-Depth

## Revenue Vehicles



FTA default useful life (for TAM purposes) is calculated in years

<https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA%20TAM%20ULB%20Cheat%20Sheet%202016-10-26.pdf>

**MTA will base initial performance measures on age (years) only. Other methods of benchmarking the useful life of revenue vehicles will be considered for future years.**

# Performance Measures In-Depth

## Equipment (Including Non-Revenue Vehicles)

% of assets at or past their **useful life**

Age (years)?

Miles?

Hours?

FTA default useful life (for TAM purposes) is calculated in years

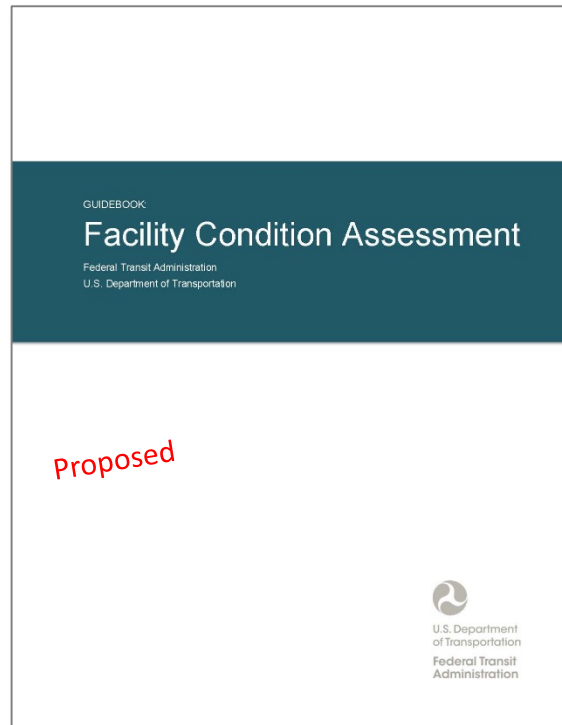
<https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA%20TAM%20ULB%20Cheat%20Sheet%202016-10-26.pdf>

**MTA will base initial performance measures on age (years) only.**  
**Other methods of benchmarking the useful life of revenue vehicles will be considered for future years.**

# Performance Measures In-Depth

## Facilities

% of assets rated below condition “3” on the TERM scale

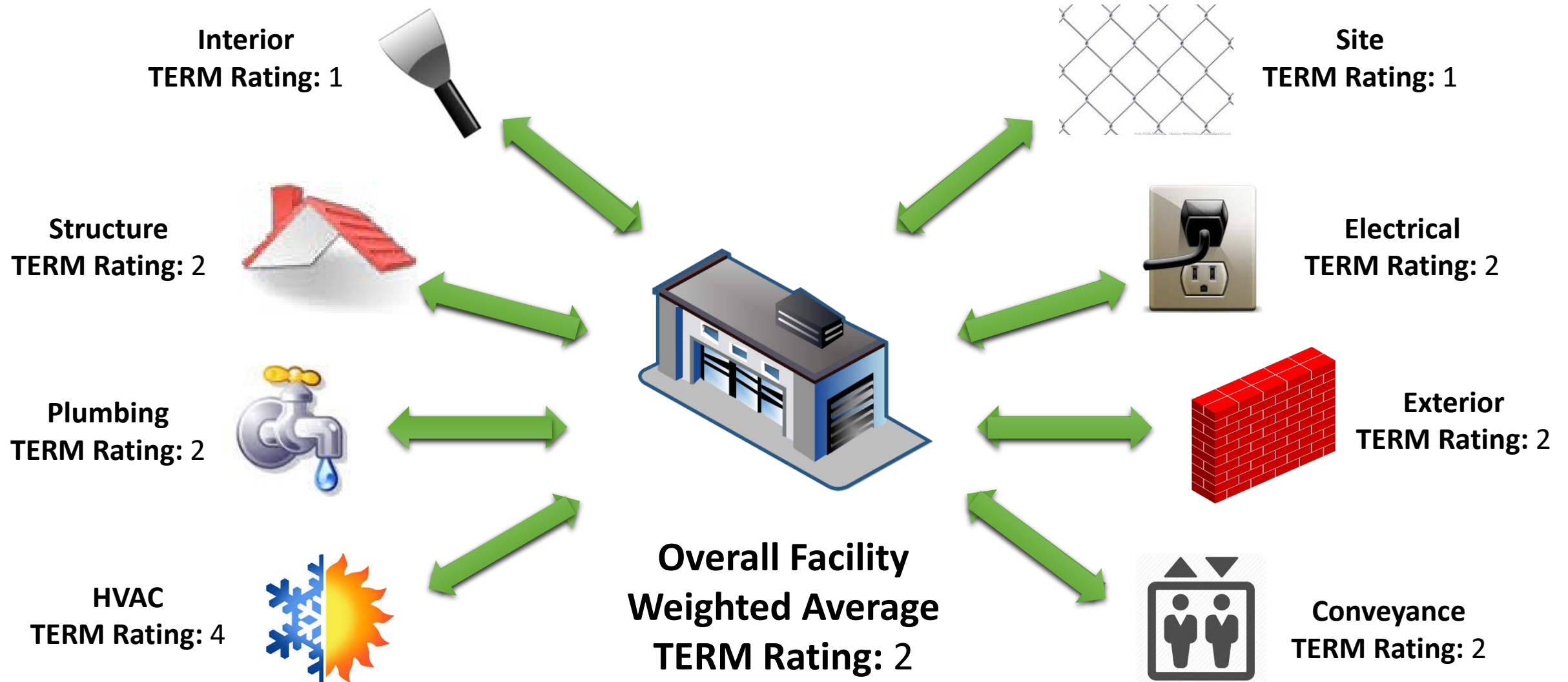


It's complicated...

**NOTE:** All facility TERM ratings must be expressed as integers (no decimals)



# Component-Level Condition Assessment



# LOTS Performance Targets

# Tier 2 Revenue Vehicles

## % of assets at or past their useful life

Asset Class (NTD)	BASELINE % Past Useful Life*	Initial Target
Bus (Heavy Duty)	23.8%	23.8%
Bus (Med Duty)	17.0%	17.0%
Cutaway Bus	59.5%	59.5%
Ferryboat	0%	0%
Automobile	50.0%	50.0%
Van	69.1%	69.1%

*\* Some Tier 2 data from Baltimore City was not available to include in analysis*

# Tier 2 Equipment (Non-Revenue Vehicles)

**% of assets at or past their useful life**

Asset Class (NTD)	BASELINE % Past Useful Life*	Initial Target
Trucks	31.3%	31.3%
Other Rubber Tire Vehicles (Service)	59.5%	59.5%

*\* Some Tier 2 data from Baltimore City was not available to include in analysis*

# Tier 2 Facilities

**% of assets rated below condition “3” on the TERM scale**

Asset Class (NTD)	BASELINE % Below “3” on TERM Scale*	Initial Target
Administrative Facility	25.0%	25.0%
Maintenance Facility	11.1%	11.1%
Admin & Maint Facility	25.0%	25.0%

*\*Tier 2 data from Baltimore Co., Baltimore City, Harford Co., Washington Co. and TCCLES were not available to include in analysis*

*Estimates based on age of each facility’s components, not physical inspection*

*Passenger facilities should only be counted if they include an enclosed building with passenger restrooms, etc.*

Questions?



DEPARTMENT OF TRANSPORTATION

Isiah Leggett  
*County Executive*

Al R. Roshdieh  
*Director*

February 13, 2017

Ms. Elizabeth Kreider, Director  
Maryland Transit Administration  
Office of Local Transit Support  
6 Saint Paul Street  
Baltimore, Maryland 21202


Dear Ms. Kreider:

The purpose of this letter is to set the performance targets for Montgomery County for each asset class applicable under the TAM plan.

Attached is the performance target chart for Montgomery County's initial goals for the 2017 TAM plan. Montgomery County is setting a target of 7.6% beyond useful life for our revenue producing heavy duty buses. The target goal for non-revenue vehicles, beyond useful life, is 50% for cars and trucks and 60% for other- Training buses. Our facility target will be 50% beyond useful life for Administrative and Maintenance buildings and 0% for Combined Admin\_Maint building (Gaithersburg EMTOC is a new facility).

If you have any questions regarding this report, please contact Tanya Nichols of my staff at 240-777-5809.

Sincerely,

  
Dan Hibbert  
Chief

**Division of Transit Services**

# Montgomery County Asset Performance - Initial Target

## REVENUE VEHICLES

Asset Class (NHD)	Asset Class (MTA)	Baseline % Past Useful Life	Suggested Target
Automobile	Accessible_Car		n/a
Bus	Bus_Heavy_Duty		
Bus	Bus_Medium_Duty		n/a
Cutaway Bus	Bus_Light_Duty		
Van	Accessible_Van		n/a

## EQUIPMENT (NON-REVENUE VEHICLES)

Asset Class (NHD)	Asset Class (MTA)	Baseline % Past Useful Life	Suggested Target
Trucks	Non_Rev_Vehicle		50%
Other Rubber Tire Vehicles (Service) (Buses for Training)	Support_Car_Truck		
	Support_Van		

## FACILITIES

Asset Class (NHD)	Asset Class (MTA)	Baseline % Past Useful Life	Suggested Target
Administrative Facility	Administrative_Building		50%
Maintenance Facility	Maintenance_Building		50%
Admin & Maint Facility	Admin_and_Maint_Building		0%
Passenger Facility	Bus_Transfer_Facility		50%



# Prince George's Asset Performance- Initial Targets

## REVENUE VEHICLES

Asset Class (NTD)	Asset Class (MTA)	BASELINE % Past Useful Life*	Suggested Target
Bus	Bus_Heavy_Duty	0%	0%
Cutaway Bus	Bus_Light_Duty	92.3%	90.3%
Van	Accessible_Van	98.5%	96.5%

## EQUIPMENT (NON-REVENUE VEHICLES)

Asset Class (NTD)	Asset Class (MTA)	BASELINE % Past Useful Life*	Suggested Target
Trucks	Non_Rev_Vehicle	20.0%	18.0%
Other Rubber Tire Vehicles (Service)	Support_Car_Truck Support_Van	100.0%	98.0%

## FACILITIES

Asset Class (NTD)	Asset Class (MTA)	BASELINE % Below "3" on TERM Scale*	Suggested Target
Administrative Facility	Administrative_Building	0%	0%
Maintenance Facility	Maintenance_Building	0%	0%

\* Preliminary estimated based on asset age

# Prince George's County Baseline Asset Performance- Preliminary Estimates

## REVENUE VEHICLES

Asset Class	Total # of Vehicles	In-Service Date	Current Age (Yrs)	Useful Life Benchmark (Yrs)	# of Vehicles Past Useful Life	% Past Useful Life
<b>Accessible Van</b>	<b>68</b>	-	-	<b>4</b>	<b>67</b>	<b>98.5%</b>
Chevy	6	2/11/2011	5.7	4	6	
Chevy	5	10/1/2011	5.1	4	5	
Chevy	5	4/12/2012	4.6	4	5	
Chevy	1	1/1/2000	16.9	4	1	
FORD	1	10/1/2005	11.1	4	1	
FORD	2	1/1/2006	10.9	4	2	
FORD	3	9/10/2006	10.2	4	3	
FORD	2	10/6/2006	10.1	4	2	
FORD	2	10/10/2006	10.1	4	2	
FORD	3	6/1/2007	9.4	4	3	
FORD	4	6/8/2007	9.4	4	4	
FORD	6	8/1/2008	8.3	4	6	
FORD	2	1/12/2009	7.8	4	2	
FORD	11	9/8/2009	7.2	4	11	
FORD	1	12/12/2009	6.9	4	1	
FORD	8	6/10/2010	6.4	4	8	
FORD	1	9/10/2014	2.2	4	0	
FORD	2	6/8/1998	18.4	4	2	
Thomas	1	4/12/2005	11.6	4	1	
Thomas	1	1/1/2006	10.9	4	1	
Thomas	1	2/1/2006	10.8	4	1	
<b>Bus (Hvy Duty)</b>	<b>95</b>	-	-	<b>12</b>	<b>0</b>	<b>0.0%</b>
Gillig	13	5/1/2007	9.5	12	0	
Gillig	9	8/1/2008	8.3	12	0	

# Prince George's County Baseline Asset Performance- Preliminary Estimates

## REVENUE VEHICLES

Asset Class	Total # of Vehicles	In-Service Date	Current Age (Yrs)	Useful Life Benchmark (Yrs)	# of Vehicles Past Useful Life	% Past Useful Life
Gillig	1	8/2/2008	8.3	12	0	
Gillig	1	8/3/2008	8.3	12	0	
Gillig	1	8/4/2008	8.3	12	0	
Gillig	8	3/10/2010	6.7	12	0	
Gillig	22	12/10/2010	5.9	12	0	
Gillig	21	12/11/2011	4.9	12	0	
Gillig	15	1/12/2012	4.8	12	0	
HDX	2	10/12/2005	11.1	12	0	
HDX	2	1/12/2006	10.8	12	0	
<b>Bus (Light Duty)</b>	<b>13</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>12</b>	<b>92.3%</b>
Chevy	1	4/12/2012	4.6	6	0	
FORD	1	6/10/1999	17.4	6	1	
Thomas	1	10/1/2003	13.1	6	1	
Thomas	7	10/1/2005	11.1	6	7	
Thomas	2	1/1/2006	10.9	6	2	
Thomas	1	5/1/2006	10.5	6	1	

# Prince George's County Baseline Asset Performance- Preliminary Estimates

## EQUIPMENT (Non-Revenue Vehicles)

Asset Class	Total # of Vehicles	In-Service Date	Current Age (Yrs)	Useful Life Benchmark (Yrs)	# of Vehicles Past Useful Life	% Past Useful Life
<b>Non-Rev. Vehicle</b>	<b>10</b>	-	-	<b>10</b>	<b>2</b>	<b>20.0%</b>
Chevy	2	7/1/2005	11.4	10	2	
Chevy	1	12/1/2007	8.9	10	0	
FORD	3	6/8/2013	3.4	10	0	
Jeep	4	6/8/2012	4.4	10	0	
<b>Support Car/Truck</b>	<b>1</b>	-	-	<b>6</b>	<b>1</b>	<b>100.0%</b>
Chevy	1	7/1/2005	11.4	6	1	
<b>Support Van</b>	<b>1</b>	-	-	<b>6</b>	<b>1</b>	<b>100.0%</b>
DODGE	1	6/8/1992	24.4	6	1	

# Prince George's County Baseline Asset Performance- Preliminary Estimates

## FACILITIES

Asset Class	Asset ID	Useful Life (Yrs)	Current Age (Yrs)	TERM Condition Rating
<b>Administrative Facility</b>	<b>9400 Peppercorn</b>	-	-	<b>3</b>
Building Structure	9400 Peppercorn	50	26	3.4
Building Access & Parking	9400 Peppercorn	20	14	3.3
Concrete walkways	9400 Peppercorn	20	26	2.1
Parking pavement	9400 Peppercorn	20	2	4.6
Building Drainage	9400 Peppercorn	40	26	3.1
Building Electrical	9400 Peppercorn	40	26	3.1
3000 Amp Service, 49 electric panels	9400 Peppercorn	40	26	3.1
7th Fl. 2 electrical panel	9400 Peppercorn	40	26	3.1
giant ups power system	9400 Peppercorn	40	26	3.1
Lobby, 11 electric panels	9400 Peppercorn	40	26	3.1
Room 130, Giant Uninterruptible Power System	9400 Peppercorn	40	26	3.1
Building Elevators	9400 Peppercorn	25	26	2.4
Building Exterior	9400 Peppercorn	40	26	3.1
1 Diesel Tank (500 Gallons)	9400 Peppercorn	40	26	3.1
4 Compressors	9400 Peppercorn	40	26	3.1
Concrete and Glass	9400 Peppercorn	40	26	3.1
Building Fire Alarm	9400 Peppercorn	40	26	3.1
Fire lite alarm, annunciator, Fire Pump	9400 Peppercorn	40	26	3.1
Lobby, Fire Alarm System	9400 Peppercorn	40	26	3.1
Room 130, Pyrotronic Fire Alarm System	9400 Peppercorn	40	26	3.1
Room 135, 1 Fire Pump	9400 Peppercorn	40	26	3.1
Building Generators	9400 Peppercorn	15	26	1.7
hold building generator, 500 gallon diesel tank	9400 Peppercorn	15	26	1.7

# Prince George's County Baseline Asset Performance- Preliminary Estimates

## FACILITIES

Asset Class	Asset ID	Useful Life (Yrs)	Current Age (Yrs)	TERM Condition Rating
Lobby, 1 building generator	9400 Peppercorn	15	26	1.7
Building HVAC	9400 Peppercorn	40	21.7	3.3
8 air handlers	9400 Peppercorn	40	26	3.1
1 cooling tower, 250g Compressor	9400 Peppercorn	40	26	3.1
4 air handlers	9400 Peppercorn	40	13	3.9
Building Interior	9400 Peppercorn	15	26	1.7
Building Plumbing	9400 Peppercorn	40	22.8	3.3
12 electric hwh, water softner, 2 pumps	9400 Peppercorn	40	10	4.1
7th Fl. 1 water softener	9400 Peppercorn	40	26	3.1
7th Fl. cooling water	9400 Peppercorn	40	26	3.1
Municipal water and sewer	9400 Peppercorn	40	26	3.1
Room 135, Water Service	9400 Peppercorn	40	26	3.1
Building Roof	9400 Peppercorn	40	26	3.1
<b>Maintenance Facility</b>	<b>8400 D'Arcy</b>	-	-	<b>4</b>
Building Drainage	8400 D'Arcy	40	17	3.6
Building Electrical	8400 D'Arcy	40	17	3.6
1 Transformer	8400 D'Arcy	40	17	3.6
7 big electrical panels, 2000 amp service	8400 D'Arcy	40	17	3.6
small electrical panel	8400 D'Arcy	40	17	3.6
Building Exterior	8400 D'Arcy	40	13.8	3.8
1 big generator	8400 D'Arcy	40	17	3.6
1 large Storage Shed	8400 D'Arcy	40	6	4.4
1 Sea Container	8400 D'Arcy	40	6	4.4
23 Close circuit televisions	8400 D'Arcy	40	13	3.9
4 Storage Sheds	8400 D'Arcy	40	17	3.6

# Prince George's County Baseline Asset Performance- Preliminary Estimates

## FACILITIES

Asset Class	Asset ID	Useful Life (Yrs)	Current Age (Yrs)	TERM Condition Rating
45 Outdoor Lighting	8400 D'Arcy	40	17	3.6
9 bus bays (Front) 8 bus bays (Back)	8400 D'Arcy	40	17	3.6
Structure: Metal Glass & Plate, block structure	8400 D'Arcy	40	17	3.6
Building Fencing	8400 D'Arcy	15	17	2.3
Building Fire Alarm	8400 D'Arcy	40	17	3.6
Building Fire Alarm - 1 radioncs annunciator	8400 D'Arcy	40	17	3.6
Building Fire Alarm - Fire alarm system	8400 D'Arcy	40	17	3.6
Building HVAC	8400 D'Arcy	40	10	4.1
Building HVAC - 1 new "H" Vac Unit	8400 D'Arcy	40	3	4.7
Building HVAC - 6 original "H: Vac Units	8400 D'Arcy	40	17	3.6
Building Interior	8400 D'Arcy	45	34	9.5
Building Roof	8400 D'Arcy	40	17	3.6

# **Commonwealth of Virginia State Transit Asset Management Plan**

## **Development of Initial Goals**

Todd Horsley

Director of Northern Virginia Transit Programs

February 3, 2017



# Setting the State of Good Repair (SGR) Goals

- Virginia State Group Goals were set by 1/1/17
- Documented “decision tool” to support goals
  - Based on feedback from other state programs, we are setting our first goals at our current state of good repair levels.
  - TransAM reports (Virginia’s TAM reporting system)
  - Because the TransAM system just went live on 12/9/16, DRPT is still reviewing to ensure that all data transferred accurately into the system.

# Revenue Vehicles in State TAM Plan Inventory

*\*ULB = Useful Life Benchmark*

- 40 foot – 119 vehicles - All within ULB
  - 100 % of vehicles within ULB
- 35 foot – 235 vehicles - 21 vehicles past ULB
  - 91 % of vehicles within ULB
- 30 foot – 61 vehicles - 13 vehicles past ULB
  - 79% of vehicles within ULB
- Under 30 foot – 209 vehicles - 8 vehicles past ULB
  - 97% of vehicles within ULB
- Vans – 410 vehicles - 51 vehicles past ULB
  - 87% of vehicles within ULB

# Goals for State TAM Plan Assets

- 40 foot – 80% of vehicles within ULB
- 35 foot – 80% of vehicles within ULB
- 30 foot – 75% of vehicles within ULB
- <30 foot – 80% of vehicles within ULB
- Vans – 80% of vehicles within ULB
- Facilities – 80% of facilities within ULB

## Next Steps

- Verify data in TransAM
- Review goals for reasonableness
- Work with transit providers in the group plan to develop condition codes for assets
- Develop TAM plan, in collaboration with group members, no later than **June 30, 2018**
- Transit providers ensure that their Accountable Executives sign off on the State TAM Plan
- Post State TAM Plan to NTD by **September 30, 2018**



Potomac and Rappahannock  
Transportation Commission

14700 Potomac Mills Road  
Woodbridge, VA 22192

March 9, 2017

Mr. Kanti Srikanth  
Director, Transportation Planning  
Transportation Planning Board  
Metropolitan Washington Council of Governments  
777 North Capitol Street NE, Suite 300  
Washington, D.C. 20002

RE: Transit Asset Management Performance Targets

Dear Mr. Srikanth,

MAP-21 required that every transit operator receiving federal funds establish Transit Asset Management (TAM) performance targets and to coordinate targets with their metropolitan planning organization. The following are the Potomac and Rappahannock Transportation Commission's (PRTC) baseline figures and initial targets, which will be included in the TAM plan and submitted annually as part of National Transit Database (NTD) reporting.

PRTC Asset Performance Measures			
Asset Class	Baseline	Initial Target	Notes
Bus (45')	46%	46%	meets or exceeds ULB of 14 years
Bus (40')	18%	18%	meets or exceeds ULB of 12 years
Bus (30')	27%	27%	meets or exceeds ULB or 10 years
Van	0%	0%	meets or exceeds ULB or 10 years
Service Vehicles	50%	50%	meets or exceeds ULB or 10 years
Admin/Maintenance Facility	0%	0%	% below "4" on TERM Scale
Commuter Lot	0%	0%	% below "4" on TERM Scale

Should you have any questions, please contact Betsy Massie, Director of Grants and Project Management, at 703-580-6113 or [bmassie@omniride.com](mailto:bmassie@omniride.com).

Sincerely,

Eric Marx

Interim Executive Director

Cc: Betsy Massie  
Perrin Palistrant  
Robert Schneider  
Eric Randall

OmniRide • Metro Direct • OmniLink • Cross County Connector • OmniMatch • VRE

Administrative Office: (703) 583-7782 • Customer Info: (703) 730-6664 • Toll Free: (888) 730-6664 • Fax: (703) 583-1377 • [PRTCtransit.org](http://PRTCtransit.org)





## VIRGINIA RAILWAY EXPRESS

March 24, 2017

Mr. Kanti Srikanth  
Director of Transportation Planning  
Metropolitan Washington Council of Governments  
Department of Transportation Planning  
777 North Capitol Street, N.E., Suite 300  
Washington, DC 20002-4290

Re: VRE Transit Asset Management (TAM) Performance Targets

Dear Mr. Srikanth:

New federal requirements stemming from the Moving Ahead for Progress in the 21st Century (MAP-21) federal transportation bill culminated in a Final Rule issued on July 26, 2016 (Effective October 1, 2016) by the FTA addressing TAM. The Virginia Railway Express (VRE) is developing the appropriate information, methodologies and processes for TAM and reporting to the National Transit Database as outlined in the Final Rule.

One of the requirements in the Final Rule is that VRE coordinate with TPB in the selection of MPO performance targets. To assist the MPO in their selection of performance targets, on January 10, 2017, VRE provided the MPO with a table as well as a printout from FTA's draft asset module to document TAM performance targets developed by VRE.

In response to VRE's January letter, MWCOG staff asked for additional details for the performance targets and VRE assets. Please see the attached updated table with the requested details related to VRE's TAM performance targets.

Please contact me Rich Dalton, Deputy CEO/Chief Operating Officer at [rdalton@vre.org](mailto:rdalton@vre.org) or 703-838-5439 if you require additional information or have any questions.

Sincerely,

Rich Dalton  
Deputy CEO/Chief Operating Officer



## SUMMARY

VRE developed performance targets for each asset class under the four asset categories as required by the FTA TAM Final Rule. Table 1 summarizes the current State of Good Repair backlog for each asset class that was used by VRE to inform setting of performance targets for the upcoming fiscal year. The performance targets represent the goal for State of Good Repair backlog for each asset class. While optional for the first year, VRE reported these performance targets to FTA in January 2017.

Table 1. Proposed VRE Transit Asset Performance Targets

Asset Category	Asset Class	Performance Measure	Number	Factor	Performance	Performance Target
Rolling Stock	Commuter Rail Locomotive	Percentage of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	20	20 years ULB	Average 6 years (Range: 5-7 years)	0% exceeded ULB
	Commuter Rail Passenger Coach		86	30 year ULB	Average 8 years (Range: 1-10 years)	0% exceeded ULB
Equipment	Automobiles	Percentage of (non-revenue service) vehicles that have met or exceeded their ULB	6	5 year ULB	Average 5 years (Range: 3-12 years)	50% exceeded ULB
	Trucks and other Rubber Tire Vehicles		N/A			
	Steel Wheel Vehicles		N/A			
Infrastructure	Commuter Rail	Percentage of track segments, signals, and systems with performance restrictions	N/A			



Asset Category	Asset Class	Performance Measure	Number	Factor	Performance	Performance Target
Facilities	Passenger Facilities	Percentage of facilities with a condition rating below 3.0 on the FTA Transit Economics Requirements Model (TERM) scale (1=Poor to 5=Excellent)	18	TERM	4 average	0% rated below 3
	Passenger Parking Facilities		3	TERM	3.7 average	0% rated below 3
	Maintenance Facilities		9	TERM	4 average	0% rated below 3
	Administrative Facilities		2	TERM	4 average	0% rated below 3





February 3, 2017

Chairman Bridget Donnell Newton  
Transportation Planning Board  
Metropolitan Washington Council of Governments  
777 North Capitol Street NE, Suite 300  
Washington, DC 20002

Dear Chairman Newton:

This letter provides the Washington Metropolitan Area Transit Authority's (Metro's) performance targets for state of good repair (SGR) in compliance with the Federal Transit Administration (FTA) Transit Asset Management (TAM) Final Rule that took effect on October 1, 2016. Metro developed these targets through a data-driven approach, engaging staff who work directly with the assets and who develop the capital budget, and following the same rigorous performance management process that is in place for Metro's other key performance indicators (KPIs).

As per the Metropolitan and Statewide and Nonmetropolitan Transportation Planning Final Rule (Planning Rule), Metro is providing these targets to help assure that the Metropolitan Washington Council of Governments (MWCOC) has the information as MWCOC works to establish regional targets.

The targets provided herein are for Metro's fiscal year (FY) 2017, the most recent year with an approved Metro budget. Additionally, the Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) legislation requires each designated recipient to submit two annual reports – including one report describing progress towards meeting the performance targets established *during* that fiscal year and a description of the recipient's targets for the subsequent fiscal year (reference 49 U.S.C. §5326(c)(1) and (2)). In this first instance of reporting, Metro is complying with setting the targets for the current fiscal year. When the FY 2018 budget is approved, these targets will be updated to reflect expected capital investments in the relevant asset classes and will also be provided to MWCOC.

### **FY17 Performance Targets for Equipment**

According to the TAM rule (subsection 625.43(a)), the measure for equipment is limited to non-revenue service vehicles. The performance measure for non-

**Washington  
Metropolitan Area  
Transit Authority**

600 Fifth Street, NW  
Washington, DC 20001  
202/962-1234

By Metrorail:  
Judiciary Square—Red Line  
Gallery Place-Chinatown—  
Red, Green and  
Yellow Lines  
By Metrobus:  
Routes D1, D3, D6, P6,  
70, 71, 80, X2

revenue, support-service, and maintenance vehicles is the percentage of those vehicles that have either met or exceeded their Useful Life Benchmark (ULB).

The ULB is defined by the rule as distinct from the minimum useful lives required for Federal Transit Administration (FTA) grants. A ULB is the expected lifecycle or period of use of capital assets for a particular transit provider's operating environment. This can include influencing factors such as manufacturer, level of use, service plans, maintenance plans, and actual environmental considerations (i.e., wear and tear from unpaved roads, extreme weather, road salting, etc.).

In compliance with this federal regulation, Metro established a ULB for equipment using studies by two independent consultants to determine the optimal life of each non-revenue service fleet. Metro's ULB and target for equipment is listed below:

Number of Vehicles by Class	ULB	Target % at or Exceeding ULB
1,339 Total: <ul style="list-style-type: none"><li>• 135 Automobiles</li><li>• 1000 Trucks and Other</li><li>• 204 Steel Wheel</li></ul>	5, 6, 8, 10, 12, 15, 20 or 75 Years depending on type/usage	15%

Metro will continue to monitor the size and performance of the non-revenue vehicle fleet. The target percentage for each vehicle type under the ULB will change each year based on the maintenance of the fleet, capital plans for replacement, service demands and other economic factors.

#### **FY17 Performance Targets for Rolling Stock**

Similar to equipment, the required performance measure for rolling stock is the percentage of vehicles that have met or exceeded their ULB (subsection 625.43(b)). For Metro, this measure is applicable to all three modes of operation: Metrorail (heavy rail passenger cars), Metrobus (buses) and MetroAccess (vans). A target was established for each class of vehicle by quantifying the percentage of rolling stock in each class that is over Metro's ULB for that class and determining FY17 replacement plans and schedules for vehicle delivery.



In compliance with this federal regulation, Metro established a ULB for rolling stock (revenue vehicles) based on existing FTA approved Fleet Management Plans. Metro's ULB and targets for rolling stock are listed below:

Vehicle Class	ULB	Target % at or Exceeding ULB
Heavy Rail Passenger	16 and 25 Years for retirement of 4000 and 5000 Series 40 Years all other Series	1%
Bus	12 Years for Articulated 15 Years for 30-40'	3%
Vans	4 Years	30%

Note that the ULB's for all vehicle types are subject to change based on fleet conditions and performance. In addition, the target percentage of each class under a ULB will change each year based on the age of each asset class, the service demand, the capital plans for replacement and other economic factors.

#### **FY17 Performance Targets for Fixed Guideway**

The TAM Rule (subsection 625.34(c)) requires a measure for infrastructure based on the percentage of guideway directional route miles (DRM) with performance restrictions. This performance measure is applicable to all rail fixed guideway infrastructure – or Metro's total of 234 miles of guideway. The reporting of this measure is intended to help standardize reporting of slow zones ("speed restrictions") across rail operating transit agencies.

According to the *FTA Guidebook: Guideway Performance Restriction Calculation* this measure should be calculated as a snapshot in time, as of 9 a.m. on the first Wednesday of each month. The target, as reported, represents the annual average over the 12 month reporting period.

In compliance with this federal regulation, Metro has quantified both planned and unplanned (corrective maintenance) speed restrictions to determine the target listed below:

Mode of Guideway	Total DRM of Guideway	Target % with Performance Restrictions
Heavy Rail	234	5%

Metro maintains reports of speed restrictions as they occur and are closed out. This historical data is the source for establishing the FY17 target percentage, along with the planned impacts of SafeTrack work in the coming months. As SafeTrack will be completed in this fiscal year, the targets for future years are expected to differ significantly from this initial target. Succeeding targets will reflect infrastructure condition, service plans and capital investment plans.

#### **FY17 Performance Targets for Facilities**

Subsection 625.43(d) of the TAM Rule requires a condition-based performance measure for transit facilities based on FTA's Transit Economic Requirements Model (TERM) five-point scale for condition rating assets where five is Excellent and one is Poor. The measure is the percentage of facilities with a condition rating of less than 3.0 rating.

This approach requires transit providers to physically inspect facilities every three years using standardized procedures and criteria. The result is a condition assessment that identifies the actual condition of each asset based on usage, maintenance history and environment.

The FTA definition of a facility includes any buildings or structures used in providing public transportation, including passenger stations, operations, maintenance and administrative facilities. This definition only includes conditioned spaces, according to the FTA *Guidebook: Facility Condition Assessment*, which excludes all bus shelters and stops.

In compliance with this federal regulation, Metro established the following target condition for facilities:



Number of Facilities by Type	Target % with Condition Rating Below 3.0
189 Total: <ul style="list-style-type: none"><li>• 91 Rail Stations</li><li>• 3 Bus Loops</li><li>• 65 Parking Garages &amp; Lots</li><li>• 25 Maintenance Facilities*</li><li>• 5 Administrative Buildings</li></ul>	32%

*\*Note: Facilities can include complexes with multiple buildings.*

Metro is in the midst of completing a comprehensive condition assessment and inventory of all facilities. Condition data used in developing performance targets included completed inspections of the most critical facilities for service delivery, stations and maintenance facilities, and relied on expert advice from maintenance staff regarding the condition of other facilities. When complete condition assessment data is available for all facilities, this target may be adjusted. Future targets may also be adjusted based on improved methods of determining asset criticality (as it relates to the overall facility rating) and changes in facility usage, capital plans and other economic factors.

As is required by the rule, I have approved these targets as Metro's *Accountable Executive*. If you have any questions or need additional information, please contact Andrea Burnside, Chief Performance Officer, at [ahburnside@wmata.com](mailto:ahburnside@wmata.com) or Yvonne Carney, Acting Director of Performance at [ycarney@wmata.com](mailto:ycarney@wmata.com).

Sincerely,



Paul J. Wiedefeld  
General Manager and  
Chief Executive Officer



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

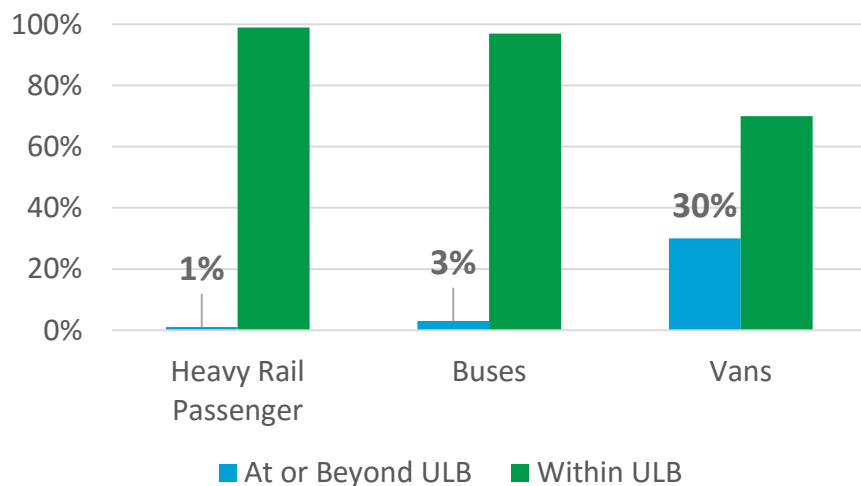
- Metro's ULBs take into consideration the age of an asset, related maintenance costs, reliability and its operating environment
  - A useful life benchmark is distinct from the term “useful life” or “minimum useful life” that applies to FTA's grant programs
  - Driven primarily by Metro's fleet management 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%

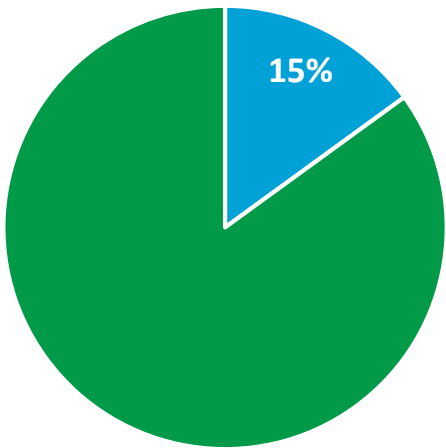
*\*Note: Early retirement agreed with FTA.*

# 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></ul>	15%
Trucks and Other (1000)	<ul style="list-style-type: none"><li>• 8 Years</li><li>• 12 Years</li></ul>	
Steel Wheel (204)	<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>	

# 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...

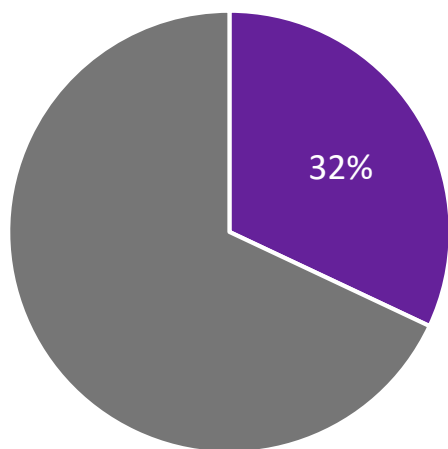
Condition	FTA Rating	Description
Excellent	5	<ul style="list-style-type: none"><li>• New asset</li><li>• No visible defects</li></ul>
Good	4	<ul style="list-style-type: none"><li>• Asset showing minimal signs of wear</li><li>• Some (slightly) defective or deteriorated components(s)</li></ul>
Adequate	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)

Bus loops (3)

Parking Garages & Lots (65)

Maintenance Facilities (25)\*

Administrative Buildings (5)

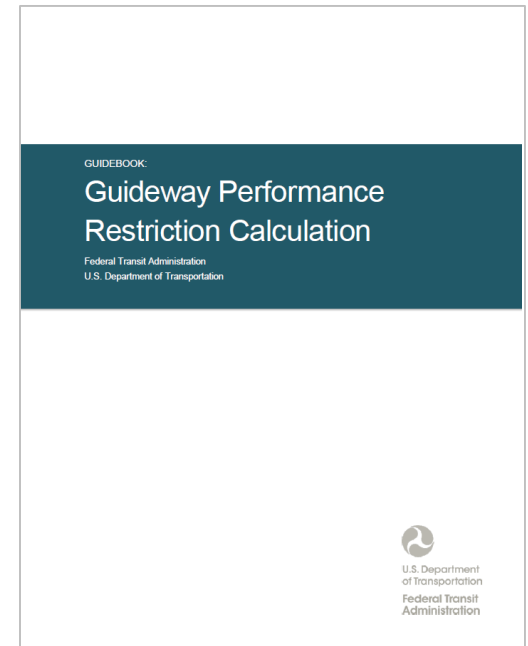
32%

*\*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

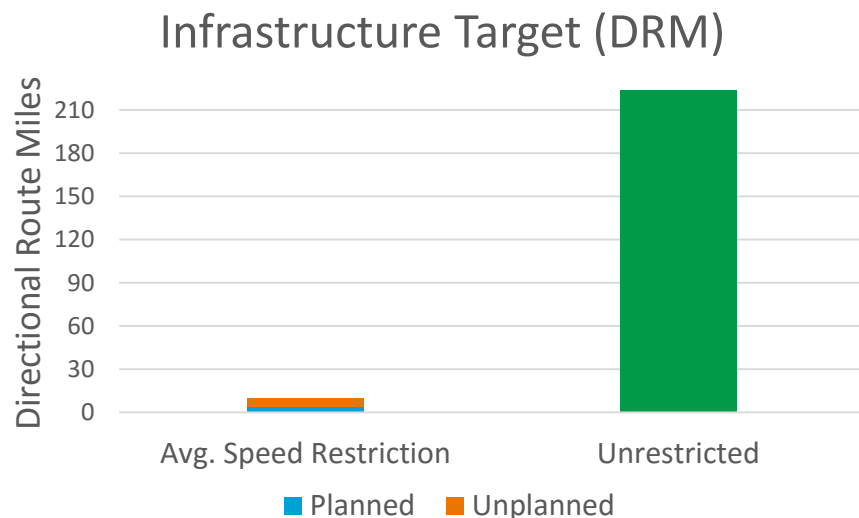
\*Note: FY17 planned and unplanned speed restrictions are high and expected to fall in FY18



# 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