Washington Metropolitan Area Transportation Authority
Board Action/Information Summary

☒ Action ☐ Information	MEAD Number: 99651	Resolution: ☐ Yes ☒ No

PURPOSE
The objective of this action item is to discuss overall deployment strategies for the entire 6000 series rail car deployment and to initiate a Board approved deployment plan for the first 50 of the 6000 series rail cars available for deployment in December 2006.

DESCRIPTION
The 6000 series rail car procurement contains a base buy of 62 cars plus an option for 122 rail cars. The expected delivery of the first 6 cars is in September 2006, a total of 50 rail cars by December 2006 and the remainder of the 6000 series by December 2008.

This action is for the deployment of the first 50 rail cars, which will be used to respond to overcrowding.

This document presents the service options for the deployment of rail cars to address ridership demands and improve reliability in the system. These service options that the Board has been previously briefed on include 8-car train operations, continued elimination of 4-car trains, minor headway adjustments, eliminating the remaining turnbacks, the Blue Line split and express trains. The deployment of 184 6000 series rail cars represents a 20% increase in our rail car fleet over the next 2 – 3 years.

Below are various service strategies for the remaining 134 rail cars.

8-Car Train Operation (Board Adopted Strategy for Growth)
The use of 8-car trains relieves severe overcrowding and keeps pace with ridership growth.

Elimination of 4 Car Trains in the Peak (Board Adopted Strategy for Growth)
Currently there are twelve 4-car trains during the peak period. This strategy would require 28 additional cars and would ease crowding.

Reliability Improvements
Minor headway adjustments from a 6 minute to a 7 minute headway on most lines except Red would improve reliability of our system by optimizing the number of trains traveling through a portal in the peak period with only a minor (30 second) adjustment to the headway in the core.

Blue Line Split (Board Adopted Strategy for Reliability and System Access)
During peak hour periods only, one half of the trains (5) leaving Franconia Springfield will travel through the Rosslyn portal to Largo. The other half of the trains (5) leaving Franconia Springfield will split from the current Blue Line at Pentagon cross the Yellow Line Bridge and continue to Greenbelt. The Orange Line would operate from Vienna to both New Carrollton and Largo. This pattern provides relief at the Rosslyn portal, faster travel for the majority of customers boarding at the Yellow and Blue Line stations south of Pentagon, and a direct route from the southern portion of the system to the northeastern portion. This strategy would require 30 additional cars.

 Eliminating the Remaining Red Line Turnbacks
This service strategy would eliminate the remaining Red Line turnbacks at Grosvenor in the peak period and at Silver Spring during the peak and off peak periods. It requires 36 rail cars to eliminate the Grovesnor turnback in the peak period and 28 additional rail cars to eliminate the Silver Spring turnback in the peak.

Express Trains
This service strategy would create fewer stops in the outer system and provide quicker delivery from the end of the line to the core during the peak period. Trains would service major stations in route to the core and stop at each of the core stations. We have provided the Express Service under special circumstances.

We are in the process of analyzing all of these strategies and will return to the Customer Service, Operations and Safety Committee this winter to present our analyses, the timing and the public process.

Deployment of the First 50 New Rail Cars – Relief of Existing Overcrowding
We have seen a 5.5% increase in the total system-wide rail ridership in the last year and a 15.9% increase in the last 5 years. The first 50 of the 6000 series rail cars are to respond to ridership growth and ease overcrowding.

First 50 Rail Cars – December 2006
Forty of the first 50 rail cars would be used to accommodate ridership demand and the remaining 10 (or 20%) would be set aside for spares.

Ridership and the number of rail cars are counted twice per month at 9 locations where maximum loads occur and a Passenger per Car (PPC) is calculated for each location.

The following chart displays the impact of the deployment and the equalization of Passengers Per Car (PPC). The AM peak hour Maximum (Max) Load Point ridership is based on Spring 2006 ridership data.

Line/From	Max Load Peak Hour Ridership	Actual Cars per Peak Hour	Present PPC - Prior to New Cars	Proposed Deployment of 50 Cars	PPC After Deployment
Red/Glenmont	13,533	140	97	6	93
Red/Shady Grove	13,100	138	95	6	91
Yellow/Huntington	5,567	62	90	4	84
Green/Branch Avenue	7,700	76	101	10	90
Green/Greenbelt	5,100	62	82	0	82
Blue/Franc-Springfield	4,633	52	89	4	83
Blue/Largo	4,267	52	82	0	82
Orange/Vienna	11,133	110	101	10	93
Orange/ New Carrollton	5,767	68	85	0	85
Total	70,800	760	93.2*	40**	88.5*

Notes:
* System wide Passengers Per Car (PPC)
** Does not include the 10 cars for spares

Accomplishments

- Relieve Overcrowding: Decrease PPC by 5% from 93.2 to 88.5
- Reduce Number of 4-car Trains by 5 (2 Yellow, 2 Blue, 1 Orange)
- Increase Number of 8-car Trains from 6 to 22 or 17% of Peak Period Trains

Below is a table with the present ridership and car deployment data by line:

Line	Avg Daily Riders	% Riders	Present Deployment Cars	%	Proposed Deployment Cars	%
Red	268,000	37%	264	35.2%	276	34.9%
Yellow	58,000	8%	56	7.5%	60	7.6%
Green	101,000	14%	120	16.0%	130	16.5%
Blue	116,000	16%	120	16.0%	124	15.7%
Orange	181,000	25%	190	25.3%	200	25.3%
Total	724,000	100%	750	100%	790	100%

FUNDING IMPACT
There is no funding impact. The cost of operating the first 50 rail cars is in the FY07 Operating Budget.

RECOMMENDATION
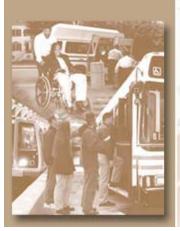1. Approve the deployment plan for the first 50 rail cars.

Line	Present Car Deployment	This Deployment	New Car Deployment
Red	264	12	276
Yellow	56	4	60
Green	120	10	130
Blue	120	4	124
Orange	190	10	200
Total	750	40	790

Deployment Strategies for 6000 Series Rail Cars

Presented to the Board of Directors:

Customer Service, Operations and Safety Committee

September 7, 2006

Delivery Schedule

6 Rail Cars by Sept. 06
50 total Rail Cars by Dec. 06
184 total Rail Cars by Dec. 08

Deployment Strategies

- ## First 50 cars (today action)

  - Relieves Overcrowding
  - Reduces number of 4-car trains
  - Increases number of 8-car trains

- ## Strategies for remainder of 134 cars (to be presented in early 2007)

  - Additional 8-car trains
  - Elimination of 4-car trains
  - Reliability Improvement
  - Blue Line Split
  - Express trains
  - Eliminate remaining Red Line Turnbacks

Proposed Deployment of First 50 New Rail Cars
(To Relieve Overcrowding)

Line/From	Max Load Peak Hour Ridership	Actual Cars per Peak Hour	Present PPC - Prior to New Cars	Proposed Deployment of 50 Cars	PPC After Deployment
Red/Glenmont	13,533	140	97	**6**	93
Red/Shady Grove	13,100	138	95	**6**	91
Yellow/Huntington	5,567	62	90	**4**	84
Green/Branch Avenue	7,700	76	101	**10**	90
Green/Greenbelt	5,100	62	82	**0**	82
Blue/Franc-Springfield	4,633	52	89	**4**	83
Blue/Largo	4,267	52	82	**0**	82
Orange/Vienna	11,133	110	101	**10**	93
Orange/ New Carrollton	5,767	68	85	**0**	85
Total	70,800	760	93.2*	**40****	88.5*

* System wide Passengers Per Car (PPC)
** Does not include the 10 cars for spares

- Approval to deploy the first 50 of the 6000 series rail cars available by December 2006

Line	Present Car Deployment	This Deployment	New Car Deployment
Red	264	12	276
Yellow	56	4	60
Green	120	10	130
Blue	120	4	124
Orange	190	10	200
Total	750	40	790