



# Overview of Items 23, 24, 25 and 30

## System Safety, Security & Operations Committee



**Metro**

November 2017

# Rail Vehicle Maintenance, Overhaul & Modernization

## Maintenance

- Preserve level of performance

## Overhaul

- Heavy maintenance repair/replacement at specific OEM intervals (age/mileage)
- No change to the design

## Modernization

- Improve systems and performance
- Approximate mid-life
- Upgrade the system designs



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# Fleet Plan 10 Year Horizon

Series	Maintenance	Overhaul	Modernize	Retire	Replace
P865	Yes	No	No	In process	P3010
P2020	Yes	Yes	No	Future	P3010
P2000	Yes	Yes	Yes	Future	Future
P2550	Yes	Yes	Yes	Future	Future
P3010	Yes	To be Scheduled	2030 ±	Future	Future
A650 Base	Yes	No	No	Future	HR4000 Base
A650	Yes	Yes	Yes	Future	HR4000 Option

# Fleet Plan

## □ P2020 LRT Car Series

- Delivered: 15
- Lines : Blue and Expo Lines
- Overhaul Program
  - Ten components
  - Program LOP \$ 30,000,000
  - Contract for air hose replacement - Completed
  - Contract for axle assembly, gearbox/roller, cab slider, body repair, seat removal for bikes, wheelchair, cameras and propulsion – On-Going
  - Contract for Friction Brake– Nov 2017 (Item 23)

## □ P2000 LRT Car Series

- Delivered: 52
- Lines: Green, Blue and Expo Lines
- Overhaul Program
  - Nine components
  - Program LOP \$ 26,360,100
  - Contracts for air hose replacement and non-power axle bearing replacement – Completed 2012
  - Contracts for power axle, car battery, couple, exterior and interior paint – On-going
  - Contracts for Friction Brake and Air Compressor – Nov 2017 (Item 25)
- Modernization
  - Renew systems:
    - Carbody; Door; HVAC; Electrical; Propulsion; Trucks; Braking Equipment; Communication; Automatic Train Control; Trainline; Destination Signs
  - Exercise optional features (Item 30)
  - Contract to Alstom
  - LOP \$160,800,000
  - Projected Completion August 2021

# Fleet Plan

## ❑ P2550 LRT Car Series

- Delivered: 50
- Lines : Gold Line
- Overhaul Program
  - Nine components
  - Program LOP \$ 35,007,540
  - Contracts for axle assemblies, and coupler awarded – June & Sept 2017
  - **Contract for Friction Brake – Nov 2017 (Item 25)**
  - Contracts for propulsion, pantograph, battery, doors, truck and suspension systems – Anticipated 2018/2019
- Modernization
  - Renew systems:
    - Carbody; Door; HVAC; Electrical; Propulsion; Trucks; Braking Equipment; Couplers; Communication; Battery
  - Specification Prep Phase
  - **Contract to STV Incorporated (Item 24)**
    - **Consultant \$1,421,086 –Nov 2017**
  - Estimated LOP TBD
  - Projected Start 2020

## ❑ A650 Subway Car Series

- Delivered: 74
- Lines : Red Line
- Overhaul Program
  - Ten components
  - Program LOP \$ 30,000,000
  - Contracts for air compressor, HVAC compressor, passenger door, and car battery replacement – Completed
  - Contracts for friction brake, traction motor, gearbox, coupler, AC, and DC – On-Going
- Modernization
  - Renew systems:
    - Propulsion; Trucks; Friction Brakes; Doors; Communication; Interiors; Signal System, HVAC
  - Design and engineering phase
  - Contract to Talgo
  - LOP \$72,970,494
  - Projected Completion December 2021



Thank you



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