



Safety and Operations Committee

Board Information Item III-A

Future Outages for Capital Program

Washington Metropolitan Area Transit Authority
Board Action/Information Summary

Action Information

Document
Number:
205667

Resolution:
 Yes No

Presentation Name:

Future Outages for Capital Program

Project Manager:

Nathan Williams

Project Department:

Infrastructure

Purpose/Key Highlights:

To update the Board on the schedule for major capital work events for calendar year 2024 that require extended shutdowns during the Summer and Winter Holiday and preview major shutdown events for 2025 and 2026. These major shutdowns allow capital improvements and modernization throughout the rail system.

Interested Parties:

- Maryland Transit Administration (MTA) , Maryland Department of Transportation (MDOT)
- Meridiam and Star America Infrastructure Partners combined dba Purple Line Transit Partners
- Dragados and OHLA combined dba Maryland Transit Solutions
- ACI and CAF USA combined dba Purple Line Transit Operators
- Montgomery County (2026 Bethesda Station outage only)

Background:

WMATA's Capital Improvement Program and Infrastructure Department improves the safety and reliability of the rail system for all customers and employees, improving the customer experience, and keeping the region's rail infrastructure in a state of good repair. The Rail Service Adjustment (RSA) outages scheduled for Summer 2024, Winter 2024, Summer 2025, Winter 2025, and Summer 2026 are key to achieving these goals. Planned outages for capital and state of good repair needs help:

1. **Customers and Jurisdictional Partners:** Provide advanced notice to customers and partners to plan ahead and provide alternate travel options, increase alternate service reliability, and complete work during periods of lower ridership to affect fewer riders.
2. **Construction and Maintenance Projects:** Provide 24-hour access to allow multiple teams to work simultaneously, reduce project lengths, and optimize repair improvements
3. **Authority:** Reduce project and support costs, minimize service disruptions elsewhere in the system, reduce setup and breakdown time

Discussion:

The current planned major outages for Summer 2024 – Summer 2026 are as follows:

- **June 2024 – September 2024:** Fort Totten Metrorail Station to Glenmont Metrorail Station Red Line service will be shutdown to allow the Maryland Transit Authority (MTA) access to construct the Purple Line mezzanine at Silver Spring. The work must be completed during a shutdown as the scope of work involves both tracks for extended timeframe. Additional work scheduled includes leak mitigation, automatic train control system replacements, traction power cables installation, drain pumping station replacement, tunnel standpipe replacement, and elevator/escalator maintenance. Shuttle Bus Service will be provided to customers.
- **December 2024 – January 2025:** Foggy-Bottom GWU Metrorail Station to L'Enfant Plaza Metrorail Station will shutdown on the Blue/Orange/Silver Line to address grout pad and fastener replacements. This state of good repair work is required to provide smooth, safe, rides. An extended shutdown is required to complete 6,4000 linear feet of grout pad and fastener replacement in a timely manner. Additional work scheduled includes the installation of 15,000 linear feet of ancillary fiber optic cable for SCADA and train control.
- **Summer 2025:** Work will occur in two phases. The specific schedule is still under review. One phase is a shutdown of Blue Line service from Franconia-Springfield Metrorail Station to King Street Metrorail Station for approximately 3 weeks. Train Control Renewal work will be completed during this time. A second phase includes a shutdown of the Green Line from Congress Heights Metrorail Station to Branch Avenue Yard. This shutdown will provide the opportunity to install 52,000 linear feet of radio and ancillary fiber optic cable for SCADA and Train Control Renewal projects. The ancillary fiber optic cable work is a quired modernization project to improve communications and address the FTA findings. This phase will last approximately 45 days.
- **Winter 2025 – Winter 2026:** Work will occur between L'Enfant Plaza Metrorail Station and Fort Totten on the Yellow and Green Lines. These stations see 82% more train stops per week than average locations driving the needs to complete significant grout pad replacement and fiber installation.
- **Summer 2026:** A shutdown will be required on the Red Line from Friendship Heights Metrorail Station to Grosvenor-Strathmore Metrorail Station to complete construction that connects the MTA Purple Line with the Bethesda Metrorail

Station mezzanine. The MTA Purple Line Revenue start date is currently mid-2027.

Funding Impact:

Funding is included in the FY24 and FY25 budget.

Previous Actions:

Unknown

Next Steps:

Unknown at this time

Recommendation:

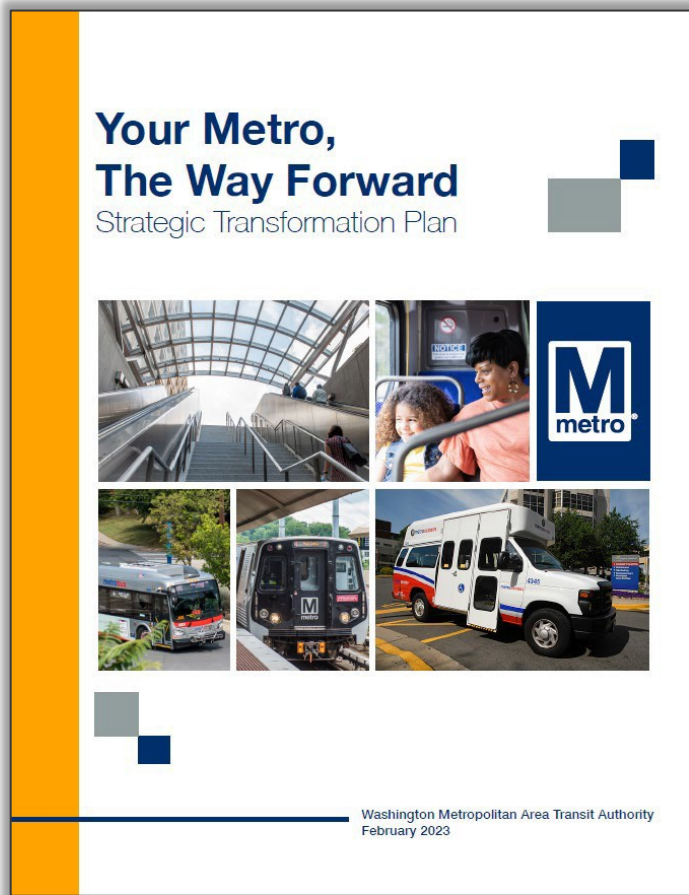
Information Only

Summer and Winter Planned Construction (CY 2024-2026)

Safety & Operations Committee
February 8, 2024



Strategic Transformation Plan

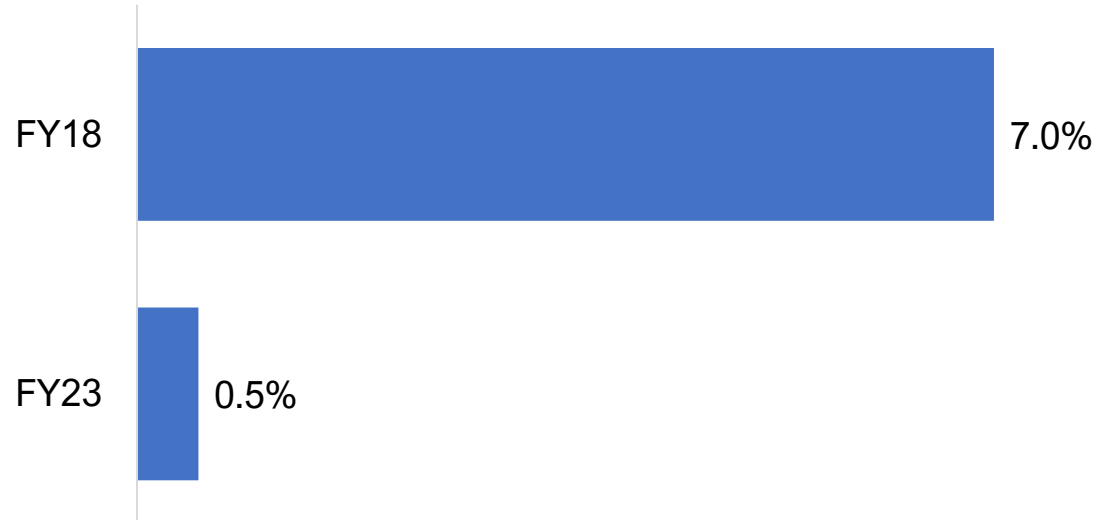


Infrastructure investments improve the state of good repair and safety of the rail system, reducing delays

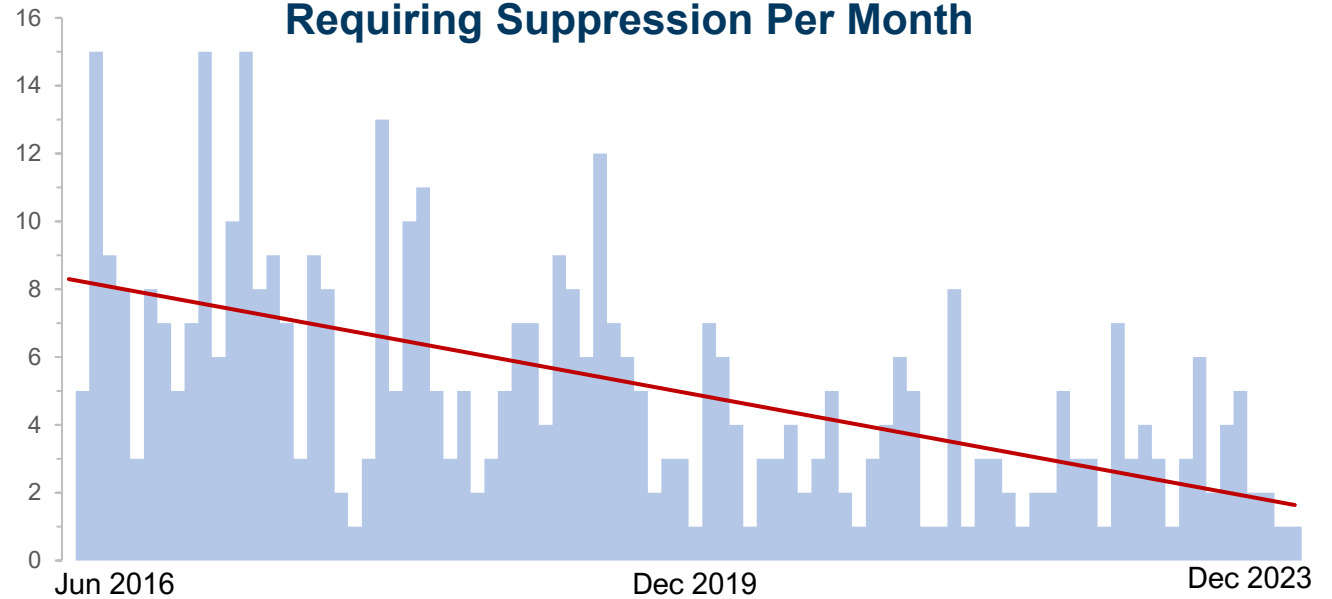
Overall condition has improved, resulting in **64%** fewer delays related to infrastructure from 2016 to 2023

Smoke and fire events have decreased by **65%** since 2016

Percentage of system under unplanned (condition-related) speed restriction



Number of Smoke and Fire Incidents Requiring Suppression Per Month

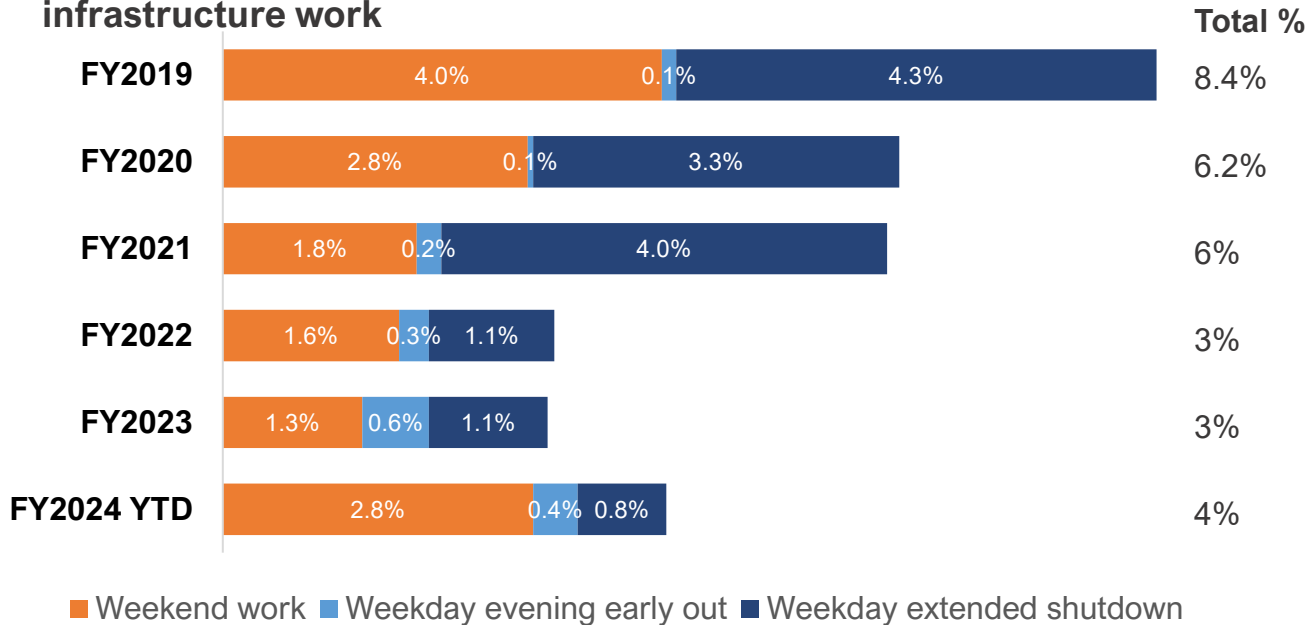


Execution of infrastructure work improved, reducing customer impact

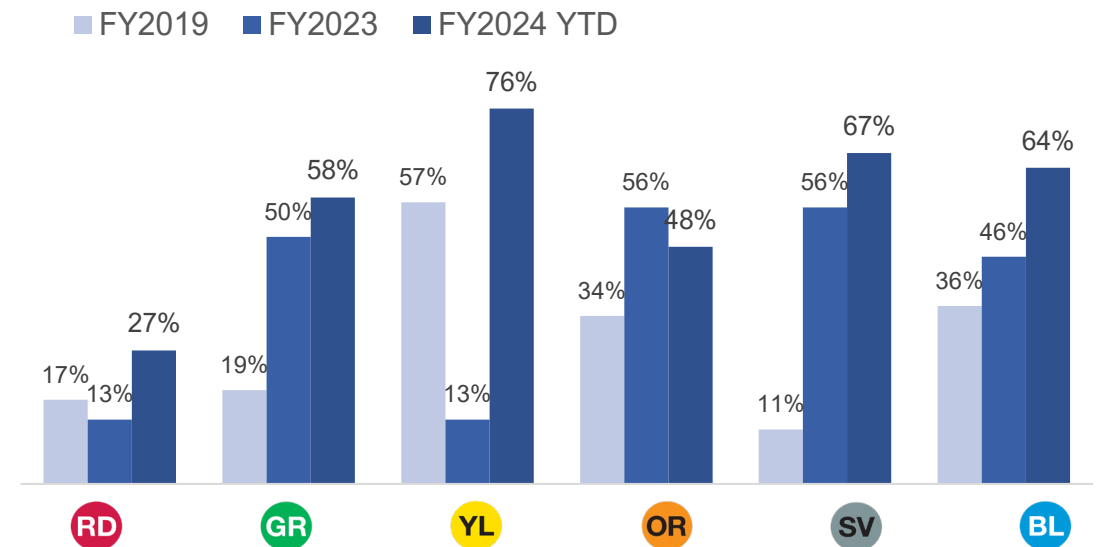
Over past 6 years, infrastructure work fell from 8.4% impact to budgeted service to 4% through efficiencies and better planning

On almost all lines, more weekends are work free

Percentage of budgeted service not delivered due to planned infrastructure work



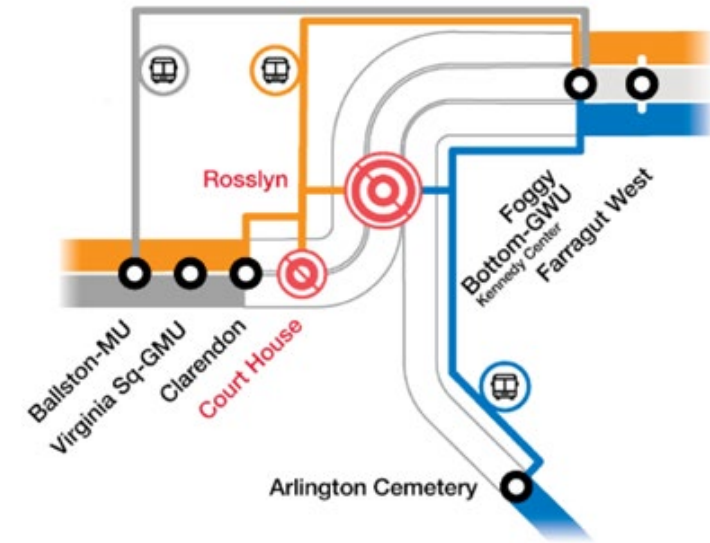
Percentage of weekends that are work free by line



Planning improvements have minimized system-wide service disruptions

2024 Martin Luther King Jr. Weekend: 2 Shutdowns

- 94 of 97 stations open with Rosslyn, Court House and Silver Spring closed
- Frequencies from 4 to 11 minutes at 94 open stations
- Work planned to impact the least number of customers and save capital dollars
 - Single track on Blue, Orange and Silver would have had 26-minute headways on each line for three weekends



Shutdown 1



Shutdown 2

Planned Major Outages for Summer and Winter Holiday Period

CY 2024

Summer

- RD** Maryland Transit Administration Purple Line Construction
Fort Totten to Glenmont region

Winter Holiday Period

- BL**
OR
SV Metro State of Good Repair
Foggy Bottom-GWU to L'Enfant Plaza region

CY 2025

Summer

- BL**
GR Metro State of Good Repair
Franconia-Springfield to King St and Branch Ave to Congress Heights region

Winter Holiday Period

- YL**
GR Metro State of Good Repair
L'Enfant Plaza to Fort Totten region

CY 2026

Summer

- RD** Maryland Transit Administration Purple Line Construction
Friendship Heights to Grosvenor-Strathmore region

Planned work outside of Summer and Winter Holiday major shutdowns and minor planned service changes are not outlined here

Lessons Learned from Winter Holiday 2023 Red Line Construction

Work Completed

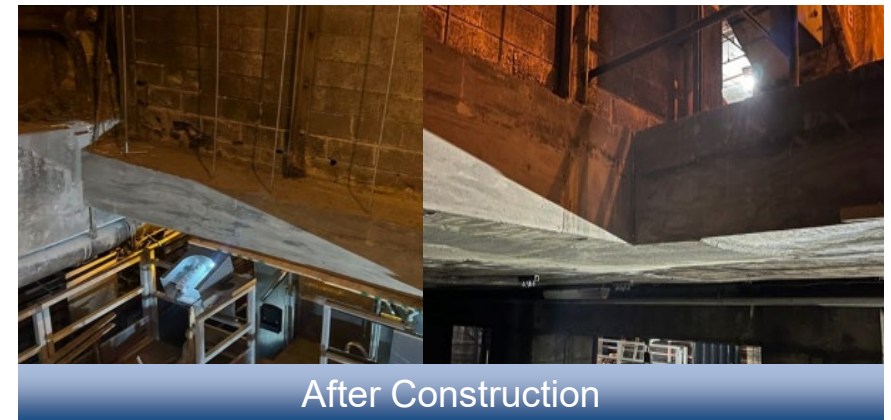
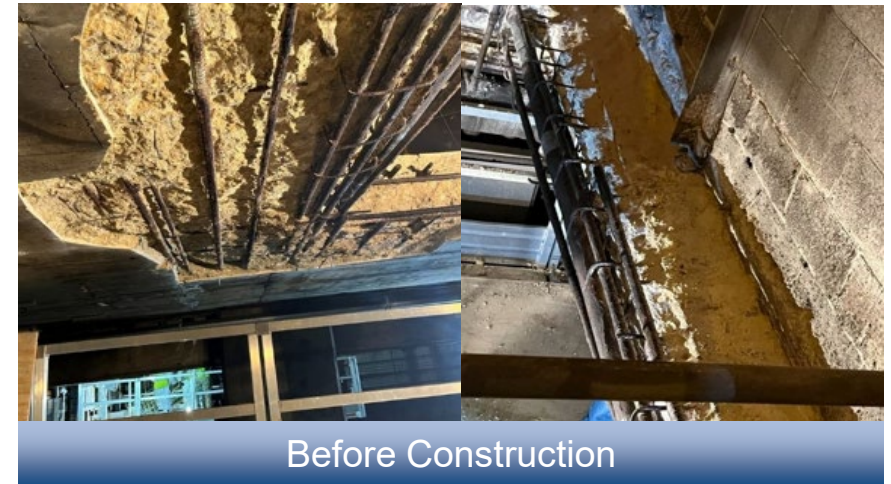
- Rebuilt tunnel ceiling with eight tons of concrete and 466 pounds of rebar
- Replaced 3,159 linear feet of running rail
- Installed 1,152 platform edge lights that are brighter and more sustainable
- Installed extra insulation to electrified third rail power cables to provide moisture barrier
- Installed fiber optic cables (SCADA and train control cable) to prepare for next generation train signaling system

Successes

- District dedicated bus lanes minimized impact to customers

Improvements moving forward

- Weekend start for major outages
- Further collaboration with local stakeholders on shutdown window



Summer 2024: Regional Coordination with Maryland Transit Administration (MTA) Purple Line Construction

Extended Outage: Fort Totten to Glenmont

- **Planned work:** Cannot build new Purple Line mezzanine safely or timely under single track
 - Construct Purple Line mezzanine at Silver Spring
 - Fix track at Takoma interlocking
 - Upgrade signaling system
 - Install SCADA and train control cable
- **Duration:** Early June 2024 to early September 2024
- **Service Plan:** Bus shuttles Fort Totten to Glenmont, detailed service plan under development
- **Project Costs:** MTA pays for all support costs related to scope of work



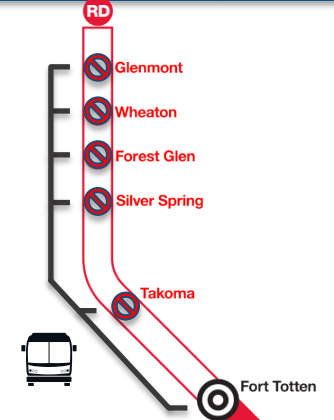
Current Layout



Future Layout



Future Station Connections



Impacted Stations

8 *Total outage length under assessment



Winter Holiday 2024: Metro State of Good Repair

Foggy Bottom-GWU to L'Enfant

- **Planned Work:**
 - 6400' grout pad and track renewal
 - 15,000' SCADA and train control cable
- **Duration and Service Considerations:**
 - Not complete closure Foggy Bottom-GWU to L'Enfant
 - Analyze segments of closure and/or single track to optimize service
 - Incorporate Red Line 2023 Winter Holiday Outage lessons learned
- **Cost and Time Alternatives:**

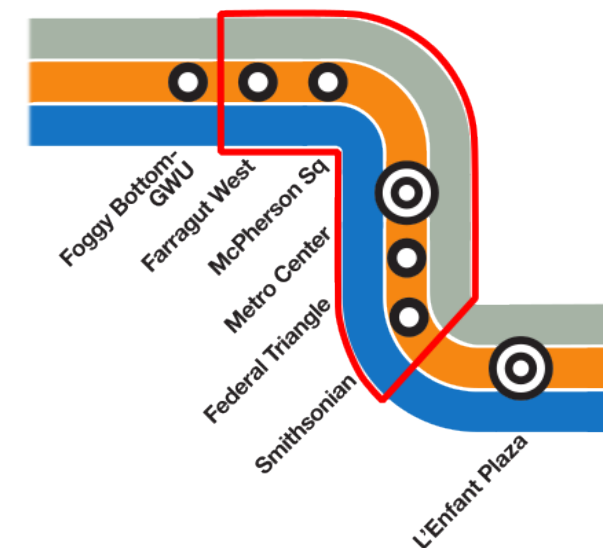


Deteriorated Grout Pad



Restored Grout Pad

Alternatives	Work Scope	Maximum Duration*	Support Cost
Extended Shutdowns	6,400 LF	2-week outage	~\$3.5M
Alternative 1: Weekend Single Track	400 LF/ weekend	16 weekend single track	~\$5.5M
Alternative 2: Early Closures	30 LF/night	200+ early closures	~\$4M
Alternative 3: Overnight Work Events	15 LF/night	400+ night events	~\$8M



9 *Total outage length under assessment

Summer 2025 Phase 1: Train Control Renewal Project

Extended Outage: King Street to Franconia-Springfield

Planned Work:

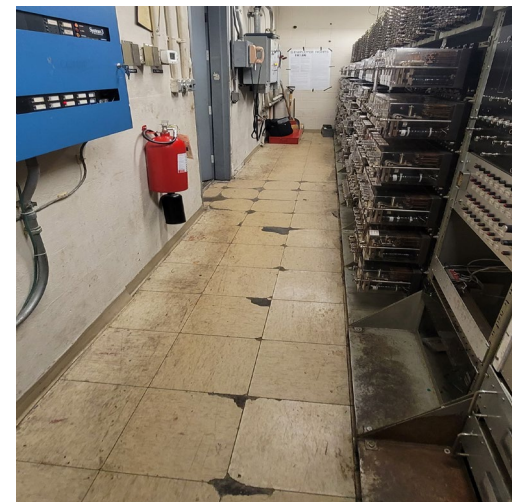
- Replace worst performing, obsolete signal system and bridge to potential next generation signaling system

Duration and Service Plan:

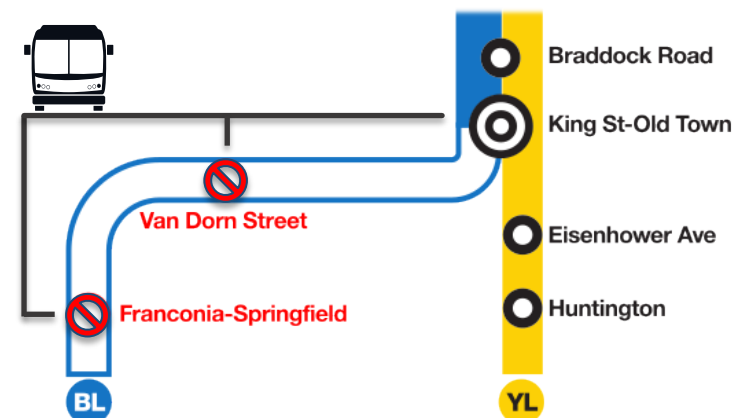
- Details under development
- Will protect June and July 4th service
- Finish both Phase 1 and Phase 2 prior to Labor Day

Cost and Time Alternatives:

Alternatives	Duration	Support Cost
Extended Shutdown	<ul style="list-style-type: none"> ▪ 3-week outage ▪ 1 setup/removal ▪ No impact to Alexandria Yard 	<ul style="list-style-type: none"> ▪ ~\$6M
Alternative 1: Consecutive Weekend Shutdown	<ul style="list-style-type: none"> ▪ 10 weekend shutdowns and 10 weeks of weekday early closures ▪ Operational impacts to Alexandria Yard ▪ 54 setup/removal 	<ul style="list-style-type: none"> ▪ ~\$11M



Train Control Room



Impacted Stations

10 *Total outage length under assessment

Summer 2025 Phase 2: Radio, SCADA and Train Control

Extended Outage: Congress Heights to Branch Avenue Yard

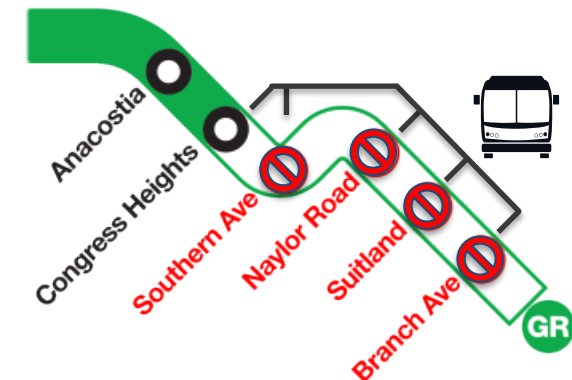
- **Planned Work:**
 - Install 52,000 linear feet of SCADA and train control cable
 - Replace signal equipment
 - Rehabilitate bridge structure
- **Cost and Time Alternatives:**

Alternatives Analyzed	Duration	Support Cost
Extended Shutdown	~ 30-45 days	~\$14M
Alternative 1: Consecutive Weekend Shutdown	~ 30 weekend shutdowns (7 months, every weekend)	~\$31M

*Total outage length under assessment



Fiber Installation Between Tracks and In Manholes



Impacted Stations

Winter Holiday 2025: Metro State of Good Repair

L'Enfant Plaza to Fort Totten

Planned Work Under Development to Address:

- Replace grout pad and fasteners
- Install SCADA and train control cable
- Replace running rail and repair restraining rail
- Perform signal wayside installation

Service Plan:

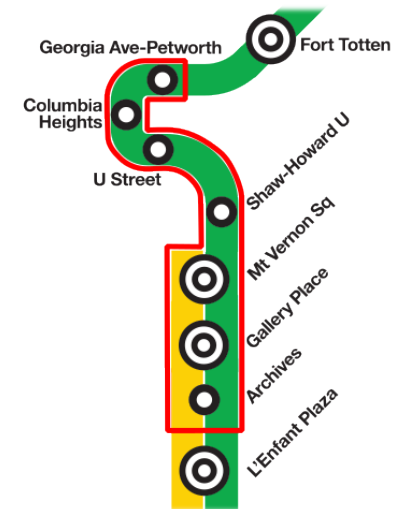
- Will analyze work in smaller segments for closures and/or single-track events to optimize service



Fiber Installation



Restored Grout Pad

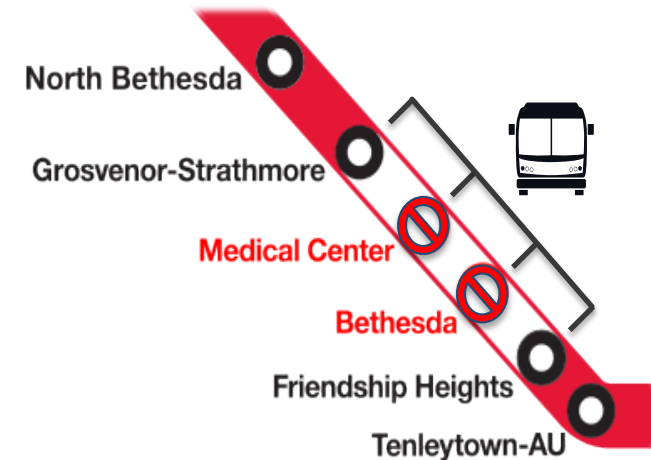


Impacted Stations

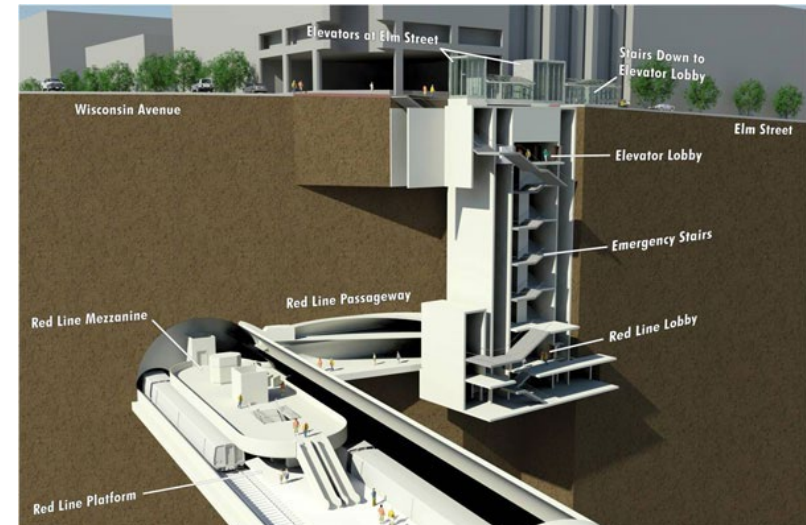
Summer 2026: MTA Purple Line Construction

Extended Outage: Friendship Heights to Grosvenor-Strathmore

- **Planned Work Under Development to Address:**
 - Construction of the Purple Line mezzanine to connect MTA to Bethesda Metrorail Station
- MTA pays for all support costs related to scope of work



Ongoing Purple Line Construction at Bethesda



New Bethesda South Entrance Rendering