



Safety and Operations Committee

Board Information Item III-A

Automatic Train Operations Update



Board Document

OVERVIEW			
PRESENTATION NAME	Progress Update; Automatic Train Operations (ATO)	DOCUMENT NO.	300031
ACTION OR INFORMATION	Information		
STRATEGIC TRANSFORMATION PLAN GOAL	Service excellence;		
RESOLUTION	No		
EXECUTIVE OWNER			
EXECUTIVE TEAM OWNER	Off, Andrew B.;Impastato, Theresa M.;		
ORGANIZATION	Infrastructure		
DOCUMENT INITIATOR	Amelia L. Gannon		
OTHER INFORMATION			
COMMITTEE	Safety and Operations Committee	COMMITTEE DATE	4/10/2025
PURPOSE/KEY HIGHLIGHTS	To provide the Board an update on the status of Automatic Train Operations (ATO).		
DISCUSSION	Metro returned to Automatic Train Operations (ATO) on the Red Line on December 15, 2024. The Green Line Temporary Use Notice (TUN) was issued to the WMSC on March 14, 2025. 98% of Green Line rail vehicle operators are ATO Qualified Operators. Metro is ready to go live with ATO on the Green Line three days after WMSC Notice to Proceed is issued.		



Board Document

INTERESTED PARTIES	N/A
RECOMMENDATION/NEXT STEPS	N/A
FUNDING IMPACT	N/A

Progress Update: Automatic Train Operations



Agenda

- **Purpose**

- *Provide the Board an update on return to Automatic Train Operations (ATO)*

- **Agenda**

- *Benefits of ATO*
- *ATO Performance on the Red Line*
- *Judiciary Square Investigation*
- *Lessons Learned from Red Line Launch*
- *Industry Benchmarking*
- *ATO and Safety*
- *Roadway Worker Protection*
- *Next Steps*

Benefits of Automatic Train Operations (ATO)

Safety

- **ATO mitigates** the significant hazard of red signal overruns
- **0 red signal overruns on Red Line** since December 15 activation of ATO
- **3 red signal overruns** on lines running in manual since December 15

Efficiency

- **ATO reduces resources** required to deliver the same amount of service
- **Run two less trains** in June on the Red Line without decreasing service
- **Save ~\$7 Million** in operating expenses in FY26 if operating in ATO at design speed on all lines

Reliability

- **Service for customers:** End-to-end run time reduced from 70 to 66 minutes and more consistent spacing

ATO Performance on the Red Line

- **Returned** to ATO on the Red Line on December 15, 2024
- **Customer Ontime Performance** increased 2% in March with the Red Line in ATO
- **60,000 more** Red Line customers were on-time in March than in prior months (on average)
- **Trains stopped** at the 8-car marker 99.97% through April 5, through 674,249 ATO stops

Overruns		
Month	System-Wide Manual	Red Line ATO
Dec 15 – Jan 15	24	84
Jan 16 – Feb 15	24	69
Feb 16 – Mar 15	25	46
Mar 16 – Apr 5	17	13

Judiciary Square Investigation

- Largest number of overruns since ATO activation
 - *47 total overruns, 39 occurring on Eastbound Track*
- Causal factor identified as false marker coil detection, isolated to 7000 series railcars
- Testing began with manufacturer April 7
- Not connected with safety-critical Automatic Train Protection (ATP) which provides:
 - *Safe shunting*
 - *Train detection*
 - *Train separation*

Red Line ATO Overruns		
Month	All Red Line	Judiciary Square Only
Dec 15 – Jan 15	84	9
Jan 16 – Feb 15	69	20
Feb 16 – Mar 15	46	16
Mar 16 – Apr 5	13	2

Lessons Learned from Red Line Launch

ATO Update

- ✓ **December 31, 2024:** ATO Stop Memo
- ✓ **January 6, 2025:** Formalized cross-functional working group to help reduce overruns
- ✓ **January 10, 2025:** Returned to Normal Operations Guidance
- ✓ **February 7, 2025:** SOP 40 Modification (Clarification on ATO Stop Usage)
- ✓ **March 22, 2025:** Cancel Station Stop Deactivation (ongoing)
- ✓ **April 7-9, 2025:** Judiciary Square Testing and Mitigation

Industry Benchmarking

Topic	Train and Platform Length	# of stations	# of stops per month	Reporting Requirement	Servicing Platform after Overrun	Reliability Percentage (last 3 months average)
WMATA	Mostly 8-car trains. Stations are 8-car long	98	1.15 Million	Tracked as a Safety event	Does not service the platform	99.97% (99.99% in March)
Peer Agency A	Mostly 8-car trains. Stations are 10-car long.	50	400,000	Not tracked as a Safety event	Services the platform unless on aerial structure	99.98%
Peer Agency B	6-car trains only. Stations are 8-car long	38	99,500	Not tracked as a Safety event	Services the platform depending on headway	99.98%

Our understanding is that no peer agency tracks overruns as a safety event.

ATO and Safety

- Reporting Obligations
 - *The Federal Transit Administration does not consider station overruns a reportable event*
 - *Not included in FTA-mandated Agency Safety Plan safety performance monitoring*
 - *Washington Metrorail Safety Commission requires email notification per Program*
 - *Many peer agencies do not track overruns as safety events*

Roadway Worker Protection

- Roadway Worker Protections are unrelated to operating mode
 - *Existing and newly issued regulations pertaining to Roadway Worker Protection do not identify any requirements related to operating mode*
 - *The primary protection method is a series of administrative actions executed by workers on the tracks*
 - *These actions are independent of the train's operation*
 - *Redundant means of protection are independent of operating mode*
 - *Since the implementation of Metro's Roadway Worker Protection Program in 2010, the likelihood of a catastrophic scenario, including being struck by train, occurring was reduced significantly*
 - *Metro's data-driven approach to safety risk management continuously reviews the Roadway Worker Protection program and has made several improvements based upon lessons learned*

Next Steps

- ✓ **November 1, 2024:** Red Line Temporary Use Notice issued to WMSC
- ✓ **December 15, 2024:** Red Line goes live with ATO
- ✓ **March 14, 2025:** Green Line Temporary Use Notice issued to WMSC
- ✓ **March 31, 2025:** Yellow Line Temporary Use Notice issued to WMSC
- April 13, 2025 (Delayed):** Planned start ATO for Green Line. WMSC declined to concur.
- May 1, 2025:** Issue Blue/Orange/Silver Temporary Use Notice to WMSC
- May 4, 2025:** Green/Yellow Lines go live with ATO
- June 1, 2025:** Blue/Orange/Silver Lines go live with ATO

Metro is prepared to return to ATO on the Green Line

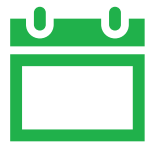


Completed all test and observation runs and submitted readiness documentation to WMSC

- *Over 1300 station stops evaluated during testing and observation runs*



98% of Green Line Rail Vehicle Operators are ATO Qualified



Temporary Use Notification and documentation submitted to WMSC on March 14



3 days notice after WMSC Notice to Proceed issued to go live with ATO on Green Line

Line	Rail Yard	Active Operators	ATO Qualified	% of Total Qualified
Red	Rail Station Brentwood Rail Station Glenmont Rail Station Shady Grove	206 (Total Active Red-Line Rail Vehicle Operators)	206 (Total Red-Line ATO Qualified Operators)	100% (206 out of 206 ATO Qualified Red Line Operators)
Green	Rail Station Branch Ave Rail Station Greenbelt	162 (Total Active Green-Line Rail Vehicle Operators)	158 (Total Green-Line ATO Qualified Operators)	98% (158 out of 162 ATO Qualified Green-Line Operators)

As of April 8, 2025