



Department of Public Utilities
Rail Transit Safety Division

DIVERSION REPORT

2022 Orange Line Surge



FTA-DPU-23-004, Action Item 3

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Background

DEPARTMENT OF PUBLIC UTILITIES STATE SAFETY OVERSIGHT (“SSO”)

As part of the Department of Public Utilities (“DPU”) enhanced oversight activities, the DPU monitors and tracks the work scheduled to be completed for any diversion through field observations and monitoring of meetings associated with the diversion. Ultimately, the DPU provides oversight of the safe execution of work, safety rules and procedures, as well as the safe return to service.

DPU’s FTA Special Directive 22-8, FTA-DPU-23-004 (Finding 4), Corrective Action Plan (“CAP”) states the DPU will develop and submit a report of field observations associated with diversions. The purpose of this report is to not only fulfill the requirements for the CAP, but to demonstrate DPU’s improved abilities and enhanced oversight activities of MBTA’s rules compliance procedures for track maintenance safety rules and procedures.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (“MBTA”)

MBTA shut down the Orange Line (“OL”) for a 30-day full access closure, allowing the Authority to:

- Address Safety Management Inspection (“SMI”) items in Federal Administration (“FTA”) Directive 22-4;
- Achieve other planned repairs and upgrades which would have otherwise taken an estimated five years of periodic closures to complete; and
- Enable a private developer to accelerate Government Center Garage demolition to reduce further Orange Line and Green Line closures.

The full access closure began at 9:00 PM Friday, August 18, 2022, and service restarted Monday, September 19, 2022.

Overview of Scope of Work

MBTA SCOPE OF WORK SUMMARY

The scope of work for the MBTA associated with this surge addressed 14 priority projects which include items identified in the FTA Directive 22-4 related to track maintenance, critical track and signal work that was postponed due to a lack of dispatcher resources at the MBTA, and private developer demolition of the Government Center Garage.

No.	Project Name	Description
1.	Tufts Curve	Replace rail components, clogne eggs, and concrete track fixations on the northbound and southbound tracks at Tufts
2.	Dana Bridge	Replace tie and ballast improvements

No.	Project Name	Description
	<i>Tie Replacement</i>	
3.	Sullivan Flyover <i>Rail Replacement</i>	Replace rail and components
4.	Ruggles Crossover <i>Track Replacement</i>	Replace rail and tie components at the Ruggles Crossover
5.	Wellington Yard <i>Track & Signals Upgrades</i>	Replace track; install turnouts; install third rail; replace duct banks, power, and signal infrastructure; install new signal mast
6.	North Station Portal <i>Tie Replacement</i>	Replace ties and components at North Station Portal
7.	Jackson Square Crossover <i>Track Replacement</i>	Replace rail and tie components at the Jackson Sq Crossover
8.	Oak Grove and Malden Center <i>Signal Upgrades</i>	Install new signal systems at Oak Grove and Malden Center
9.	Forest Hills Diamond <i>Replacement (Crossover)</i>	Replace steel components at the Forest Hills Diamond
10.	Downtown Crossing to State <i>Rail Replacement</i>	Replace rail and components from Downtown Crossing to State
11.	Community to Assembly <i>Surface Line & Tamp</i>	Surface line and tamp
12.	Back Bay <i>Tie Replacement</i>	Replace tie components on the northbound, southbound, and crossover tracks at Back Bay
13.	Back Bay <i>Rail Replacement</i>	Replace rail components on the northbound track at Back Bay
14.	Government Center <i>Garage Demolition</i>	Progress Government Center Garage demolition
15.	Additional Opportunities	Leveraging the Surge to include other corridor needs without jeopardizing priority projects

Table 1. Project Name and Description of OL Surge Work

 Priority Projects

 Opportunity Projects

DPU SCOPE OF WORK SUMMARY

The DPU develops an inspection and verification plan to oversee each diversion comprised of the following steps:

1. Information request for all related project documents,
2. Various document reviews,
3. Establish internal schedules for work zone observations and safety briefings observations,
4. Field observations of MBTA safety briefings and audits,
5. Field observations at high priority locations and work zones,
6. Tracking of MBTA's progress of work to be completed,
7. Attend all relative meetings (i.e., Coordination meetings such as the Capital Transformation construction and senior management meetings), and
8. Issue directives as needed.

Summary of Observations

The table summarizes the total number of observations or tasks the DPU conducted during the 30-day surge period:

Task	Total	Notable Observations
On Call Duty	2	<ol style="list-style-type: none"> 08/22/22 Derailment/Hi-Rail - Barletta Gradall derailed while on NB outside loop. The rear bogie wheels came off the rail as the stopped Gradall was swiveling the bucket. No damage to rail, no injuries. 8/23/22 Derailment/Maintenance - Pettibone 2209 derailed just south of Gainsborough St Truck Pad due to front bogie wheels coming off. 2 insulators were damaged during re-railing process. No injuries.
Work Zone Observations	17	<ol style="list-style-type: none"> MBTA contractor was observed not wearing the appropriate yellow safety vest and had improper footwear for the ROW. Improperly stored gas bottles stored in Tufts Station.
Safety Briefing Observations	15	All positive observations.
Coordination Meetings	28	All positive observations.
Requests for Information	3	All positive observations.
GRAND TOTAL		65

Table 2. DPU Summary of Observations

WORK ZONE OBSERVATIONS

Every week during the DPU's Rail Staff Meetings, DPU created schedules for its staff for the current and following week, to ensure oversight of all areas of the surge. DPU prioritized any projects labeled as "Priority Project" and conducted additional observations on "Opportunity Projects" as time and resources allowed. The DPU planned to observe a work zone at least once a week.

Observations included, but were not limited to:

- Coordination of moving work vehicles between work zones
- Use of required PPE
- ROW License on person
- Construction areas are clear, no tripping hazards or tools left behind
- Third rail energized within work zone and status properly communicated to employees and contractors
- Document relevant checklists or special orders used by MBTA or contractors

SAFETY BRIEFING OBSERVATIONS

Safety briefings were held by MBTA at the following locations every day at 6 AM and 6 PM by the Construction Coordinator:

- Wellington Yard

- Community College Truck Pad
- Tufts Station Platform
- Gainsborough Truck Pad

There were two safety briefings held a day. DPU's goal was to attend a minimum of four safety briefings a week throughout the surge. DPU achieved this goal.

COORDINATION MEETINGS

Senior Management Meetings were held daily at 8 AM and 5 PM. Capital Transformation constructions meetings were held daily at 7 AM and 4 PM. There were 4 meetings held a day and DPU's goal was to attend at least three per week. DPU achieved this goal.

DOCUMENT REVIEWS

Documents reviews included any work plans, the Surge Management Plan ("SMP") and any relevant special orders.

Immediate Actions

1. **Safety Event:** On August 22, 2022, a Barletta Gradall derailed while on NB outside loop. The rear bogey wheels came off the rail as the stopped Gradall was swiveling the bucket. There were no damages to the rail and there were no injuries. DPU and FTA were notified within 2 hours of the event as required.
2. **Safety Event:** On August 23, 2022, a Pettibone 2209 derailed just south of Gainsborough St Truck Pad due to front bogie wheels coming off. 2 insulators were damaged during re-railing process. No injuries. DPU and FTA were notified within 2 hours of the event as required.
3. **Improper PPE:** The issue was raised to safety and the individual was coached and proper PPE was provided prior to being allowed to return to work.
4. **Improper storage of materials:** MOW crews secured the gas bottles that were improperly stored temporarily and removed them the next day.

CAPs

The Orange Line Surge was completed as scheduled and there were no CAPs or longer-term actions required by DPU during the surge.

Conclusion

The DPU conducted oversight of the Orange Line Surge that occurred between August 18 to September 19, 2022. The DPU conducted 15 unannounced observations of the daily safety briefings at various brief locations throughout the surge. The purpose of these observations

was to verify the safety briefs were thorough and PPE and ROW cards were checked prior to workers entering the ROW.

Two negative safety observations were observed. One was a MBTA contractor was observed not wearing the appropriate yellow safety vest and had improper footwear for the ROW. The issue was raised to safety and the individual was coached; proper PPE was provided prior to being allowed to return to work. The second negative observation was improperly stored gas bottles stored in Tufts Station. DPU and Safety observed the unsecured gas bottles located on the platform. Safety had previously notified MOW crews of the improper storage the night before. MOW crews secured the gas bottles temporarily and removed them the next day.

DPU conducted 17 work zone observations at various locations throughout the diversion area. The DPU's work zone observations were all positive. Hi-Rail movements, work zone safety and work practices were part of the observations. A work zone checklist was filled out for all observations conducted.

DPU attended the daily contractors (7 AM and 4 PM daily) and senior management (8am and 5pm daily) check-in meetings. During the check in meetings safety observations were discussed along with any safety bulletins or flashes. Work status of all work zones with detailed updates from the contractors was also discussed with any challenges or issues worked out during the meeting. The DPU tracked the status of the high priority and opportunity projects with a project tracker. The tracker was updated following the check in meetings daily with any comments added and completed projects identified.

The DPU submitted 3 Information Requests during the project. The information requests were submitted to collect work plans and surge documentation prior to the start, information regarding the 2 Hi-Rail derailments, and the close out documentation for the surge, including safety observations and inspection closeout reports.

DPU attended the lessons learned workshop on September 20, 2022, where all MBTA departments reported out the positives and lessons learned during the surge.