



# Track Improvement Program Update

June 20, 2024

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Ryan Jordan, Deputy Chief,  
Construction Field Services



# Track Improvement Program 2023-2024 | Timeline

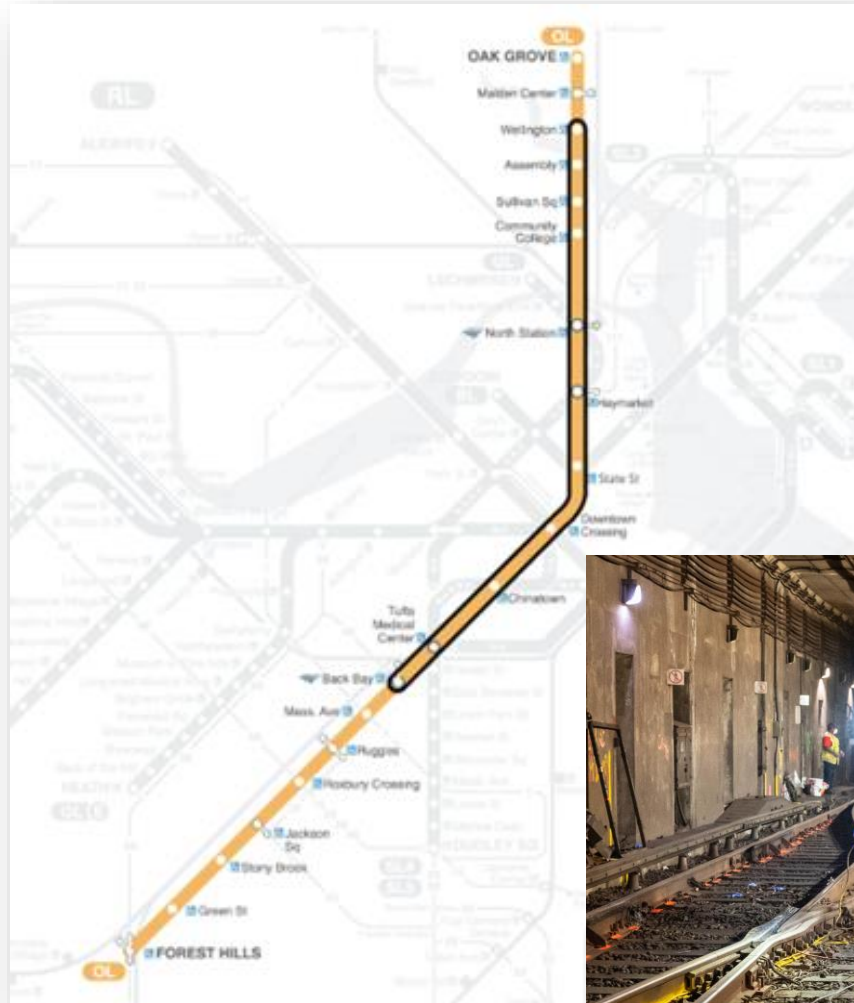
Alternative Service Limits	Speed Restrictions Actual/Planned	Modeled Time Savings (mins)	Diversion Duration (days)	2023		2024												
				NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
A	Harvard to Central	<input checked="" type="checkbox"/> 1/1	1.7	Wknd														
B	JFK/UMass to Park St	<input checked="" type="checkbox"/> 6/6	2.7	EA/Wknd														
A	Oak Grove to North Station	<input checked="" type="checkbox"/> 2/2	1.9	EA/Wknd														
A	North Station to Kenmore, Heath, Babcock	<input checked="" type="checkbox"/> 12/10	4.3	9														
B	Riverside to Kenmore	<input checked="" type="checkbox"/> 22/20	3.7	10														
1	Medford/Union to Park St.	2	1.8	14														
2	North Station to Kenmore, Heath, Babcock	<input checked="" type="checkbox"/> 16/15	2.0	21														
3	Copley to St. Mary's, Babcock, Brookline Hills	<input checked="" type="checkbox"/> 11/9	4.2	18														
4	Boston College to Babcock	7	1.7	10														
5	Cleveland Circle to St. Mary's	1/1	0.1	-														
1	Oak Grove to North Station	9	1.7	7														
2	Wellington to North Station	5	4.3	9														
3	Wellington to Back Bay	<input checked="" type="checkbox"/> 10/6	3.3	10														
4	North Station to Jackson Sq	<input checked="" type="checkbox"/> 7/2	2.2	4														
5	Back Bay to Forest Hills	12	4.8	11														
1	Alewife to Harvard	<input checked="" type="checkbox"/> 8/9	8.4	9														
2	Alewife to Kendall	7	4.0	16														
3	Harvard to Park	3	0.8	7														
4	Kendall/MIT to JFK/UMass	5	3.7	7														
5	Park to JFK/UMass	<input checked="" type="checkbox"/> 13/8	10.2	8														
6	Broadway to North Quincy	4	2.7	6														
7	JFK/UMass to Braintree	22	9.1	24														
1	Airport to Wonderland	<input checked="" type="checkbox"/> 16/12	3.1	12														
2	Bowdoin to Orient Heights	<input checked="" type="checkbox"/> 3/2	0.7	Early Access														

Today  
Jun 20

191 original restrictions to address  
80.6 RT min  
212 days of work

# Track Improvement Program | Completed Work

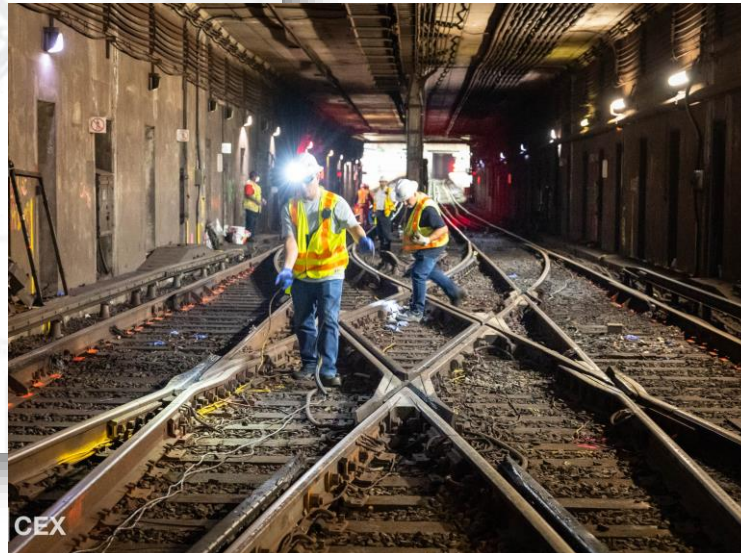
OL-003 Wellington to Back Bay May 28 – Jun 6, 2024



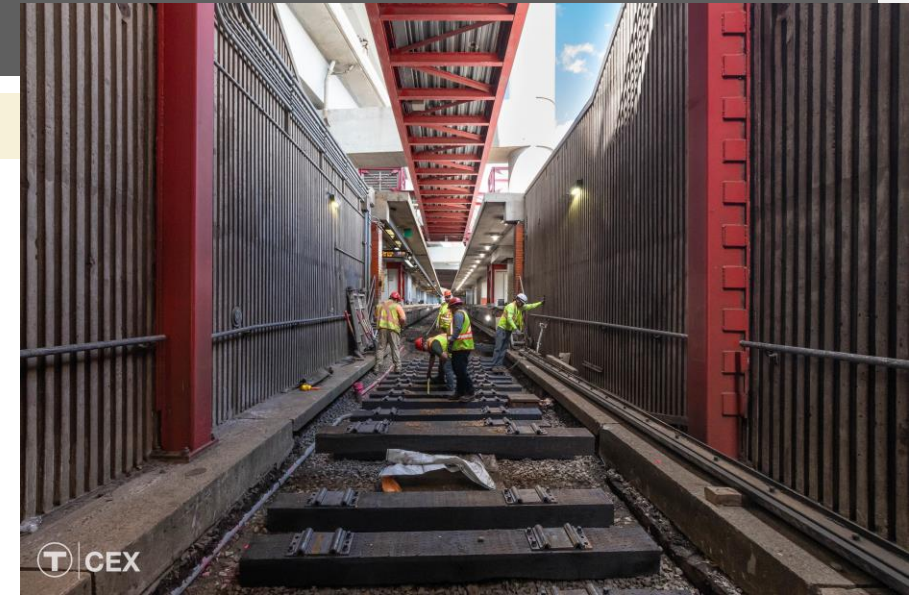
## Track Work

- Lifted 10 speed restrictions.
- Replaced 12,591 ft of rail.
- Replaced 388 ties.
- Resurfaced and tamped 7,940 ft of track.
- Replaced 2501 tie plates.
- Replaced 84 cologne eggs.
- 1,130 ft of full-depth track reconstruction.
- ~3.3 min RT decrease (2.4 min SB / 0.9 min NB) between Wellington and Ruggles.

## Piggyback Work

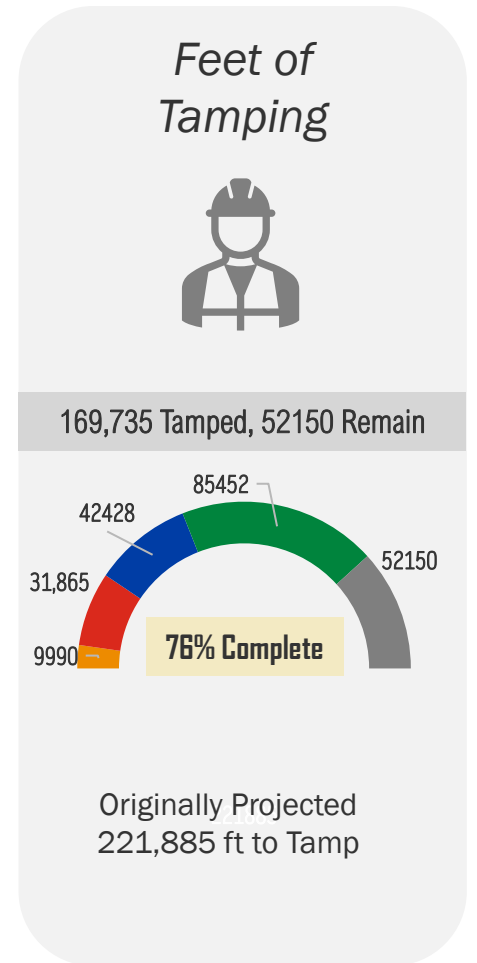
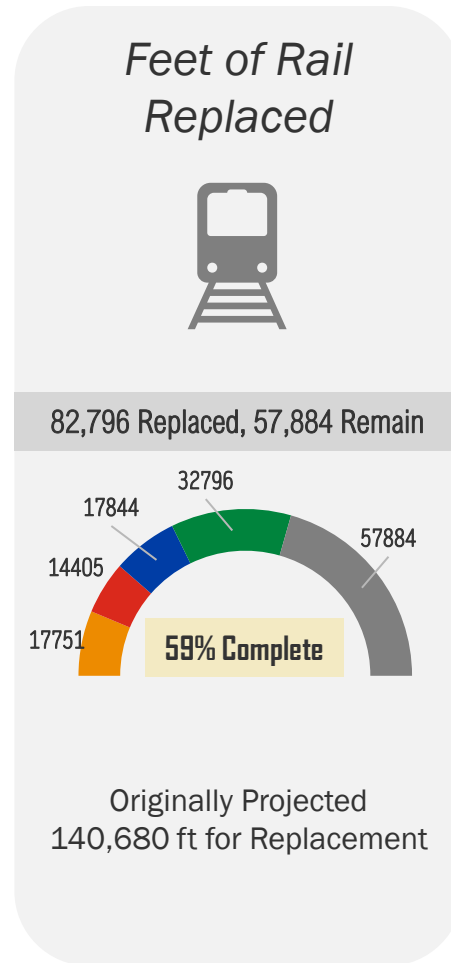
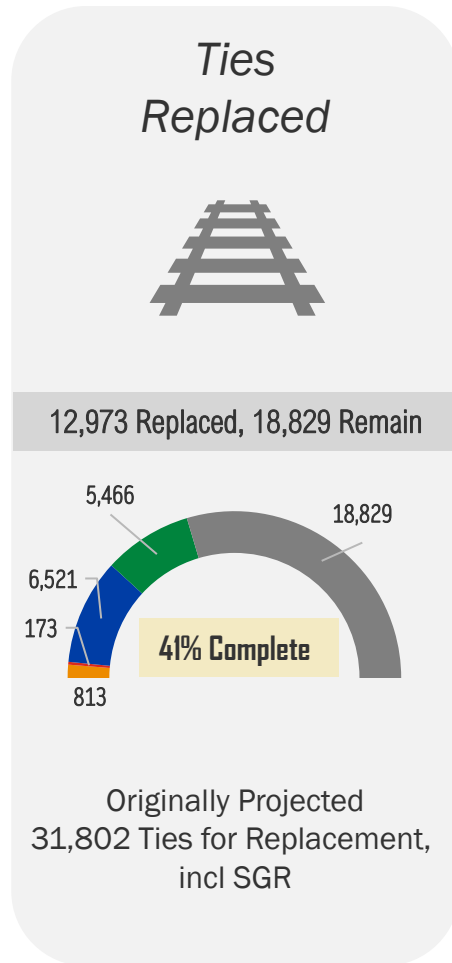
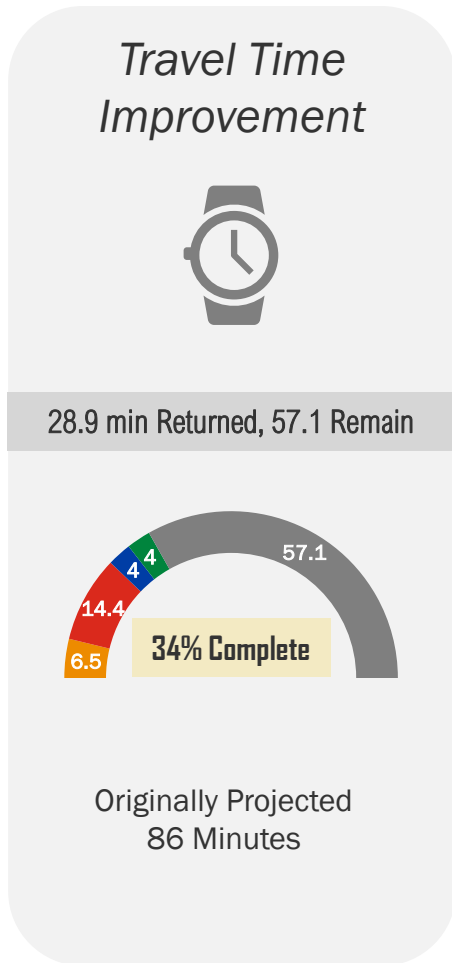
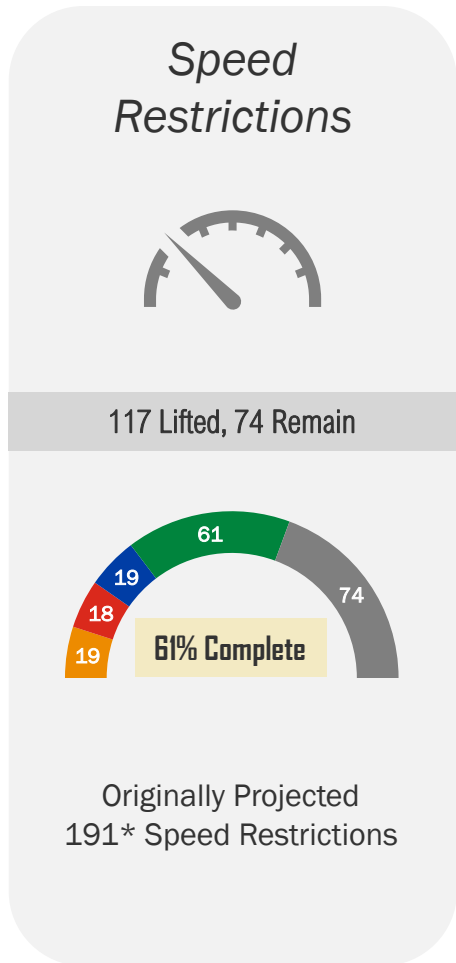


- Installed 500 feet of stringer cable at Sullivan Square.
- Performed overhead station inspections of platforms, entrances, and lobbies at Sullivan Square, Community College, and Tufts Medical Center, Haymarket, North Station, and State.
- Inspected tunnels between Tufts Medical Center and North Stn.
- Made security improvements at Chinatown.
- Inspected electrical rooms at Tufts Medical Center to upgrade the station's lighting.
- Upgraded and made accessibility improvements to the Community College entrance - new concrete. Repaired underlying slab.
- Repaired Community College's elevated walkway with new concrete for a smooth walkway surface.
- Installed new cable, power wires, and fiber optic.
- Reinstalled signal equipment from 60 track circuits.
- Performed signal improvement work throughout the diversion areas.



# Progress Metrics

Data date: June 11, 2024



Projections as of Nov. 6, 2023, Track Improvement Program

■ Orange Line 
 ■ Red Line 
 ■ Blue Line 
 ■ Green Line 
 ■ Remaining

# Track Improvement Program | *Upcoming Work – Orange Line*

*Piggybacking on MassDOT Mystic Ave/Maffa Way Bridgework | OL Wellington to North Station Jun 22-30, 2024*



## Proposed Track Work

- Address 6 Speed Restrictions
- Full depth replacement
- Rail and tie replacement
- Surface, line, and tamping
- Contact rail insulator replacement.

## Proposed Piggyback Work

- Clean stations - all areas that are permitted access during the diversion. Entry areas, lobby areas, corridors, and platforms (if accessible).
- Paint, bench repairs, concrete, repairs, floor repairs, hand-rail replacement, ceiling panel removals, waste receptacle replacement, plumbing & HVAC maintenance and inspection activities.



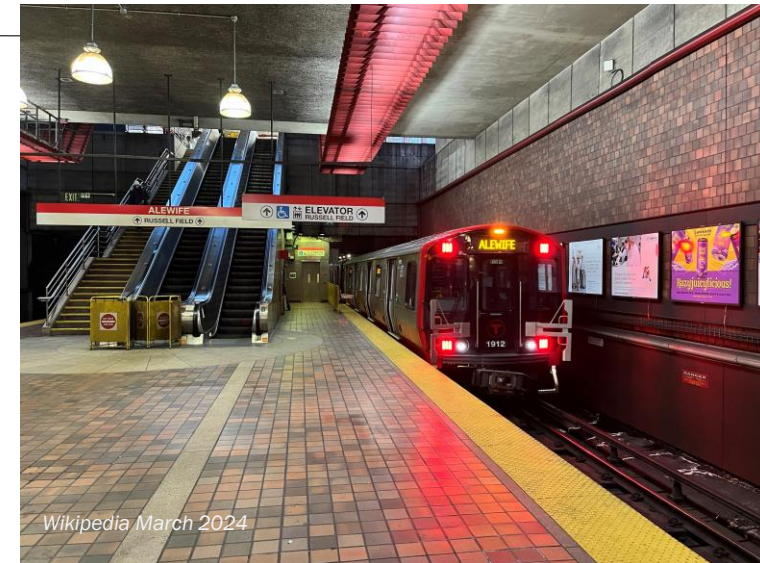
# Track Improvement Program | Upcoming Work – Red Line

RL Alewife to Kendall/MIT July 13 - 28, 2024



## Track Work Proposed

- Addressing 10 speed restrictions.
- Extending the limits to Park Street on nights and weekends for access to 1<sup>st</sup> St gate.
- Full depth reconstruction,
- rail replacement,
- tie replacement,
- plate replacement,
- switch upgrades,
- primary and secondary floating slab concrete replacement.



Wikipedia March 2024

## Piggyback Work

Paint, bench repairs, concrete, repairs, floor repairs, hand-rail replacement, ceiling panel removals, waste receptacle replacement, plumbing & HVAC maintenance and inspection activities



MBTA on Twitter



### Track Improvement Program 2023-2024

Phil Eng, MBTA GM & CEO  
Sam Zhou, MBTA Chief Engineer

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Draft for Discussion & Policy Purposes Only

<https://www.mbta.com/trackprogram>

<https://www.mbta.com/performance-metrics/speed-restrictions>

As of 06.10..2024



# Upcoming Community Engagement Events | *Calendar*

## *Open Houses*

Thu., 1/25, 6 – 7:30pm, Cristo Rey High School

Wed., 2/21, 6:30 – 8pm, Zoom

Thu., 3/7, 6:30 – 8pm, Zoom

Thu., 4/11, 6 – 7:30pm, Boston Public Library

Tue., 5/14, 6 – 7:30pm, Mattapan Public Library

Mon., 8/19, 6 – 7:30pm, English High School

## *Station Pop-ups*

Fri. 3/08, 5 – 6:30 pm, Ruggles Station

Tue. 4/09, 3 – 4:30pm, Airport Station

Thu., 6/20, 5:00 – 6:30pm, Kenmore

Mon., 6/24, 6 – 6:30pm, Davis Square Station

Thu., 6/27, 5 – 6:30pm, Alewife Station

Thu., 8/08, 6 - 7:30pm, Malden Center Station

Tue., 8/20, 5 - 6:30pm, Quincy Center

Tue., 10/01, 5 - 6:30 pm, Park Street Center

*Interpretation services will be made available in American Sign Language, Haitian Creole, Spanish, Vietnamese, Chinese, and Cape Verdean Creole. Additional languages are available upon request.*





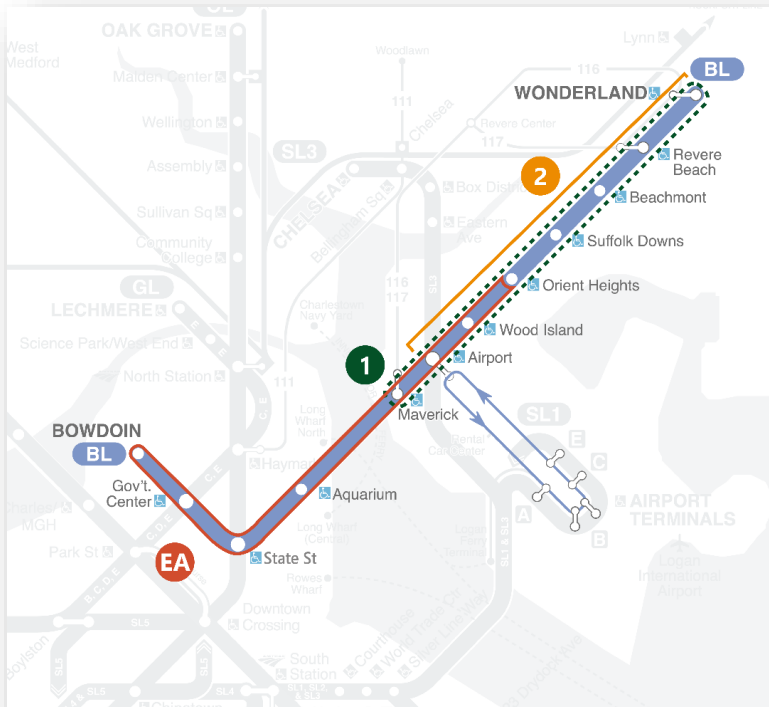
# Questions



# Previous Board TIP Updates

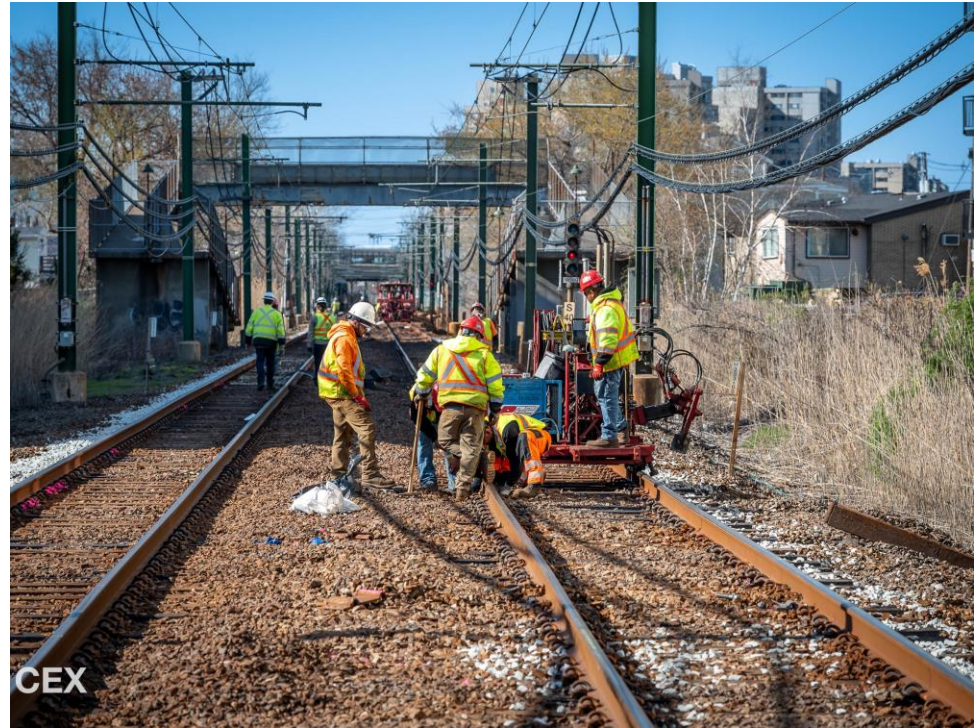


BL (001) Maverick to Wonderland, Apr 17-19 | Airport to Wonderland Apr 20-30, 2024

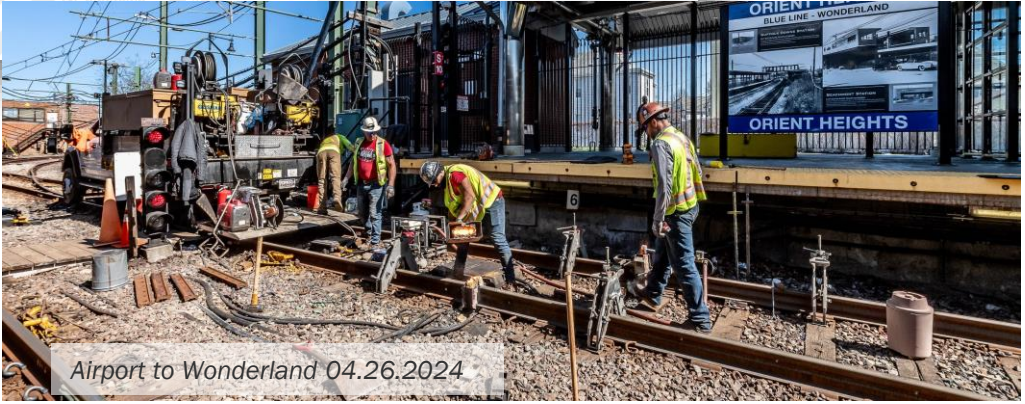


### Track Work

- Addressed 16 speed restrictions.
- 4-min RT time improvement (3 EB, 1 WB).
- Replaced 17,844 ft rail.
- Replaced 6,521 ties (incl FFU ties).
- Full depth 808 ft. reconstruction at Beachmont, Orient Heights and Wood Island stations.
- Two truck pad reconstructions: Cambell’s Gate, Beachmont.
- Resurfaced and tamped 41,650 ft track.
- Replaced/Rehab 3 switches.



Airport to Wonderland 04.26.2024



Airport to Wonderland 04.26.2024

### Piggyback Work

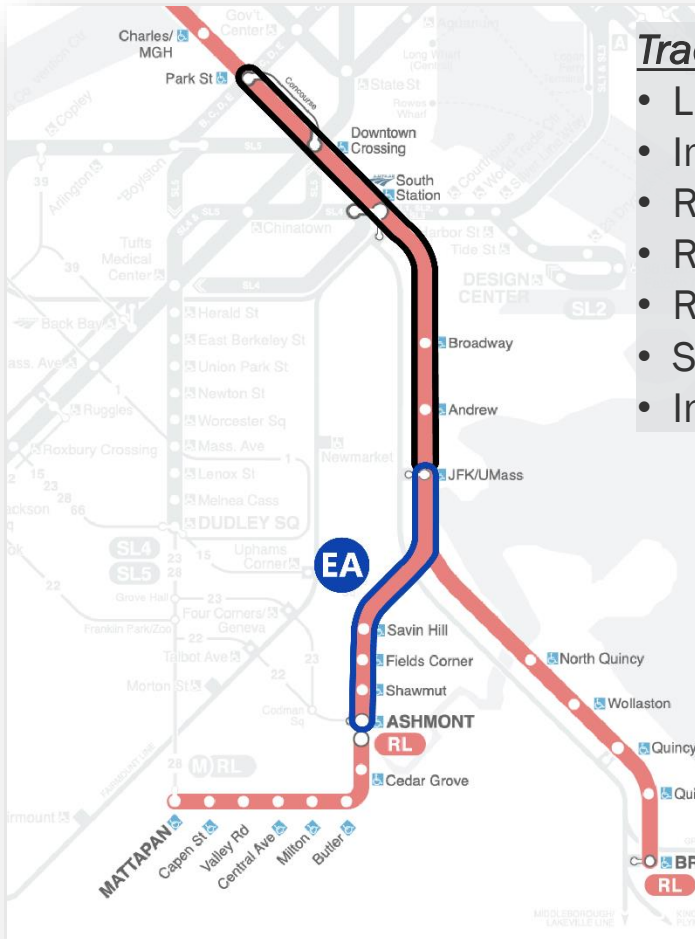
- Replaced ~9,000 feet of overhead catenary wire.
- Performed station inspections and standpipe testing.
- Repaired operator’s platform in non-passenger area on Wonderland and operator’s walkway at Orient Heights.
- Replaced ~500 ft of fencing between Beachmont and Revere Beach.
- Repaired roof canopies at Wood Island, Orient Heights, Suffolk Downs.



# Track Improvement Program | Completed Work

Reported  
05.23.2024

## RL Park to JFK/UMass May 2-10, 2024

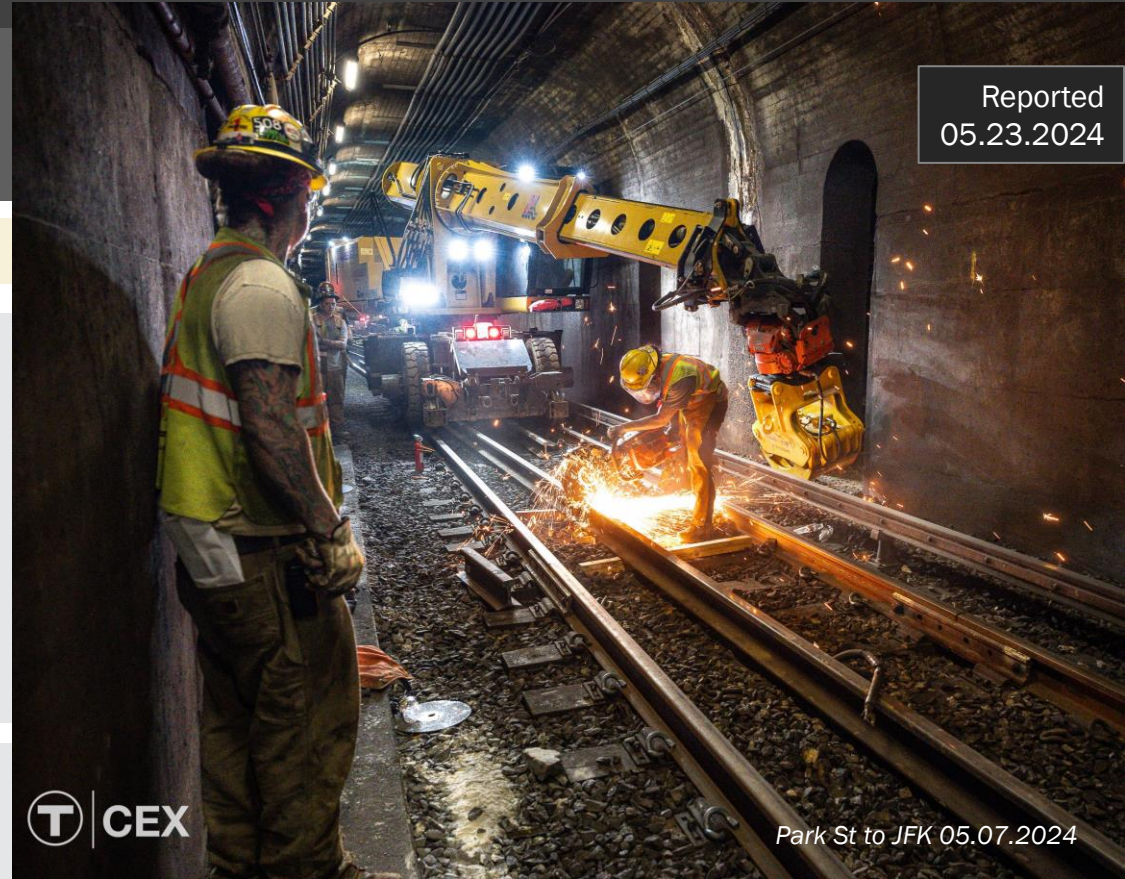


### Track Work

- Lifted 13 speed restrictions.
- Improved RT time by 10.2 min.
- Replaced 10,201 ft rail.
- Replaced 225 ties.
- Replaced 3,822 tie plates.
- Surfaced & tamped 24,200 ft.
- Installed 231 contact rail insulators.

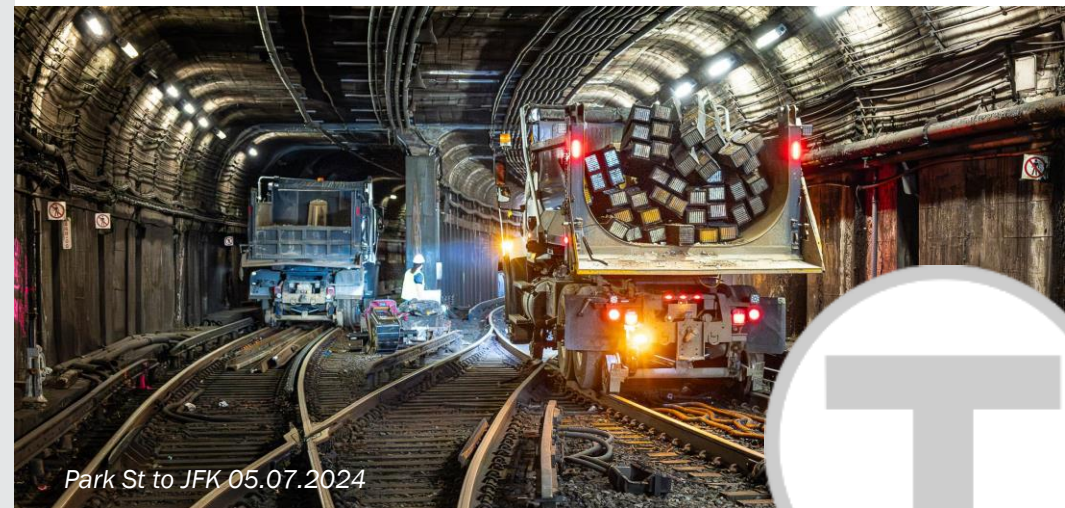
### Piggyback Work

- Overhead inspections of platform & lobbies.
- Security improvements JFK/UMass.
- Tunnel inspections between Broadway and JFK/UMass.
- Completed critical ceiling repairs.
- Fireproofing work Downtown Crossing. Could not have been done during overnight periods alone.
- Replaced ~180 sq ft glass panels at Ashmont - improves customer experience.



**T** CEX

Park St to JFK 05.07.2024



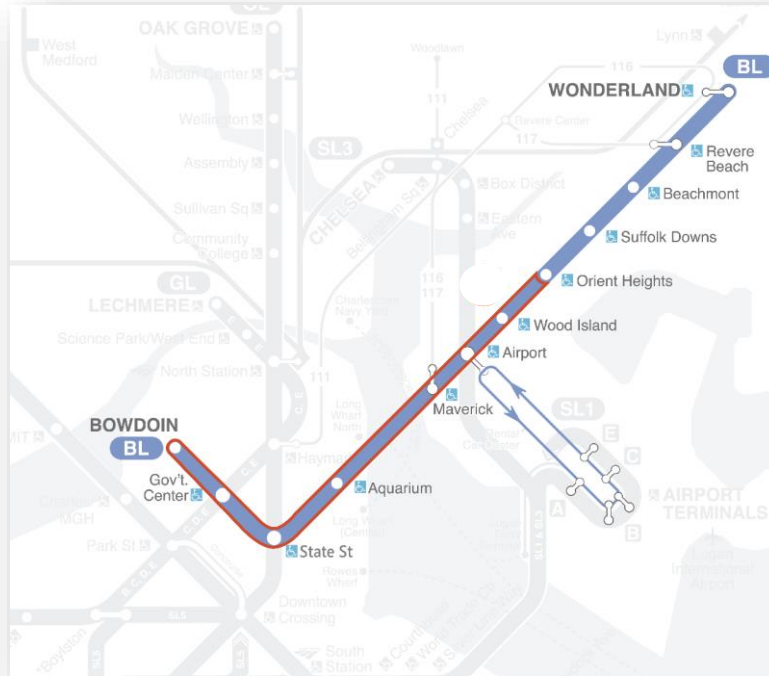
Park St to JFK 05.07.2024



# Track Improvement Program | Completed Work

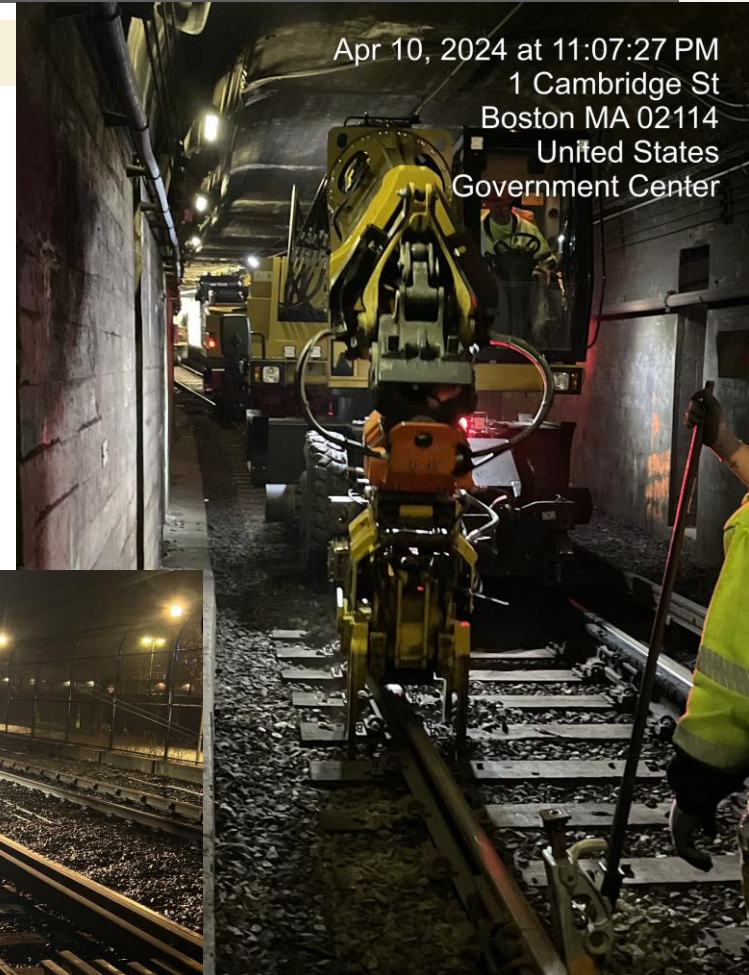
Reported  
04.25.2024

## BL (002) Bowdoin to Orient Heights Preliminary Work, Apr 9-11, 2024



### Track Work

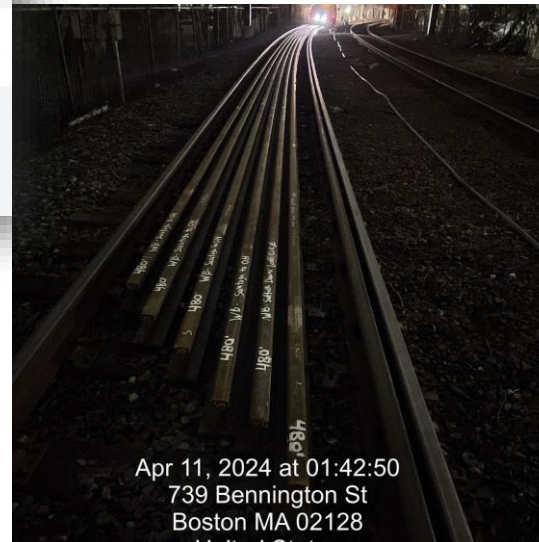
- Removed 3 speed restrictions.
- 778 ft surface tamping and aligning.
- *Prep for EOM April Diversion:*
  - Drilled 96 holes and installed bolts and assemblies on the 115 ft rail.
  - Relocated 24 rail stringers.
  - Staged 432 ties.



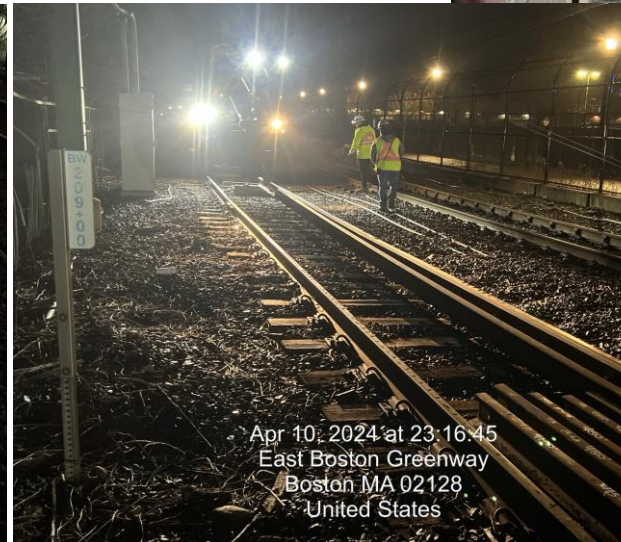
Apr 10, 2024 at 11:07:27 PM  
1 Cambridge St  
Boston MA 02114  
United States  
Government Center

### Piggyback Work

- Painted Sand boxes at Orient Heights, Wood Island, Airport & Maverick
- Started repair Wonderland operators' platform.
- Standpipe testing at Aquarium.
- Visual survey & recorded measurements of tunnels, communication rooms and Emergency exits from Bowdoin Station to the portal at Airport Station.



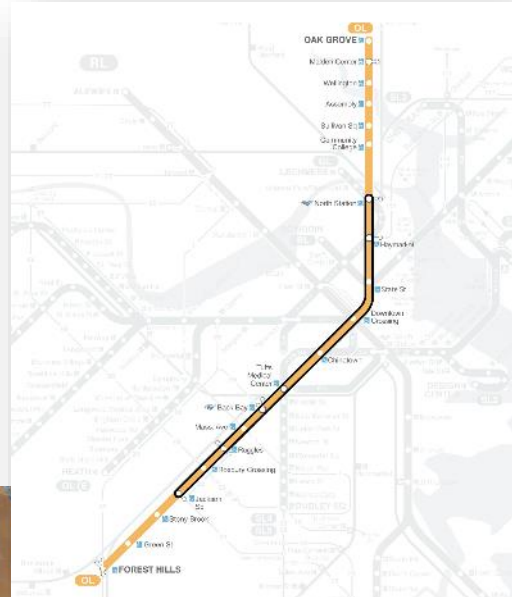
Apr 11, 2024 at 01:42:50  
739 Bennington St  
Boston MA 02128  
United States



Apr 10, 2024 at 23:16:45  
East Boston Greenway  
Boston MA 02128  
United States

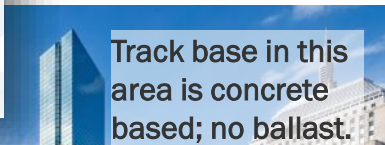


## OL North Station to Jackson Square, Mar 18-21, 2024

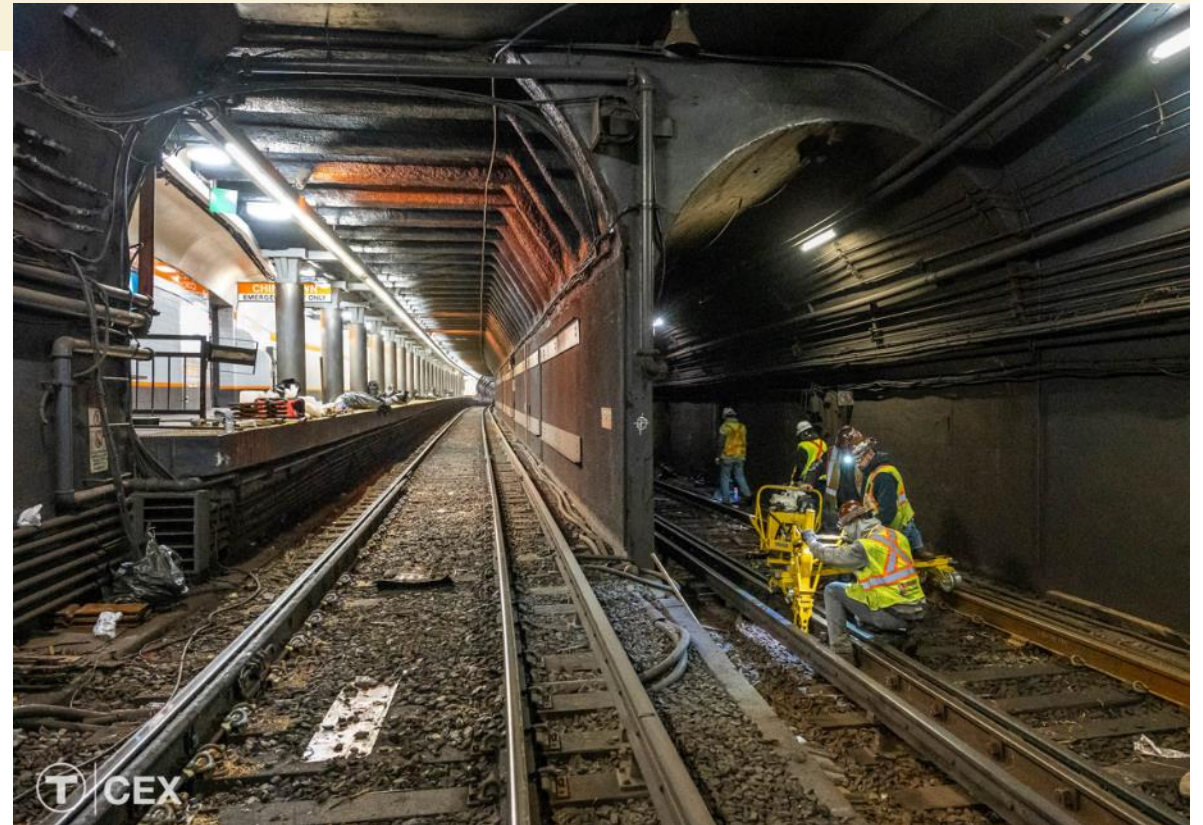


### Track Work

- 7 speed restrictions lifted.
- 5160 ft rail replaced.
- 27 cologne eggs replaced.
- 63 shoulders cored.
- 259 plates installed.
- 500 ft of stringer cable replaced.
- 2 direct fixation concrete pads installed. 1 weld completed.

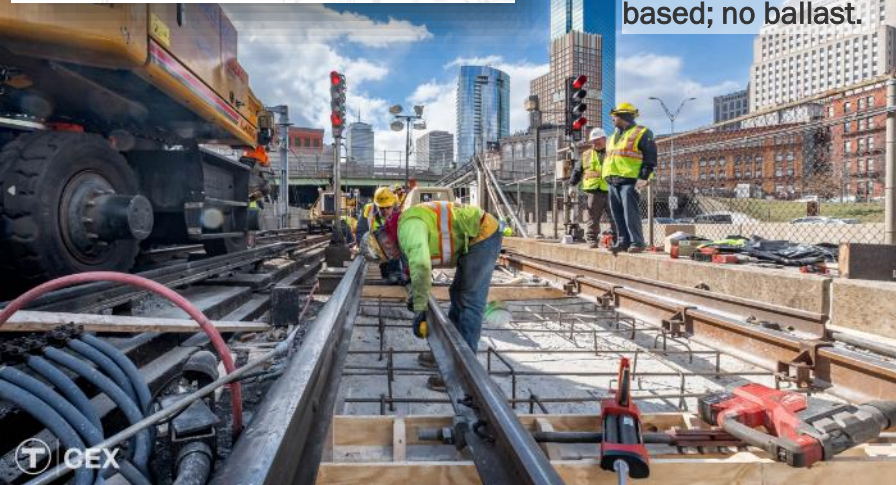


- 2.2 min. (RT) improved time.



### Station Work

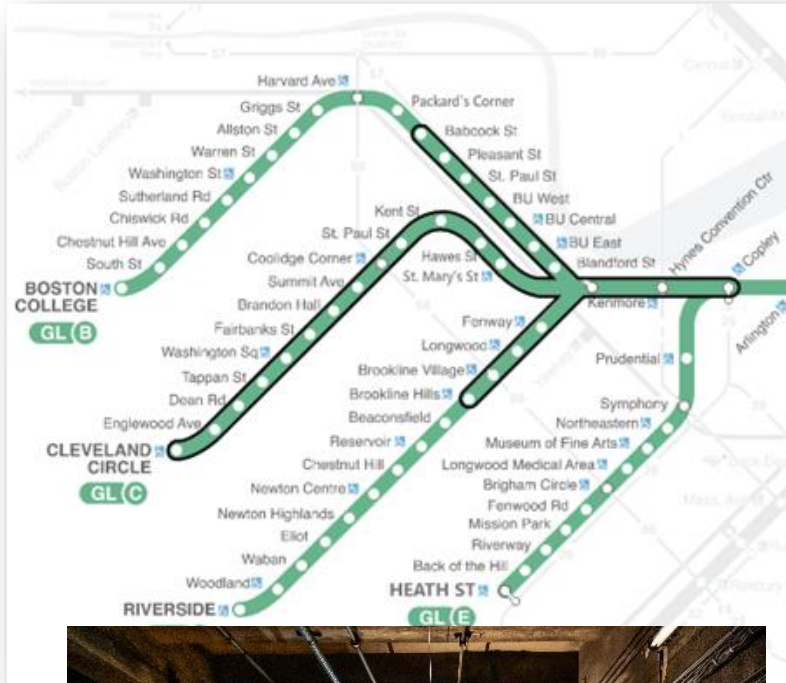
- Maintenance and repairs: painting, concrete repairs, floor/wall repairs, stair tread repairs/replacements, waste receptacle replacement, plumbing and HVAC repairs / maintenance, spider map replacements, new American flags installed.
- South Cove pump room clean out. Evaluated piping, electrical wiring and control valves for future upgrades.



# Track Improvement Program | Completed Work

Reported  
03.28.2024

GL Copley to Babcock, Cleveland Circle and Brookline Hills, Feb. 20 – Mar 8, 2024

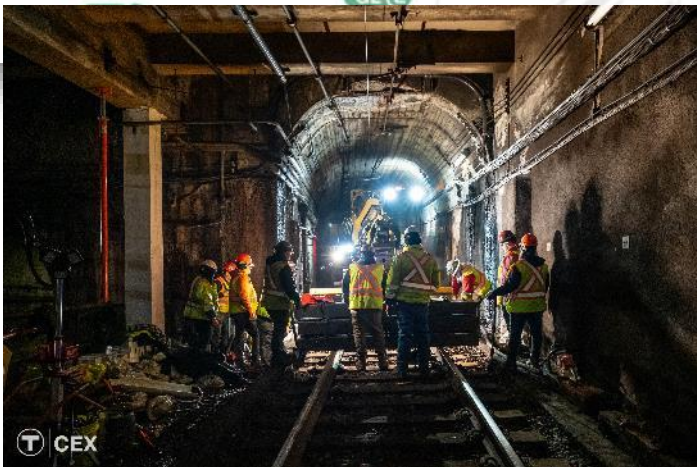


## Metrics

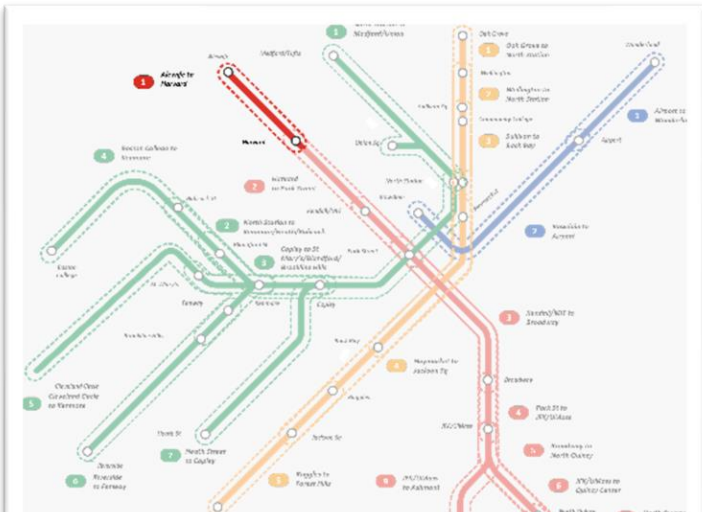
- ✓ 11 speed restrictions lifted.
- ✓ 1331 ties replaced.
- ✓ 13,429 ft rail replaced, inc. 1,200 by MOW
- ✓ 21,000 ft track resurfaced/tamped.
- ✓ 2 switches replaced/rehabbed
- ✓ 93 rail welds
- ✓ 1424 ft full depth track repairs

## Piggyback Work

- Stations: maintenance and repairs such as paint, bench repairs, concrete, floor repairs, stair tread replacement, hand-rail replacement, ceiling panel removals, waste receptacle replacement, plumbing & HVAC maintenance and inspection activities.
- E-Ink sign poles & solar panels installed - various locations C & B branches.
- Completed hands-on inspection of the GL tunnel near Fenway & Beacon Junction. Leak sealing performed on EB & WB tracks.
- Signals Fiber installed from Fenway Station to Aspinwall street.
- Replaced movable OCR at the Fenway Portal with traditional OCS.



RL Alewife to Harvard, Feb. 5 – 14, 2024



### Metrics:

- ✓ 8 speed restrictions lifted.
- ✓ 27 ties replaced.
- ✓ 2002 ft rail replaced.
- ✓ 1360 ft track resurfaced/tamped.
- ✓ 6 switches replaced/rehabbed
- ✓ 30 thermite welds
- ✓ 28 primary pads & 61 secondary pads replaced (0 ft full depth track repairs)



Repairing concrete slabs

### Piggyback Work:

- ✓ Station enhancements - new flooring and lighting.
- ✓ Replaced dozens of signal bonds, reinstalled ~3,500 ft signal cable.
- ✓ Regauged 3<sup>rd</sup> rail and other rail work at Alewife crossover.
- ✓ Tunnel inspections/repairs along SB track between Harvard and Central stations.
- ✓ Davis station ceiling repairs.
- ✓ Signal modernization work at Alewife, Davis, Porter, Harvard stations.
- ✓ Installed a new standpipe at Kendall/MIT station.
- ✓ Improved security cameras at Alewife, Porter, Davis stations.

Track work on the Red Line

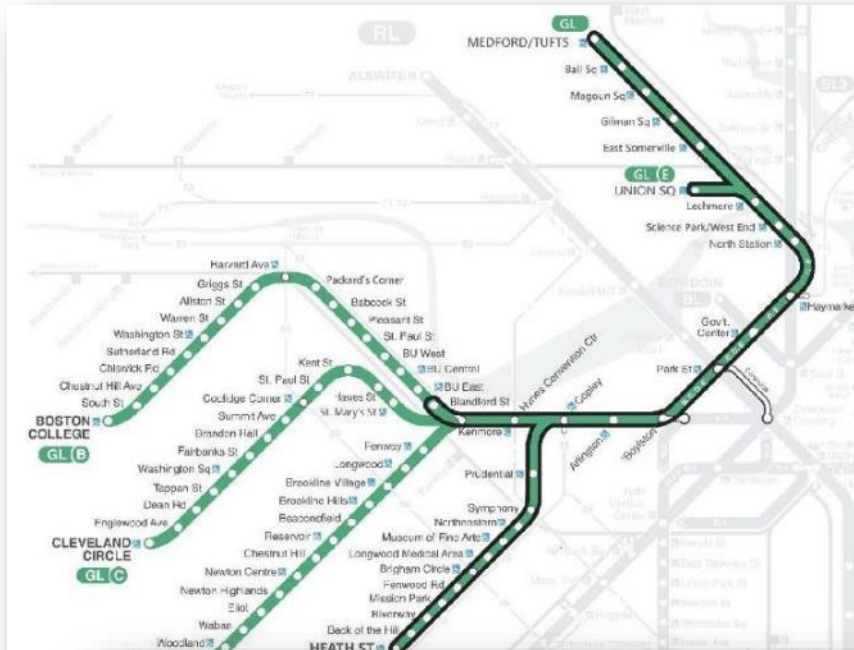




# Track Improvement Program | 2-Phase January Surge, Completed

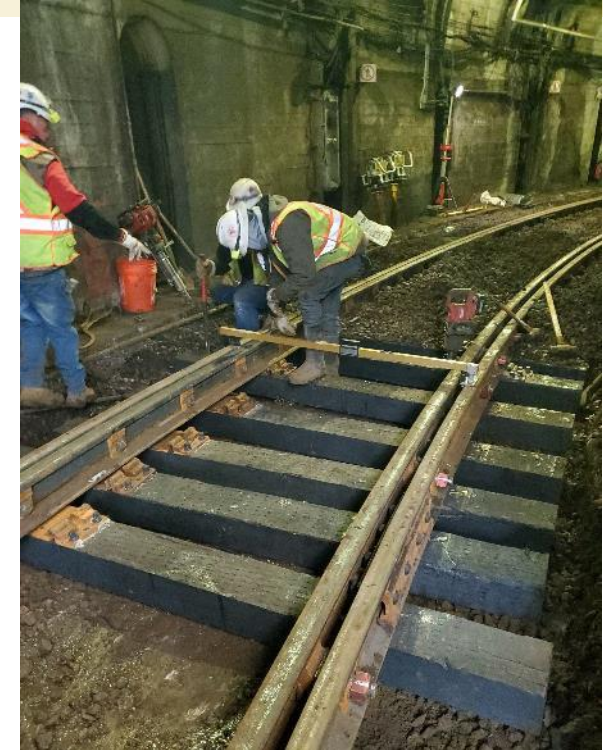
Reported  
02.29.2024

GL Central Tunnel, and B North Stn - Babcock St, E North Stn - Heath St, C & D North Stn - Kenmore Stn, Jan 3-12 & 16-28, 2024



## Metrics

- ✓ 16 Speed Restrictions cleared.
- ✓ 1306 ties replaced.
- ✓ 10,845 ft rail replaced.
- ✓ 1280 ft full depth track repairs
- ✓ 8887 ft track resurfaced & tamped - smoother ride.
- ✓ 12 Switch Replacements/Rehabilitations.
- ✓ 66 thermite welds.



Park St to Gov't Center 01.20.2024

## Piggyback Work

- ✓ ~7,300 ft overhead catenary wire replaced between Haymarket and Boylston stations.
- ✓ Water infiltration repairs completed in Green Line tunnel.
- ✓ Park Street communication room improvements.
- ✓ Copley station, repair work completed 3 in-station columns with additional infrastructure upgrades accomplished



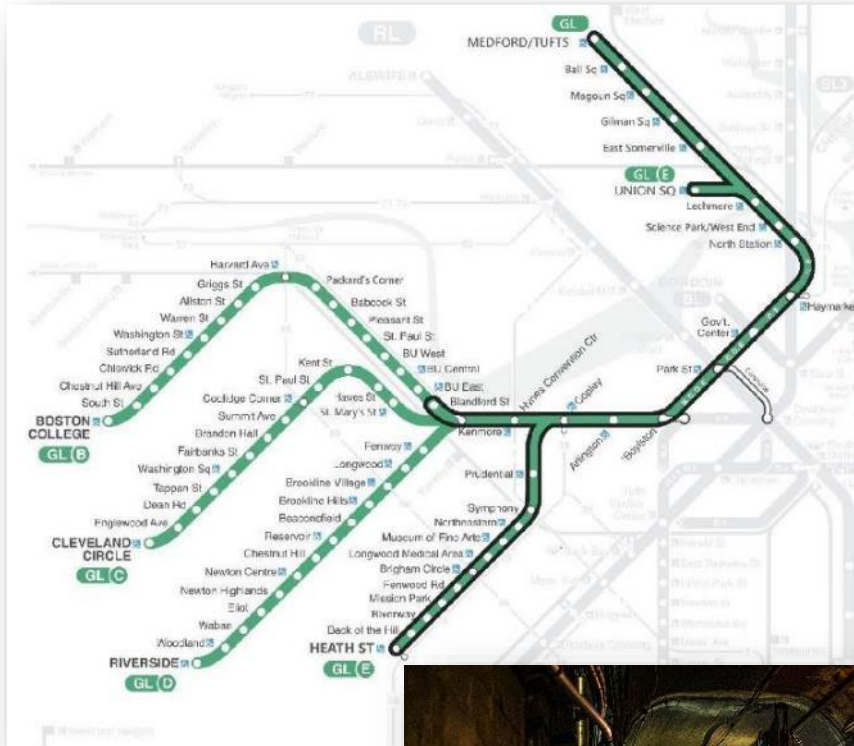
Copley Square  
01.18.2024



# Track Improvement Program | Completed Work (1<sup>st</sup> portion of January Surge)

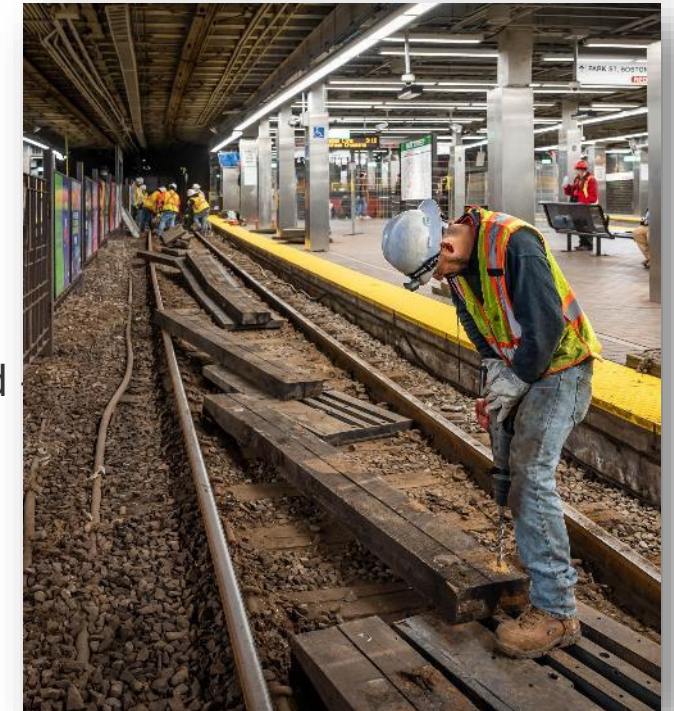
Reported  
01.25.2024

GL Central Tunnel, and B North Stn - Babcock Street, E North Stn - Heath Street, C & D North Stn - Kenmore Stn, Jan 3-12, 2024

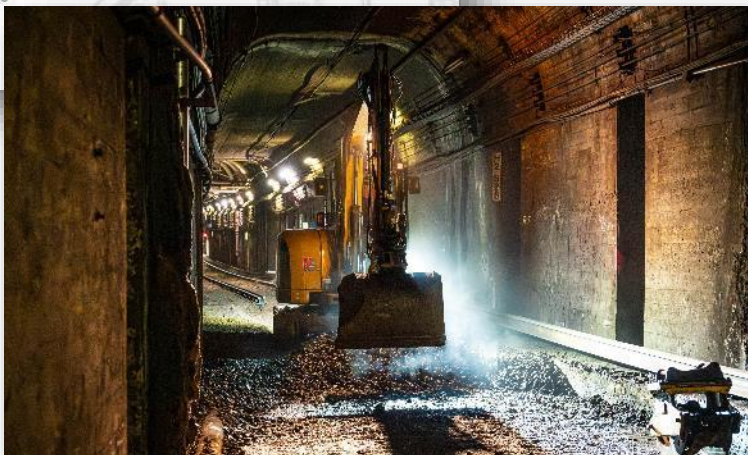


## Metrics

- ✓ 4 Speed Restrictions cleared.
- ✓ NA travel time improved.
- ✓ 387 ties replaced.
- ✓ 3,047 ft rail replaced.
- ✓ 400 ft full depth track repairs
- ✓ 1330 ft track resurfaced & tamped smoother ride.
- ✓ 2 Switch Replacements/Rehabilitations
- ✓ 15 thermite welds.



Boylston to Park 01.03.2024



Boylston to Park 01.04.2024

## Piggyback Work

- ✓ Boylston & Copley roof structural repairs
- ✓ Haymarket to North Stn tunnel inspections
- ✓ Hynes stair repairs and replacements and handrails/benches restored
- ✓ New Arlington elevator sump pump installed



# Track Improvement Program | Completed Work (Surge)

Reported  
01.25.2024

## Green Line: Riverside to Kenmore, Dec. 11-20



### Metrics

- ✓ 22 Speed Restrictions cleared (20 planned).
- ✓ ~4 min travel time improved.
- ✓ 2,767 ties replaced.
- ✓ 4,757 ft rail replaced.
- ✓ 600 ft full depth track repairs
- ✓ 48,840 ft track resurfaced & tamped - smoother ride.
- ✓ 8,918 ft rail thermal adjustment.
- ✓ 36 thermite welds.

### Piggyback Work

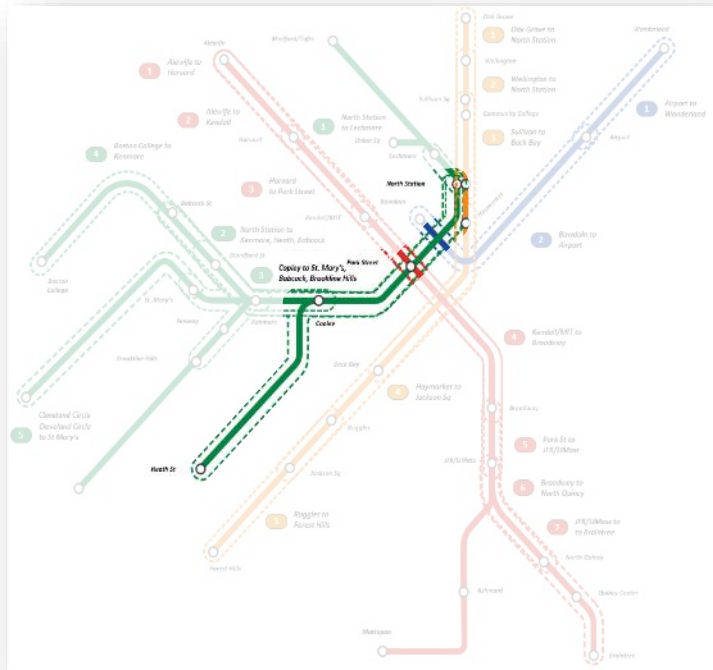
- ✓ Removed speed restrictions and resumed line speed on Lechmere Viaduct between Science Park & Lechmere, both directions.
- ✓ Dozens of switch certifications completed, four switch heaters repaired, 11 ground tests performed, 50 track circuits replaced.
- ✓ Catenary EB & WB replaced near Fenway Station.
- ✓ Riverside operators' roof replaced.



GL D Branch 12.12.2023



## Green Line Surge: North Station to Kenmore, Heath, Babcock, Nov. 27 – Dec.5

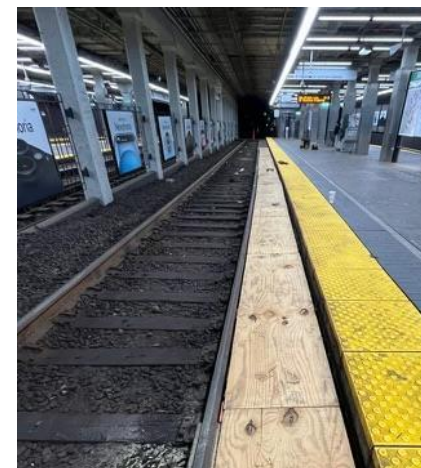


### Metrics

- ✓ 12 Speed Restrictions cleared (10 planned)
- ✓ 530 feet full depth track reconstruction
- ✓ 3765 feet rail replaced
- ✓ 6725 feet rail tamping
- ✓ 62 Ties replaced
- ✓ 785 Plates swapped & regauged

### Piggyback Work

- Critical tunnel structural repairs
- Hynes floor & stairs repaired
- Replaced some catenary sections
- Installed add'l E-ink signs
- Conducted tunnel inspections
- Inspected station overhead locations and stairs.
- Completed signal system cable, switches & junction boxes work
- Lechmere Viaduct Early Access

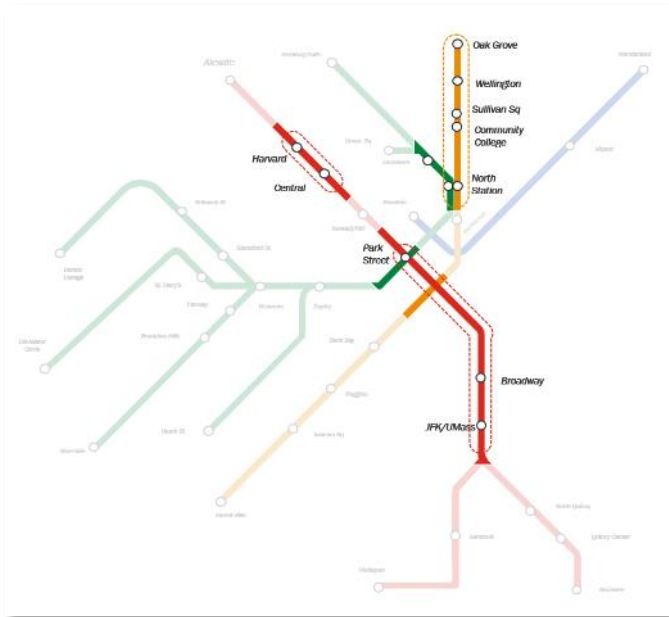


Station Upgrades



## Red Line & Orange Line Weekend & Early Access

- Harvard to Central: Nov 4 – 5
- Oak Grove to North Station: Nov 7 – 12
- JFK/UMass to Park St: Nov 14 – 19



### Metrics

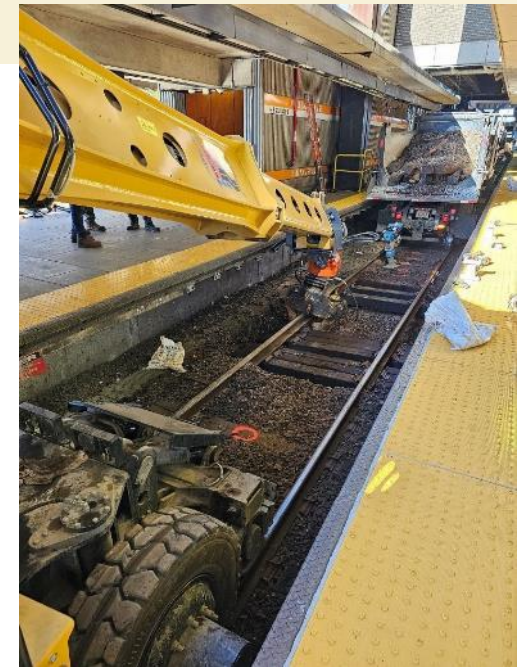
#### Red Line

- ✓ 10 Speed Restrictions cleared (7 planned)
- ✓ ~6 minutes travel time improved
- ✓ 146 ties replaced
- ✓ 2,202 feet rail replaced
- ✓ 6,305 feet of tamping

#### Orange Line

- ✓ 2 Speed Restrictions cleared
- ✓ ~1 minute travel time improved, NB
- ✓ 425 ties replaced
- ✓ 2,050 feet of tamping

OL Oak Grove to North Station



RL Park to JFK/UMass