



# Massachusetts Bay Transportation Authority

MBTA Construction Services Contract No. L70CN01  
Commuter Rail Fiber Optic Resiliency Contract Award

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MBTA Board of Directors

October 27, 2022

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# Project Background

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- Positive Train Control (PTC) is a safety system that monitors a train's location, direction, and speed in real time and will stop the train in the event that the locomotive engineer is not operating the train properly.
- The Rail Safety Improvement Act of 2008, a federal law, mandated the implementation of PTC on commuter and freight railroads
- The MBTA's PTC network was fully implemented and safety certified in 2020, and is in compliance with all federal regulations
  - Includes communications via a system-wide aerial fiber network, except in those locations where one was previously buried
- Federal Railroad Administration PTC regulations require 100% PTC availability in order to run normal commuter rail service



# Project Overview

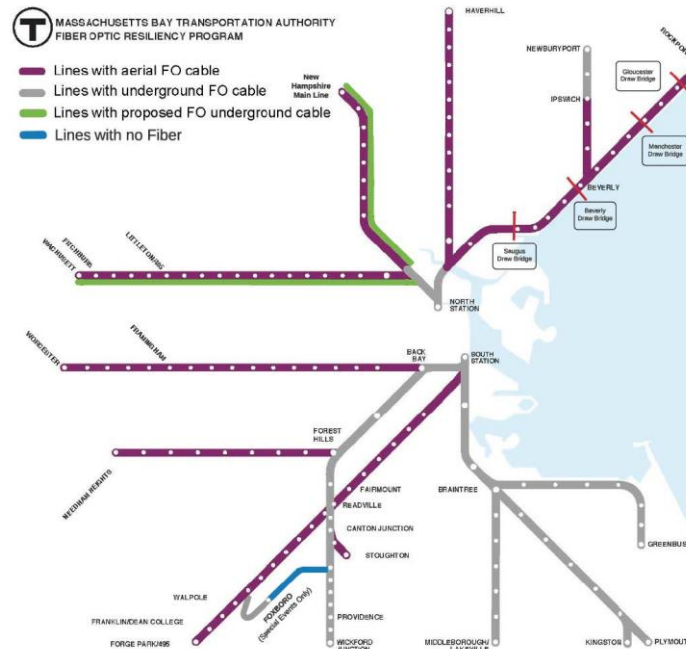
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- The current aerial fiber has experienced repeated breaks due to tree fall and extreme weather
  - The MBTA anticipated a maximum of 5 fiber breaks per year. In 2021, the project recorded 16.
- Each fiber repair degrades the quality of the PTC network, decreasing its reliability
- As spare fiber dwindles, commuter rail service disruptions are required to complete repairs
- The Fiber Optic Resiliency Project will bury a fiber optic cable to improve PTC system resiliency and allow for FRA required 100% PTC availability



# Project Scope

- Fiber will be buried on the Fitchburg and New Hampshire Main Lines
  - Prioritizes lines where MBTA has experienced the most fiber cable breaks
  - Connects the new commuter rail dispatch facility at Iron Horse Park to the existing wayside signal system
- Remaining lines will be addressed in future phases as funding becomes available



# Project Benefits

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## Safety

- The PTC safety system will operate on the new buried fiber network to support operation of the commuter railroad.

## Resiliency

- Buried fiber is more resilient to extreme weather and the impact of third-party activities.

## Operations

- MBTA Commuter Railroad Operations is required by federal mandate to operate Positive Train Control (PTC). This new asset will provide a highly resilient and secure facility for the transmission of PTC.

## Sustainability

- Buried fiber conduit systems require minimal maintenance compared to existing aerial fiber networks.



# Request of the MBTA Board of Directors

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## **VOTED:**

That the MBTA Board of Directors hereby authorizes the General Manager or his designee to execute a contract, on behalf of the Authority, with McCourt Construction Co. Inc in an amount not to exceed \$78,819,500, such contract to include two options, to be exercised in MBTA's sole discretion, to install additional infrastructure in an amount not to exceed \$12,960,000 to accommodate commercial fiber cable for future revenue opportunities.

