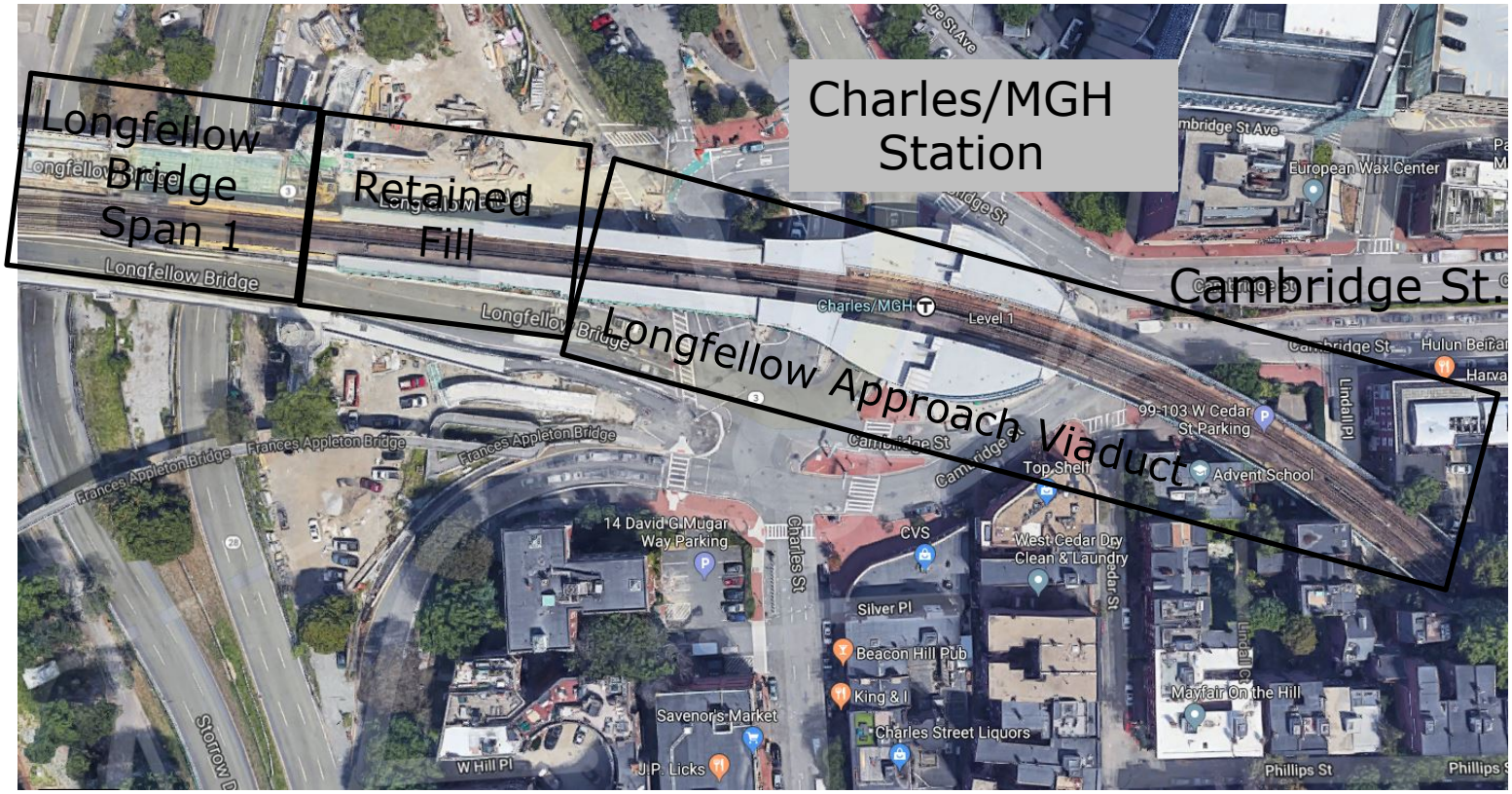
Massachusetts Bay Transportation Authority

MBTA Contract No. B43PS02: Longfellow Approach Architecture and Engineering Services

April 29, 2019

OVERVIEW

- Today's board action will provide for Design Phase, Bid Phase and Construction Phase Services for the Longfellow Approach project.



Aerial View of Longfellow Approach Viaduct, Charles/MGH Station and Span 1 of the Longfellow Bridge

Longfellow Approach Background

- The Longfellow Approach was constructed between 1911 and 1912 to carry the subway between Boston and Cambridge
- Original Charles Street Station was completed in 1932
- In 1982 the station platforms were extended 120 feet west over Span 1 of the Longfellow Bridge to accommodate 6 car train sets
- In 2007, upgrades to Charles/MGH Station were completed to meet ADA and accessibility standards
- 2019 - Steel repairs underway to select columns to accommodate the new Red Line vehicles

Longfellow Approach Project Scope

The Longfellow Approach Project Scope Includes:

- Rehabilitation of the Longfellow Approach Viaduct, including replacement of the concrete deck slabs and steel stringers, and repairs to the main steel girders and concrete piers
- Repair/Replacement of the Charles/MGH Station platforms and canopies, as well as station brightening
- Rehabilitation of Span 1 of the adjacent Longfellow Bridge

  (The portion of the Span 1 deck that supports the Red Line was not included in the Longfellow Bridge rehab project because the Charles/MGH Station platforms and utilities extend onto the first span of the Longfellow Bridge)

Project Benefits

- Increased passenger and overall system safety
- ADA upgrades consistent with code compliance requirements
- Improved operations
- Improved customer experience
- Reduced station life cycle maintenance costs and lower energy consumption
- Environmentally-friendly station platform design
- Achieving a State of Good Repair and extends service life of the existing structure
- Minimizes bus diversions by utilizing a fully functional permanent crossover interlocking to accommodate single track operations during construction

Potential Operational Impacts During Construction

Operational impacts during construction may include:

- Single track Red Line operation (largely at night)
- Limited weekend shutdowns of Red Line Service
- Traffic impacts to Charles Circle (including shifting travel lanes through the circle, lane reductions and < 5 WE closures of Charles Circle)
- Modifications to passenger movements accessing and within the station
- Limited impacts to area parking

NOTE: The extent of, and ability to limit operational impacts during construction will be determined as part of the scope of this professional services contract.

Planned Stakeholder Engagement and Public Outreach

Stakeholder Engagement and Public Participation Plan includes:

- Providing a Municipal Liaison throughout the duration of the project to coordinate with stakeholders, abutters, MassDOT, DCR, City of Boston, local utilities and others, as required
- Coordinating with MGH regarding access to hospital and campus expansion
- Preparing Stakeholder Briefings, fact sheets, and meeting materials
- Holding Public Meetings
- Attending community/neighborhood group meetings
- Monitoring and updating the project database, website, issue tracking, email updates, and responding to questions/comments/ concerns

Delivery of Scope of Services

The services will be delivered on a Task Order basis by Phase. Project Phases for this project are defined to be:

- Phase I Pre-Design
- Phase II Preliminary Design (15% - 30%)
- Phase III Design Development (30% - 75%)
- Phase IV Final Design (75% - PSE)
- Phase V Bid Phase
- Phase VI Construction Phase Services (*)

(*) Subject to FY20-FY24 CIP approval

Request of the Fiscal and Management Control Board

Staff request that the Fiscal and Management Control Board authorize the MBTA General Manager, or his designee, to award and execute MBTA Contract No. B43PS02: Longfellow Approach Architecture and Engineering Services with Jacobs Engineering, Inc. for an amount not to exceed $8,500,000.00.

Massachusetts Bay Transportation Authority

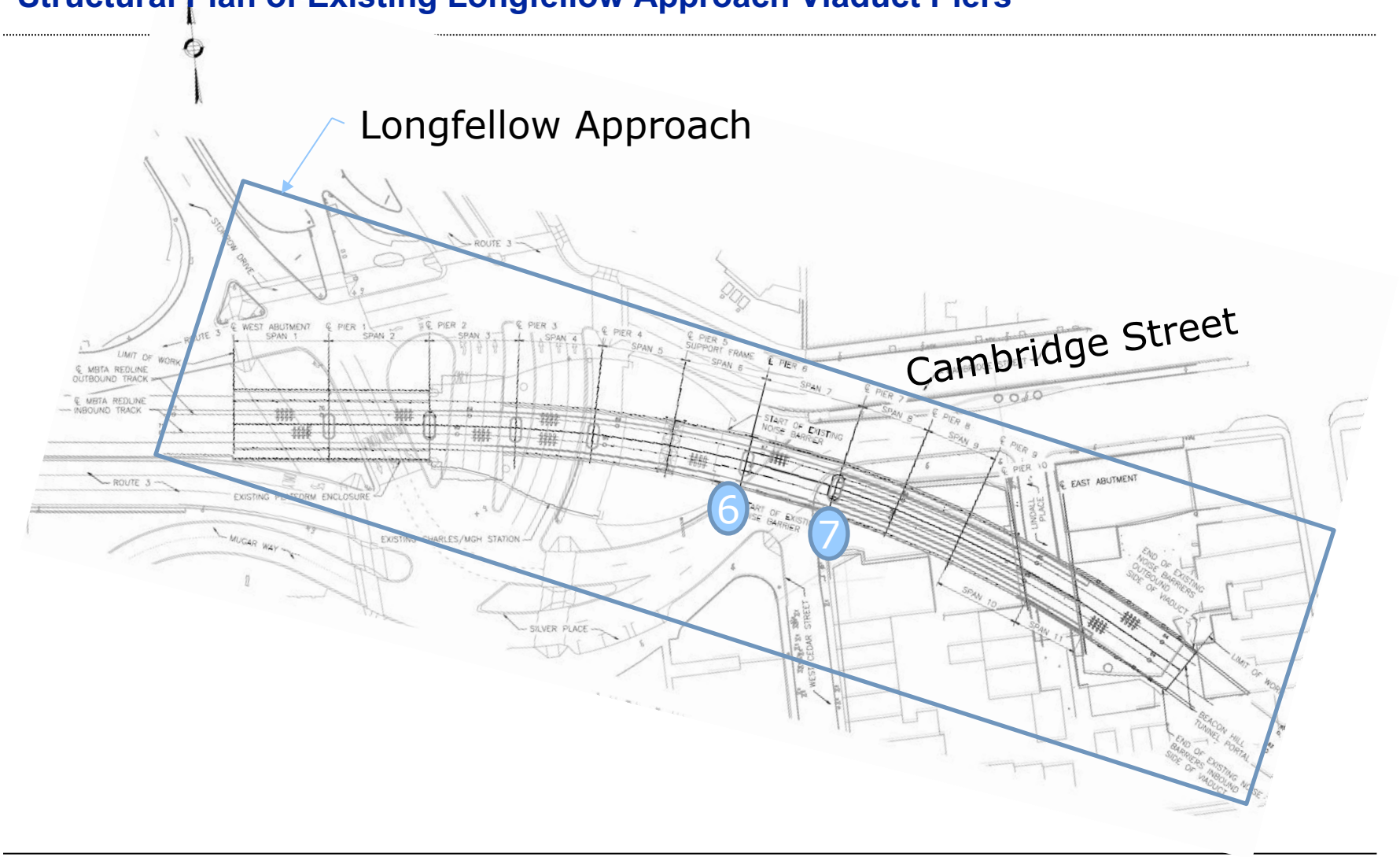
Appendix: Future Red/Blue Connector

April 22, 2019

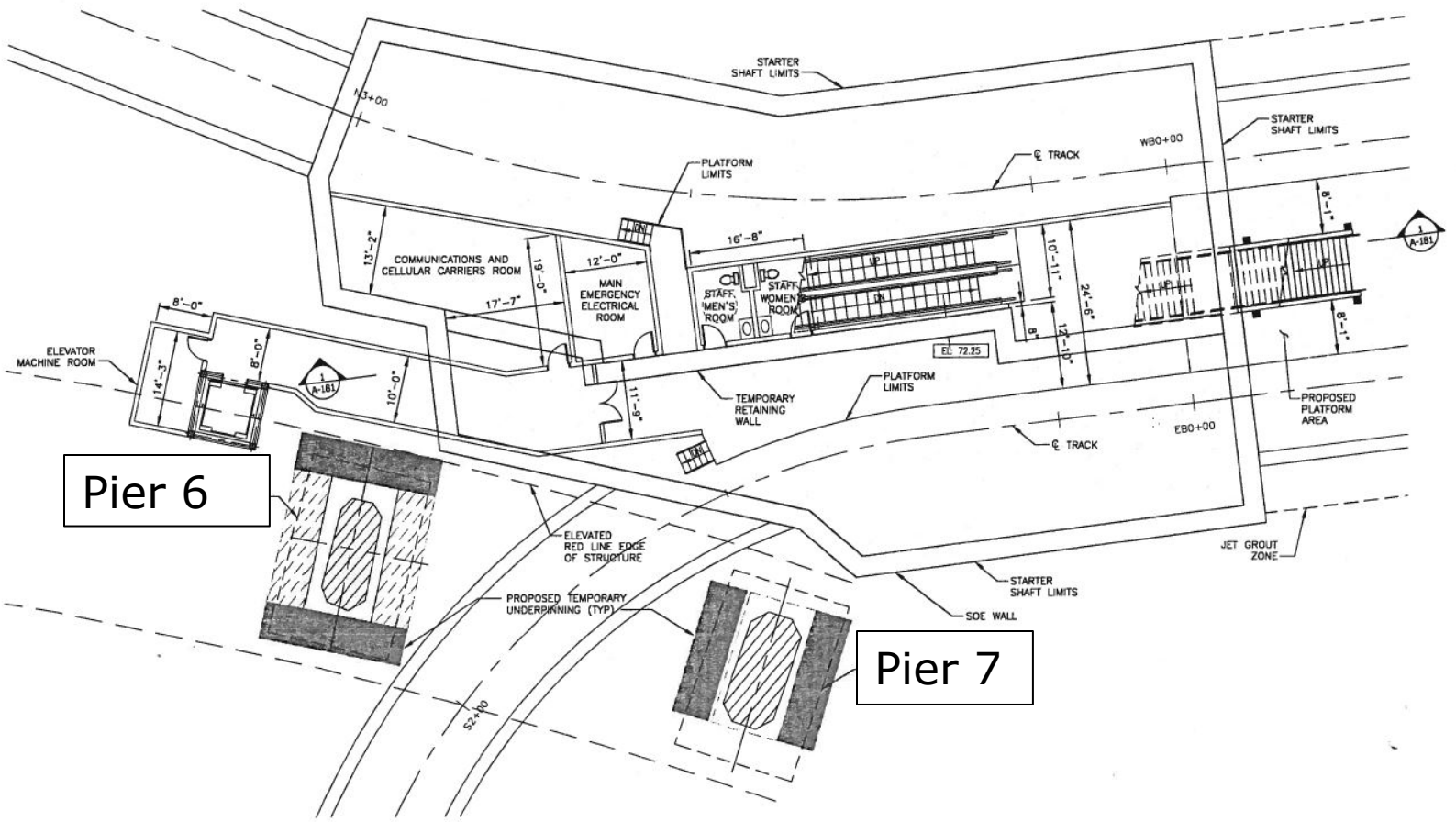
Future Red/Blue Connector Project Scope

- A future Red/Blue Connector Project is being contemplated to extend the Blue Line Tunnel from Bowdoin to Charles/MGH Station.
- The conceptual 10% level design, developed in 2010, includes a new sub-grade Blue Line Station directly adjacent to and connected to the existing Red Line Charles/MGH Station.
- The 10% Study proposes a Blue Line tail track tunnel at a depth of 60 feet passing below the Longfellow Viaduct (between Piers 6 and 7). Piers 6 and 7 are shown being temporarily underpinned and then replaced with new mini-pile foundations and piers to allow for the proposed Blue Line Tunnel without undermining the viaduct.

Structural Plan of Existing Longfellow Approach Viaduct Piers



Conceptual Plan of The Future Blue Line Tunnel - Showing a Spur Tail Track Passing Below the Existing Viaduct Between Pier 6 and Pier 7



Longfellow Viaduct Project and Future Red/Blue Connector

- An engineering evaluation was conducted to determine if there is any benefit to performing advance viaduct foundation modifications (as part of the Viaduct Project), in an attempt to reduce future impacts to either the viaduct or the future proposed Red/Blue Connector.
- It was determined that the Viaduct Project will not complicate or interfere with the future Red/Blue Connector. The Viaduct Project does not intend to alter the foundations nor do anything that reduces access to the area of the piers/foundations.
- The Study concluded that possible benefits of doing advance Red/Blue Connector foundation work to support a concept that was developed in 2010 does not justify either the cost or the risk that such work may create a detriment to the *future* Red/Blue Connector design and construction.
- Incorporation of potential Red/Blue Connector project elements should be re-evaluated once a final plan for the Red/Blue Connector has been developed.