



Automated Fare Collection (AFC 2.0) Change Order

May 23, 2024

Jeff Cook, Acting Chief Administrative Officer

Elizabeth Winters Ronaldson, Acting Deputy Chief of Fare Revenue



**Massachusetts Bay
Transportation Authority**

Cubic Transportation Systems Leadership



Peter Torrellas
Senior Vice President of Cubic Corporation | President of Cubic Transportation Systems

Peter Torrellas is the senior vice president of Cubic Corporation and president of Cubic Transportation Systems (CTS). He is responsible for leading the strategic vision for CTS, growing our customer base, finishing the product rationalization, while enhancing our partnerships with existing customers.

Prior to joining Cubic, Torrellas was the President of the Connected Communities business unit at Parsons where he was responsible for strategic growth, business execution and operations across a portfolio that included Rail, Utilities, Oil & Gas, Aviation, Mining, Intelligent Traffic, Smart Vehicles, Facilities and “Parsons X,” the digital service and solution business of Parsons across the world. Prior to Parsons, he was Managing Partner for Digital Cities and Infrastructure at Siemens Advanta and head of Smart Cities and Communities at Siemens Smart Infrastructure.

Torrellas has led major digital transformation initiatives across mobility, buildings, energy and water infrastructures. His passion for cities and infrastructure began after successfully designing, integrating and delivering a Public Address and Customer Information system for New York City’s subway – a mega project that included the train he rode as a child.

An expert in the industry, Torrellas is a recognized thought leader in technology implementations and has collaborated with the United Nations, World Bank Group, United States Conference of Mayors, National Governors Association, National Academies of Sciences, International City and County Managers Association, The Brookings Institution, Harvard and many others.



Executive Summary

- **Procurement conducted in 2016:**
 - To replace outdated legacy system and move to a unified, integrated fare payment system.
 - Scope of work - design, implement, install, finance, operate, maintain, and manage a new fare collection system.
- **Contract awarded in 2018:**
 - Agreement entered with Boston AFC 2.0 OpCo, LLC – owned by John Laing and Cubic Transportation Systems – to deliver this scope of work (implement and operate the system).
- **Contract Amended / Reset in 2020:**
 - To address technical and delivery challenges, introduce scope adjustments, and minimize MBTA construction-related risks.
 - Current agreement includes:
 - Term expiration in 2033 with two five-year options.
 - Total contract cost of \$967M (capital and operating).
- Under the direction of the Healey-Driscoll Administration, **the MBTA has engaged in discussions with OpCo to expedite the public launch of pay-as-you-go Contactless payments** and advance the AFC 2.0 project.

OpCo has paid Cubic \$312M to implement the AFC 2.0 system. The MBTA has paid \$23M to OpCo to date.









The MBTA seeks Board authorization to execute the Change Order that enables the accelerated public launch of Contactless payments on subway and bus.

The new fare collection system reflects the Healey-Driscoll Administration’s priorities to provide safe and reliable transportation for the Commonwealth.

In 2016, the legacy fare collection system was outdated and struggled to meet evolving needs.

- System specification largely written in 2001.
- Discrepancy in systems and customer experience across modes.
- Cumbersome process to change fare policy.
- Limitations to enforcing performance.
- Frequent needs for investment in an aging system just to preserve existing capabilities.
- Increasing operational costs and reliability challenges.
- More work done in-house versus industry norm.

AFC 2.0 will deliver a modern, customer-centric fare collection system.

 <p>Improve Customer Experience</p>	 <p>Ensure Equal Access</p>	 <p>Maintain Business Continuity</p>	 <p>Improve Revenue Control</p>	 <p>Focus on Core Operations</p>	 <p>Support the Future MBTA</p>
<ul style="list-style-type: none"> • Convenient options for bring your own fare media (bank card or smartphone). • Easier to reload or get a Charlie Card. • Tap one card for all transit modes. • New rider tools, including website and mobile app. 	<ul style="list-style-type: none"> • Accessibility improvements • Expanded language support. • Improve access to existing reduced fare programs. • Widespread network of cash sales locations. 	<ul style="list-style-type: none"> • Replace worn hardware. • Improve uptime of fare collection equipment. • Maintain compliance with latest security standards. 	<ul style="list-style-type: none"> • Improve revenue accounting. • Fully reconciled, auditable and accurate revenue deposits and reports. • Control fare evasion. • Prevent fraud. 	<ul style="list-style-type: none"> • Speed up buses and Green Line by reducing dwell time at stops through all-door boarding. • Better ridership and revenue data. • Hold the vendor accountable for the performance of the system. 	<ul style="list-style-type: none"> • Enable fare policy innovation. • Integrate with other transportation providers. • Support additional revenue streams through incentive programs, dynamic pricing, sponsorships.

AFC 2.0 functionality is delivered in a series of phased launches.

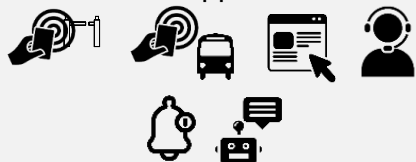
SUMMER 2024 ¹

Contactless Payments Launch on Bus and Subway



Riders, including reduced fare riders, with a contactless credit card or mobile wallet can pay fares using the new Charlie system for pay-as-you-go travel.

Functionality includes Fare System Back Office, Readers on Bus, Readers on Green Line, Readers on Gates, Charlie Website, Notifications, Digital Assistant, and Call Center Support.



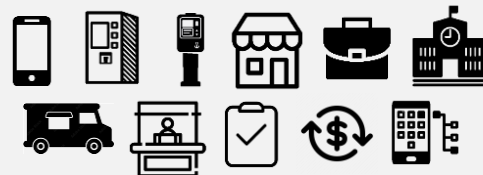
SPRING 2025 ¹

New Charlie Card & Group Sales Launch

(Revenue Service Commencement)



Functionality includes New Charlie Card, Mobile Fare Card, Mobile App, Fare Vending Machines, Retail, Handheld Readers for Fare Verification, Passes and Transit Value, Autoload, Groups, Discounts and Promotions, In-Person Customer Support, Charlie Van, and Automated Phone System.



SPRING 2026 ¹

Expansion to Commuter Rail & Ferry

(Commuter Rail Revenue Service Commencement)



Functionality includes Readers on Commuter Rail Gates, Readers on Commuter Rail Platforms, Fare Vending Machines at Commuter Rail Stops, Handheld Readers for Fare Verification on Commuter Rail, and Handheld Readers for Payment Onboard Ferries.



¹ Based on current project schedule.

Contactless Payment Public Rollout requires a change order.

Change Order Benefits

- **Expedite the introduction of Contactless payment functionality.**
 - Available to subway ¹ and bus riders in **Summer '24**.
 - Riders can ride the T using the same credit and debit cards they use for other purchases.
- **Decrease the total project cost.**
 - Modifications to the payment schedule – payment milestones and monthly payment terms – will lower the base project cost up to \$41M.
- **Deliver additional functionality and enhanced customer experience.**
 - Introduce new tools for riders to access and manage the ways they pay.

Key Contractual Changes Required

- **Re-sequence the project rollout.**
 - Bring forward a **stand-alone Contactless Payments launch** on subway and bus in Summer '24.
 - Delivery of remaining functionality in '25 and '26.
- **Restructure payments.**
 - Align with Contactless Payment delivery in '24 and remaining functionality phases in '25 and '26.
- **Extend functionality delivery, namely:**
 - **Full-Service Commencement to June 2026** from May 2024; and
 - **Longstop Date² to June 2027** from August 2025.
- **Revise technical requirements.**
 - Align with appropriate functionality delivery dates in '25 and '26 accordingly.

¹ Mattapan line is not included in the initial rollout of contactless payments on the subway network.

² It is the deadline by which all conditions of the contract must be fulfilled or met.



Total Contract Cost

	Capital <i>Including Milestone and Availability Payments of Capital (APC)</i>	Operating <i>Including Availability Payments for Operating (APO) and for Transactions (APT)</i>	Estimated Contract Total (Not To Exceed) <i>Through September 2033</i>
Current Agreement	\$595M	\$372M	\$967M
Proposed Change Order	\$572M	\$354M	\$926M[*]

** Additionally, the MBTA may pay up to \$12M for Digital Assistant (\$1M) and Schedule Performance Incentive (\$11M).*



Contract Cost Structure and Payment Mechanism

Contract Cost Structure *Under the proposed change order*

Capital Payments
Including Milestone and Availability Payments for Capital (APC)

\$572M

Operating Payments
Including Availability Payments for Operating (APO) and for Transactions (APT)

\$354M

Total: \$926M

Payment Mechanism

- Capital payments made are part of **an approved CIP and are funded via bond issuance.**
- Treasury **forecasts all capital project spend** for the upcoming fiscal year and issues a **30-year serial bond to cover capital costs.**
- Operating payments are **funded via the annual MBTA Operating Budget.**
- FY25 payments are captured on the FY25 Fare Revenue Operating Budget.
- These annual costs will be included **every year in the Operating Budget.**

	To Date	Summer '24	Spring '25	Spring '26	Fall '26 - Fall '33	Overall
		<i>Contactless Payments Launch on Subway & Bus ¹</i>	<i>New Charlie Card & Group Sales Launch ¹</i>	<i>Expansion to Commuter Rail & Ferry ¹</i>		
Capital Payment Cash Flow	\$23M	\$105M	\$160M	\$39M	\$245M \$35M/Year	\$572M
Operating Payment Cash Flow	N/A	\$26M	\$35M	\$38M	\$255M \$36.4M/Year	\$354M
Total	\$23M	\$131M	\$195M	\$77M	\$500M \$71.4M/Year	\$926M

¹ Based on current project schedule.

Recommend Board Vote - AFC 2.0 Resequencing Change Order

To authorize the General Manager or his designee to execute Change Order 13 to the Amended and Restated Project Agreement (“ARPA”) with Boston AFC 2.0 OpCo LLC to launch Contactless EMV payments to the public, re-schedule Availability Payments and Milestone Payments to align payments to public launch and successful operation of the revised system rollout stages, and amend other contract terms as necessary to effect those changes, in a form approved by the Chief Counsel. The General Manager or his designee is further authorized to execute any necessary or ancillary documents on behalf of the MBTA to effectuate such agreement.

