



**Massachusetts Bay
Transportation Authority**

Fare Transformation Update

Fiscal and Management Control Board

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Fare Transformation

Update on plans to proceed with the AFC 2.0 project and other improvements to fare collection at the MBTA.



Summary of today's update

We have a new plan for improving fare collection at the MBTA. It's going to take longer and cost more than our original plan, but we are confident that the outcome will result in meaningful benefits to our customers in both the near term and the long term.

Goals for Improving Fare Collection

In late 2017, the MBTA announced an effort to improve fare collection operations. The goals that were established at that time continue to guide us as we carry out the implementation work.

Improve the customer experience	Ensure equal access	Upgrade assets	Improve revenue control	Focus on core operations	Support the future MBTA
<ul style="list-style-type: none"> ✓ Easier to get and reload a CharlieCard ✓ Tap on for all transit modes ✓ Convenient options for bring your own fare media (smartphone or contactless credit card) 	<ul style="list-style-type: none"> ✓ Accessibility improvements for seniors and people with disabilities ✓ Expanded language support ✓ Improve access to existing reduced fare programs 	<ul style="list-style-type: none"> ✓ Replace worn hardware and improve uptime of fare collection equipment ✓ Security and fraud protection 	<ul style="list-style-type: none"> ✓ Improve revenue accounting ✓ Control fare evasion ✓ Prevent fraud 	<ul style="list-style-type: none"> ✓ Speed up buses and Green Line with all-door boarding ✓ Better ridership and revenue data ✓ Hold the vendor accountable for the performance of the fare collection 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

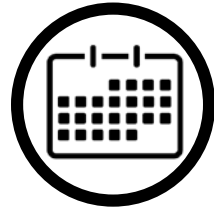
Resetting the Project Plan

We're making some key changes to the project plan, based on feedback and lessons learned.



Phased rollout

- Prioritize near term improvements for bus customers and reduced fare customers
- Followed by rollout on bus and subway
- Finally adding in more ways to pay on Commuter Rail



Achievable schedule

- More time for testing, installation and migrating customers
- Longer transition, which necessitates upgrades to the existing system



Improve reliability ASAP

- Reinvest in existing fare collection assets
- Reduce future disruption in stations



Community-driven process

- Significantly expand the planned retail and vending machine sales network across the region
- MBTA takes lead on a process for community input on placement of sales locations



Customer experience improvements

- Improve the customer experience during the transition
- Broader access to CharlieCards
- Reduce customer pain associated with CharlieCard fees
- Be more forgiving of customers learning to tap on/off Commuter Rail



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Reconsidering the Approach – Based on Customer Feedback

As the MBTA has been working to deliver on the fare transformation promises, we've listened to feedback from our customers.

What we hear about most from our customers:

- The original Cubic contract provides **limited opportunities for community input** to influence placement of cash sales locations
- There are **problems with the existing system** that make paying fares inconvenient and frustrating
- Based on details that have been shared about the new system, customers are concerned about **pain points** as new payment behaviors are learned



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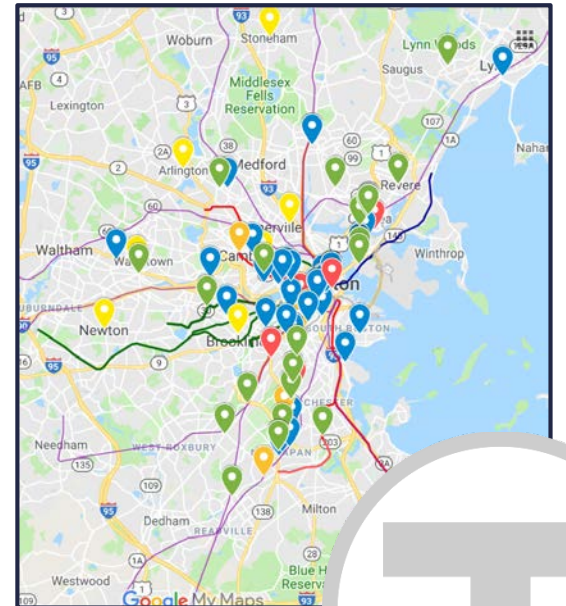


Community-Driven Process for Determining Sales Locations

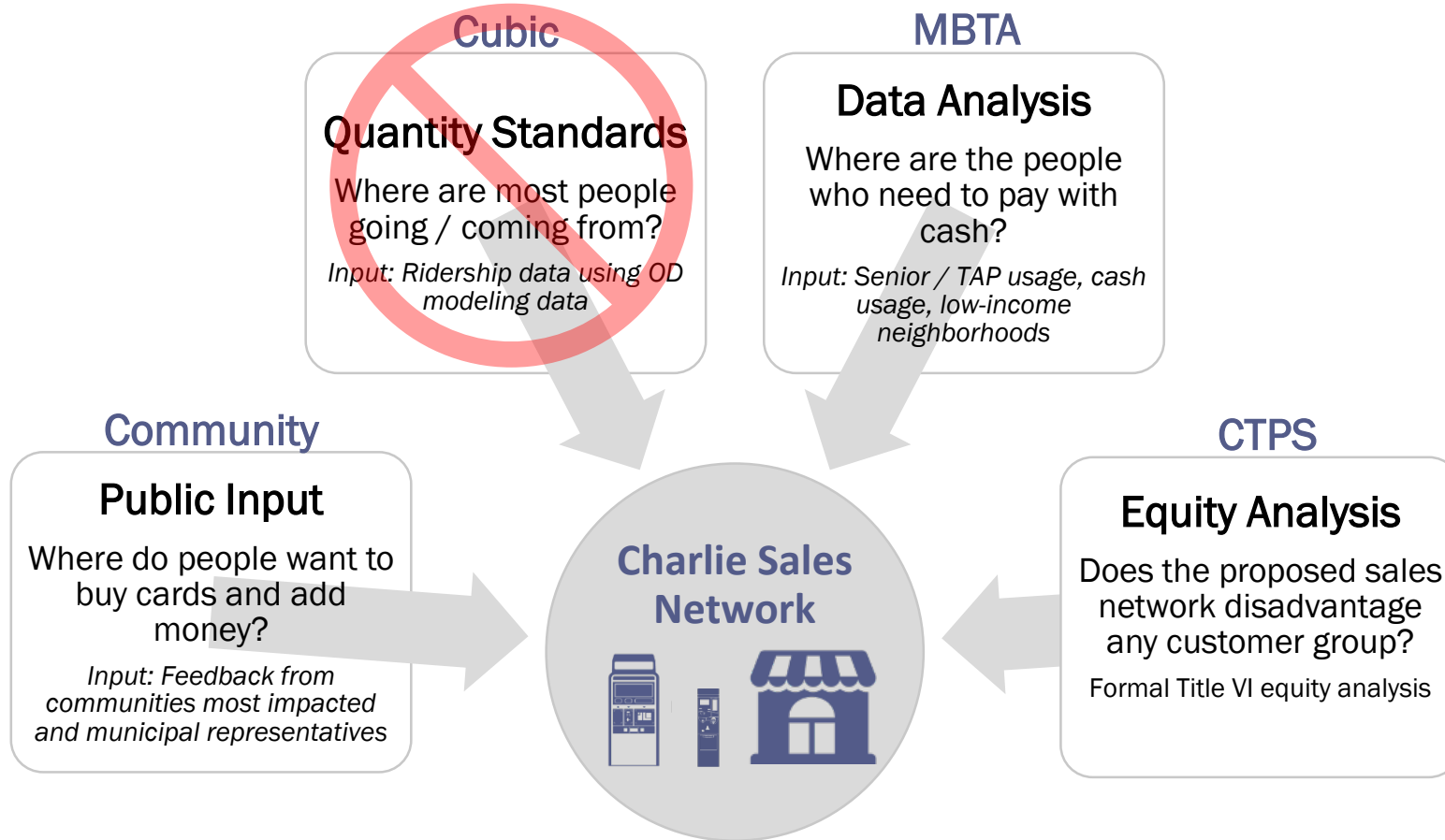
In the original contract, the vendor would determine the sales locations based on standards set by the MBTA. The new Fare Transformation plan involves more community input in the decision-making process.



We've gathered more than 800 suggestions for cash sales locations through an online tool and in person outreach



We've participated in 75+ community events throughout our service area



Addressing Customer Complaints About the Existing System

We'll be making continuous improvements in fare technologies and operations to achieve benefits to customers in advance of full implementation of new fare system.

Bus and Subway

What we hear from customers

How we're going to improve it

Short term

Medium term

Long term

“Fare gates are frequently broken and are being held together by duct tape”

Fare gates repaired as part of ongoing station improvements

All gates across the entire system overhauled so that they look and work better

Monitoring system will detect gate failures and maintenance team dispatched quickly

“It's too difficult to get and reload a CharlieCard”

CharlieCards available from local community based organizations

CharlieCards dispensed from new vending machines at all subway stations

Charlie retailers and vending machines at more locations including some bus stops



Addressing Customer Complaints About the Existing System

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Commuter Rail

What we hear from customers

How we're going to improve it

Short term

Medium term

Long term

“Paying for the Fairmount Line is inconvenient”

Tap with a CharlieCard at Zone 1A Fairmount Line Stations and carry printed receipt to ride

New readers and fare vending machines at all Fairmount Line Stations for tap on/off and easier CharlieCard reload

Tap on the Fairmount Line using a new CharlieCard, smartphone or contactless credit card

“Fares are collected inconsistently on the Commuter Rail”

New gates at North Station, South Station, and Back Bay ensure that fares are collected at the busiest stations

mTicket replaced by new mobile app which can be tapped like a CharlieCard

Paper tickets phased out



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Addressing Customer Complaints About the Existing System

We'll be making continuous improvements in fare technologies and operations to achieve benefits to customers in advance of full implementation of new fare system.

Fares

What we hear from customers

How we're going to improve it

Short term

Medium term

Long term

“It’s a hassle to get a reduced fare card”

Simplified application process and quicker card issuance

Easier to replace a lost or stolen card

Easier renewal processes

“It’s not fair to pay more for CharlieTickets”

Widespread distribution of CharlieCards

Eliminate CharlieTicket surcharge

No CharlieTickets



Addressing Customer Concerns About the New System

We are making changes to address the concerns we've heard about our original plan, and incorporating them into the revised Fare Transformation Project.

Original plan

What we've heard from customers

How we've updated the plan

Commuter Rail customers tap in and tap out or face a surcharge or fine.

“If I am a regular rider and have a pass, I shouldn't be fined just because I forget to tap once in a while”

Customers will still need to tap in and tap out, but there will be fallbacks if this is forgotten. These include:

- Functionality for tapping onboard with the conductor
- Automatically filling in a missing tap based on travel history

A fee will be charged for each fare card, including paying full price for a replacement.

“The cost of a card is going to be a barrier to entry for low-income or infrequent riders”

Customers will still need to purchase a fare card, but new functionality will enable:

- Replacement cards to be purchased at a lower cost
- Agencies to purchase lower cost, single-use tickets online
- Potential to bundle card cost and pass purchases

New tool for Perq administrators to manage purchases on behalf of their employees.

“My company spends too much time managing travel benefits for our employees”

Riders will have self-service capabilities to manage their own accounts. This functionality will include the ability for customers to change their preferred pass types for payroll deductions.



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Reconsidering the Approach – Lessons Learned (Legacy System)

As the MBTA continues to operate the legacy system, we've learned about how to make the transition from the legacy system to the new system better.

Challenges encountered with the original plan:

- **Ongoing reliability issues** with legacy equipment
- **Payment industry standards changes** timed very close to system transition
- **Limited investment in the legacy system** until the rollout of replacement system
- Lack of ability to use existing equipment as backup during the **'big bang' rollout** of the new system
- Desire to implement **fare collection improvements** sooner than just with new system



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Reconsidering the Approach – Lessons Learned (Cubic)

As the MBTA and Cubic have been working to deliver the new payment system, we've learned what was working well and what wasn't.

Challenges encountered with the original plan:

- **Technical challenges** encountered by Cubic (for example, vehicle validator)
- Questionable feasibility of the **'big bang' rollout**, launching all functionality across the entire transit system at once
- **Compressed timeline** for testing, installation and customer transition
- Requests for **additional system functionality**



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Fare Transformation Roadmap

A program of continuous improvements to the MBTA's fare system

Phase 1: Address key customer concerns about the existing system and begin upgrades

- Tap on to Fairmount Line using CharlieCard
- Charlie Cards available from community locations
- Pilots of new fare policy
- Improved fare collection on Commuter Rail using gates at terminal stations
- Improved reliability of subway gates



2020

Phase 2: Improve Charlie Card and program availability

- Charlie Cards dispensed from vending machines
- Improved reduced fare programs for seniors, youth and persons with disabilities
- Remove cash/ticket surcharge (CharlieTicket and cash fares will be the same as CharlieCard fares)
- First pilots of next generation readers



2021

Phase 3: Pilot new technology and approaches

- New technology rolled out on Orange Line, Green Line, and select bus routes
- Pilot all door boarding on select bus routes at busiest stops
- Charlie Cards available at more retailers



2022

Phase 4: All-door boarding

- New alternatives to Charlie Card: tap with mobile device or contactless credit card
- Faster buses and Green Line trains through all door boarding
- New website and mobile app for customers
- Charlie Cards available at many bus stops and even more retail locations



2023

Phase 5: Expand to Commuter Rail

- One card for every route
- Tap on and transfer between all MBTA modes (including Commuter Rail, ferry, subway and bus)
- New portal for corporate pass customers
- Improved access to and use of ridership and revenue data



2024

Project complete



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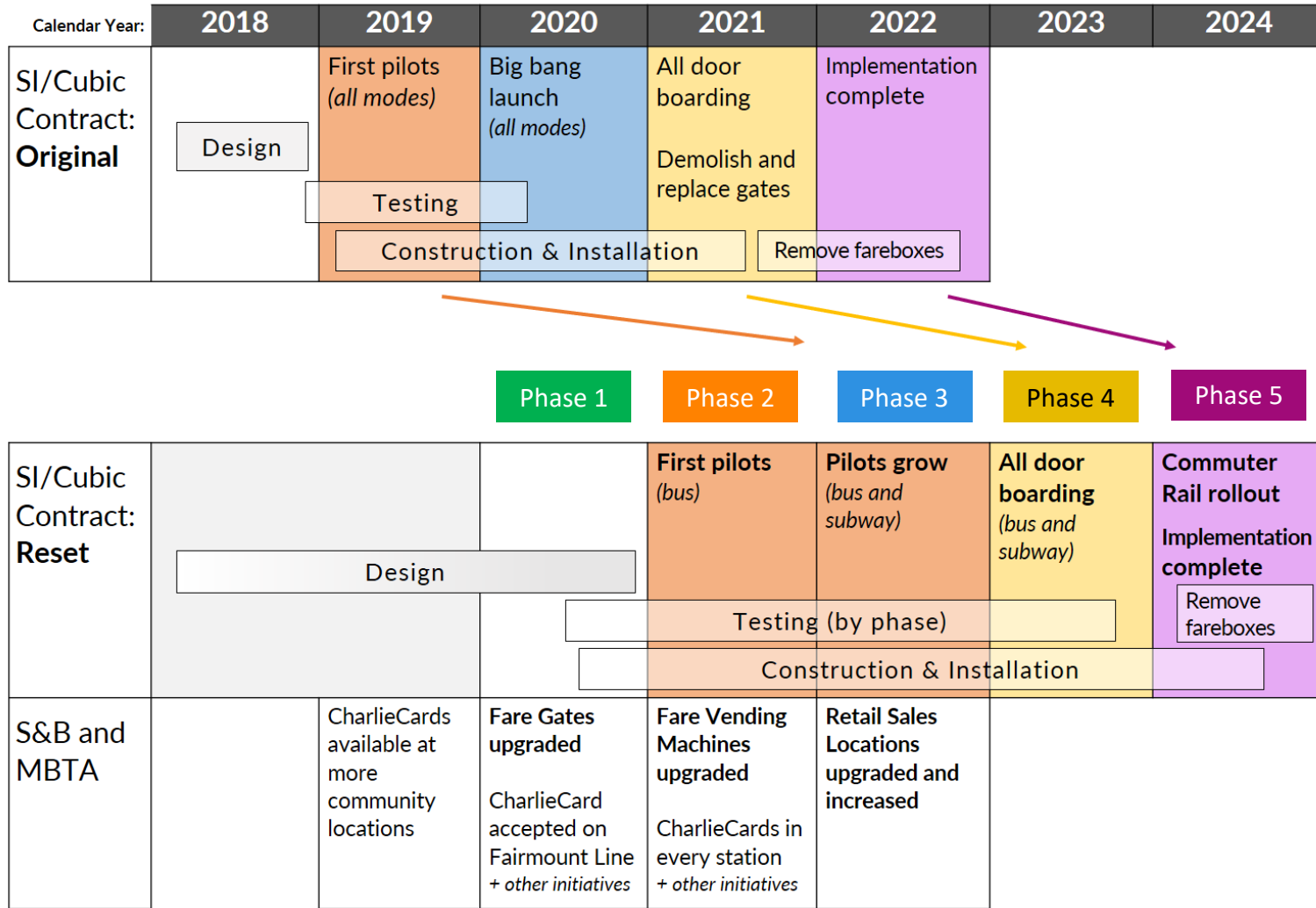


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SI / Cubic Schedule Comparison



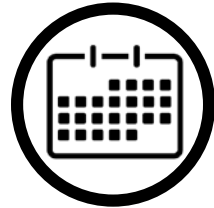
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Reset Costs and Board Request

The changes and investments for the restructured Fare Transformation reset will result in additional cost. Two agreements are now required to advance Fare Transformation to the next stage.

Fare Transformation investments:

1. MBTA – Internal costs
2. Scheidt & Bachmann – Investments in legacy system
3. Systems Integrator/Cubic – Improved and modified contract

Fare Transformation team requests:

1. Approval of agreement with Scheidt & Bachmann (\$49M)
2. Approval of agreement with Systems Integrator/Cubic (\$30M)
 - This agreement serves as a bridge to advance the project while final contract reset is negotiated



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Investments in Legacy System

Contract with Scheidt & Bachmann in an amount not to exceed \$49 million to include:

- New fare vending machines
- New fare gate computers and associated hardware
- Enhancements to the CharlieTicket
- New retail sales terminals
- New handheld readers
- Software upgrade to support new hardware
- New back office environment hosting
- Implementation services
- Payment processing services and fees
- Developing interoperability between Scheidt & Bachmann (S&B) and Cubic devices
- \$49 million S&B cost includes approximately \$6 million of transaction costs currently being paid directly to credit card processing company. New technology implementation requires transaction costs to pass through Scheidt & Bachmann.



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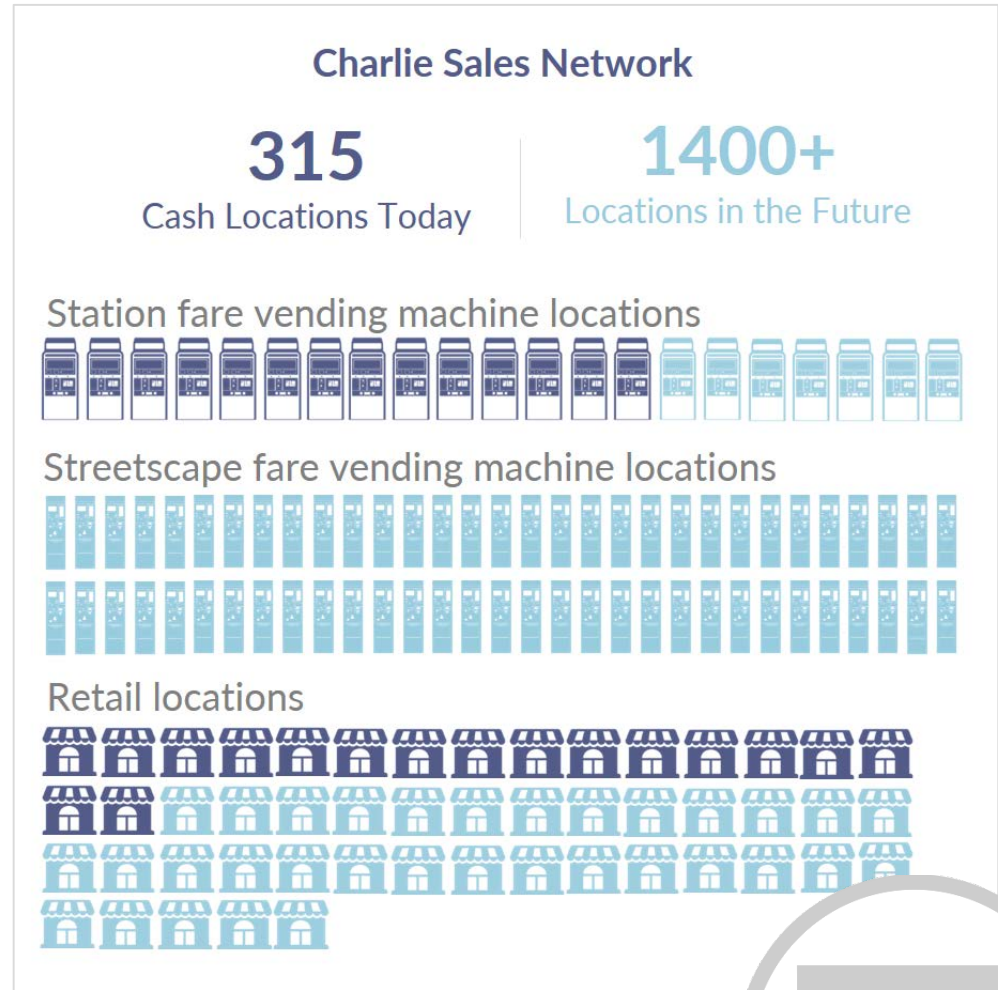


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Improving the Contract with the Systems Integrator/Cubic

- New approach to designing the sales network
 - Vastly expanded cash sales network
 - More opportunities for community engagement on placement of sales locations
- Improved deal
 - Payments associated with additional project milestones
- Longer transition to allow customers more time to get a new CharlieCard
- More schedule confidence
- Additional functionality
 - Better “tap in/tap out” for commuter rail
 - Tools to address needs of low-income customers and infrequent riders
 - Balance data needs and privacy protections
 - Integrate with gates at commuter rail terminals
 - Improved corporate program management



Reducing Construction Risk

- Through the reset:
 - Durations allowed for the MBTA to perform engineering design & construction work prior to system launch are more than 50% longer than earlier versions of the schedule
 - The MBTA plans to move from a single design-build contract to on-call construction contracts per transit mode to provide more flexibility
 - Collectively, these changes will substantially reduce the financial risk faced by the MBTA and optimize the allocation of risk and responsibility among the parties within the constraints of applicable law
- Within the transportation bond bill put forward by the Governor are changes that would enhance the MBTA's ability to enter into Public-Private Partnership contracts with the optimal balance of construction risk and responsibility between the MBTA and future partners



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Cost of Changes to the Systems Integrator/Cubic Contract

- Capital costs in original contract: \$192.1M
- Additional capital costs: approximately \$159.1M (being finalized)
- Additional financing costs: Under negotiation; will be finalized at financial close. Expected to be in the tens of millions.
- Contract (original and revised) includes annual operations and maintenance cost for 10 years (paid monthly).

Example: First year of full Systems Integrator/Cubic O&M (FY25) = annual cost of \$33.1M.

Contract change will include additional O&M cost (for additional devices, additional technology scope, etc.); Final additional O&M cost under negotiation.

- Near term effort will be executed under an agreement while final contract reset is being negotiated
 - \$30M Agreement, which is a portion of the above \$192.1M (not additive)

For context, the annual Fare Revenue collected by MBTA = \$696.8M (FY20 budget).



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Today's Actions

1. That the General Manager, or his designee, is hereby authorized to award and execute in the name of and on behalf of the Massachusetts Bay Transportation Authority (the "MBTA"), and in a form approved by General Counsel, an agreement with Scheidt & Bachmann GmbH ("S&B") for certain improvements to MBTA's fare collection system, including improvements to equipment, services, and software, in an not-to-exceed amount of \$49,000,000; and, further, to enter into an ancillary agreement to direct S&B to secure resources and to order long-lead components while the agreement is being negotiated, within the foregoing not-to-exceed amount.
2. That the General Manager, or his designee, is hereby authorized to award and execute in the name of and on behalf of the Massachusetts Bay Transportation Authority ("MBTA"), and in a form approved by General Counsel, an agreement with Cubic Transportation Systems, Inc. and Boston AFC 2.0 OpCo, LLC in an amount not to exceed \$30,000,000 to mobilize future fare equipment installation design work, software design and development work, design work and software licensing related to interoperability with existing MBTA fare media, design work on validators for future commuter rail gates, and for other related fare collection system activities.



Summary



- More achievable schedule with phased rollout
- Reliability improvements ASAP
- Continued customer and stakeholder engagement in process
- Combination of near-, medium-, and long-term customer experience improvements

