

# The MBTA's Automated Fare Collection Modernization Contract: Over-Budget and Behind Schedule, but Now Back On Track

By Andrew Mikula and Greg Sullivan



# MISSION

**Pioneer Institute develops and communicates dynamic ideas that advance prosperity and a vibrant civic life in Massachusetts and beyond.**

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Success for Pioneer is when the citizens of our state and nation prosper and our society thrives because we enjoy world-class options in education, healthcare, transportation and economic opportunity, and when our government is limited, accountable and transparent.

## Values

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## Introduction

On June 10, 2020, the MBTA executed a 3,083-page, \$935.4 million amended and restated public-private partnership agreement with Boston AFC 2.0 OpCo LLC (OpCo), a consortium of Cubic Transportation Systems (Cubic) and John Laing AFC HoldCo Corp (Laing) to replace the transit agency's antiquated Charlie Card fare collection system. In its place will be a state-of-the-art account-based "tap and go" system on all MBTA subway, trolley, commuter rail, bus, and ferry lines. The contract represents the MBTA's first use of a Design-Build-Finance-Operate-Maintain public-private procurement (P3) model.<sup>1</sup> Under this model, OpCo finances the project and is reimbursed by the MBTA upon achieving full service operation. The agreement amends and effectively replaces a \$723.3 million P3 contract executed by the MBTA and OpCo on March 21, 2018 to perform essentially the same scope of work, except that the new contract will introduce the new system in stages with built-in additional time and procedures to allow for customer feedback, testing, and potential modifications of system elements.

Despite the two year project delay and the resulting need for a new contract, the MBTA remains fully committed to modernizing its fare collection system for a host of good reasons. Once implemented, the new system will allow T riders to use account-based contactless fare cards, bank-issued debit and credit cards and cell phone apps that are replenishable either online or at a broadly expanded network of MBTA fare vending machines in stations, retail locations, and some busy bus stops. The new system is aimed at making it easier for riders to purchase and use interoperable electronic tickets on all MBTA subway, trolley, commuter rail, bus, and ferry lines, and to provide the T with new options in ticket pricing, including the possibility of distance-based, age-based, income-based, and multimodal fare pricing.

Notable aspects of the project include the accountability measures used to hold the contractors responsible for implementing and operating the new fare collection system. The Federal Transit Administration says the AFC 2.0 project "gives MBTA leverage to enforce system requirements, giving it some protection against technology obsolescence, a key concern in a long-term contract. Milestone and monthly availability payments begin only after acceptance, and up to 50% of payments can be withheld by MBTA in the event of poor system performance, including performance issues related to the work of subcontractors. Cubic/Laing will have the opportunity to earn back 75% of deductions by providing 'exceptional service.'"<sup>2</sup>

## A Costly Delay

The original contract called for the new AFC 2.0 system to begin initial service on all transit modes in May 2020 and achieve full-service in May 2021, at which point the old Charlie Card system would be retired.<sup>3</sup> The revised contract increased the cost of designing, building, financing, and operating the project over the 13-year term by \$211.1 million and delayed its full-service commencement date by 36 months from May 2021 to May 2024. The financial terms of both the original and amended contracts contain a 13-year base contract award, including a three-year implementation period followed by 10 years of operations and maintenance performed by OpCo, including options for two possible five-year extensions.<sup>4</sup>

The public received an early warning signal on May 6, 2019 that AFC 2.0 was facing major schedule delays when MBTA General Manager Steve Poftak announced that "Cubic is unlikely to meet the current schedule" for the AFC 2.0 project.<sup>5</sup>

The full extent of the project delay was made public at a December 2019 Fiscal and Management Control Board (FMCB) meeting when MBTA project managers made a presentation asking for authorization to "reset" the contract with a three year delay in the full-service commencement date. The main argument offered for the reset was that the contract's planned "big bang" roll-out, in which initial service commencement would be implemented simultaneously on all transit modes in May 2020, just 28 months after the contract was executed, was likely to be riddled with problems. They recommended instead that a phased-in approach be utilized

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that would allow additional time for expanded testing, customer feedback, additional pilots, and potential modifications of system elements at the request of the MBTA.

Following the presentation, then-Secretary of Transportation Stephanie Pollack asked Cubic Transportation President Matt Cole whether the delays occurred “because some of the technology that we assumed would be available earlier was just not mature at the time the original contract was signed, particularly the validators.”

Cole confirmed the Secretary’s observation, saying that “we encountered more hardware design changes than we anticipated,” which in turn “resulted in [an] extension of the design period.”<sup>6</sup>

This exchange makes clear that OpCo had fallen behind schedule in designing the hardware and software system necessary to facilitate communications between tap-on/tap-off fare card validators and participating components of the payment and telecommunications mechanisms. When a commuter taps on or taps off at a fare card validator at MBTA stations or vehicles, approval or denial of the transaction must be fast enough so as not to delay boarding. The exchange also makes it clear that when the MBTA chose OpCo as system integrator of the project, it did so with the belief that Cubic already had at its disposal mature and proven hardware and software that could be readily deployed in the MBTA system, requiring little further technological development. OpCo agreed in the contract that it would fully design the project by the end of 2018, reinforcing the idea that an extensive hardware and software design period would not be necessary. Under the original contract, the design phase was scheduled to be completed by December 2018. The restated and amended contract includes a design phase completion date of December 2020, two years later.

It is easy to understand why MBTA leaders concluded that Cubic’s technological designs “would be available earlier.” During the procurement process, Cubic publicly announced that it had achieved a successful milestone with Transport for London (TfL) by reaching one billion pay-as-you-go journeys using contactless fare cards, bank cards and mobile payments across London’s transportation network, including the bus, Tube, Docklands Light Railway, tram, and London Overground network.<sup>7</sup> Cubic Transportation Systems also announced during the procurement process that it had reached a successful milestone with Chicago Transit Authority (CTA) of achieving more than two million downloads of the Ventra mobile app used to purchase nearly \$250 million in fares on the Chicago transit network, including the CTA’s subway, its suburban system, and its commuter rail system. The CTA system, launched in 2013, offers “tap and go” for travel using Ventra cards, contactless bank cards, and mobile payment technology through Apple Pay, Google Pay, and Samsung Pay.

Despite the fact that the AFC 2.0 project experienced a two year delay in designing the project, there is no public evidence that the MBTA imposed any penalties on OpCo for project delays or breaches of contract. The MBTA sent a notice of breach of contract to OpCo on February 26, 2019, but the MBTA rescinded the breach notice on April 22 (see Appendix B).<sup>8</sup>

Not all of the blame for the project delay falls on OpCo; some falls on the MBTA for establishing an overly optimistic contract schedule. The original contract included a “big bang” rollout with all elements scheduled to go live simultaneously just 28 months after it was signed. In agreeing to such an aggressive timeline, the MBTA should have heeded warning signs that may have emerged during contractor due diligence.

One warning sign the MBTA should have considered was that the Chicago Transit Authority (CTA) had experienced significant delays in implementing a Cubic-operated system earlier in the decade. At one point, the CTA ceased payments to Cubic, citing a failure to perform contract requirements.<sup>9</sup>

Another warning sign emerged at a March 2016 FMCB meeting when the MBTA’s AFC 2.0 manager warned that the MBTA’s project management team wasn’t sufficiently staffed to administer the accelerated schedule proposed for AFC 2.0.<sup>10</sup> This warning turned out to have been prescient. More than three years later, at a December 2019 FMCB meeting, FMCB Chair Joseph Aiello opined that “I remain very worried about implementation ability on our end, just because

**OpCo had fallen behind schedule in designing the hardware and software system necessary to facilitate communications.**

**The MBTA sent a notice of breach of contract to OpCo on February 26, 2019, but the MBTA rescinded the breach notice on April 22 (see Appendix B).**

you guys are spread way too thin. [T]his is what happens when we don't have sufficient talent... You need to satisfy the board that we can manage this risk [or] I for one won't approve it."<sup>11</sup>

A third warning sign appeared in an article written by *Governing Magazine's* transportation and infrastructure reporter Daniel Vock on November 10, 2017, ten days before the FMCB voted to award the AFC 2.0 contract to OpCo.<sup>12</sup> The article described problems and delays that had occurred in the Chicago, Philadelphia, and Washington D.C. transit systems in implementing similar automated, account-based fare collection conversions. Michael Gwinn, a Chicago Transit Authority official, was quoted in the article as saying that "successful roll-outs require new policies, education campaigns, employee training, occasional fare adjustments and testing of both the new equipment and how users interact with it. Go in with eyes wide open to understand the complexity of these transitions."

Similarly, Tom Rousakis of Ernst & Young Infrastructure Advisors LLC, which advised the MBTA on the AFC 2.0 transaction, told the FMCB at the December 2019 meeting, "This is an important and complex transaction. I want to hone in on the word complexity because it is in complex public programs where you run the risk of cost overruns and cost delays."<sup>13</sup>

The AFC 2.0 project delay also caused the MBTA to incur additional costs to keep the existing fare collection system operating. For example, in December 2019 the FMCB authorized the T to enter into a \$49 million contract with Scheidt & Bachmann, the company that installed and currently operates and maintains the MBTA's CharlieCard fare system, to maintain and improve the current fare collection and ticket vending system until AFC 2.0 can be completed.<sup>14</sup> Eventually, OpCo would replace all vending machines and station equipment for commuter rail, buses, and subway lines in the 2023–2024 timeframe, more than quadrupling the number of physical locations where fares can be purchased. In practice, conducting expensive upgrades to capital equipment only to replace the same machines a couple of years later is highly inefficient. As of November 2021, the T has already begun installing some new vending machines on the Orange Line, although it's not clear whether these installations are a part of the Scheidt & Bachmann contract or the AFC 2.0 project.<sup>15</sup>

At the conclusion of its December 9, 2019 meeting, the FMCB approved the MBTA request to "reset" its AFC 2.0 contract with the Cubic/Laing consortium by negotiating "a new full project agreement," which was expected to be presented for approval to the FMCB in late spring. The FMCB also authorized the MBTA to incur \$30 million in expenses to fund continuing work until the new contract can be executed. The new contract eventually included a nearly three-year delay in implementation of the new fare system and a 29 percent cost increase.

Another factor that may have contributed to the delay is the sheer amount of leverage Cubic had in its negotiations with the MBTA, due to both its market power and the nature of public sector contract procurement. In 2018, the same year the MBTA awarded Cubic the initial AFC 2.0 contract, Cubic's annual report boasted that it had a 61 percent share of the mobile fare collection market in the United States.<sup>16</sup> According to Allied Market Research, among global leaders in automated fare collection systems, Cubic is the only one that is based in the United States.<sup>17</sup> It's also easy to imagine that, after an expensive, years-long procurement process, switching vendors or restarting the process entirely would expose the MBTA to both public scrutiny and litigation from prior contractors.

## Administrative Needs and Expertise

Management of the AFC 2.0 contract will require the MBTA to be diligent in performing an enormous array of consequential administrative functions during the design, installation, and operation of the contract that will determine whether the MBTA will pay the system integrator for its services.

Examples of performance failures for which the MBTA may withhold compensation in the contract include:

- The timely depositing and reconciliation of 100 percent of fare revenue daily;
- Charging correct fares to all passengers;

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- Making administrative interfaces, application programming interfaces (APIs), and automated monitoring subsystem available to MBTA personnel at all times;
- Keeping the system website and mobile app fully operational at all times;
- Keeping all system elements and services operating in accordance with technical requirements at all times;
- Keeping all customer-facing devices in a state of reasonably clean appearance at all times;
- Fulfilling, managing, and tracking all orders for products and fare cards in accordance with technical requirements, pg 1232
- Keeping integrated services APIs and location data APIs and all related Operating Services
- Keeping all devices and Cubic/Laing personnel operating in or at any location or vehicle operating safely
- Acknowledging, responding to, and keeping records of all user and MBTA calls, emails and other notifications and correspondence in a timely fashion;
- Keeping all fare cards and mobile fare cards compliant with technical requirements
- Maintaining the model office in accordance with contractual requirements
- Retrieving records of all taps stored in offline readers and inspection devices in accordance with contractual schedules
- Conducting the supplemental monitoring process in accordance with technical requirements at all times
- Operating inspection devices and readers in accordance with technical requirements at all times; and
- Operating the communications networks in accordance with technical requirements at all times.

The contract also requires the MBTA to compute a “System Impact Multiplier” percentage that is applied when calculating monthly deductions for each instance of Cubic/Laing’s failure to meet a “System Availability Standard.” Thus, the MBTA is charged with tracking OpCo’s success or failure in achieving project milestones by specified dates. Further obligations include tracking “Allowable AP Transaction Rate” fees owed to Cubic/Laing for processing debit and credit card taps and enabling fare cards, and also for reimbursing Cubic/Laing for wholesale costs associated with the purchase of smartcards for use to meet fare card requirements on an arms’ length basis. At every turn, the 3,083-page contract seems to place an extraordinary administrative burden on the MBTA to monitor and guide the implementation activities of OpCo. To execute its side of the contract, the MBTA will need the kind of capacity described by FMCB chairman Joseph Aiello at the December 2019 meeting, when he said the MBTA is “spread way too thin.” Otherwise, the MBTA may have difficulty holding OpCo accountable to the contract terms.

On top of that, the MBTA is facing an unprecedented financial challenge due to an ongoing period of depressed ridership during the COVID-19 pandemic. Because of declining fare revenue, the MBTA was at one point in the fall of 2020 planning a temporary cancellation of service on ferry lines and some bus routes and considering more extensive service cuts beginning in FY2022. Staffing shortages also forced the agency to eliminate some express commuter train services.<sup>18</sup> The MBTA’s revenue crisis has affected not only its operating side but also its capital side. Federal funding may temporarily help alleviate budget gaps, but the agency needs a long-term strategy for making sure the new fare collection system remains worth the investment despite a potentially permanent 15–50 percent decline in commuter rail ridership.<sup>19</sup> This will entail being strategic about phasing in the new fare collection system where it is most likely to both increase passenger convenience, improve service quality, and reduce fare evasion. Fortunately, the MBTA has already been on top of responding to the evolving needs of consumers, as evidenced by its feedback-driven approach to expanding access to Charlie Cards in 2021.<sup>20</sup>

**At every turn, the 3,083-page contract seems to place an extraordinary administrative burden on the MBTA to monitor and guide the implementation activities of OpCo.**

## Conclusion

Hypothetically, a principal advantage of public-private partnerships is that they reduce financial risks for the public agency involved. However, the volume of resources the MBTA would have to utilize to monitor and enforce the terms of the 3,083-page AFC 2.0 agreement with OpCo may exceed its current capacity. While the substantial delays and cost overruns that have characterized the project so far are ultimately attributable to OpCo's limited design capacity, the MBTA's lack of *administrative* capacity may also limit the MBTA's ability to hold OpCo accountable to contract terms.

In light of these challenges, Pioneer recommends the following actions to ensure that the AFC 2.0 project remains on schedule and on budget going forward:

- **Over the coming months, the MBTA needs to continue to hire talented managers with previous experience in automated fare collection system rollout.** Chicago, London, and many other cities have been through this process, and current and former officials from these cities may be able to assist the MBTA. More lawyers, fare collection experts (outside of the contractor), and financial advisors need to be involved in this contract implementation as the upgrades shift from improved access to actually creating new fare options. In 2022, many commuters will be able to tap onto rapid transit in Greater Boston using a credit card, which, without the MBTA's vigilant oversight, has the potential to compromise enormous amounts of personal consumer data.
- **For future projects, the MBTA should hire a management team and, as needed, third-party lawyers before the contract negotiations begin.** A senior official with extensive implementation experience in public works projects and transportation technology would know when and how to hold Cubic's feet to the fire. This additional early hiring is more than worth the associated costs if it results in savings to the taxpayers on the order of the \$211 million increase in the AFC 2.0 contract value between 2018 and 2020. As the new automated fare collection system enters the implementation phase in 2022 and 2023, the sooner the MBTA hires such officials, the better.
- **MBTA officials should prioritize implementing the new system on modes where ridership remains relatively high, including the bus and rapid transit networks.** MBTA efforts to modernize fare collection were a lot more appealing before the pandemic caused the agency's ridership to plummet. But moving to all-door boarding and off-vehicle payment for tickets may be the right policies to speed up the system in the long-run, as efficiency and convenience improvements could help woo back passengers that have worked from home or driven into work during COVID. Ongoing efforts to remain sensitive to shifting consumer needs post-COVID should include extensive public engagement and data collection.

If the MBTA succeeds in hiring enough contract lawyers, automated fare collection experts, and financial professionals to fully implement AFC 2.0, this internal expertise will have wide-ranging benefits beyond the fare collection modernization project. It will protect the MBTA's financial interests, enable the agency to further improve the frequency and reliability of service, and provide greater transparency over how the T uses fare and taxpayer dollars in public contracts. Above all, it would help ensure the long-term viability of Boston's transit system after what has been a devastating couple of years for public transportation.

In 2022, many commuters will be able to tap onto rapid transit in Greater Boston using a credit card, which, without the MBTA's vigilant oversight, has the potential to compromise enormous amounts of personal consumer data.



## Appendix A: Features of the June 10, 2020 AFC 2.0 contract

AFC 2.0 was originally supposed to become operational in May 2020, after which old Charlie Cards would continue to work. The full transition to the new system was set for May 2021, at which time the old system would be retired. General features of the new system include:

- Installation of “pay on the platform” “tap on/tap off” contactless fare validators that support distance-based fare collection at all commuter rail and Mattapan Line stations
- Installation of multiple “tap on” fare validators on all doors of Green Line vehicles and buses to facilitate faster all-door boarding. Installation of new fare gates with “tap on/tap off capability” at all Red, Orange and Blue Line stations; initial roll-out will include “tap in”; future implementation options include “tap out” feature at all fare gates
- Provision of handheld devices to allow fare checkers to conduct onboard spot checks of fare payment on all buses; commuter rail; Red, Orange, Blue, and Green Line trains; and Mattapan Line trolleys
- Deployment of a fully integrated fare collection system transferable across all modes (commuter Rail, Red Line, Orange Line, Blue Line, Green Line, Mattapan trolley, buses, and ferry), including installation of fare validators capable of reading MBTA fare cards, near-field communication phones or wearable devices, and contactless credit cards.
- Improved uptime (time between breakdowns or maintenance) and performance<sup>21</sup>
- All-door boarding on buses and the Green Line. With shorter lines and reduced boarding times, buses and Green Line trains will have reduced “dwell times.”
- The ability to tap and board the same way on all buses, trains, commuter rail, and ferries so that customers can seamlessly transfer between modes.
- A contactless fare card, similar to the existing CharlieCard, but with added security and account management benefits. New fare cards will be available at select retail locations and fare vending machines located in all subway stations and at some bus stops.
- Elimination of the need for riders to reload value by tapping with contactless credit cards or smartphones at fare gates and readers.
- Account value reloading at fare vending machines and retailers throughout the MBTA service area, as well as via the call center and a new website.
- Acceptance of cash payments at all ticket vending machines and local retailers, which will be in twice as many locations as they are today. Even if customers tap with a smartphone, they will be able to reload using cash.
- Ability for customers to check their balances, access travel history, and reload or replace a lost card online or by phone through the MBTA’s call center
- Design accommodations by user experience specialists for a broad range of accessibility needs. All fare gates will be wider, and the website and mobile app will be compliant with digital accessibility guidelines.
- Privacy protection above and beyond the industry standard to ensure that each customer’s personally identifiable information and travel history are protected.<sup>22</sup>

## Appendix B: Internal communications at the MBTA that demonstrate OpCo's breach of contract



Charles D. Baker, Governor  
 Karyn E. Polito, Lieutenant Governor  
 Stephanie Pollack, MassDOT Secretary & CEO  
 Steve Poftak, General Manager



Date: February 26, 2019  
 Letter No: MBTA-CJL-AFC2-0145  
 Contract: Project Agreement  
 Method: Prepaid airmail and electronic transmission

Boston AFC 2.0 OpCo LLC  
 One Boston Place, Suite 2600  
 Boston, MA 02108  
 Attention Doug Grunewald  
 Email: Doug.Grunewald@cubic.com

**Re: Project Agreement for Automated Fare Collection System Services - Notice of Remediable Breach**

Dear Mr. Grunewald,

This letter serves as a notice of Remediable Breach to the Systems Integrator under the Project Agreement for Automated Fare Collections System Services between the Massachusetts Bay Transportation Authority and Boston AFC 2.0 OpCo LLC, dated March 20, 2018 (the "Project Agreement"). Capitalized terms used but not defined in this letter have the meanings specified in the Project Agreement.

The Systems Integrator has failed to demonstrate a commitment to delivering on its Proposal and satisfying its obligations under the Project Agreement. Such failures include breaches of the following material obligations under the Project Agreement:

1. The obligation to provide, update and maintain the Project Schedule in accordance with the Contract Standards;
2. The obligation to provide a complete draft of the Complete DB Plans and Specifications meeting all applicable requirements of the Project Agreement; and
3. The obligation to commit sufficient qualified staff dedicated to ensuring that the Systems Integrator will achieve Key Milestones and satisfy its contract obligations in a timely manner.

The breaches of these material obligations constitute Remediable Breaches under Section 22.2(A)(7) of the Project Agreement.

#### **Project Schedule**

The obligation of the Systems Integrator to provide and update the Project Schedule is a material obligation. The Project Schedule was required to have been submitted within 30 days following the Effective Date and updated on a monthly basis throughout the Implementation Period. To date, the MBTA has not yet received a Project Schedule that is compliant with the terms and conditions of the Project Agreement, nor has the MBTA received the required monthly updates. MBTA comments

Massachusetts Bay Transportation Authority  
 Attention AFC 2.0  
 10 Park Plaza, Suite 2810 Boston, MA 02116

concerning each Project Schedule Submittal have been provided to the Systems Integrator in accordance with the Project Agreement. Without limitation, we note the following critical issues:

- **Predecessor Activities and Dependencies**

The Project Schedule Submittals have failed to comply with the requirements of Appendix 2.11, Section 2.11.1.2.5. No Project Schedule Submittal to date<sup>1</sup> has identified “all dependencies, deliverables and critical path tasks” or demonstrated the “the sequence and interdependence of activities required for complete performance of all items of Implementation Work” in a manner consistent with the Contract Standards. Specific issues include, without limitation:

- Failure to account for all conditions identified in the Project Agreement that are required to be satisfied prior to milestone achievement (especially Key Milestones) as predecessor activities linked to the applicable milestone;
- Formal schedule submissions relying on mere delivery of a Submittal by the Systems Integrator as the key predecessor activity for milestone completion, where the Project Agreement requires acceptance of the Submittal by the MBTA, as well as ties to successor activities;
- Failure to incorporate all logic relationships for the “interdependence of activities required for complete performance of all items of Implementation Work. The Systems Integrator must add logic for MBTA approvals, material deliveries, training, etc. to successor activities. Industry practice is to minimize the number of open ends, and not have activities that lack predecessor and successor activities;
- Failure to tie milestones to all activities that are necessary to achieve the milestones, such as Design Review, testing, reporting, and rectification;
- Activities with fixed or hard-coded dates without a logical connection to predecessor activities or an adequate explanation as to the relationship between these activities and other required activities, such as Design Review; and
- Failure to identify critical path activities, including critical paths for interim completion dates.

- **Vehicle Installations**

The Project Schedule Submittals have not accounted for the constraints established by the Project Agreement with regard to the availability of Vehicles for Vehicle Installations by the Systems Integrator. Pursuant to Appendix 2.12, Section 2.12.4, the Systems Integrator is required to account for Vehicle availability in planning and executing the Implementation Work, including through consideration of the fact that available Vehicle quantities may be affected by service demands, special events, weather and ongoing maintenance activities. Section 2.12.4 specifies estimated quantities of Vehicles that may be

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<sup>1</sup> On February 14 and 15, 2019, the Systems Integrator emailed to the MBTA two versions of a “Hypothetical Schedule,” each purporting to be “without prejudice.” We understand these were not formal Project Schedule Submittals. Even if they were Project Schedule Submittals, they would not cure the breaches addressed in this letter.



assumed to be available for scheduling purposes. However, each of the Project Schedule Submittals have included durations for Vehicle Installations that are materially inconsistent with these estimated quantities and not achievable in light of the constraints established by the Project Agreement. Additionally, while the preliminary schedule reflected in Appendix 6 to the Project Agreement assumed a duration of 16 months for pre-wiring work in respect of Vehicles, Project Schedule Submittals have reduced this duration to two months, which is both unrealistic and inconsistent with the Contract Standards.

- **DB Installation Work**

The Project Schedule Submittals have failed to account for the performance of the DB Installation Work in a manner that complies with the Contract Standards. Pursuant to Section 6.5(B)(2) of the Project Agreement, the Systems Integrator is specifically required to develop “the Project Schedule and the applicable Project Management Plans to account for the performance of the DB Installation Work...” Both Appendix 2.13 and Appendix 2.14 similarly require coordination and identification of dependencies between the DB Installation Work and the Implementation Work in the Project Schedule, with Appendix 2.13, Section 2.13.4.1, establishing certain constraints associated with assumed durations for the performance of the DB Installation Work. Further, Appendix 2.11, Section 2.11.1.2.5, provides that “Interfaces and dependencies with preceding, concurrent, and follow-on work by others shall be included as milestone events” in the Project Schedule.

The Project Schedule Submittals have failed to adequately account for key aspects of the DB Installation Work, such as procurement of the DB Entity, design development, and survey and field work specified in the draft DB Plans and Specifications. The Systems Integrator has specific responsibilities under Appendix 2.14 to assist the MBTA in connection with the DB Entity procurement and to work with the DB Entity in connection with design development, as well as obligations under Section 6.5(E) of the Project Agreement to provide assistance to the MBTA and the DB Entity in obtaining the DB Governmental Approvals. However, these obligations have not been reflected in the Project Schedule Submittals in a manner consistent with the Contract Standards.

- **Monthly Updates**

As noted above, in addition to failing to provide an acceptable Project Schedule, the Systems Integrator has failed to provide the required monthly updates to the Project Schedule, which is also a material obligation under Section 6.1(D) of the Project Agreement. While it is imperative that the Systems Integrator provide the MBTA with a compliant Project Schedule in accordance with the Project Agreement, it is no less important that the Systems Integrator update the Project Schedule on a monthly basis to accurately show the Systems Integrator’s progress throughout the Implementation Period so that the MBTA can appropriately monitor the performance of the Implementation Work and plan its activities and contractual responsibilities.

### **Complete DB Plans and Specifications**

Pursuant to Appendix 2.13, Section 2.13.3.4.1, a complete draft of the Complete DB Plans and Specifications meeting all applicable requirements of the Project Agreement was required to have been submitted to the MBTA not later than 30 Business Days after the Financial Close Deadline of March 24,

2018. This due date was approximately six months following the commencement of work under the Early Works Agreement. The Systems Integrator provided Submittals for the DB Plans and Specifications on May 3, 2018, August 31, 2018, and December 20, 2018 (each, a "Submitted DB Plans and Specifications"). However, the MBTA has not yet received a compliant draft of the Complete DB Plans and Specifications, as required by the terms of the Project Agreement. All of the Submitted DB Plans and Specifications have been non-compliant and deficient.

The Systems Integrator is required under Appendix 2.13, Section 2.13.2, to "develop the Complete DB Plans and Specifications in accordance with all Contract Standards and to a level of design development sufficient to define the scope of the DB Installation Work and enable the MBTA to procure a fixed-price DB Contract for the performance of the DB Installation Work." None of the Submitted DB Plans and Specifications have met this basic requirement. The MBTA has provided detailed comments to the first Submitted DB Plans and Specifications and to each subsequent Submitted DB Plans and Specifications, yet each iteration has been non-compliant and inadequate.

### **Effect of Breach/Remedial Action**

The Remediable Breaches described in this notice have already had a significant negative impact on the completion schedule for the Implementation Work. For example, the Preliminary Schedule in Appendix 6 to the Project Agreement identified January 29, 2019 as the Installation Commencement Date, and yet the status of the Project is nowhere close to Installation Commencement. The Systems Integrator's breaches of Project Agreement have prevented the MBTA from putting DB Installation Work out for procurement and from selecting and engaging the DB Entity, because the MBTA cannot solicit proposals for DB Installation Work without a Project Schedule and Complete DB Plans and Specifications. The Systems Integrator is solely responsible for these delays.

The MBTA expects the Systems Integrator to identify the causes of all performance issues and resolve them, including the Systems Integrator's failure to commit the level and quality of resources required to meet its obligations under the Project Agreement. As a result, the MBTA is seriously concerned about the Systems Integrator's ability to perform the Contract Services and to meaningfully progress the Project. For example:


- Many Submittals have been delivered incomplete and have failed to address prior MBTA comments, even as recently as over the past month;
- The Systems Integrator has not identified to the MBTA full-time technical leads across some areas of the Implementation Work, and areas which lack strong identified technical leads have, predictably, fallen short;
- Forecasted delivery dates for Submittals shift frequently and often with little to no warning; and
- The specifications and narrative sections of the DB Plans and Specifications Submittals have been developed by personnel without design-build contracting experience and who are not professional architects or engineers licensed in the Commonwealth.

Pursuant to Section 22.2(B) of the Project Agreement, the Systems Integrator has a period of 30 days following receipt of this notice to cure the Remediable Breaches described herein. To cure these Remediable Breaches, the Systems Integrator must, without limitation:

- Submit a fully compliant master Project Schedule, reflecting all delays caused by the Systems Integrator to date;
- Submit monthly updates to the Project Schedule in accordance with Section 6.1(D) of the Project Agreement;
- Submit a fully compliant draft of the Complete DB Plans and Specifications that meet Contract Standards and can be used to procure the DB Entity; and
- Provide a rectification plan to address the underlying resourcing, staffing, and quality issues contributing to the delays, including a redeveloped and complete organizational chart.

The MBTA continues to reserve all rights under law and the terms of the Project Agreement.

Sincerely,



Jeffrey Cook

Chief Procurement and Contract Administration  
Officer

CC: Boston AFC 2.0 OpCo LLC  
c/o John Laing  
120 Adelaide Street West  
Suite 2201  
Toronto, ON M5H 1T1  
Attention: Gregory Kitscha  
Email: Greg.Kitscha@laing.com





Charles D. Baker, Governor  
 Karyn E. Polito, Lieutenant Governor  
 Stephanie Pollack, MassDOT Secretary & CEO  
 Steve Poftak, General Manager



Date: April 22, 2019  
 Letter No: MBTA-CJL-AFC2-174  
 Contract: Project Agreement  
 Method: Electronic transmission

Boston AFC 2.0 OpCo LLC  
 One Boston Place, Suite 2600  
 Boston, MA 02108  
 Attention Doug Grunewald  
 Email: Doug.Grunewald@cubic.com

**Re: Project Agreement for Automated Fare Collection Services – Withdrawal of Notice of Remedial Breach**

Dear Mr. Grunewald,

On February 26, 2019, the Massachusetts Bay Transportation Authority (“MBTA”) sent a notice of Remedial Breach to Boston AFC 2.0 OpCo LLC (“the Systems Integrator”).

The MBTA previously agreed to extend the period for the Systems Integrator to cure the Remedial Breach.

Since February 26, 2019, the MBTA and the Systems Integrator have met on several occasions, and the Systems Integrator has improved its staffing and devoted executive-level attention to the AFC 2.0 Project.

Based on these developments and our recent communications, the MBTA believes that the MBTA and the Systems Integrator are reasonably likely to reach agreement as to Amendments of the Project Agreement that will alter certain requirements that provided the basis for the MBTA’s notice of Remedial Breach. Such Amendments are permitted pursuant to Section 25.4 of the Project Agreement. It will take several weeks for the parties to come to terms on Amendments to the Project Agreement, and it would be impractical and inefficient for the Systems Integrator to remain in a state of Remedial Breach as to Project Agreement terms that are reasonably likely to change through the Section 25.4 Amendment process. For these reasons and without prejudice to any of the MBTA’s rights or remedies, the MBTA hereby withdraws its notice of Remedial Breach.

The MBTA continues to reserve all rights under law and the terms of the Project Agreement.

Massachusetts Bay Transportation Authority  
 Attention AFC 2.0  
 10 Park Plaza, Suite 2810 Boston, MA 02116

Sincerely,

Jeffery Cook

Chief Procurement and  
Contract Administration Officer

CC: Steve Poflak, MBTA General Manager

Boston AFC 2.0 OpCo LLC  
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## Endnotes

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## About the Authors

**Andrew Mikula** is a former Economic Research Analyst at Pioneer Institute and current candidate for a Master's degree in Urban Planning at Harvard University.

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## Mission

Pioneer Institute develops and communicates dynamic ideas that advance prosperity and a vibrant civic life in Massachusetts and beyond.

## Vision

Success for Pioneer is when the citizens of our state and nation prosper and our society thrives because we enjoy world-class options in education, healthcare, transportation and economic opportunity, and when our government is limited, accountable and transparent.

## Values

Pioneer believes that America is at its best when our citizenry is well-educated, committed to liberty, personal responsibility, and free enterprise, and both willing and able to test their beliefs based on facts and the free exchange of ideas.

