Memorandum

To: Christian Zacariassen
Executive Vice President / Chief Information Officer

From: Jim Morrison
Assistant Inspector General, Audits

Date: April 22, 2020

Subject: *Observations on Risks to the Acela 21 Information Technology Program Element* (OIG-MAR-2020-009)

The $2.5 billion Acela 21 program is the largest single investment in Amtrak's (the company) 49-year history. Through this program, the company will replace its existing Acela fleet with 28 new high-speed trainsets to upgrade service on its most profitable business line. In January 2020, we reported on management and structural weaknesses in the Acela 21 program.[1]

Our report identified five key steps—commonly called "program elements"—the company must complete to launch service by the planned date in 2021. One of these is the program's Information Technology (IT) element, which involves the IT department developing and implementing eight different systems—or workstreams—needed for critical functions like performing trainset maintenance and federally required daily safety inspections.

In February 2020, we undertook additional work to better understand the IT department's efforts to manage these eight workstreams and to mitigate any potential risks to completion, including interviewing IT and Acela 21 program officials and reviewing program documents.[2] Shortly thereafter, the company began engaging in unprecedented changes in response to dramatic reductions in customer demand as a result of the COVID-19 pandemic.

Nevertheless, the company's Acela 21 program team remains focused on initiating service on time. Therefore, we are providing this memo to communicate what

[1] *Train Operations: Acela 21 Program Continues to Face Significant Risk of Delays, Warranting More Contingency Planning* (OIG-A-2020-004), January 21, 2020.
[2] We conducted our work in accordance with standards we developed for alternative products.

we learned about these IT risks, the IT department's mitigation steps, and our intent to continue monitoring the company's progress on the Acela 21 program.

Background

The Acela 21 program's eight IT workstreams are outlined in Table 1.

Table 1. Acela 21 IT Workstreams

Eight IT Workstreams Required for Revenue Service Launch		**Forecasted Deployment Date**
1. Onboard Information Systems	Integrates new onboard passenger information displays with travel information, such as delays or upcoming stations	June 2020
2. Corporate Systems	Integrates new Acela service with back office systems, including Human Resources, and Finance	August 2020
3. Seat Assignment System	Integrates Acela first class seat assignment program with new trainsets' seat configuration	August 2020
4. Analytics and Information Management	Records and transmits new trainsets' performance data to the company's maintenance system	September 2020
5. Enterprise Asset Management System	Upgrades the system the company uses to manage trainsets' maintenance	November 2020
6. Wi-Fi	Upgrades passenger access for high-speed Wi-Fi	November 2020
7. Safety Systems	Ensures new trainsets align with existing safety features and systems in current fleet, such as an onboard video capture system	January 2021
8. Food and Beverage Point-of-Sale Systems	Updates point-of-sale terminals and integrates with back office accounting systems	April 2021

Source: OIG analysis of company documents

According to the IT department, the company needs outputs from each of these eight workstreams in some capacity prior to revenue service launch. For example, the

Analytics and Information Management (AIM) service provides multiple functions for operating the new trainsets. In fact, the trainsets cannot operate in revenue service without it. Principally, AIM provides the Mechanical department with preventative and predictive maintenance data to identify issues before they impact the trainsets' ability to run safely. It also acts as the "black box" capturing and relaying safety, performance, and analytic information from the train control system to the company's servers located off the trainset in the event of a safety incident. As another example, the Onboard Information System must have functioning digital screens and audio announcements in passenger cars to provide station stop and other travel information to comply with federal requirements for passengers with disabilities.

Analysis of the Issues

In February 2020, when we initiated this follow-on review, the IT department had taken some steps to improve its management and oversight of its eight Acela 21 workstreams since our prior report, but it had not taken other key steps. For example, the department had begun holding weekly coordination meetings with internal partners and Alstom to assess progress on several critical workstreams and ensure clear communication. The department had not, however, finalized detailed schedules for each workstream and provided them to the Acela 21 program office or finalized a full assessment of risks and risk mitigation plans for each workstream.

According to company standards, teams should manage projects using a detailed schedule that incorporates critical activities needed for completion and should develop these schedules early in the project. The Acela 21 program office told us that detailed milestone schedules are important for the office to effectively make business decisions for the overall program. Similarly, an official in the Enterprise Program Management Office who assesses the probability that complex programs will achieve major milestones told us in early February 2020 that he could not complete this analysis until he received the detailed schedules for the IT workstreams. This analysis provides the program managers with critical information needed to determine whether to make substantial adjustments to program execution to deliver the program on time. Further, company standards require teams to identify project risks and develop risk mitigation plans to avoid or minimize the negative consequences to the project or the company from unplanned cost, schedule, or performance challenges. This cannot be achieved without the analysis, which cannot be done without the detailed milestone schedules.

We initially requested such detailed schedules, along with risk assessments and mitigation plans, in October 2019 as part of our review of the Acela 21 program and

repeatedly after that through the course of this follow-on work. Likewise, the Acela 21 program office first requested the detailed schedules in December 2019. IT department representatives told us that they understood the importance of developing and finalizing these schedules, and around April 9, 2020, provided the detailed schedules for all eight workstreams to the Acela 21 program office. This information should allow the Acela 21 program office to work with the department to fully identify schedule-based risks that could impact on-time service launch and develop mitigation strategies.

Conclusions

We are encouraged by the recent progress the IT department has made in finalizing detailed schedules for the eight Acela 21 workstreams and providing them to the program office; therefore, we are closing out our work reviewing the risks to the Acela IT program element. Going forward, it will be important for the department to continue working with the Acela 21 program office to update these schedules as needed, identify any significant, remaining risks to the eight IT workstreams, and take any necessary actions to mitigate them.

Because of the significance of the Acela 21 program and the risks to achieving the company's intended date to begin revenue service we identified in our prior two reports, we will continue to monitor the overall program, including progress on the IT program element. Depending on the results of this monitoring, we may consider initiating an audit of the program in the future.

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