



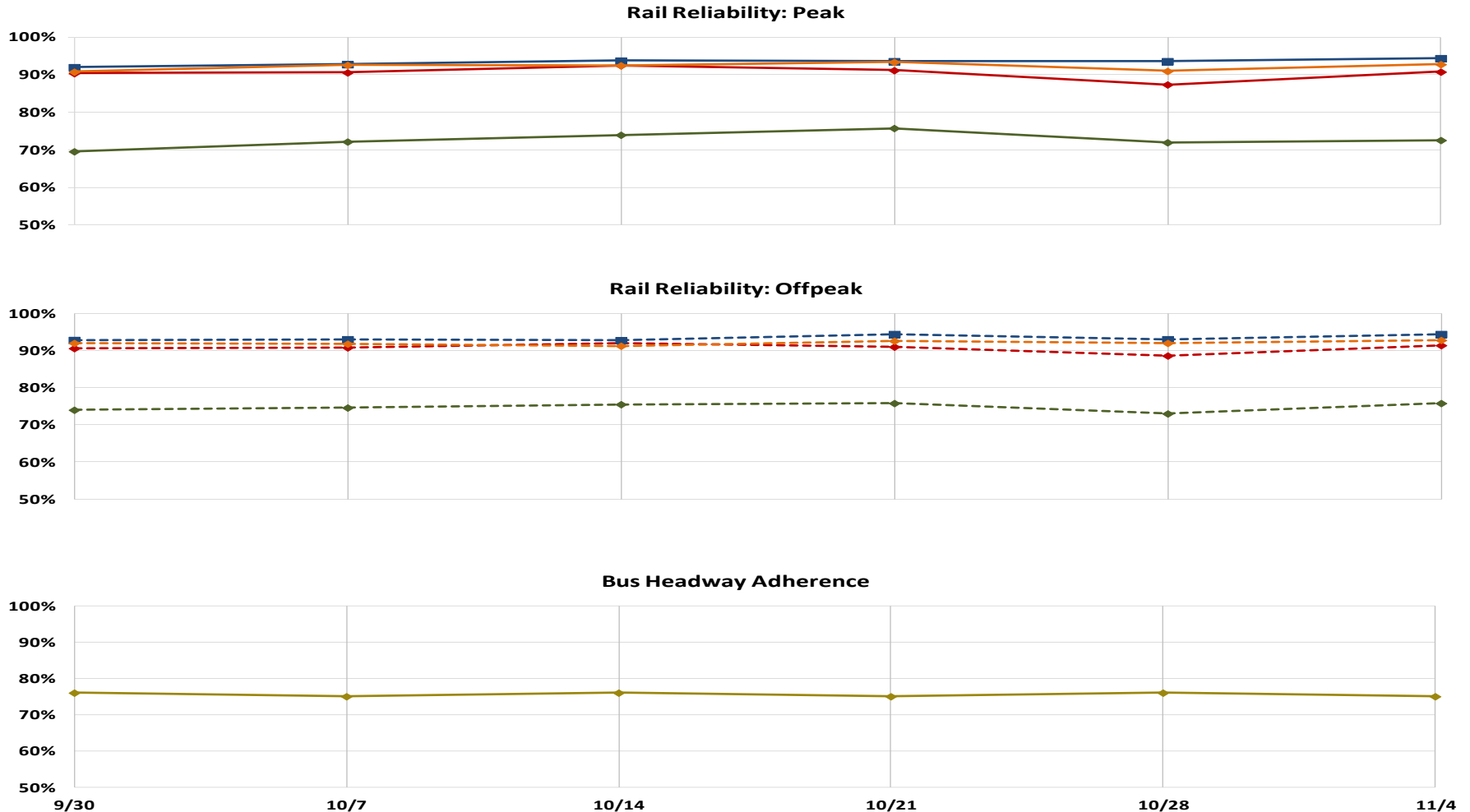
Massachusetts Bay Transportation Authority

COO Remarks

November 7, 2016



Weekly Reliability





Massachusetts Bay Transportation Authority

Red/Orange Line Vehicle Procurement

Project Update

November 7, 2016



Project Overview

Vehicle Project Contract

- 284 heavy rail cars: 152 for Orange Line and 132 for Red Line
- Manufacturer: CRRC MA Corporation
- Engineering and Inspection Services Support – STV Inc.
- Advisory Council Oversight – CH2MHill



Project Budget

- Total budget \$728,968,456
- Cost to date: **\$57,693,466 (7.9%)**





Project Schedule

- Notice to Proceed (NTP) Red/Orange Line Cars: Dec. 18,2014
- Orange Line Pilot Train delivery: Dec. 2017
- Orange Line Production Car delivery: Dec. 2018
- Estimated Service Date of 1st Orange Line Car: Early 2019
- Red Line Pilot Train delivery: Mar. 2019
- Red Line Production Car delivery: Nov. 2019
- Estimated Service Date of 1st Red Line Car: Early 2020
- Delivery rate: 4 cars per month for each line
- All 284 cars delivered by: Dec. 2022

2/3 length mock-up



Mock-up interior

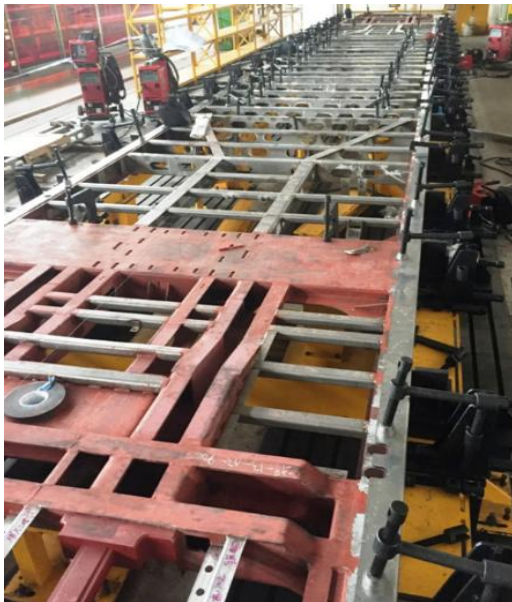




Project Status – Next Steps

- Closeout of Final Design (through March 2017)
- Delivery of Mock-up to MBTA (January 2017)
- Qualification Testing and First Article Inspection (through September 2017)
- Carshell Structural Testing (November 2016 – January 2017)

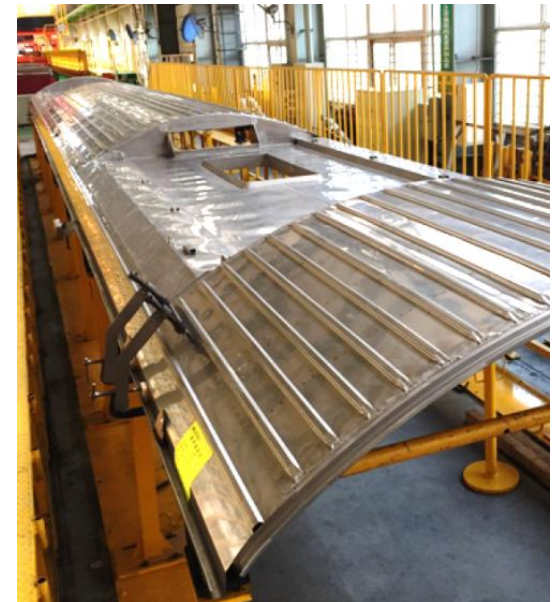
Underframe



Side walls



Roof





Mitigation of Risk

In order to mitigate potential project risk (design or schedule), the MBTA project team implemented the following pro-active steps:

- MBTA has partnered with CRRC by creating a joint project office.
- MBTA coordinated meetings and streamlined communication with all parties.
- CRRC has focused on the next scheduled activity: **Qualification Testing and First Article Inspections** MBTA initiated design closeout meetings with CRRC and suppliers to ensure the equipment is approved and meets all contractual requirements.
 - To further expedite this process, MBTA team members go directly to suppliers to ensure all their resources remain focused until all design parameters are reviewed and closed out.
- MBTA has worked with CRRC and their suppliers to mitigate any schedule impacts.
 - Approach includes:
 - Parallel activities instead of sequential activities
 - Development of a separate, more granular detailed daily schedule
 - Monitor all steps including workaround activities with weekly conference calls between all parties to confirm progress and schedule adherence.
- **All schedule impacts have been avoided to date.**