

**PENINSULA CORRIDOR JOINT POWERS BOARD
STAFF REPORT**

TO: Joint Powers Board

THROUGH: Jim Hartnett
Executive Director

FROM: Michelle Bouchard
Chief Operating Officer, Rail

SUBJECT: **CALTRAIN POSITIVE TRAIN CONTROL PROJECT UPDATE – MAY 2018**

ACTION

Staff Coordinating Council recommends that the Board receive the Postive Train Control (PTC) report for May 2018.

SIGNIFICANCE

Staff will provide monthly updates covering PTC related activities during the previous month and provide a preview of activities anticipated to take place during the current month.

BUDGET IMPACT

There is no budget impact.

MONTHLY UPDATE

1. Status on Major Milestones to Successfully Enter RSD December 2018

<u>Key Project Activity</u>	<u>Expected Completion</u>	<u>Progress As Of 5/31/18</u>	<u>Progress On Track?</u>	<u>Mitigation Required / Comments</u>
Approval of Designated RSD Test Request	May 31	In Process	Yes	Test Request submitted in April to FRA for review and approval
Approval of revised project PTC Implementation Plan (PTCIP) and Request for Ammendment (RFA)	May 31	In Process	Yes	Revised PTCIP and RFA submitted in May for review and approval, to be used by FRA in conjunction with their review of the Test Request
Pilot Installations (4) Completed	June 20	In Process	Yes	First pilot completed, next pilot in process
Submit Designated RSD Application	Oct 15	Not Started	Not Started	No issues at this time, discussions with FRA ongoing to insure clarity in process
Complete Critical Feature V&V	Oct 30	In Process	Yes	Designated RSD area informal V&V survey in process, no issues at this time
Designated RSD Training Complete	Nov 14	Not Started	Not Started	Master Test Plan reviewed, material development starts in July
Designated RSD – Required Vehicle Install Completion*	Nov 27	Not Started	Not Started	(44) Total installs required – (4) pilot plus (40) other vehicles
Complete All Designated RSD Testing (Lab, Functional and FQT)	Dec 18	Not Started	Not Started	Lab testing begins Aug 16, field testing Sept 28, PTC functional testing Nov 27
Start of Designated RSD*	Dec 18	Not Started	Not Started	Complete (44) installs and receive FRA approval to run in PTC mode in Designated RSD area

**Key project activity that is tied to Wabtec performace incentive payment*

Major Wabtec activities started and / or completed in May :

- Mobilized Wabtec onboard installation resources (personnel, office and storage space) for commencement of pilot installations, including safety training, security clearance requirements.
- Completed first pilot installation of I-ETMS onboard equipment on a Caltrain locomotive (including removal of I-ITCS equipment no longer required). Second pilot has begun (installation on a Caltrain cab car).
- Initial field survey of the designated RSD section (approximately 15 miles) using hi-rail vehicles.
- Began system-wide fiber audit to determine the scope of repair required from the installation performed under the previous integrator. This audit will also result in updated As-Built drawings that correctly display the PTC fiber network and will be used by other capital projects as needed for their work as well as Caltrain day to day maintenance of the overall system.
- Large number of contract submittals have been submitted by Wabtec, reviewed and comments returned by Caltrain project team. A sampling of the submittals include:
 - o Installation Validation Test Procedure
 - o Subdiv Issues Log
 - o F40PH-2CAT Installation Guide
 - o Brake Testing
 - o Project Management Plan
 - o Gallery Cab Car Survey
 - o Master Training Plan
 - o Field V&V Critical Features Test Plan
 - o Quality Management Plan
 - o Systems Engineering Plan
- Antenna study of Caltrain locomotives to determine if current configurations are appropriate for use with I-ETMS equipment.
- Audit of Caltrain base stations and determination of modifications required for implementation of full PTC operational mode.

2. Change Order Log – There have been no change orders requested from Wabtec during this reporting period, and there are none in process or review by JPB. This section will track all change activity on the contract.

3. Risk Management - JPB and Wabtec agreed to share the management of an identified list of risk items which were identified during the contract negotiations. The total cost allocated to these risks is \$1.9M to be shared amongst both parties. Unrealized risks will result in cost savings to the JPB. Risk review meetings between the JPB and Wabtec will be held on a quarterly basis, the first review will occur in June, with the resulting update and actions to be noted in this report. There are also risks to be monitored outside the Wabtec – specific contract that the project team monitors and mitigates as necessary.

The following table captures the top risks both external (outside the Wabtec contract) and internal (specific to the Wabtec contract):

Risk Item	Type	Mitigation Action
Potential EMU delay due to move from I-ITCS to I-ETMS	External	Support EMU team effort to bring Wabtec under contract to provide PTC solution required for EMU cars with minimal delay
FRA process changes	External	Maintain close and open relationship with key FRA contacts to insure all submittals are done correctly and within required time frame to achieve 2018 RSD
FRA review cycle delays	External	Potential for delays incurred due to significant volume of submittals from all properties requiring review and approval of RSD documentation prior to year end
Interoperability delays	External	Work with UPRR and tenants to insure agreed to interoperability schedule dates are maintained
Missing WIU mapping files	Internal	Required configuration files not received from previous system integrator, could lead to significant re-work effort if Wabtec is

		required to recreate them.
Onboard installation delays	Internal	Uphold review schedule for pilot design approval and insure production installation schedule is maintained by Wabtec to achieve required 2018 installs to achieve RSD
Track access delays	Internal	Insure field test schedule is maintained by coordinating all field work in combination with other capital projects needs
Back Office Server (BOS) documentation scope creep	Internal	Insure standard documentation supplied by Wabtec meets requirements of Caltrain specification criteria

4. Cost – Spend vs budget

	(A)	(B)	(C)	(D)	(E)	(F) = (C - E)	(G) = (D / E)
	Original Budget (US\$MM)	Approved Changes (Contractor) (US\$MM)	Project Current Budget (US\$MM)	Expended and Accrual To- Date (US\$MM)	Estimated at Completion (EAC) (US\$MM)	Variance at Completion (US\$MM)	% Expended of EAC
Project Cost Analysis							
CBOSS PTC Project (Jan 2008 - Feb 2018)	\$ 231.00		\$ 239.88	\$ 202.07	\$ 202.07		
Caltrain PTC Project (March 1st 2018 - June 2020):							
Integrator WABTEC Contract	\$ 43.01		\$ 43.01	\$ 2.24	\$ 43.01	\$ -	5.20%
Other Contractors	\$ 6.00		\$ 6.00		\$ 6.00	\$ -	
Potential Changes	\$ 2.00		\$ 2.00		\$ 2.00	\$ -	
Potential Incentive - WABTEC	\$ 2.00		\$ 2.00		\$ 2.00	\$ -	
Other Program Costs	\$ 30.34		\$ 30.34	\$ 1.11	\$ 30.34	\$ -	3.67%
Project Contingency	\$ 6.06		\$ 6.06		\$ 6.06	\$ -	
Total PTC Project	\$ 89.41		\$ 89.41	\$ 3.35	\$ 89.41	\$ -	3.75%

Note: Expended and Arrual to-Date is through April 30, 2018.

1). Expended and Arrual to Date is through April 30, 2018;

2). Integrator Wabtec Contract Value includes Shared Risk with Not to Exceed Total of \$1.91MM.

3). Other Contractors amount includes ROCS Modification and potential fiber fixes;

4). Potential Changes amount is set for future project change orders as result of WABTEC assessment and survey for the communications and office subsystems

5). Potential incentive amount reflects what is in the WABTEC conformed agreement.

6). Other Program Costs includes JPB project oversight costs, TASI support and Other Direct Cost for PTC project delivery

7). Project contingency includes a) contingencies for WABTEC contract per Board Staff Report; b) JPB project team cost contingency

8). CBOSS PTC project budget and actual cost are highlighted to reflect prior March 1st, 2018 CBOSS project financial data.

5. Items of note in May – This section reports on PTC general progress and issues being tracked outside the Wabtec contract during the current reporting month.

- 1) Completed a scope of work and issued the Notice To Proceed (NTP) to ARINC / Rockwell Collins for CAD support required to upgrade the Caltrain ROCS system as related to the Back Office Server (BOS) upgrade to be performed by Wabtec as a part of the PTC project. Work has begun to update BCCF equipment in support of BOS upgrade.
- 2) Submitted revised PTC Implementation Plan (IP) and Request For Amendment (RFA) on Monday May 7, 2018 detailing the move from I-ITCS to I-ETMS to the FRA for review / approval. This are key project submittals linking to the successful approval other documents required to achieve RSD.
- 3) Revised and re-submitted the FTA / FRA testing grant (\$2.8M) to reflect the move from I-ITCS to an I-ETMS PTC solution for the Caltrain system.
- 4) Project reviewing WIU mapping / configuration files received by JPB legal team from previous integrator and required for new integrator to implement PTC system. Project considering path forward to maintain WIU updates via maintenance agreement with previous integrator signaling subcontractor.
- 5) Submitted 2017 Annual PTC Status Report to FRA
- 6) Began review of application requirements and review criteria for potential new grant under recently announced Consolidated Rail Infrastructure and Safety Improvements funding.
- 7) Ongoing informal updates to the FRA to insure the Caltrain PTC project provides all information required in timely and correct manner expected to achieve RSD this year. Building strong relationships with the FRA regional personnel key to insuring minimal if any delays in the review process.

- 8) Continued updates to Caltrain tenant railroads and the UPRR, discussing the Caltrain project re-start and plans to achieve PTC interoperability for the Caltrain and UPRR properties.
 - a. Supplied high level project schedules to Caltrain tenants to provide tentative interoperability testing dates for tenant planning purposes.
- 9) Project team in final stages of completing review / replan of overall program budget required to complete the PTC project. Once replan is complete, the JPB executive staff will submit the revised budget to the PTC Ad Hoc committee and Board for review.
- 10) The PTC project continues its coordination efforts with the Electrification and EMU programs via regularly scheduled status meetings such as the Biweekly CalMod Systems Integration, the PCEP Delivery Coordination and the PTC-PCEP coordination meetings. Ad hoc meetings to discuss topics requiring indepth or immediate decisions are held as needed.
- 11) Supplied high level baseline schedules to Caltrain capital projects for planning / coordination purposes.
- 12) Hosted meeting of MTA04 regional partners (BNSF, UPRR) to status PTC progress and plan coordination activities for federated network activities.
- 13) Performed field audit of Wayside Interface Units (WIUs) in designated RSD section. Four units determined not functioning but corrective action taken to restore functionality.
- 14) Caltrain configuration management (CM) manager is fully integrated into project team to insure all Caltrain CM requirements are maintained during project execution and transition to daily operations upon project completion.
- 15) Caltrain Go Live team reinstated to insure smooth transition of PTC operations and maintenance upon project completion. These efforts include manloading planning for both Caltrain and TASI operations as well as coordination of Master Service Agreements (MAS) negotiations with key suppliers required to support PTC long term service needs.

6. Upcoming Key Activities in June -

- 1) Initiate and complete all remaining pilot onboard installations on Caltrain fleet – Wabtec will install their onboard PTC product on (4) types of vehicles that have been chosen for the (44) total vehicles to be installed and tested to complete the RSD requirements for fleet installations.
- 2) Complete anticipated FRA approval for the designated RSD track segment (15 miles) required for achieving RSD in 2018.
- 3) Continue V&V testing activities in designated RSD area to insure PTC equipment is in good working condition prior to start of full filed testing this summer.
- 4) Informal submission of project PTC functional test procedures to FRA for comment
- 5) Begin implementation and testing of of Caltrain test lab system
- 6) Attend (with freight and other commuter rail authorities) proposed FRA coordination meeting in Washington, D.C. to gain FRA direction / insights to insuring smooth coordination and reviews of RSD application documentation toward goal of gaining 2018 RSD approvals.
- 7) Attend key quarterly APTA meeting in Denver to discuss RSD progress with APTA representatives and other railroads.
- 8) Select project and integrator team members will attend training session covering MTA04 design topics approved by the PTC-220, Spectrum Management Committee.