

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 – AUGUST 2018**

ACTION

Staff Coordinating Council recommends that the Board receive the Positive Train Control (PTC) report for August 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 7/31/18</u>	<u>Progress On Track?</u>	<u>Mitigation Required or Approvals Needed</u>
Approval of Designated RSD Test Request	May 31	In FRA review	No	Original Test Request submitted to FRA on April 18 for approval. Revised Test Request submitted to FRA on June 22 based on FRA initial comments. Verbal approval received, waiting written approval.
Approval of revised project PTC Implementation Plan (PTCIP) and Request for Amendment (RFA)	May 31	In FRA review	No	Revised PTCIP and RFA submitted to FRA for approval on May 7. Revised PTCIP and RFA submitted on June 22 based on initial FRA comments. Verbal approval received, waiting written approval.
Pilot Installations (4) Completed	June 20	Completed	Completed	All pilots completed
Production Installations (40) required	Dec 4	In Process	Yes	32% completed thru August 27th
Submit Designated RSD Application	Oct 15	Drafts in review	Yes	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, started July 9
Designated RSD Training Complete	Nov 14	Not Started	Not Started	Master Test Plan reviewed, material development started in August
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 in development, lab testing began in Aug, field testing to start Sept, PTC functional testing Nov
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 performance incentive payment*

Major Wabtec activities started and / or completed in August :

- Production installations of I-ETMS onboard equipment on Caltrain locomotive and Caltrain cab cars ongoing, cars may be used in normal operations with PTC not engaged. (14) completed through August 24th.
- Key Personnel changes: Previous Wabtec project manager has left Wabtec, replacement named and in place. New Test Manager also named to lead test effort. Wabtec deputy project manager also in place in San Carlos to support project.
- Senior management review held between JPB and Wabtec senior staff to discuss project progress and ensure any JPB concerns are addressed promptly. Wabtec will commit additional resources (see above) as result of meeting, and monthly meetings will be held through year end to ensure focus is maintained.
- Field Verification & Validation testing continues, Wabtec completed Critical Features and WIU testing. FRA required brake testing to begin by month end.
- Test lab set-up at Wabtec facility has been slightly delayed due to material and resource planning issues, however Wabtec has re-planned requirements and testing is to begin by month end.
- Significantly large number of contract submittals have been submitted by Wabtec, reviewed and comments returned by Caltrain project team. A sampling of the submittals in August included:
 - o Field V&V Testing of PTC Critical Features Test Plan
 - o PTC Configuration Management Plan
 - o ITCM System Design
 - o DCS Network Survey
 - o Critical Features Validation Work Plan
 - o I-ETMS Onboard System Operations Manual
 - o I-ETMS Onboard Installation Manual
 - o Static Bulletin Delivery Confirmation Test
 - o Integrated Work Plan
 - o F40 Brake Test Plan
 - o Nippon Sharyo Cab Car Brake Test Plan

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 initiated the joint risk review sessions in June, with tentative agreement on format and reporting tool to be employed, and began deep dive into all risks to be monitored as part of the joint risk pool of items. There were no risks identified in the first meeting requiring elevation to JPB or Wabtec senior management for consideration of use of the risk pool funds. JPB and Wabtec have 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, 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	Project team continues to 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 ensure all submittals are done correctly and within required time frame to achieve 2018 RSD
FRA review cycle delays	External	Delays are being incurred due to significant volume of submittals from all properties requiring review and approval of RSD documentation prior to year end. Team working with FRA to minimize any delays incurred with Caltrain documentation and speed FRA review process (<i>see #4 FRA document status below</i>).
Interoperability delays	External	Work with UPRR and tenants to ensure agreed to interoperability schedule dates are maintained
Onboard installation delays	Internal	Pilots installations are complete, project team is working with Wabtec to ensure installations are not delayed due to Caltrain review periods. Wabtec must insure production installation schedule is maintained to achieve required 2018 installs to achieve RSD.
Track access delays	Internal	Ensure 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	Ensure standard documentation supplied by Wabtec meets requirements of Caltrain specification criteria

4. Caltrain PTC Project FRA Documentation Status_ - **green** highlighting indicates Final is approved by FRA

Weekly calls with FRA review team instituted in August. Significant progress occurred this month to gain FRA approval of key project project documents required to enter RSD (see below), however formal written approval of the Test Request has still not been received as of the writing of this document. Informal verbal approval has however been received, as well as verbal direction to perform field testing.

Document Name	Status – Through August 27th	Projected Submittal Date	Actual Submittal Date	Need FRA Approval By
Updated PTC Implementation Plan and Request for Amendment of the PTCIP	FRA processing formal approval response	Already submitted	6/22/2018 (final)	Informal approval received July 2018
Test Request	FRA processing formal approval response	Already submitted	6/22/2018 (final)	Informal approval received July 2018
Subdivision and Critical Asset Configuration Management Plan	Final approved by FRA - 8/13/2018	Already submitted	7/25/2018	Received August 2018
Critical Features Verification and Validation Procedure	Final approved by FRA - 8/16/2018	Already submitted	8/15/18	Received August 2018
Critical Features Verification and Validation Plan - Designated Track Section	Final approved by FRA - 8/16/2018	Already submitted	8/15/18	Received August 2018
Critical Features Verification and Validation Plan - Brake Test Area	Final approved by FRA - 8/16/2018	Already submitted	8/15/18	Received August 2018
Signal and Switch (WIU) Verification and Validation Procedure	Final approved by FRA - 8/16/2018	Already submitted	8/15/18	Received August 2018
Signal and Switch (WIU) Verification and Validation Plan - Designated Track Section	Final approved by FRA - 8/16/2018	Already submitted	8/15/18	Received August 2018

Static Bulletin Delivery Confirmation	Final approved by FRA - 8/16/2018	Already submitted	8/15/18	Received August 2018
Brake Test Plan - F40 locomotive	Final approved by FRA - 8/22/2018	Already submitted	8/21/2018	Received August 2018
Brake Test Plan - Gallery cab car	Final approved by FRA - 8/22/2018	Already submitted	8/21/2018	Received August 2018
Brake Test Plan - MP36 locomotive	Draft in internal review.	August 2018		September 2018
Brake Test Plan - Bombardier Cab Cars	Draft in internal review.	August 2018		September 2018
Field Integrated Test (FIT) Plan - Designated Track Section	Draft in internal review.	September 2018		October 2018
Field Qualification Test (FQT) Plan - Designated Track Area	Draft in internal review.	September 2018		October 2018
RSD Application	Under development	Q4 2018		December 2018
Test Results: Critical Features Verification and Validation - Designated Track Section	Submitted as information only	Already submitted	8/22/2018	No approval required
Test Results: Critical Features Verification and Validation - Brake Test Area	Submitted as information only	Already submitted	8/22/2018	No approval required
Test Results: Signal and Switch (WIU) Verification and Validation - Designated Track Section	Under development	September 2018		No Approval required
Substitute Criteria Strategy	Under development	September 2018		November 2018

5. Cost – Spend vs budget – through August

	(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	\$ 202.26	\$ 202.26		
Caltrain PTC Project (March 1st 2018- June 2020):							
Integrator WABTEC Contract	\$ 43.01		\$ 43.01	\$ 4.55	\$ 43.01	\$ -	10.57%
Other Contractors	\$ 6.00		\$ 6.00	\$ 0.22	\$ 6.00	\$ -	3.65%
Potential Changes	\$ 2.00		\$ 2.00		\$ 2.00	\$ -	
Potential Incentive - WABTEC	\$ 2.00		\$ 2.00		\$ 2.00		
Other Program Costs	\$ 30.34		\$ 30.34	\$ 3.18	\$ 29.71	\$ 0.63	10.71%
Project Contingency	\$ 6.06		\$ 6.06		\$ 5.95	\$ 0.11	
Total PTC Project	\$ 89.41		\$ 89.41	\$ 7.95	\$ 88.67	\$ 0.74	8.96%
Note:							
1). Expended and Annual to Date is through July 31, 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.							

- Note – Caltrain continues effort to reduce previously identified \$30M funding gap. Award of \$18.7M CRISI grant (noted below) will be used to reduce gap, Caltrain will reallocate funds from other resource avenues.

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

- 1) Caltrain awarded \$18.7M via the Consolidated Rail Infrastructure and Safety Improvements (CRISI) Part 2 testing grant to support the implementation of PTC at Caltrain. Solid support from the PTC project team to draft the proposal documentation

and coordinate the revisions from multiple intra-agency reviews. Awaiting results of CRISI part 1 application.

- 2) FRA required brake testing to begin on F40 locomotives and Gallery cab car equipment, based on approval of test plans by FRA. Test plans submitted for review, comments received, test plans revised and re-submitted, FRA has approved. Testing will continue on all vehicle types (4 total) through the Fall.
- 3) Project team continued to perform analysis of installed WIUs requiring maintenance and examining the need for path forward to maintain WIU updates via either maintenance agreement with previous integrator signaling subcontractor or through other options.
- 4) Team instituted weekly review meetings with the FRA western regional team to review all information required is submitted in a timely and correct manner expected to achieve RSD this year. Team continues to build strong relationships with the FRA regional personnel key to minimize any delays in the review process.
- 5) Team has proposed a September meeting with UPRR counterparts to discuss PTC implementation and related interoperability requirements for the Caltrain and UPRR properties.
- 6) 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 in-depth or immediate decisions are held as needed. Data sharing of fiber audit results and testing schedules (sharing of track and time) ongoing to insure both teams coordinate needs.
- 7) Continued field audit and diagnosis of Wayside Interface Units (WIUs) in designated RSD section and expanding to other areas to corrective action to restore functionality on any units identified by Wabtec.
- 8) Caltrain configuration management (CM) manager continues full integration into project team to ensure all Caltrain CM requirements are maintained during project execution and transition to daily operations upon project completion.
- 9) Caltrain Go Live team reinstated to ensure smooth transition of PTC operations and maintenance upon project completion. These efforts include manloading planning for both Caltrain and TASI operations and maintenance, as well as coordination of Master Service Agreements (MAS) negotiations with key suppliers required to support PTC long term service needs.

7. Upcoming Key Activities in September -

- 1) Conduct meeting with UPRR PTC counterparts to strengthen relationship needed to successfully implement interoperability on both properties. Caltrain requires UPRR continued support to receive FRA 2019 extension, no issues foreseen at this time.
- 2) Continuation of brake testing on Caltrain locomotives and cab cars as required by FRA to complete prior to entering RSD.
- 3) Continue production onboard installations on Caltrain fleet – Continue production effort to complete onboard PTC product installation on (40) production vehicles that have been chosen for the (44) total vehicles to be installed and tested to complete the RSD requirements for fleet installations.
- 4) Receive anticipated FRA approval for the designated RSD track segment (15 miles) required for achieving RSD in 2018. Also expect approval of the PTCIP, RFA and Test Request if not received in August.
- 5) Continue regular monthly review with Wabtec senior management to ensure the Wabtec project team maintains focus on completing all activities required to meet 2018 RSD requirements.

- 6) Continue V&V testing activities in designated RSD area to ensure all PTC equipment is in good working condition.
- 7) Continue to work closely with the FRA regional and national representatives to ensure all aspects of documentation and testing requirements are maintained and approved (by FRA) granted.

8. Vehicle Installation

- 44 vehicles require full installation of PTC equipment by December 2018 to achieve RSD goal

I-ETMS On-Board Installation Progress (As of 8/27/18)			
Equipment	Completed	In Progress	Pending
F40PH-2CAT	5	1	10
MP36	1	0	5
Bombardier Cab	1	0	4
Gallery Cab	7	1	9
Total	14	2	28
%	32%	5%	64%

Prepared By: Matt Scanlon, Deputy Director, Systems

650.622.7819