Caltrain PTC Program Status
&
Wabtec Contract Award

Citizen Advisory Committee
March 21, 2018
Agenda Item #8
Discussion

- Program timeline
- PTC program and industry status
- Contracting objectives and strategy
- Path forward and Wabtec
- Funding
- Next Steps
## Timeline

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>Pre-2008</td>
<td>Caltrain began development Communications Based Overlay Signal System (CBOSS) Positive Train Control (PTC)</td>
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<tr>
<td>2008</td>
<td>Rail Safety Improvement Act, Federal Mandate PTC</td>
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<tr>
<td>2011</td>
<td>Contract with PTG</td>
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<tr>
<td></td>
<td>• $239M Budget ($159M for PTG contract)</td>
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<td></td>
<td>• Original in-service date October 2015</td>
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<tr>
<td>2016</td>
<td>Peer review, multiple partnering efforts</td>
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<tr>
<td>2017 (Feb.)</td>
<td>Termination PTG contract after persistent delays, associated program cost increase and lack of performance</td>
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Timeline (Continued)

- **PTG Termination Last Resort**
  - Advised regulators (FRA & FTA)
  - Coordination with funding partners
  - Secured program assets (fiber, spares, Backup Control Center Facility etc)

- **Summer 2017 Pursue Options with Alstom**
  - Contractual issues associated w/ relationship PTG
  - Prohibitively unreasonable price

- **Fall 2017 / Winter 2018 Revisit Scope**
  - Solicit proposals from original RFP proposers
  - Evaluate industry since original award in 2011
Installation of all subsystems complete
  - On-Board Equipment
  - Wayside Interface Unit & FRA Official Validation Testing
  - Back office
  - Fiber optic backbone
  - Base stations (14)
  - Control center
  - High Rail Testing for FRA Official Critical Assets Complete

Spectrum leased

Train brake testing and federation in-process

Draft RSD application submitted to FRA
Industry Status

- PTC implementation problematic
- FRA rigid requirements for extension to 2018 deadline
  - February 5 meeting with FRA indicates no flexibility
- Interoperability significant challenge even when using same technology
- Capital funding scarce
- Operations and SOGR funding not available from grants
  - Significant impacts to operating budgets
- Availability resources (people and technology) challenge
- Few vendors in the industry
Industry Status Continued

PTC IMPLEMENTATION STATUS BY FREIGHT AND PASSENGER RAIL
Q3 Jul. 1—Sept. 30, 2017

- 68% FREIGHT (11,804/17,432)
- 50% PASSENGER (1,967/3,935)
- 91% FREIGHT (14,888/16,568)
- 64% PASSENGER (798/1,233)
- 82% FREIGHT (84,141/103,093)
- 66% PASSENGER (17,038/25,707)
- 45% FREIGHT (24,535/54,185)
- 24% PASSENGER (1,668/4,147)

RADIO TOWERS INSTALLED
TRAINING COMPLETED
ROUTE MILES IN PTC OPERATION
TRACK SEGMENTS COMPLETED

59% FREIGHT (377/634)
25% PASSENGER (51/208)
Lessons Learned

• Caltrain PTC team hired and in place
  – Will work in concert with Wabtec to deliver the program
  – Will ensure knowledge transfer

• Go live planning
  – Interdisciplinary team working to ensure smooth transition to operations and maintenance

• Peer discussions/benchmarking
  – Knowledge share among properties with the same challenges
  – Future benchmarking for estimating ongoing SOGR and Operating costs
Contracting Objectives & Strategy

• Meet December 2018 Federal PTC mandate
• Retain knowledge / experience project team
• Procure in compliance with applicable FTA guidelines
• Minimize procurement time
• Maximize cost efficiencies
• Minimize risk
Path Forward

• Most Viable Alternative: Wabtec
  – Second highest ranked proposer in original RFP
  – Additional recent proposal solicitation/outreach confirmed ability to deliver
  – Technology (I-ETMS) already approved by FRA
  – Used by Union Pacific (UP) on San Jose to Gilroy corridor (JPB was going to install same equipment on locomotives in UP territory)
  – Facilitates interoperability with UP and tenants
  – Reduced maintenance costs
  – Developed passenger rail functionality
Wabtec Transition

- Original CBOSS PTC designed to be interoperable with Wabtec platform
- Not a complete change-out

<table>
<thead>
<tr>
<th>Component</th>
<th>Reuse Status</th>
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<tbody>
<tr>
<td>Onboard</td>
<td>~60% re-used/repurposed/retrofit. Some components used for spare, pilot units</td>
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<tr>
<td>Data Communication System (DCS)</td>
<td>100% reused</td>
</tr>
<tr>
<td>Office</td>
<td>75% Used with 2 servers kept for spares</td>
</tr>
<tr>
<td>Wayside</td>
<td>90% equipment can be re-used, the remainder used for spares</td>
</tr>
<tr>
<td>Backup Central Control Facility (BCCF)</td>
<td>100% reused</td>
</tr>
<tr>
<td>Database</td>
<td>100% reused</td>
</tr>
<tr>
<td>Transponders</td>
<td>Not used by I-ETMS. Keeping transponders to aid in train location in the future</td>
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Wabtec Contract

- **Scope**
  - On-board installation
  - Assessment and integration of all systems
  - Hi-Rail and Lab equipment
  - FRA documentation

- **Incentives:** $2 million
- **Risk sharing:** $1.9 million
- **Contingency:** $4.5 million
- **Total contract budget:** $49.5m
- **Eligibility for extension by 12/18**
- **Compliant PTC system within allowed time**
Funding Status

• ~$59M remaining in funds
  – Cover contract budget through system acceptance
  – Program support costs through 2018

• Total program budget and funding plan to be developed
  – Brought back to the Board once field assessments have begun (June/July)

• Staff currently identifying grant and funding opportunities
Next Steps

• Contract
  – Award Contract and issue NTP
  – Begin field assessment and submit alternate Revenue Service Demonstration (RSD) strategy and extension request to FRA (April)
  – Onboard equipment installation complete (Dec)
  – Enter RSD (Dec)
  – Complete staff training
  – Submit Safety Certification Program

• Program
  – Monthly board reporting and updates
  – Ensure rigorous oversight feedback loop w/ partners
  – Continue PCEP PTC interface coordination
  – Develop final program budget and funding plan
  – Continue go live team efforts
Questions

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