



Advanced Signal System (CBOSS PTC)

Updated Installation Work Plan

LPMG Meeting
March 27, 2014



Context



Caltrain Modernization Program

- ~\$1.5 Billion
- Projects
 - Advanced Signal System (2015)
 - Corridor Electrification and Electric Multiple Units (2019)



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Project Description

- Communications Based Overlay Signal System (CBOSS) Positive Train Control (PTC)
- Fiber Optic Network
- Project Requirements
 - Includes federal mandate (PTC)
 - Improves Caltrain performance
- Project Partners
 - FRA, UP, CHSRA, JPB
- Needed for Blended System

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CBOSS PTC Requirements

- PTC
 - Prevent train to train collisions
 - Prevent over speed derailments
 - Prevent incursions into established work zones
 - Prevent movement through a misaligned switch
 - Interoperability
- Caltrain
 - Enhanced crossing safety / performance
 - Improved headways and operational flexibility
 - Enforcement of scheduled station stops
 - Schedule management
 - Employee In Charge

Project Total Cost and Milestones

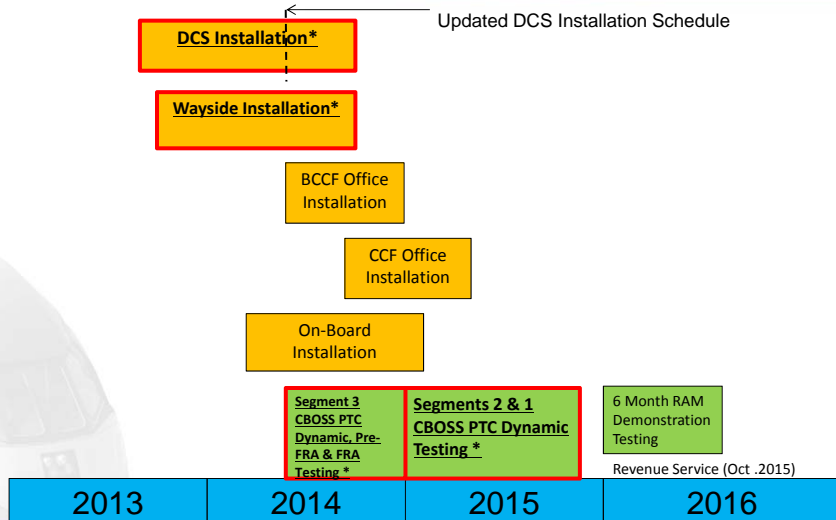
Description	Cost (in millions)	Milestones
Project Planning and Procurement	\$5	2010 - 2011
Phase 1 - Critical Design	\$25	2012 – 2013
Phase 2 - Final Design, Data Communications Subsystem & Fiber Backbone Installation	\$51	2013 – 2014
Phase 3 - Installation, Testing, Commissioning	\$150	2014 – 2016 (Revenue service Oct. 2015)
Total	\$231	

Updated Work Plan

3 Segments – South to North



Updated Milestones (Entire Corridor)



Work Complete to Date

- Fiber Installation Activities
 - Boring, trenching (lateral), pull boxes, conduit
 - Segment 3: 50% complete
 - Segment 2: 10% complete
- Wayside Installation
 - Modules installed at key system points
 - Associated gate activity
 - Segment 3: 70% complete
 - Segment 2: 10% complete
- On-board Equipment Installation
 - Staging started Feb. 10

Installation Pictures

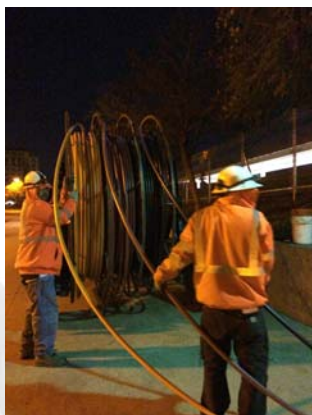


Directional Boring



Hand Trenching near a Signal House

Installation Pictures



Unwinding inner-ducts off the wheel



Tie-in to Control Point Franklin

Installation Pictures



Installing new wires at the rear of the entry rack



Performing end of work ground verification test

Challenges

- Construction on an active railroad
- Customized local processes
- Maximizing productivity
 - Obstacles in boring path
 - Equipment damaged

Outreach

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Outreach To Date

- Activities
 - CSCG (4 meetings)
 - LPMG (4 meetings)
 - One-on-one (each of the 17 cities/3 counties)
 - Community Groups, as requested (8 meetings)
- Communication tailored to location
 - Direct mailers, flyers stations
 - Website, social media, email, phone
 - City/County Staff coordination

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Complaint Status (Over 6 months)

- Noise
 - 2 people
- Installation activities
 - Disturbed foliage on Caltrain ROW (apologized)
 - Mud tracked on side street (cleaned)
 - Grass damaged (repaired)

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Next Steps

- Activities
 - Community Groups Meetings (as requested)
- Communication
 - Addition direct mailer residents
 - Website, social media, email, phone
 - Separate installation and testing notices
- City/County Staff coordination

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Questions

