Electrification - Infrastructure
Electrification - Infrastructure

• Construction activities in Segment 2:
  – Began tree trimming and removals

• Progression of field activities:
  – Continued utility potholing and completed signal potholing
  – Prepared sidings and staging areas for start of foundation installation
  – Installed test piles
  – Performed stray current surveys
  – Relocated existing signal cables
Electrification - Infrastructure

• Progression of design:
  – Overhead Catenary System (OCS):
    • Complete design for Segment 2 Work Area 5
    • Continued design for other Segments 2 and 4
  – Signal System:
    • Continued submission and review of 65% signal design for Segments 2 and 4
    • Continued technical coordination with Union Pacific Railroad for system wide signal system design
  – Traction Power System:
    • Continued submission and review of 95% Traction Power Facilities design for Segment 4
    • Continued with Pacific Gas and Electric (PG&E) interconnection feasibility study for Segments 2 and 4
  – Communication System:
    • Continued work on 65% system wide communication system design
Test pile installation in preparation for foundation installations
OCS Foundations

Potholing

Drilling

Installing
Electrification - Infrastructure

- Supervisory Control and Data Acquisition (SCADA) Contract (ARINC Inc.)
  - Completed contract negotiations
  - Awarded contract at August Board meeting
  - Executed in September
  - Notice to Proceed and kickoff meeting in October
Electrification - Infrastructure

• Tunnel Modifications
  – 100% Plans and Specifications reviewed
  – Completion of bid package targeted for December

• Centralized Equipment Maintenance and Operations Facility (CEMOF)
  – Developed design concepts
  – Reviewed with stakeholders
Electrification - Infrastructure

- PG&E
  - Supplemental Agreement #3 approved for final design and long lead procurement
  - Progress on power quality studies with PG&E
  - Start interconnection option study and coordination
  - Temporary power available from PG&E by summer 2018
Electrification - Infrastructure

• Utility Relocation and Coordination
  – Relocation required at locations of overhead power and communication lines
  – Relocation notices sent to owners of utilities
  – Conducted utility partnering session
  – Received relocation schedules from PG&E and Silicon Valley Power
  – Received first PG&E relocation designs
Electrification - Infrastructure

- Disadvantaged Business Enterprise (DBE) Participation and Labor
  - Design-Build contract has a DBE goal of 5.2%
    - $1,795,031 (0.258%) paid to date
  - Upcoming solicitations for DBE/Small Business Enterprise to be determined:
    - Tunnel modifications
    - CEMOF facility upgrades for Electric Multiple Units (EMUs)
    - On-call safety & security support for PCEP
EMUs

- Stadler
  - Input for on board bike storage received with stacked option selected
  - Completed preliminary design review meetings for car shell, ventilations and mechanical systems
  - Receiving extrusions for car body manufacturing
EMUs

Mockup of engineer’s console and seat within the cab.
EMUs

Carbody - Aluminium Section of End Underframe

Carbody - Aluminium Section of Roof End Structure
Safety

- Safety and Security Certification Review Committee - monthly basis with participation from FRA, FTA and Project Management Oversight Committee
- Fire Life Safety & Security Committee - monthly basis with representatives from local fire, police and County Office of Emergency Services personnel
- Certifiable Element and Items List developed
- Two incidents in the quarter
  - No injuries or schedule impacts
  - Mitigation efforts undertaken to prevent repeats
Quality Assurance

• Revised PCEP Quality Management Plan
• RFP preparation underway for QA lab
• 7 audits conducted this quarter (35 to date) including:
  – Wayside power cabinets
  – Switch machines
  – Bridge segments
  – Concrete batching
  – Traction power facilities/systems
  – Control point signaling

• No findings
Schedule

MILESTONES

- Caltrain strategic plan makes electrification a priority
- Environmental Clearance
- Award Contract
- Groundbreaking
- First Electric Train Arrives
- Passenger Service with Electric Trains
- Additional Capacity Improvements

Electrification Infrastructure Construction
Final System Testing

Note: Schedule Subject to Change

*Please keep in mind that testing and construction will overlap as each Segment will be tested individually, prior to final system testing.*
### Budget & Expenditures (in millions)

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget</th>
<th>Current Budget*</th>
<th>Q1 Costs</th>
<th>Costs to Date</th>
<th>Estimate at Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrification</td>
<td>$696.6</td>
<td>$696.7</td>
<td>$24.8</td>
<td>$157.2</td>
<td>$696.7</td>
</tr>
<tr>
<td>SCADA</td>
<td>$0.0</td>
<td>$3.4</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$3.4</td>
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<tr>
<td>EMU</td>
<td>$550.9</td>
<td>$550.9</td>
<td>$29.7</td>
<td>$43.6</td>
<td>$550.9</td>
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<tr>
<td>Separate Contract &amp; Support Costs</td>
<td>$417.2</td>
<td>$417.2</td>
<td>$15.9</td>
<td>$123.4</td>
<td>$417.2</td>
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<tr>
<td>Contingency</td>
<td>$315.5</td>
<td>$312.0**</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$298.9</td>
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<tr>
<td>Forecasted Costs &amp; Changes</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$0.0</td>
<td>$13.1</td>
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<tr>
<td><strong>PCEP Total</strong></td>
<td><strong>$1,980.3</strong></td>
<td><strong>$1,980.3</strong></td>
<td><strong>$70.4</strong></td>
<td><strong>$324.1</strong></td>
<td><strong>$1,980.3</strong></td>
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</tbody>
</table>

* Includes executed change orders and awarded contracts

** Refer to Contingency Drawdown Table on next slide for details

Note: Budget / Expenditures as of September 30, 2017
# Contingency Drawdown Table

<table>
<thead>
<tr>
<th>Contracts</th>
<th>Drawdown Amount</th>
<th>Contingency</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>$ 315,533,611</td>
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<tr>
<td>BBII Executed Change Orders</td>
<td>$ 85,472</td>
<td></td>
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<tr>
<td>SCADA Contract</td>
<td>$ 3,446,917</td>
<td>$ 3,532,389</td>
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<tr>
<td>Total</td>
<td></td>
<td>$ 3,532,389</td>
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<tr>
<td>Remaining Contingency</td>
<td></td>
<td>$ 312,001,222</td>
</tr>
</tbody>
</table>

Note: As of September 30, 2017
Risk Management

• September Risk Refresh Meeting
  – Comprehensive review of full risk register

• Top Risk: Contractor may be unable to develop grade crossing modifications that meet operational requirements prior to scheduled sub-system testing of the grade crossings

• 276 risks; 106 active; 170 retired
Environmental Compliance

• Pre-construction efforts:
  – Nesting bird surveys
  – Biological surveys
  – Installation of wildlife exclusion fencing

• Archaeological exploratory trenching

• Construction noise and light mitigation
The real estate acquisition program has prioritized delivering property first the first two construction segments, 2 and 4. With those acquisitions finalized, the focus is now turning to segments 1 and 3, which are scheduled to commence later in the project schedule.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Appraisal Packages Needed</th>
<th>Appraisals Completed</th>
<th>Acquisition Offers Presented</th>
<th>Acquisition Offers Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment 1</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Segment 2</td>
<td>27</td>
<td>26</td>
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<td>Segment 3</td>
<td>11</td>
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<tr>
<td>Segment 4</td>
<td>9</td>
<td>9</td>
<td>8</td>
<td>0</td>
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<tr>
<td>Total</td>
<td>55</td>
<td>42</td>
<td>39</td>
<td>21</td>
</tr>
</tbody>
</table>

Note: As of September 30, 2017
Groundbreakings

Salt Lake City Vehicle Plant Groundbreaking
October 13, 2017
Gov. Gary Herbert and Sen. Orrin Hatch helped celebrate the groundbreaking of a new vehicle plant that will help build Caltrain’s EMUs

PCEP Groundbreaking
July 21, 2017
EMU Outreach

• Input received
  – Seat colors (gray and red)
  – Onboard bike storage (stacking, storage, demarcation)
  – ADA restroom input from Caltrain Accessibility Advisory Committee (labeling, grab bars, emergency button)
  – Website

• Total Sessions: 7,817
  - Mobile (42.8%)
  - Desktop (52.4%)
  - Tablet (4%)
• Users
  - New (76.7%)
  - Returning (23.3%)

www.calmodtrains.com
Onboard Bike Storage

• Stacking Option Selected
• Incorporated feedback specific to stacking design:
  - To reduce turning of front wheel, spacing for handle bars similar to Gallery cars
  - Bungee cord connection/spacing similar to Gallery cars
  - Bar covered in durable material to prevent scratching bike frames
• Incorporated feedback to bike cars: boarding/deboarding, platform demarcation, removed vertical hooks, storage under cantilevered seats
Onboard Bike Storage

• Outreach Included
  - At Stations w/ Sample Options
  - Bicycle Advisory Committee
  - Bike Coalition Meetings
  - Public Poll (1,770 votes)
  - Traditional and Social Media
  - Emails, website comments

• Will continue to work with bike community on:
  - Security issues
  - 8-car EMU design
  - Station bike parking
ADA Restroom

• Outreach Included
  - Multiple meetings with Caltrain Accessibility Advisory Committee and tour of restroom mock-up

• Feedback Incorporated
  - Labeling (Braille and raised letters, placement requests)
  - Emergency Buttons (placement requests)
  - Grab Bars (Added and Locations Adjusted)
  - Toilet Paper Dispenser (no hard corners or edges)
  - Coat Hooks (Flush to wall, pull down feature)
Construction Outreach

- Pre-construction community mtgs
- Notices (38,000+)
- Weekly e-mail updates
  www.caltrain.com/pcepconstruction
- Construction outreach office
- Dedicated 24-hour project hotline
  650-508-7726
- Dedicated interactive website
  (upcoming)