Caltrain Electrification Update
Menlo Park Community Meeting
December 05, 2018

Agenda

• Project Overview Recap
• Project Update
• Electrification Infrastructure
  – Menlo Park Activities
• Questions
Caltrain System

- 32 Stations Gilroy to San Francisco
- 92 Weekday Trains
- At-Grade Crossings, viaducts, and bridges
- Intermodal Connections
- Bike Commuters

JPB owns right-of-way from SF to San Jose

Ridership

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AVERAGE DAILY RIDERSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>10,000</td>
</tr>
<tr>
<td>2018</td>
<td>70,000</td>
</tr>
</tbody>
</table>

Union Pacific owns
At Capacity Today

Bi-directional commute with riders standing on trains going southbound and northbound

Aging Fleet

<table>
<thead>
<tr>
<th>Series</th>
<th>Quantity</th>
<th>Number of Seats</th>
<th>Year of Manufacture</th>
<th>Make</th>
<th>Retire Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>F40 PH-2</td>
<td>5</td>
<td>na</td>
<td>1985</td>
<td>GM - EMD</td>
<td>2015</td>
</tr>
<tr>
<td>F40 PH-2C</td>
<td>3</td>
<td>na</td>
<td>1998</td>
<td>Stobie Locomotive</td>
<td>2020</td>
</tr>
<tr>
<td>MPOGPH-3C</td>
<td>6</td>
<td>na</td>
<td>2003</td>
<td>Motive Power</td>
<td>2033</td>
</tr>
</tbody>
</table>

Passenger Cars

- Gallery Cab (BiKE): 6, 78, 1999-2000, Nippon Sharyo, 2020
- Gallery Cab (BiKE): 21, 97, 1985, Nippon Sharyo, 2015
- Bi-Level Trailer*: 16, 148, 1997, Bombardier, 2027
- Bi-Level Trailer: 9, 144, 2002, Bombardier, 2030
- Bi-Level Trailer (BiKE): 2, 114, 2000, Bombardier, 2030
- Bi-Level Trailer (BiKE): 5, 114, 2001-2002, Bombardier, 2031-2032
- Bi-Level Trailer (BiKE): 2, 114, 2006, Bombardier, 2030
- Bi-Level Trailer (BiKE): 1, 127, 2002, Bombardier, 2030
- Bi-Level Trailer: 6, 140, 2008, Bombardier, 2030

*Trails recently acquired from Metrolink with refurbishment ongoing.

At Retirement Age: 20/29 loco; 73/134 cars
Regional Transportation Needs

- US 101 and Interstate 280 Congested
- Corridor supports growing economy
- 75% Caltrain riders commute to work
- 60% are choice riders

Project Description

<table>
<thead>
<tr>
<th>Area</th>
<th>Project</th>
<th>Service</th>
</tr>
</thead>
</table>
| 51 miles San Francisco to San Jose (Tamien Station) | Electrification:  
  - Overhead Contact System (OCS)  
  - Traction Power Facilities  
  Electric Trains  
  - 75 percent of fleet | Up to 79 mph  
  Service Increase  
  - 6 trains / hour / direction  
  - More station stops / reduced travel time  
  - Restore Atherton & Broadway service  
  Mixed-fleet service (interim period)  
  Continue tenant service  
  - ACE, Capitol Corridor, Amtrak, Freight |
# Service Benefits

<table>
<thead>
<tr>
<th>Metric</th>
<th>Today</th>
<th>PCEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example Baby Bullet Train</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retain 5-6 stops</td>
<td>60 minutes</td>
<td>45 minutes</td>
</tr>
<tr>
<td>Retain SF to SJ 60 minutes</td>
<td>6 stops</td>
<td>13 stops</td>
</tr>
<tr>
<td>Example Redwood City Station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train stops / peak hour</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: Prototypical Train and Schedule

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# Key Regional Benefits (2040)

- **Greenhouse Gases Annual**: 176,000 metric tons of CO₂
- **Daily Traffic Congestion**: 619,000 vehicle miles
- **Engine Noise Reduced**
- **Up to 97% Clean Air Daily**
- **111,000 Ridership Daily**
- **Improved Frequency / Quicker Trips**

Note: 2013 BAC Report, generates $2.5B economic activity and 9,600 jobs
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


*Please keep in mind that testing and construction will overlap as each segment will be tested individually, prior to final system testing.

Note: Schedule Subject to Change

Electric Train

- 2016 Capacity Board Decision (bike to seat ratio, onboard bathrooms, upper doors ‘not precluded’)
- 2017 Design Progressing w/ Additional Public Input
  - Completed: Exterior design, Seat colors, Bike Storage, ADA restroom
- 2019 Virtual Reality 360 Tour
Construction Phasing

- 51 Miles Corridor
- 4 Work Segments
- 3,000 Poles
- 10 Traction Power Facilities

Menlo Park – Work Segments 2 & 3

Menlo Park Work Segment 2 Area .9 miles
Menlo Park Work Segment 3 Area .7 miles
Field Work Progression

Work Completed
• Utility Survey
• Geotechnical Investigations
• Disposal of Soil from Geotechnical Investigations
• Soil Resistivity Testing
• Site Surveys
• Signal Cable Inspections
• Tree Pruning/Removal

Work In Progress
• Potholing
• Foundation Installation

Future Work
• Pole Installation
• Wire Installation

Future Construction Activities

<table>
<thead>
<tr>
<th>Date</th>
<th>Work Activity</th>
<th>Expected Duration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Progress</td>
<td>Potholing</td>
<td>2-3 months</td>
</tr>
<tr>
<td>In Progress</td>
<td>Foundation Construction</td>
<td>3-7 months</td>
</tr>
<tr>
<td>Late 2018</td>
<td>Pole Installation</td>
<td>2-6 months</td>
</tr>
<tr>
<td>Spring 2019</td>
<td>Wire Installation</td>
<td>2-3 months</td>
</tr>
</tbody>
</table>

*Expected duration indicates first and last day of activity. Number of actual work days will be fewer.
Foundation Installation

On Track Equipment

Pole Information

- 3,000 Installed throughout Corridor
  - 51 poles in Menlo Park
- Pole Height: 30-50’
- Pole Spacing: ~180’ apart
Pole Types Menlo Park

Single Track Cantilever
Two Track Cantilever
Single Track Center

Example of Poles Currently Planned for Use in Menlo Park

Pole Installation

Current Pole Installation
Stringing Wire

4 overhead wires per track: Feeder, Contact, Messenger, and Static

Construction Impacts

- Work will occur during day and night
- Some 24 hour weekend work
- Crews will utilize acoustical barrier blankets and position lights away from homes
- Dedicated hotline for construction complaints
San Francisco Tunnel Work

• Within the four San Francisco Tunnels:
  – Overhead Contact System Installation
  – Grouting and Notching
  – Drainage and Track Work

SF Weekend Caltrain Closures

• Weekends - Oct 6, 2018 to Spring 2019
  – Caltrain service north of the Bayshore Station will be suspended on the weekends
  – Bus service will be provided from Bayshore to 4th and King and 22nd Street stations
• Weekday service will remain unchanged
• Caltrain service south of Bayshore will remain unchanged
• Schedule at caltrain.com/SFWeekendClosure
Public Outreach

• Subscribe to Weekly Updates
  – Visit www.calmod.org/get-involved

• Social Media

• Construction Outreach Office

Public Outreach

Physical Notices
CALMOD CONTACT INFORMATION

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