Caltrain Electrification Update
Belmont Community Meeting
November 8, 2018

Agenda
• Project Overview Recap
• Project Update
• Electrification Infrastructure
  – Belmont Activities
• Questions
Caltrain System

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

Ridership

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

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>
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<tbody>
<tr>
<td>Locomotives</td>
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<tr>
<td>F40PH-2</td>
<td>5</td>
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<td>GM - EMD</td>
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<td>F40PH-2C</td>
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<td>MP36PH-3C</td>
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<td>2003</td>
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<td>Passenger Cars</td>
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<td>Gallery Trailer</td>
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<td>120</td>
<td>1999-2000</td>
<td>Nippon Sharyo</td>
<td>2017</td>
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<td>108</td>
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<td>Nippon Sharyo</td>
<td>2015-2017</td>
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<td>Gallery Cab (Bike)</td>
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<td>76</td>
<td>1999-2000</td>
<td>Nippon Sharyo</td>
<td>2033</td>
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<td>97</td>
<td>1985</td>
<td>Nippon Sharyo</td>
<td>2015</td>
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<tr>
<td>Bi-Level Trailer*</td>
<td>16</td>
<td>149</td>
<td>1997</td>
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<td>140</td>
<td>2008</td>
<td>Bombardier</td>
<td>2038</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Metric</th>
<th>Today</th>
<th>PCEP</th>
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<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

## Key Regional Benefits (2040)

- **Greenhouse Gas Emissions**:
  - 176,000 metric tons of CO₂ annually

- **Daily Traffic Congestion**:
  - 619,000 vehicle miles

- **Engine Noise**:
  - Reduced

- **Clean Air**:
  - Up to 97% daily

- **Ridership**:
  - 111,000 daily

- **Improved Frequency/Quicker Trips**:
  - More service

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
- 1999
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022

*Note: Schedule Subject to Change*

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**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

Belmont

Belmont Project Area 1.5 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>3-4 months</td>
</tr>
<tr>
<td>Late 2018</td>
<td>Pole Installation</td>
<td>2-3 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
- 81 poles in Belmont
- Pole Height: 30-50’
- Pole Spacing: ~180’ apart
Pole Types Belmont

- Single Track Center
- Single Track Side
- Two-Track Cantilever (20)

Combination of 61 Single Track Cantilever Poles. Number for each type TBD

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