Agenda

• Caltrain System Overview
• Project Overview
• Electric Train Design
• San Jose Construction 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

Union Pacific owns
Ridership

Average Daily Ridership

1998 - 2018
At Capacity Today

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

#### Table 1.2: Caltrain Fleet Inventory

<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><strong>Locomotives</strong></td>
<td></td>
<td></td>
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<tr>
<td>F40 PH-2</td>
<td>5</td>
<td>na</td>
<td>1985</td>
<td>GM - EMD</td>
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<td>F40 PH-2C</td>
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<td>MP36PH-3C</td>
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<td>2003</td>
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<td><strong>Passenger Cars</strong></td>
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<tr>
<td>Gallery Trailer</td>
<td>14</td>
<td>120</td>
<td>1999-2000</td>
<td>Nippon Sharyo</td>
<td>2030</td>
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<tr>
<td>Gallery Cab (Bike)</td>
<td>10</td>
<td>108</td>
<td>1985-1987</td>
<td>Nippon Sharyo</td>
<td>2015-2017</td>
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<td>Gallery Cab (Bike)</td>
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<td>78</td>
<td>1999-2000</td>
<td>Nippon Sharyo</td>
<td>2030</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>1987</td>
<td>Bombardier</td>
<td>2027</td>
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<tr>
<td>Bi-Level Trailer</td>
<td>9</td>
<td>144</td>
<td>2002</td>
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<td>2032</td>
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<td>2031-2032</td>
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<tr>
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<td>2008</td>
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<td>2038</td>
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<td>2032</td>
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<tr>
<td>Bi-Level Trailer</td>
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<td>140</td>
<td>2008</td>
<td>Bombardier</td>
<td>2038</td>
</tr>
</tbody>
</table>

*Trailers 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</td>
<td>• Overhead Contact System (OCS)</td>
<td>Service Increase</td>
</tr>
<tr>
<td>Station)</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, Capital Corridor, Amtrak, Freight</td>
</tr>
</tbody>
</table>
## 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
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
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 Decisions with Public Input (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
San Jose Work Area

- College Park Station
- San Jose Diridon Station
- Traction Power Substation
- Tamien Station
- Paralleling Station

CalMod

Caltrain
## Field Work Status

| Pre-Construction Work Completed | • Utility Survey  
|                               | • Geotechnical Investigations  
|                               | • Disposal of Soil from Geotechnical Investigations  
|                               | • Soil Resistivity Testing  
|                               | • Site Surveys  
|                               | • Signal Cable Inspections  
| Pre-Construction Work In Progress | • Foundation Potholing  
|                               | • Tree Pruning and Removal  
| Future Work | • Foundation Installation  
|             | • Pole Installation  
|             | • Wire Installation  |
## Future Construction Activities

### San Jose

<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>Early 2019</td>
<td>Foundation Construction</td>
<td>3-4 months</td>
</tr>
<tr>
<td>Summer 2019</td>
<td>Pole Installation</td>
<td>3-4 months</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>Wire Installation</td>
<td>3-4 months</td>
</tr>
<tr>
<td>In Progress</td>
<td>Traction Power Substation Construction</td>
<td>4-6 months</td>
</tr>
<tr>
<td>In Progress</td>
<td>Paralleling Station Construction</td>
<td>4-6 months</td>
</tr>
<tr>
<td>Spring 2019</td>
<td>CEMOF Facility Modifications</td>
<td>6-9 months</td>
</tr>
</tbody>
</table>

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

- Excavation
- Rebar and Anchor Installation
- Electrical Grounding
- Concrete Fill
Pole Installation

• 3,000 Installed throughout Corridor
  • Approx. 460 Poles in San Jose

• Pole Height: 30-45.5’

• Pole Spacing: ~180’ apart
Pole Installation San Jose

Example of Poles Currently Planned for Use in San Jose

Single Track Cantilever

Two Track Cantilever

Center
Pole Installation San Jose

Example of Poles Currently Planned for Use in San Jose

Portal

Headspan
Pole Installation

Current Pole Installation
Stringing Wire

On-track Equipment
Traction Power Facilities

- 10 Traction Power Facilities Installed throughout Corridor
  - 1 Traction Power Substation installed in San Jose
  - 1 Paralleling Station in San Jose
    - Gantry structures up to 50’
- Provides electrical power to trains through the Overhead Contact System
- Unmanned station
- Day and weekend construction work
- Limited night work during construction
Traction Power Substation Location

[Map showing the location of Traction Power Substation and CEMOF (Caltrain Maintenance Facility)]
Traction Power Substation

Example Traction Power Substation
Paralleling Station Location
Example Paralleling Stations

Examples from Amtrak Northeast Corridor
Test Track Location

Currently existing maintenance track (no new track)
Test Track Information

- Approximately 1.5 miles of existing maintenance track (no new track)
- Located between Santa Clara Station and Caltrain CEMOF facility
- Foundations, poles and wires to be installed prior to electric train testing
Test Track Information

• New electric trains will be tested on track
• Testing to occur between Late 2019 to Spring 2022
• Testing anticipated to be during daytime
Overall Construction Information

- 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
SF Weekend Caltrain Closures

• Weekends - Oct 6, 2018 to Late 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

• Bus schedule available at caltrain.com
Public Outreach

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

• Additional Community Meetings
  – Pole and Wire Installation

• Social Media

• Construction Outreach Office
Public Outreach

Physical Notices
CALMOD CONTACT INFORMATION

WEBSITE  CalMod.org

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       800-660-4287 (Toll Free)

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        San Mateo, CA 94403
        9 a.m. - 5 p.m. Monday - Friday

FACEBOOK  www.facebook.com/caltrain

TWITTER  @caltrain
What’s Next

• Caltrain Business Plan
  – caltrain2040.org

• High Speed Rail Blended System
  – hsr.ca.gov

• Caltrain Downtown Extension
  – sfcta.org/transbay-transit-center

• Diridon Concept Plan