AGENDA

- Caltrain System Overview
- Project Overview
- Electric Train Design
- San Francisco Construction Activities
- Questions
CALTRAIN SYSTEM

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

RIDERSHIP

Average Daily Ridership

1998 2018

CalMod.org
AT CAPACITY TODAY

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

AGING FLEET

Locomotives

- Locomotives Past Retirement Date 2015-2017 (20 of 29)
- Locomotives Within Retirement Date (9 of 29)
CORRIDOR SUPPORTS GROWING ECONOMY

- The corridor is the #3 most congested area in the U.S.
- US 101 and Interstate 280 congested
- 75% Caltrain riders commute to work
- 60% are choice riders
- Organizations shown represent Caltrain Commuter Coalition (P3)

PROJECT DESCRIPTION

Project Area

- 51 miles
- San Francisco to San Jose (Tamien Station)

Project Elements

- Electric Trains*
  - 19 7-car train sets
  - 133 electric cars
  *Includes 2018 State TIRCP Funding

Electrification
- Overhead Contact System (OCS)
- Traction Power Facilities
PROJECT DESCRIPTION

Service Elements

Speed
• 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>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE: BABY BULLET TRAIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retain 5-6 stops</td>
<td>60 min</td>
<td>45 min</td>
<td>15 minute savings</td>
</tr>
<tr>
<td>Retain SF to SJ 60 minutes</td>
<td>6 stops</td>
<td>13 stops</td>
<td>7 more stops</td>
</tr>
<tr>
<td>EXAMPLE: REDWOOD CITY STATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train stops / peak hour</td>
<td>3</td>
<td>5</td>
<td>2 more stops</td>
</tr>
</tbody>
</table>

* Note: Prototypical Train and Schedule
**PROJECT BENEFITS**

- **Improved Train Performance, Increased Service and Greater Capacity**
- **Improved Regional Air Quality and Reduced Greenhouse Gas Emissions**
- **Positive Economic Benefits for the Region**
- **Reduced Engine Noise Emanating from Trains**
- **Increased Revenue and Reduced Fuel Cost**

*Note: Schedule subject to change*

**SCHEDULE**

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

  **Timeline:**
  - 1999
  - 2015
  - 2016
  - 2017
  - 2018
  - 2019
  - 2020
  - 2021
  - 2022

  *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 Finalized with Additional Public Input (exterior design, seat colors, bike storage, ADA restroom)

- **2019** Virtual Reality 360 Tour

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**CONSTRUCTION PHASING**

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

FIELD WORK PROGRESSION

| Work Completed                  | • Utility Survey  
|                                | • Geotechnical Investigations  
|                                | • Disposal of Soil from Geotechnical Investigations  
|                                | • Soil Resistivity Testing  
|                                | • Site Surveys  
|                                | • Signal Cable Inspections  
| Work In Progress               | • Tree Pruning/Removal  
|                                | • Potholing  
|                                | • Tunnel Work  
| Future Work                    | • Foundation Installation  
|                                | • Pole Installation  
|                                | • Wire Installation  
|                                | • Paralleling Station  
|                                | • Bridge Barrier Installation  

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### FUTURE CONSTRUCTION

**San Francisco**

<table>
<thead>
<tr>
<th>Date</th>
<th>Work Activity</th>
<th>Expected Duration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Progress</td>
<td>Tree Pruning/Removal</td>
<td>2-3 months</td>
</tr>
<tr>
<td>In Progress</td>
<td>Potholing</td>
<td>2-3 months</td>
</tr>
<tr>
<td>In Progress</td>
<td>Tunnel Work</td>
<td>7-8 months</td>
</tr>
<tr>
<td>Summer 2019</td>
<td>Paralleling Station 1 Construction</td>
<td>4-6 months</td>
</tr>
<tr>
<td>Late 2019</td>
<td>Foundation Installation</td>
<td>2-3 months</td>
</tr>
<tr>
<td>Late 2019</td>
<td>Pole/Wire Installation</td>
<td>4-5 months</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>Paralleling Station 2 Construction</td>
<td>4-6 months</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>Bridge Barrier 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.

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### POTHOLING

![Potholing Image]

*CalMod.org*
SAN FRANCISCO TUNNEL WORK

• Work on the four San Francisco Tunnels:
  – Overhead Contact System Installation
  – Grouting and Notching
  – Drainage and Track Work
• 24 hour weekend work

FOUNDATION INSTALLATION

• Excavation
• Rebar and Anchor Installation
• Electrical Grounding
• Concrete Fill
FOUNDATION INSTALLATION

POLE INFORMATION

• 3,000 Installed throughout Corridor
  • Approx. 300 poles in San Francisco
• Pole Height: 30-50’
• Pole Spacing: ~180’ apart
POLE TYPES SAN FRANCISCO

Single Track Cantilever
Two Track Cantilever
Center

POLE TYPES SAN FRANCISCO

Portal
Headspan
POLE INSTALLATION

STRINGING WIRE
TRACTION POWER FACILITIES

- 10 Traction Power Facilities Installed throughout Corridor
  - 2 Paralleling Stations installed in San Francisco
  - 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

PARALLELING STATION-1 LOCATION
PARALLELING STATION-1

36’ Cables Installed Below the Freeway

PARALLELING STATION-2 LOCATION

Northern Portion of Bayshore Station Parking Lot
EXAMPLE PARALLELING STATIONS

BRIDGE BARRIERS

9’6” fence height required for pedestrian bridges
BRIDGE BARRIER LOCATIONS

- Mariposa Avenue
- 22nd Street
- 23rd Street
- Paul Avenue
- Oakdale Avenue
- Williams Avenue
- Interstate Overcrossings

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
PUBLIC OUTREACH

- Subscribe to Weekly Updates
  - Visit [www.calmod.org/get-involved](http://www.calmod.org/get-involved)
- Social Media
- Construction Outreach Office
- Additional Community Meetings
  - Pole Installation
WHAT’S NEXT

• Caltrain Business Plan
  – Caltrain2040.org
• High-Speed Rail Blended System
  – hsr.ca.gov
• Caltrain Downtown Extension
  – sftca.org/transbay-transit-center
• Diridon Concept Plan
  – DiridonSJ.org

CALMOD CONTACT INFORMATION

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