AGENDA

• Caltrain System Overview
• Project Overview
• Electric Train Design
• Palo Alto 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 chart from 1998 to 2018
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)
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)

CORRIDOR SUPPORTS GROWING ECONOMY

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

Project Area

Project Elements

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

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

PROJECT DESCRIPTION
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 minutes</td>
<td>45 minutes</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>
</tbody>
</table>

EXAMPLE: REDWOOD CITY STATION

<table>
<thead>
<tr>
<th>Metric</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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

SCHEDULE

* 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.
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

CONSTRUCTION PHASING

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

**Future Work**
- Foundation Installation
- Pole Installation
- Wire Installation
- Paralleling Station Construction
- Bridge Barrier Construction
### FUTURE CONSTRUCTION

**Palo Alto**

<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>Summer/Fall 2019</td>
<td>Paralleling Station Construction</td>
<td>6-8 months</td>
</tr>
<tr>
<td>Summer/Fall 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>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*
FOUNDATION CONSTRUCTION

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

FOUNDATION INSTALLATION

On Track Equipment
POLE INFORMATION

- 3,000 Installed throughout Corridor
  - Approx. 196 poles in Palo Alto
- Pole Height: 30-50’
- Pole Spacing: ~180’ apart

POLE TYPES PALO ALTO

- Single Track Cantilever
- Two Track Cantilever
- Center
POLE INSTALLATION

STRINGING WIRE
• 10 Traction Power Facilities Installed throughout Corridor
  - 1 Paralleling Station installed in Palo Alto
  - 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**

*Note: Location subject to change*

**EXAMPLE PARALLELING STATION**

Example from Amtrak Northeast Corridor
BRIDGE BARRIERS

• Ensure the safety of pedestrians and electrical infrastructure
• Will be installed at:
  – San Antonio Road

9'6" fence height required for pedestrian bridges

Polycarbonate Panel
Screen Mesh
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
- Social Media
- Construction Outreach Office

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