AGENDA

- Caltrain System Overview
- Project Overview
- Electric Train Design
- Santa Clara 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

AVG DAILY RIDERSHIP

1998 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)

**Project Description**

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

**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

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>
</tbody>
</table>

EXAMPLE: REDWOOD CITY STATION

- Train stops / peak hour
  - 3
  - 5
  - 2 more stops

* 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

MILESTONES

* 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

CONSTRUCTION PHASING

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

![Map of SANTA CLARA](image)

### FIELD WORK PROGRESSION

<table>
<thead>
<tr>
<th>Work Completed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Utility Survey</td>
<td></td>
</tr>
<tr>
<td>• Geotechnical Investigations</td>
<td></td>
</tr>
<tr>
<td>• Disposal of Soil from</td>
<td></td>
</tr>
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<td>Geotechnical Investigations</td>
<td></td>
</tr>
<tr>
<td>• Soil Resistivity Testing</td>
<td></td>
</tr>
<tr>
<td>• Site Surveys</td>
<td></td>
</tr>
<tr>
<td>• Signal Cable Inspections</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Work In Progress</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tree Pruning/Removal</td>
<td></td>
</tr>
<tr>
<td>• Foundation Potholing</td>
<td></td>
</tr>
<tr>
<td>• Foundation Installation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Future Work</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pole Installation</td>
<td></td>
</tr>
<tr>
<td>• Wire Installation</td>
<td></td>
</tr>
<tr>
<td>• Bridge Barrier Installation</td>
<td></td>
</tr>
</tbody>
</table>
## FUTURE CONSTRUCTION ACTIVITIES

### Santa Clara (Segment 4 - South of De La Cruz)

<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>Spring/Summer 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>Late 2019</td>
<td>Wire Installation</td>
<td>3-4 months</td>
</tr>
</tbody>
</table>

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

## FUTURE CONSTRUCTION ACTIVITIES

### Santa Clara (Segment 3 - North of De La Cruz)

<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>Summer/Fall 2019</td>
<td>Foundation Construction</td>
<td>3-4 months</td>
</tr>
<tr>
<td>Fall 2019</td>
<td>Bridge Barrier Installation</td>
<td>2-3 months</td>
</tr>
<tr>
<td>Early 2020</td>
<td>Pole Installation</td>
<td>3-4 months</td>
</tr>
<tr>
<td>Early-Mid 2020</td>
<td>Wire Installation</td>
<td>3-4 months</td>
</tr>
</tbody>
</table>

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

CONSTRUCTION STAGING

- Equipment will be staged between the Santa Clara and College Park Stations
- Construction staging will occur along the Caltrain right-of-way south of Santa Clara Station
- Use of trucks, loading/unloading construction trains, occasional use of backup alarms
- 6-8 month period
- Day and night work from 7 p.m. to 5 a.m.
CONSTRUCTION STAGING

FOUNDATION INSTALLATION
FOUNDATION CONSTRUCTION

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

POLE INFORMATION

• 3,000 Installed throughout Corridor
  • Approx. 150 poles in Santa Clara
• Pole Height: 30-50’
• Pole Spacing: ~180’ apart
POLE TYPES SANTA CLARA

Single Track Cantilever

Two Track Cantilever

Portals

Example of Poles Planned for Use in Santa Clara

POLE INSTALLATION

Current Pole Installation
STRINGING WIRE

SANTA CLARA TEST TRACK

• Approximately 1.5 miles of track
• Located between Santa Clara Station and Caltrain CEMOF facility
• Foundations, poles and wires to be installed prior to electric train testing
SANTA CLARA TEST TRACK

• New electric trains will be tested on track
• Testing to occur between 2020 and 2021
• Testing anticipated to be during daytime

BRIDGE BARRIERS

• Ensure the safety of pedestrians and electrical infrastructure
• Will be installed at:
  – Scott Boulevard
  – Lafayette Street
  – De La Cruz Boulevard
BRIDGE BARRIERS

• 9’6” fence height required for pedestrian bridges

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

CALMOD CONTACT INFORMATION

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