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**CALTRAIN ELECTRIFICATION UPDATE**

Sunnyvale Community Meeting  
March 7, 2019



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## AGENDA

- Caltrain System Overview
- Project Overview
- Electric Train Design
- Sunnyvale Construction Activities
- Questions

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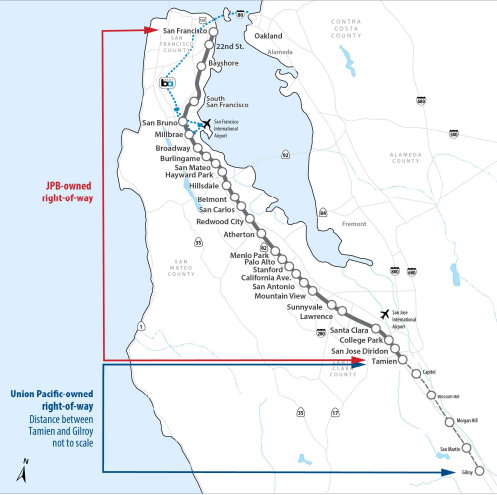
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## CALTRAIN SYSTEM



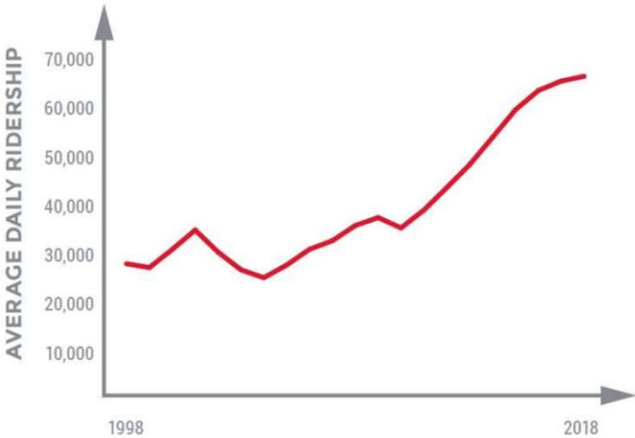
- 32 Stations Gilroy to San Francisco
- 92 Weekday Trains
- At-Grade Crossings, Viaducts, and Bridges
- Intermodal Connections
- Bike Commuters

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## RIDERSHIP



Year	Average Daily Ridership
1998	28,000
2000	35,000
2003	25,000
2005	30,000
2008	35,000
2010	40,000
2012	50,000
2014	60,000
2016	65,000
2018	68,000

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## AT CAPACITY TODAY



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

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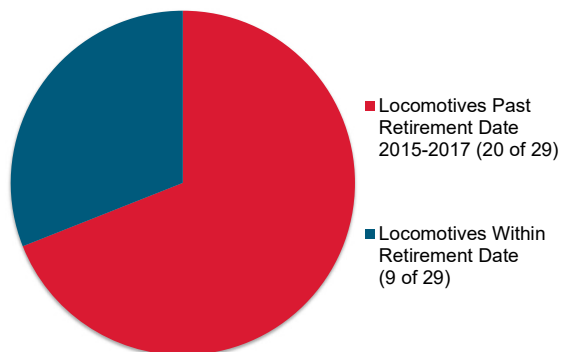


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## AGING FLEET

### Locomotives



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## 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)

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## PROJECT DESCRIPTION

**Project Area**

- 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


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## 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

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## SERVICE BENEFITS


Metric	Today	PCEP	Benefit
EXAMPLE: BABY BULLET TRAIN			
Retain 5-6 stops	60 minutes	45 minutes	<b>15 minute savings</b>
Retain SF to SJ 60 minutes	6 stops	13 stops	<b>7 more stops</b>
EXAMPLE: REDWOOD CITY STATION			
Train stops / peak hour	3	5	<b>2 more stops</b>

\* Note: Prototypical Train and Schedule


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## 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**

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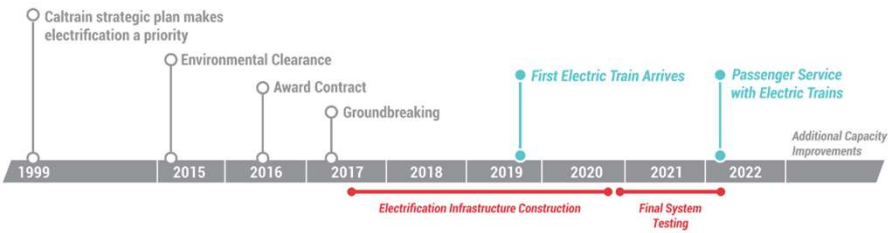
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## SCHEDULE


**MILESTONES**



\*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**

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# 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



FEEDBACK COLLECTION PROCESS



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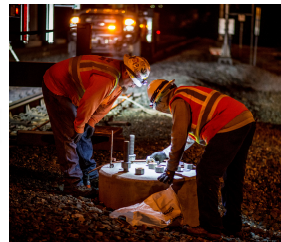
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# CONSTRUCTION PHASING



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



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## SUNNYVALE

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## FIELD WORK PROGRESSION

Work Completed	<ul style="list-style-type: none"> <li>Utility Survey</li> <li>Geotechnical Investigations</li> <li>Disposal of Soil from Geotechnical Investigations</li> <li>Soil Resistivity Testing</li> <li>Site Surveys</li> <li>Signal Cable Inspections</li> </ul>
Work In Progress	<ul style="list-style-type: none"> <li>Tree Pruning/Removal</li> <li>Potholing</li> </ul>
Future Work	<ul style="list-style-type: none"> <li>Foundation Installation</li> <li>Pole Installation</li> <li>Wire Installation</li> <li>Paralleling Station</li> </ul>

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## FUTURE CONSTRUCTION

### Sunnyvale

Date	Work Activity	Expected Duration*
In Progress	Tree Pruning/Removal	2-3 months
In Progress	Potholing	2-3 months
Spring 2019	Paralleling Station Construction	4-5 months
Summer/Fall 2019	Foundation Construction	2-3 months
Late 2019	Pole/Wire Installation	2-3 months

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



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## FOUNDATION INSTALLATION



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On Track Equipment



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## POLE INFORMATION

- 3,000 Installed throughout Corridor
  - Approx. 250 poles in Sunnyvale
- Pole Height: 30-50'
- Pole Spacing: ~180' apart

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## POLE TYPES SUNNYVALE



Single Track Cantilever



Two Track Cantilever

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Example of Poles Planned for Use in Sunnyvale



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## POLE TYPES SUNNYVALE



Center



Portals

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Example of Poles Planned for Use in Sunnyvale



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## POLE INSTALLATION



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Current Pole Installation



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## STRINGING WIRE



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On-track Equipment



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## TRACTION POWER FACILITIES

- 10 Traction Power Facilities Installed throughout Corridor
  - 1 Paralleling Station installed in Sunnyvale
  - 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

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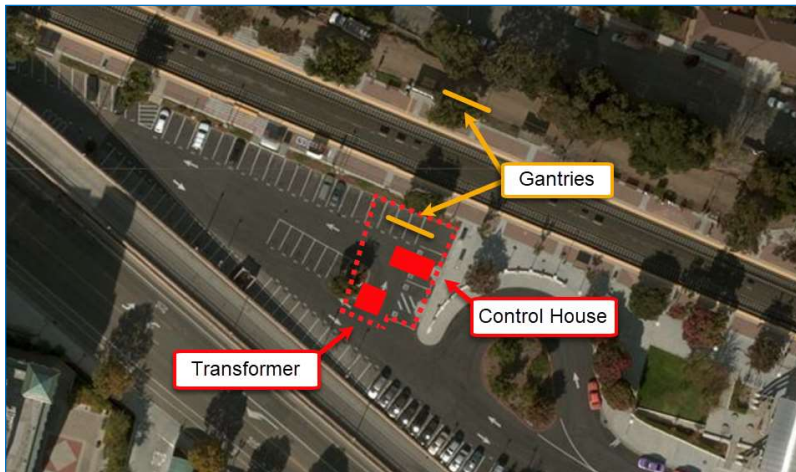
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## PARALLELING STATION LOCATION



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## EXAMPLE PARALLELING STATIONS



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Examples from Amtrak Northeast Corridor



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## 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

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## SAN FRANCISCO WEEKEND SERVICE

- 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 4<sup>th</sup> and King and 22<sup>nd</sup> Street stations
- Weekday service will remain unchanged
- Caltrain service south of Bayshore will remain unchanged
- Bus schedule available at [caltrain.com](http://caltrain.com)


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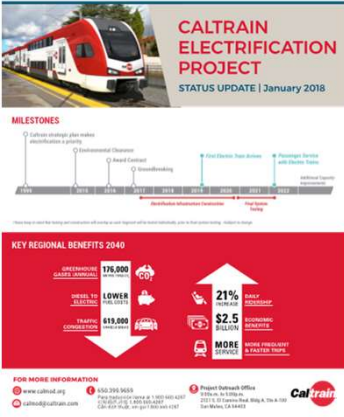





## PUBLIC OUTREACH




**Doorhanger**



**Factsheet**



**Public Meeting**

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## 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

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## CALMOD CONTACT INFORMATION

**WEEKLY UPDATES** 🌐 [CalMod.org/get-involved](http://CalMod.org/get-involved)

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