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## Peninsula Corridor Electrification Update Meeting


San Jose Community Meeting  
March 5, 2018



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## Agenda

- Caltrain System Overview
- Project Overview
- Electric Train Design
- San Jose Construction Activities
- Questions



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## Caltrain System



JBP owns right-of-way from SF to San Jose

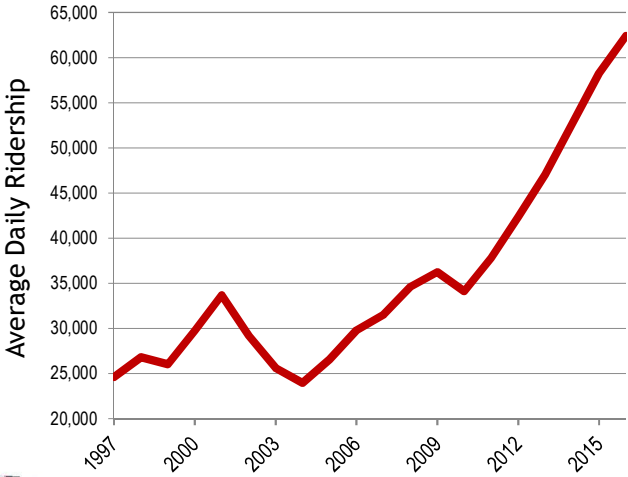
- 32 Stations Gilroy to San Francisco
- 92 Weekday Trains
- At-Grade Crossings, viaducts, and bridges
- Intermodal Connections
- Bike Commuters

Union Pacific owns





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## Ridership



Year	Average Daily Ridership
1997	25,000
2000	26,000
2003	25,000
2006	28,000
2009	35,000
2012	40,000
2015	62,000





# At Capacity Today



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



# Aging Fleet

Table 1.2: Caltrain Fleet Inventory

SERIES	QUANTITY	NUMBER OF SEATS	YEAR OF MANUFACTURE	MAKE	RETIRE DATE
<b>Locomotives</b>					
F40 PH-2	5	na	1985	GM - EMD	2015
F40PH-2-CAT	15	na	1985-1987	GM - EMD	2015-2017
F40 PH-2C	3	na	1998	Boise Locomotive	2028
MP36PH-3C	6	na	2003	Motive Power	2033
<b>Passenger Cars</b>					
Gallery Trailer	26	142	1985-1987	Nippon Sharyo	2015-2017
Gallery Trailer	16	148	1985-1987	Nippon Sharyo	2015-2017
Gallery Trailer	14	120	1999-2000	Nippon Sharyo	2030
Gallery Cab (Bike)	10	108	1985-1987	Nippon Sharyo	2015-2017
Gallery Cab (Bike)	6	78	1999-2000	Nippon Sharyo	2030
Gallery Cab (Bike)	21	97	1985	Nippon Sharyo	2015
Bi-Level Trailer*	16	149	1997	Bombardier	2027
Bi-Level Trailer	9	144	2002	Bombardier	2032
Bi-level Trailer (Bike)	2	114	2002	Bombardier	2032
Bi-level Trailer (Bike)	5	114	2001-2002	Bombardier	2031-2032
Bi-level Trailer (Bike)	2	114	2008	Bombardier	2038
Bi-level Trailer (Bike)	1	127	2002	Bombardier	2032
Bi-Level Trailer	6	140	2008	Bombardier	2038

\*Trailers recently acquired from Metrolink with refurbishment ongoing.





## 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

Area	Project	Service
51 miles San Francisco to San Jose (Tamien Station)	Electrification: <ul style="list-style-type: none"> <li>• Overhead Contact System (OCS)</li> <li>• Traction Power Facilities</li> </ul> Electric Trains (EMUs) <ul style="list-style-type: none"> <li>• 75 percent of fleet</li> </ul>	Up to 79 mph Service Increase <ul style="list-style-type: none"> <li>• 6 trains / hour / direction</li> <li>• More station stops / reduced travel time</li> <li>• Restore Atherton &amp; Broadway service</li> </ul> Mixed-fleet service (interim period) Continue tenant service <ul style="list-style-type: none"> <li>• ACE, Capital Corridor, Amtrak, Freight</li> </ul>





## Service Benefits

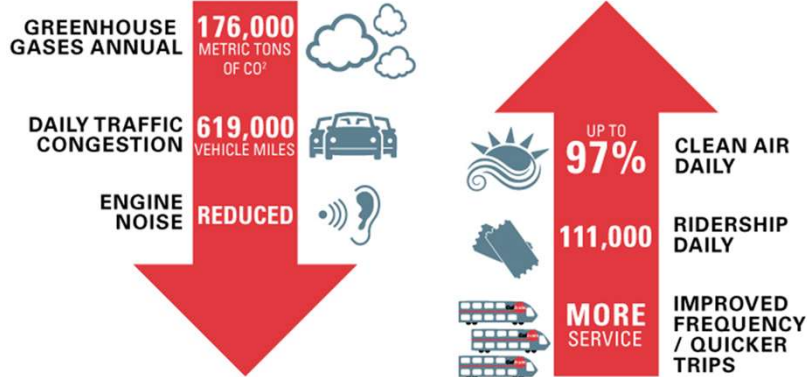
Metric	Today	PCEP
Example Baby Bullet Train		
Retain 5-6 stops	60 minutes	45 minutes
Retain SF to SJ 60 minutes	6 stops	13 stops
Example Redwood City Station		
Train stops / peak hour	3	5



Note: Prototypical Train and Schedule



## Key Regional Benefits (2040)



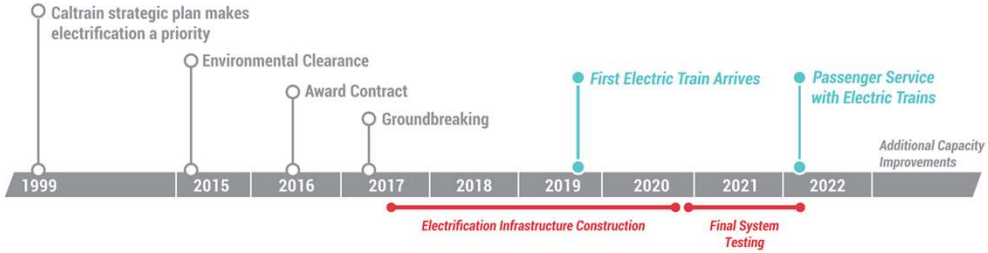
Note: 2013 BAC Report, generates \$2.5B economic activity and 9,600 jobs





# 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



## Electric Train Design & Public Input

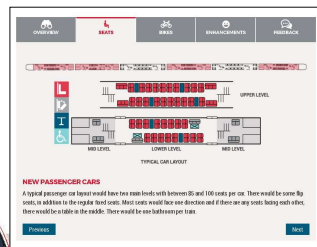
Peninsula Corridor Electrification Project



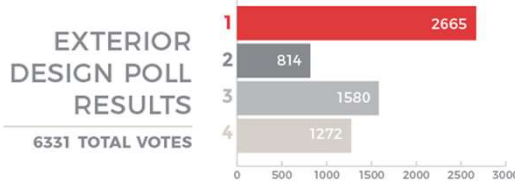


# Electric Train

- 2016 Capacity Board Decision (bike to seat ratio, onboard bathrooms, upper doors ‘not precluded’)
- 2017 Design Progressing w/ Additional Public Input
  - Completed: Exterior design, Seat colors, Bike Storage, ADA restroom
- 2018 Virtual Reality 360 Tour



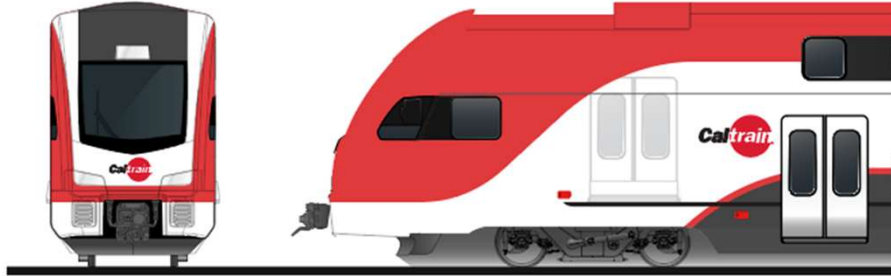
# Electric Train Exterior Design Public Poll



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# Electric Train Exterior Design

WINNING DESIGN: **OPTION 1**



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# Electric Train Seat Design

WINNING DESIGN: **OPTION B**



SEAT POLL RESULTS

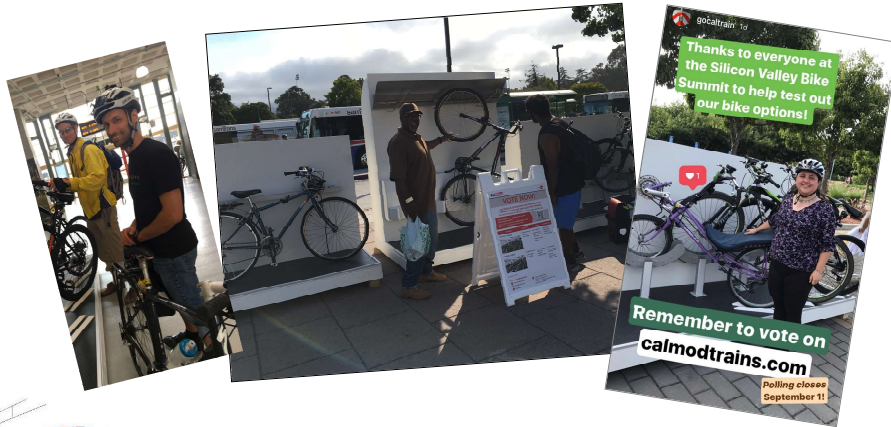
2549 TOTAL VOTES







# Electric Train Onboard Bike Storage Outreach



Station Outreach with Samples: August 8 to September 1



# Electric Train Onboard Bike Storage Outreach

## FEEDBACK COLLECTION PROCESS



- + BICYCLE ADVISORY COMMITTEE (BAC)
- + BIKE COALITION INPUT
- + ONLINE BIKE POLL
- + STATION OUTREACH
- + RIDER COMMENTS



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# Electric Train Onboard Bike Storage Design



- Maximizes capacity
- Accommodates variety of bike types
- Recommended by:
  - Bicycle Advisory Committee
  - Bike Coalitions (SF and Silicon Valley)



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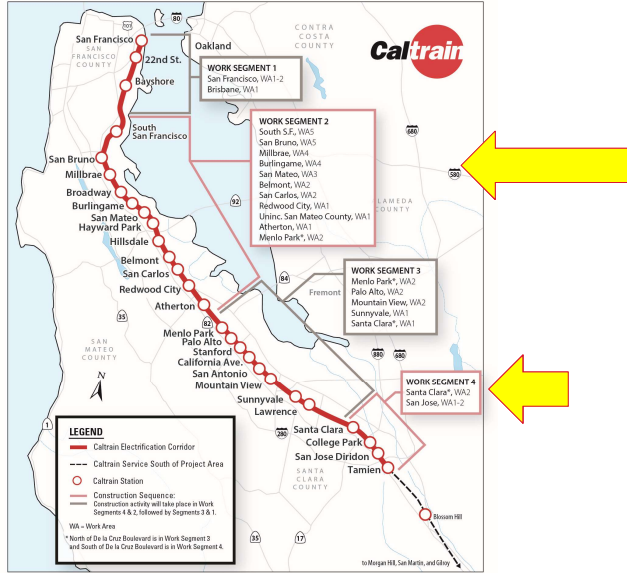


## Construction Activities



# CalMod Construction Phasing

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

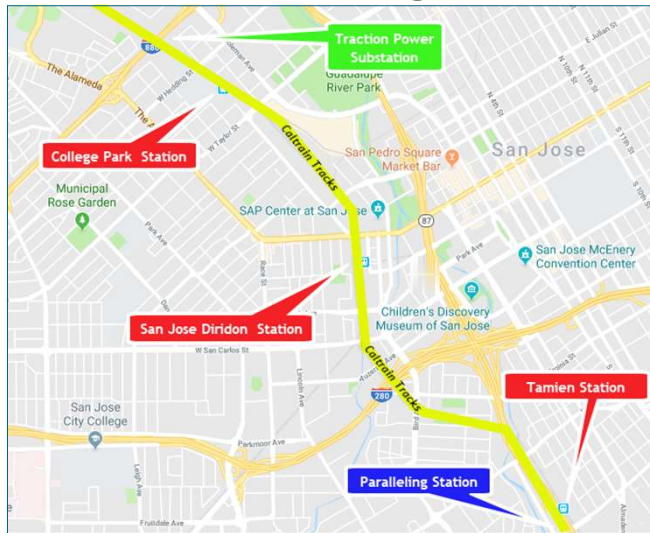


• Segments 2 & 4 followed by 1 & 3



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## San Jose – Work Segment 4



San Jose Project Area 5.38 miles





## Field Work Status

Pre-Construction 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 and Upcoming	<ul style="list-style-type: none"> <li>• Foundation Potholing</li> <li>• Tree Pruning and Removal</li> <li>• Foundation Construction</li> </ul>
Future Work	<ul style="list-style-type: none"> <li>• Overhead Contact System Pole Installation</li> <li>• Overhead Contact System Wire Installation</li> <li>• Traction Power Substation (TPS) – North San Jose Only</li> <li>• TPS Interconnect</li> <li>• Paralleling Station – South San Jose Only</li> </ul>



## Future Construction Activities

### San Jose (Work Segment 4)

Date	Work Activity	Expected Duration*
In Process	Potholing	3-5 months
In Process	Tree Pruning/Removal	3-4 months
Spring 2018	Foundation Construction	3-5 months
Summer 2018	Pole/Wire Installation	2-3 months
Spring 2018	Traction Power Substation (North San Jose)	1 year
Late Summer/Fall 2018	Paralleling Station (South San Jose)	1 year



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



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## Potholing

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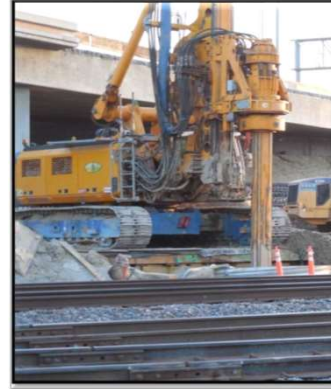
## Foundation Construction

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

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## Foundation Installation



On and Off Track Equipment

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## Pole Information

- 3,000 Installed throughout Corridor
  - 460 poles installed in San Jose
- San Jose Pole Types\*
  - Single-Track Cantilever (30'-35' height)
  - Two-Track Cantilever (45.5' height)
  - Center Poles (30'-35' height)
  - Portals (35'-40' height)
  - Headspan (35'-40' height)
- Pole Spacing: ~180' apart
- Black poles at San Jose Stations



\* Currently 95% Design



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## Pole Installation San Jose



Single Track Cantilever



Two Track Cantilever



Center

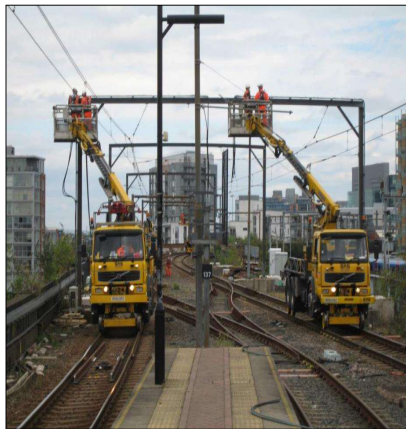


Example of Poles Currently Planned for Use in San Jose



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## Pole Installation San Jose



Portal



Headspan



Example of Poles Currently Planned for Use in San Jose



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## Stringing Wire



On-track Equipment

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## Construction Impacts

- Daytime work and night work from 8 p.m. - 6 a.m.
- 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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# Public Outreach

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



# Public Outreach

- Physical Notices



725 Box 3000  
San Carlos, CA 95070-1300

Estimado Vecino de Caltrain:


Durante los próximos tres meses, Caltrain estará trabajando en el corredor del Ferrocarril de la Zona para mejorar el servicio del Caltrain como parte del Programa Corredor Electrificación Proyecto. Las actividades previstas durante este tiempo incluyen: instalación de infraestructura de electrificación, construcción de pilas para probar el contacto para la instalación y operación del servicio de transporte modernizado. Después del completamiento de algunas, trabajos continuaremos a trabajar en las bases para el sistema antes de concluir.

Los trabajos tendrán a cabo durante el día y la noche. Actividades de noche se realizarán entre las 8:00 p.m. y las 5:00 a.m. Nos disculpamos por cualquier inconveniente que esto pueda causar. Para mitigar el ruido y otros impactos durante las actividades de noche, el equipo utilizará métodos de barrido nocturno y controlará niveles de ruido de acuerdo a áreas residenciales y de negocios.

El proyecto de electrificación permitirá que Caltrain opere más silenciosos, más limpios, más seguros, más rápidos, y con servicio más frecuente del día. Mayor capacidad y mejor servicio ayudará a Caltrain a satisfacer la creciente demanda de servicio más frecuente y a nivel de la capacidad de trabajo regular. Los nuevos trenes eléctricos están programados para operar en el 2021.

No los culpamos por las molestias que pueden sufrir mientras trabajamos para entregar estos beneficios críticos a nuestras comunidades.

Por favor visite nuestro sitio web en [www.caltrain.com/PCEP](http://www.caltrain.com/PCEP) para más detalles de construcción. Gracias por su paciencia y comprensión.



Dear Caltrain Neighbor:

Over the next three months, Caltrain will be performing work on the railroad corridor in your area of the Peninsula Corridor Electrification Project. The anticipated activities during this time include testing soil conditions, inspecting signal/communication equipment, and tree trimming/removal to allow for the installation and operation of modernized transit service. After tree trimming/removal occurs, crews will be installing contact systems.

Work will take place during the day and at night. Night activities will occur between 8:00 p.m. and 5:00 a.m. To mitigate noise and other impacts during nighttime activities, we will position lights away from residential, roadways, and business areas.


The electrification project will allow Caltrain to operate quieter, cleaner, more frequent and/or fast, created capacity and improved service will help Caltrain meet the increasing ridership demand at this time. The new electric trains are scheduled to be operational in 2021.

We apologize for any inconvenience you might experience while we work to deliver these critical benefits to our communities.

Please visit our website at [www.caltrain.com/PCEP](http://www.caltrain.com/PCEP) for weekly construction notice updates. Thank you for your patience and understanding as we deliver these critical benefits to our communities.

Please visit our website at [www.caltrain.com/PCEP/construction](http://www.caltrain.com/PCEP/construction) to sign-up for weekly construction updates.

We appreciate your patience during construction.



**CALTRAIN MODERNIZATION PROGRAM**  
Test Pile Construction Activities

**DAY TIME WORK**  
08/28/17 - 09/1/17

**ANTICIPATED WORK HOURS**  
7:00 a.m. - 5:00 p.m.

**CREWS CONDUCTING WORK IN YOUR AREA TO INSTALL AND TEST FOUNDATION PILES**

During the week of August 28, Caltrain electrification crews will be working in your area to construct one test pile foundation for integrity testing. The piles will be installed within the Caltrain right-of-way.

Crews will be conducting the work over a two-day period between Monday, August 28 and Friday, September 1, between the hours of 7 a.m. and 5 p.m. Crews will return at a later date to test the integrity of the installed piles.


Main construction activities include:

- Survey and layout of proposed pile test location
- Trucks and equipment working near Caltrain right-of-way
- Drilling holes for placement of test piles
- Pour concrete and install rebar
- Backfill holes to cover work areas

We apologize for any inconvenience this may cause. The field team will work as quickly as possible. Thank you for your patience and understanding as we deliver these critical benefits to our communities.

Please visit our website at [www.caltrain.com/PCEP/construction](http://www.caltrain.com/PCEP/construction) to sign-up for weekly construction updates.

We appreciate your patience during construction.







**Construction Contact Information**

Email: [calmod@caltrain.com](mailto:calmod@caltrain.com)

Phone: 650.399.9659

Toll Free: 800.660.4287

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