




CalMod

Peninsula Corridor Electrification Update Meeting


Menlo Park Community Meeting
February 28, 2018




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Agenda

- Caltrain System Overview
- Project Overview
- Electric Multiple Unit (EMU) Design
- Menlo Park Construction Activities
- Questions








Caltrain System



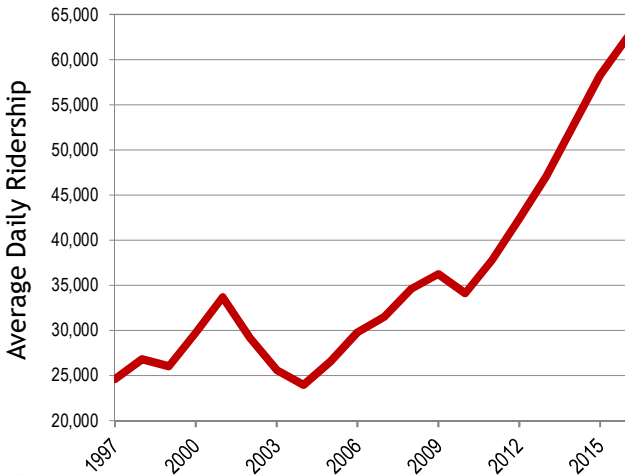
JBP owns right-of-way from SF to San Jose

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



Union Pacific owns

Ridership



Year	Average Daily Ridership
1997	25,000
1998	26,000
1999	26,000
2000	28,000
2001	33,000
2002	28,000
2003	25,000
2004	24,000
2005	26,000
2006	29,000
2007	31,000
2008	35,000
2009	36,000
2010	34,000
2011	38,000
2012	43,000
2013	48,000
2014	55,000
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
Locomotives					
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
Passenger Cars					
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"> • Overhead Contact System (OCS) • Traction Power Facilities Electric Trains (EMUs) <ul style="list-style-type: none"> • 75 percent of fleet 	Up to 79 mph Service Increase <ul style="list-style-type: none"> • 6 trains / hour / direction • More station stops / reduced travel time • Restore Atherton & Broadway service Mixed-fleet service (interim period) Continue tenant service <ul style="list-style-type: none"> • ACE, Capital Corridor, Amtrak, Freight





Service Benefits

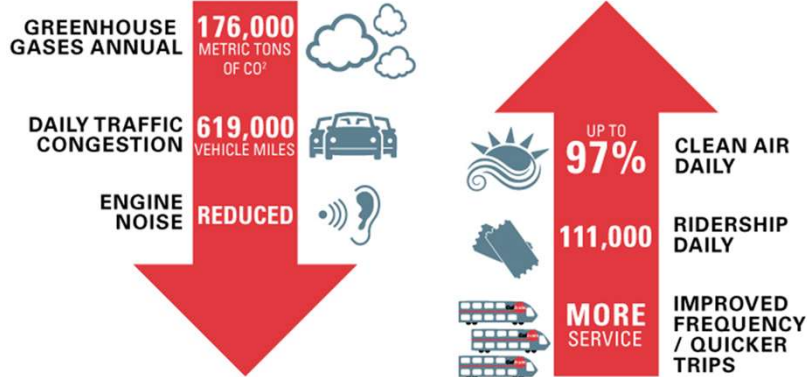
Metric	Today	PCEP
Example Baby Bullet Train		
Retain 5-6 stops	60 minutes	45 minutes
Retain SF to SJ 60 minutes	6 stops	13 stops
Example Redwood City Station		
Train stops / peak hour	3	5



Note: Prototypical Train and Schedule



Key Regional Benefits (2040)



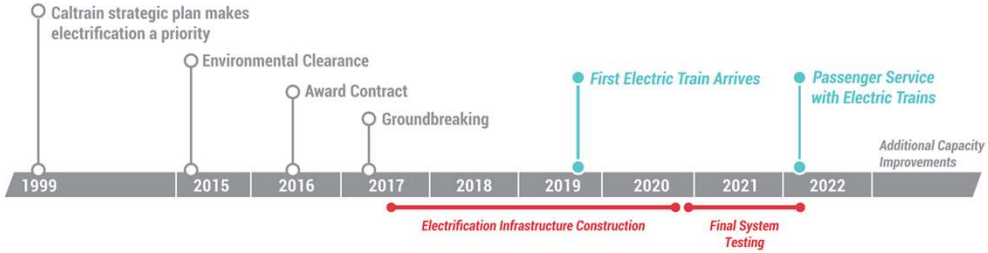
Note: 2013 BAC Report, generates \$2.5B economic activity and 9,600 jobs





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

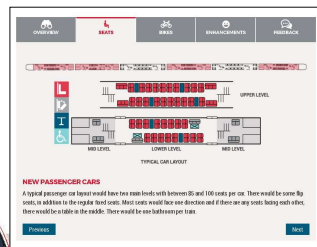
Peninsula Corridor Electrification Project



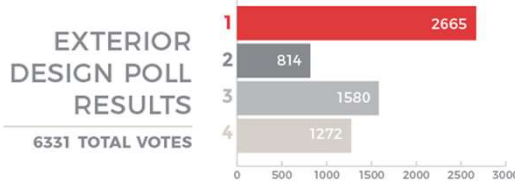


Electric Train

- 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



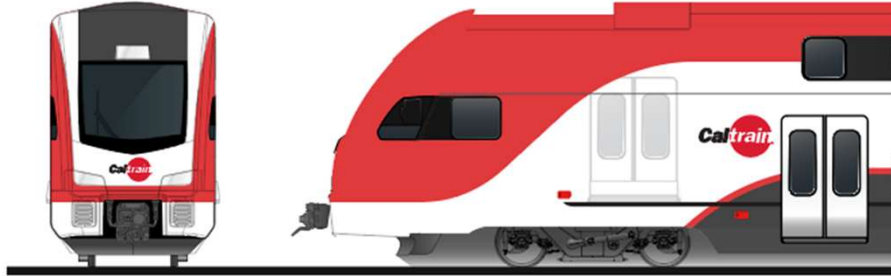
Electric Train Exterior Design Public Poll



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Electric Train Exterior Design

WINNING DESIGN: **OPTION 1**



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Electric Train Seat Design

WINNING DESIGN: **OPTION B**



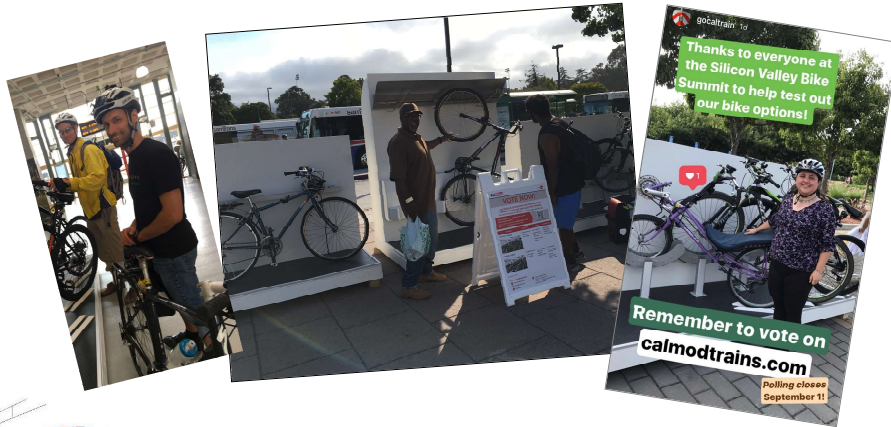
SEAT POLL RESULTS

2549 TOTAL VOTES





Electric Train Onboard Bike Storage Outreach

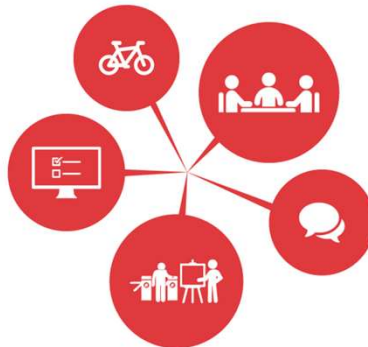


Station Outreach with Samples: August 8 to September 1



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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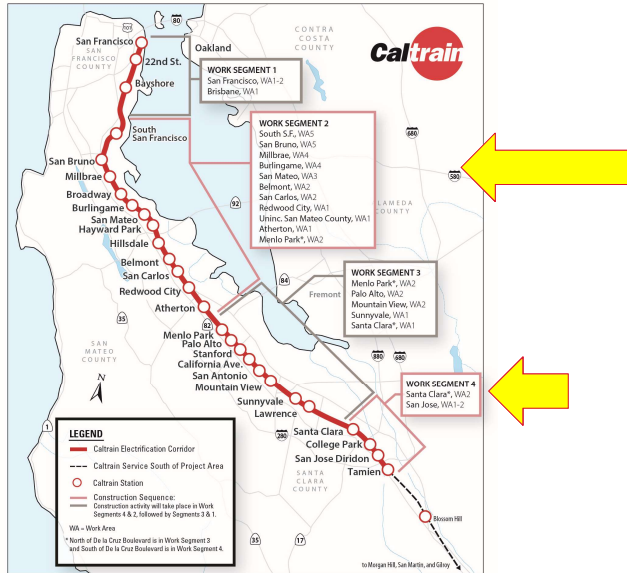


Construction Activities



CalMod Construction Phasing

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



• Segments 2 & 4 followed by 1 & 3



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Menlo Park – Work Segments 2 & 3



Menlo Park Work Segment 2 Area .9 miles
 Menlo Park Work Segment 3 Area .7 miles





Field Work Status

Pre-Construction Work Completed	<ul style="list-style-type: none"> • Utility Survey • Geotechnical Investigations • Disposal of Soil from Geotechnical Investigations • Soil Resistivity Testing • Site Surveys • Signal Cable Inspections
Work In Progress	<ul style="list-style-type: none"> • Foundation Potholing • Tree Pruning and Removal
Future Work	<ul style="list-style-type: none"> • Foundation Construction • Overhead Contact System Pole Installation • Overhead Contact System Wire Installation



Future Construction Activities

Menlo Park

Date	Work Activity	Expected Duration
Spring 2018	Potholing	1-2 months
Spring 2018	Tree Pruning/Removal	1-2 months
Late Summer 2018	Foundation Construction	1-2 months
Late 2018	Pole/Wire Installation	1-2 months



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



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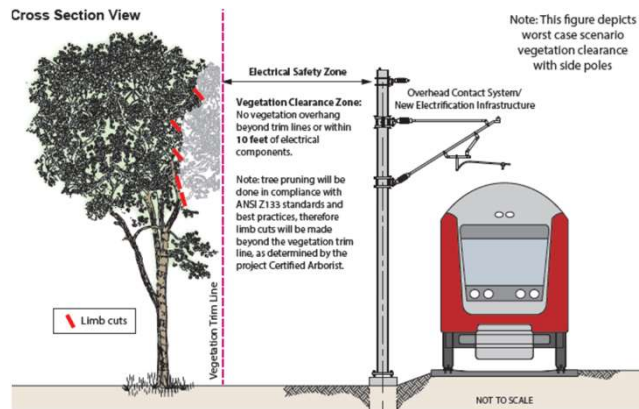
Potholing



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Tree Pruning and Replacement



Vegetation cleared for Electrical Safety Zone

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City of Menlo Park: Tree Pruning and Replacement Plan

City of Menlo Park			
	Caltrain Right of Way	Public Property	Private Property
Trees Removed	30	0	0
Trees Pruned >25%	72	4	9
Trees Pruned <25%	244	26	76
115 Trees will be replaced per the Menlo Park Tree Replacement Plan			



Note: Information may change as the design progresses



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

- 51 poles in Menlo Park
- Menlo Park Pole Types*
 - Single Track Cantilever (30' -35' height)
 - Two-Track Cantilever (45.6' height)
 - Center Poles (30' -35' height)
- Pole Spacing: ~180' apart



* Currently 65% Design



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Pole Installation Menlo Park



Single Track Cantilever



Two Track Cantilever



Center



Example of Poles Currently Planned for Use in Menlo Park



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Stringing Wire



On-track Equipment





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



Public Outreach


- Subscribe to Weekly Updates
 - Visit www.calmod.org
- Additional Community Meetings
 - Pole and Wire Installation
- Social Media
- Construction Outreach Office





Public Outreach


- Physical Notices




P.O. Box 3106
San Carlos, CA 94070-1306

Presented by:
CalMod
PCEP
Alstom Inc.

Estimado vecino de Caltrain:
Durante los próximos tres meses, Caltrain estará trabajando en el corredor del Ferrocarril en su área para mejorar el servicio de Caltrain como parte de la Península Corridor Electrificación Proyecto. Las actividades previstas durante este tiempo incluyen: instalación de instalaciones subterráneas, ajustando las condiciones de la tierra, inspección de terreno de calidad, inspección de equipos de señalización y comunicación, y mantenimiento de árboles para asegurar el espacio para la instalación y operación de servicios de transporte mejorados. Después del contacto de calidad de terreno, se espera comenzar a trabajar en los terrenos en el sistema antes de iniciar.
Las labores tendrán a cabo durante el día y la noche. Actividades de noche se ocurrirán entre las 8:00 p.m. y las 6:00 a.m. Nos disculpamos por cualquier inconveniente que esto pueda causar. Para mitigar el ruido y otros impactos durante las actividades, los ruidos y otros impactos serán de forma reducida y controlados para asegurar de minimizar áreas residenciales de impacto.
El proyecto de electrificación permitirá que Caltrain opere más silenciosamente, más rápido, más seguro y con servicios más frecuentes. Mayor capacidad y mejor servicio ayudará a Caltrain a enfrentar el crecimiento de la zona de la Península y a dar la capacidad de tráfico mejor. Los nuevos trenes eléctricos están programados para comenzar en 2021.
No disculpamos por los molestias que pueden surgir mientras trabajamos para entregar estos beneficios críticos a nuestros consumidores.
Por favor visite nuestro sitio web en 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 for installation and operation of modernized transit services. After tree trimming/removal occurs, crews will be working on the overhead contact system.
Work will take place during the day and at night. Night activities will occur between 8:00 p.m. and 6:00 a.m. as inconvenience this may cause. To mitigate noise and other impacts during nighttime activities, barrier blankets, and will position lights away from residential, roadways, and business areas.
The electrification project will allow Caltrain to operate quieter, cleaner, more frequent and/or faster. Increased capacity and improved service will help Caltrain meet the increasing ridership demand in the area. 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 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 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
- Drill 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 crews will work as quietly 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 to sign-up for weekly construction updates.
We appreciate your patience during construction.





Construction Contact Information

Email: calmod@caltrain.com

Phone: 650.399.9659

Toll Free: 800.660.4287

2121 S. El Camino Real, Suite A-100
San Mateo, CA 94403
9 a.m. - 5 p.m. Monday - Friday

www.calmod.org

