






**Peninsula Corridor
Electrification Update Meeting**


Mountain View Community Meeting
September 12, 2018



Agenda


- Caltrain System Overview
- Project Overview
- Electric Train Design
- Mountain View Construction Activities
- Questions








Caltrain System

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

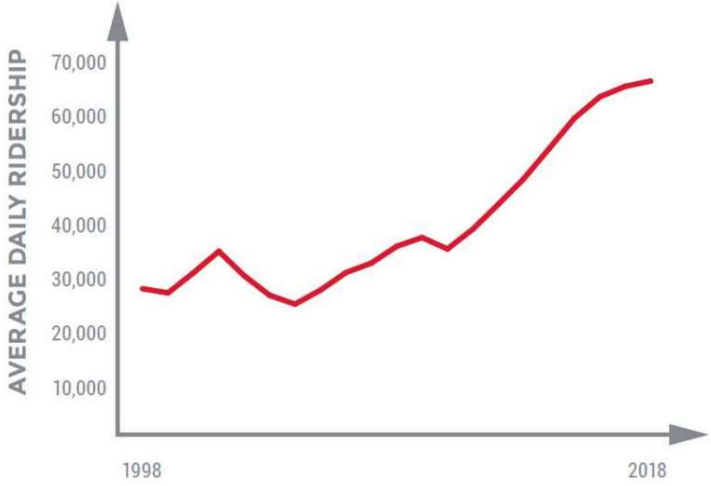


- 32 Stations Gilroy to San Francisco
- 92 Weekday Trains
- At-Grade Crossings, viaducts, and bridges
- Intermodal Connections
- Bike Commuters



Union Pacific owns

Ridership



Year	Average Daily Ridership
1998	28,000
2000	35,000
2002	25,000
2004	32,000
2006	38,000
2008	35,000
2010	45,000
2012	55,000
2014	62,000
2016	65,000
2018	68,000



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	2026
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.



At Retirement Age: 20/29 loco; 73/134 cars





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





Service Benefits

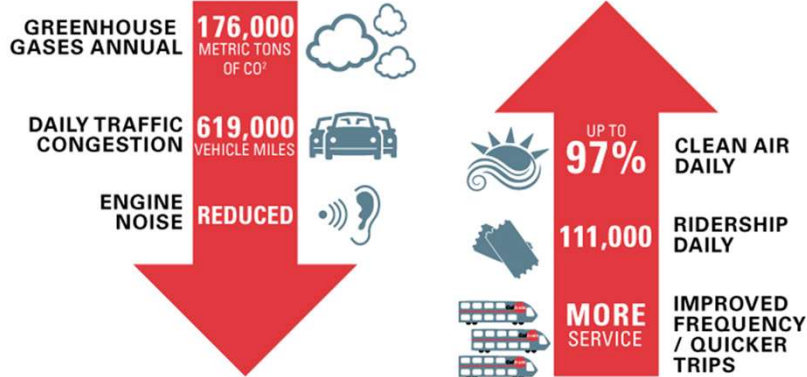
Metric	Today	PCEP
Example Baby Bullet Train		
Retain 5-6 stops	60 minutes	45 minutes
Retain SF to SJ 60 minutes	6 stops	13 stops
Example Redwood City Station		
Train stops / peak hour	3	5



Note: Prototypical Train and Schedule




Key Regional Benefits (2040)



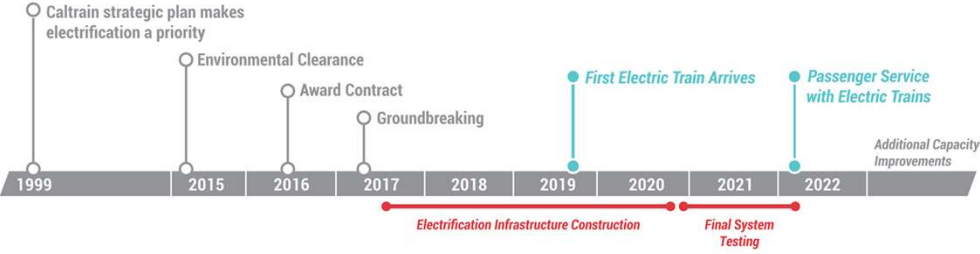
Note: 2013 BAC Report, generates \$2.5B economic activity and 9,600 jobs






Schedule



MILESTONES



*Please keep in mind that testing and construction will overlap as each Segment will be tested individually, prior to final system testing.

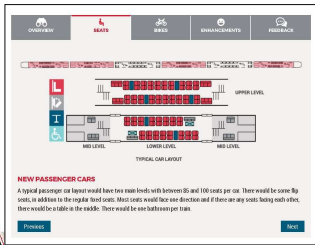


Note: Schedule Subject to Change







Electric Train

- 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

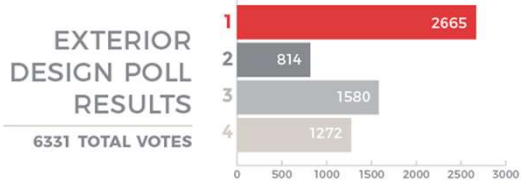


NEW PASSENGER CARS
A typical passenger car layout would have two levels with between 85 and 100 seats per car. There would be some 8p seats in addition to the regular seat ones. Most cars would have one direction and if there are any seats facing each other, they would be in the aisle. There would be one bathroom per train.



Electric Train Exterior Design Public Poll



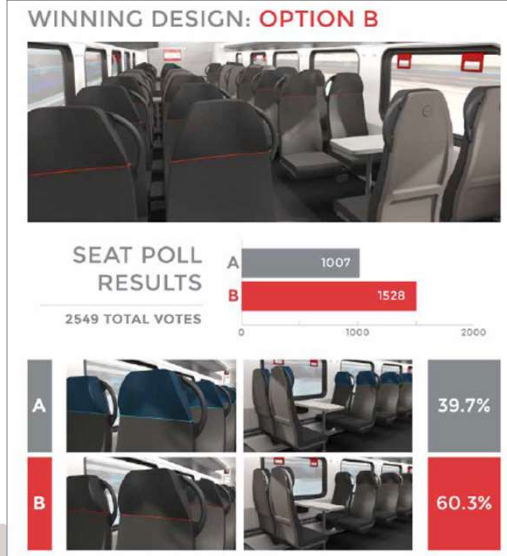
Electric Train Exterior Design

WINNING DESIGN: **OPTION 1**



CalMod

Electric Train Seat Design



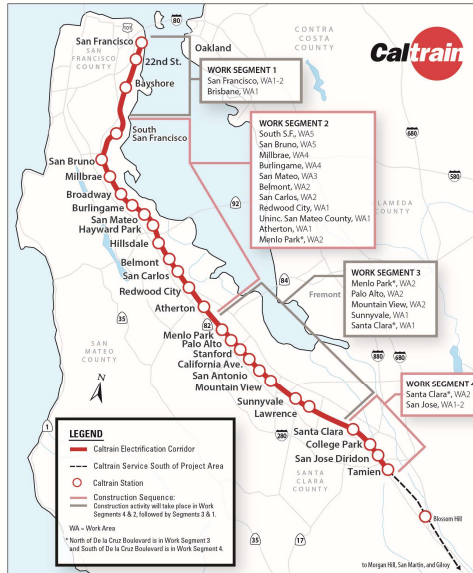
CalMod

Electric Train Onboard Bike Storage Outreach



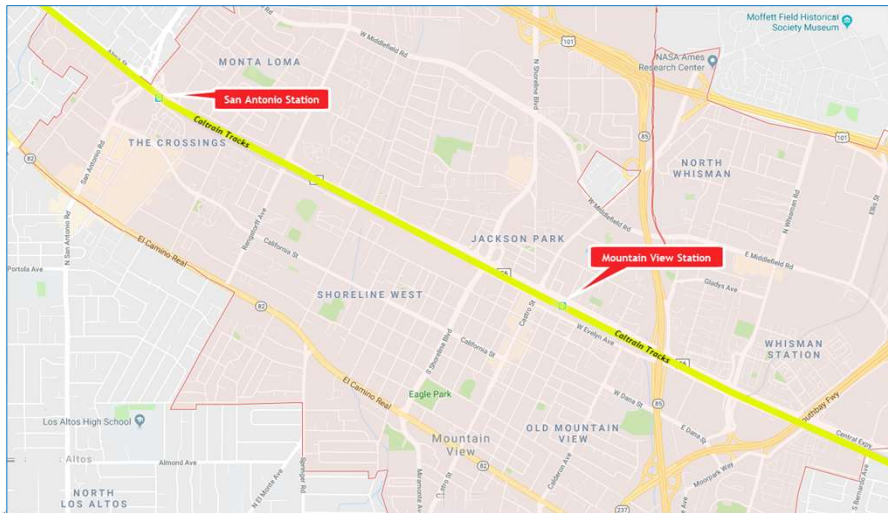
CalMod Construction Phasing

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



CalMod

Mountain View – Work Segment 3



Mountain View Work Area 3.5 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
Pre-Construction Work In Progress	<ul style="list-style-type: none"> • Foundation Potholing
Future Work	<ul style="list-style-type: none"> • Tree Pruning and Removal • Foundation Installation • Overhead Contact System Pole Installation • Overhead Contact System Wire Installation



Future Construction Activities

Mountain View

Date	Work Activity	Expected Duration*
Summer/Fall 2018	Potholing	2-3 months
Fall 2018	Tree Pruning/Removal	2-3 months
Spring 2019	Foundation Installation	2-4 months
Summer/Fall 2019	Pole/Wire Installation	4-5 months



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





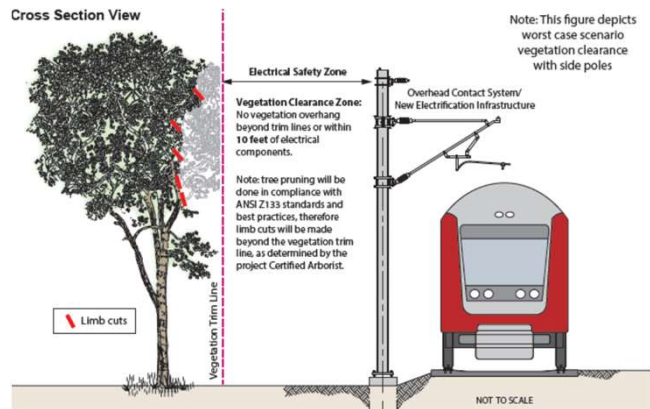
Potholing



Approx. 213 Potholes Mountain View



Tree Pruning and Replacement



Vegetation cleared for Electrical Safety Zone



CalMod**City of Mountain View: Tree Pruning and Replacement Plan**

City of Mountain View			
	Caltrain Right of Way	Public Property	Private Property
Trees Removed	11	72	0
Trees Pruned >25%	33	22	0
Trees Pruned <25%	143	83	23

172 Trees will be replaced per the Mountain View Tree Replacement Plan



Note: Information may change as the design progresses

**CalMod****Foundation Construction**

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



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Foundation Installation



On Track Equipment

**CalMod**

Pole Installation

- 3,000 Installed throughout Corridor
 - Approx. 186 Poles in Mountain View
- Pole Height: 30-45.5'
- Pole Spacing: ~180' apart



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Pole Installation



Current Pole Installation



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Stringing Wire



On-track Equipment



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Construction Impacts

- 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

**Caltrain****CalMod**

San Francisco Tunnel Work

- Within the four San Francisco Tunnels:
 - Overhead Contact System Installation
 - Grouting and Notching
 - Drainage and Track Work
- September 2018 through March 2019

**Caltrain**


CalMod**Caltrain Service During Tunnel Work**

- Weekends - Oct 6, 2018 to March 17, 2019
 - Caltrain service north of the Bayshore Station will be suspended on the weekends
 - Bus service will be provided from Bayshore to 4th and King and 22nd Street stations
- Weekday service will remain unchanged
- Caltrain service south of Bayshore will remain unchanged
- Bus schedule will be available in September

**CalMod****Public Outreach**


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



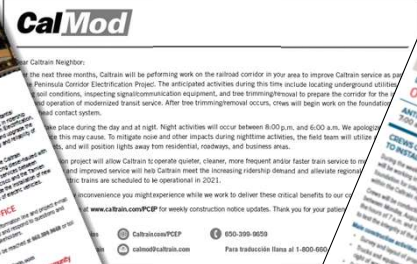


Public Outreach

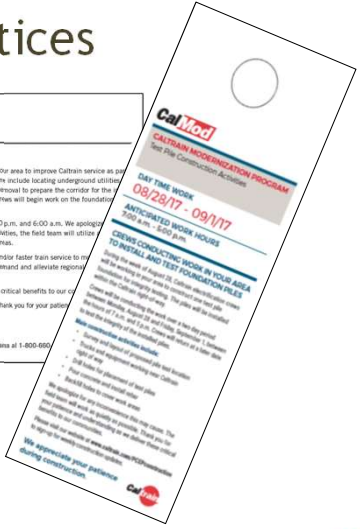
Physical Notices






Peninsula Corridor Electrification
SCOTT STREET CLOSURE NOTICE | March 2018




CalMod





CalMod
CALTRAIN MODERNIZATION PROGRAM
FAST TIME WORK
08/28/17 - 09/1/17







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