Peninsula Corridor Electrification Update Meeting

Palo Alto Community Meeting
August 28, 2018

Caltrain

CalMod

Agenda

- Caltrain System Overview
- Project Overview
- Electric Multiple Unit (EMU) Design
- Palo Alto Construction Activities
- Questions

Caltrain

CalMod

Caltrain System

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

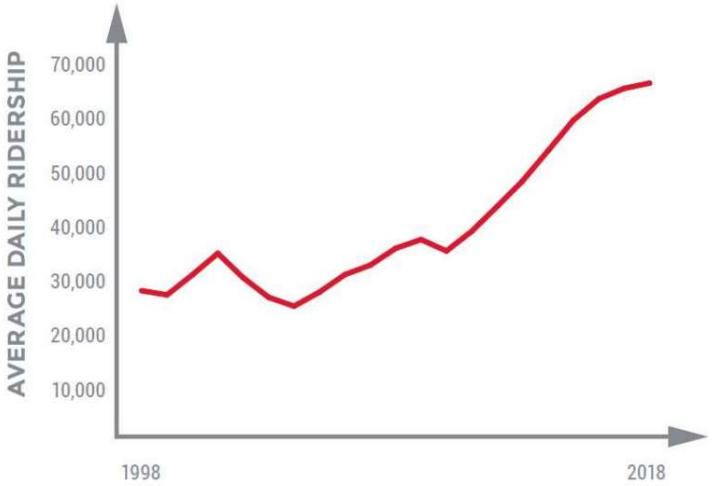
- 32 Stations Gilroy to San Francisco
- 92 Weekday Trains
- At-Grade Crossings, viaducts, and bridges
- Intermodal Connections
- Bike Commuters

Union Pacific owns

Caltrain

CalMod

Ridership



Caltrain

CalMod

At Capacity Today

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

Caltrain

CalMod

Aging Fleet

Table 1.2: Caltrain Fleet Inventory

SERIES	QUANTITY	NUMBER OF SEATS	YEAR OF MANUFACTURE	MAKE	RETIRE DATE
Locamotives					
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.

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

Caltrain

CalMod

Regional Transportation Needs

- US 101 and Interstate 280 Congested
- Corridor supports growing economy
- 75% Caltrain riders commute to work
- 60% are choice riders

Caltrain

CalMod

Project Description

Area	Project	Service
51 miles San Francisco to San Jose (Tamien Station)	Electrification: • Overhead Contact System (OCS) • Traction Power Facilities Electric Trains (EMUs) • 75 percent of fleet	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, Capital Corridor, Amtrak, Freight

Caltrain

CalMod

Service Benefits

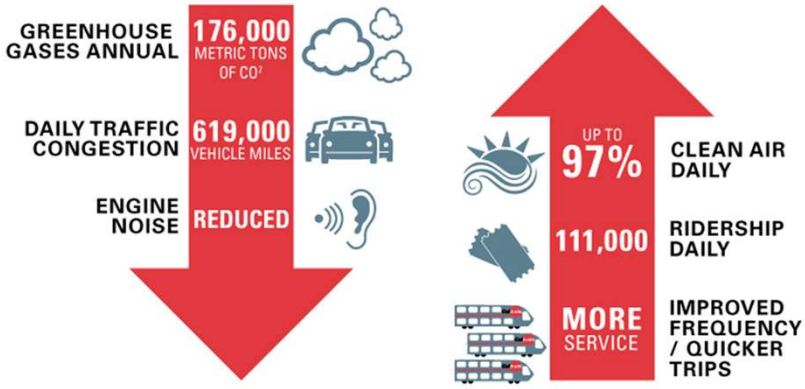
Metric	Today	PCEP
Example Baby Bullet Train		
Retain 5-6 stops	60 minutes	45 minutes
Retain SF to SJ 60 minutes	6 stops	13 stops
Example Redwood City Station		
Train stops / peak hour	3	5

Note: Prototypical Train and Schedule

Caltrain

CalMod

Key Regional Benefits (2040)



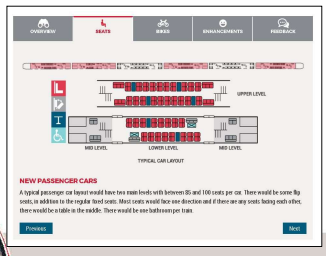
Note: 2013 BAC Report, generates $2.5B economic activity and 9,600 jobs

Caltrain

CalMod

Electric Train

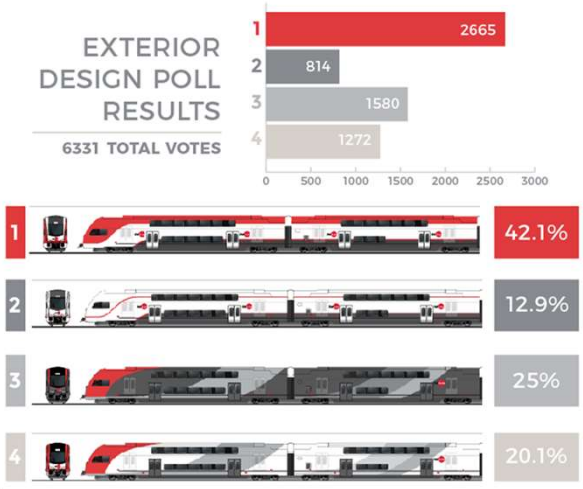
- 2016 Capacity Board Decision (bike to seat ratio, onboard bathrooms, upper doors 'not precluded')
- 2017 Design Progressing w/ Additional Public Input
  - Completed: Exterior design, Seat colors, Bike Storage, ADA restroom
- 2018 Virtual Reality 360 Tour



Caltrain

CalMod

Electric Train Exterior Design Public Poll

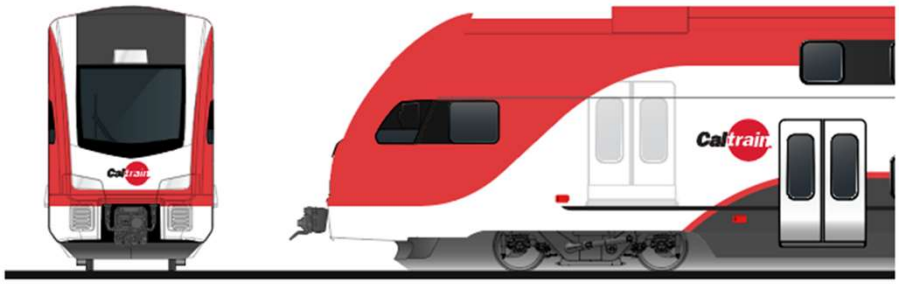


Caltrain

CalMod

Electric Train Exterior Design

WINNING DESIGN: OPTION 1



Caltrain

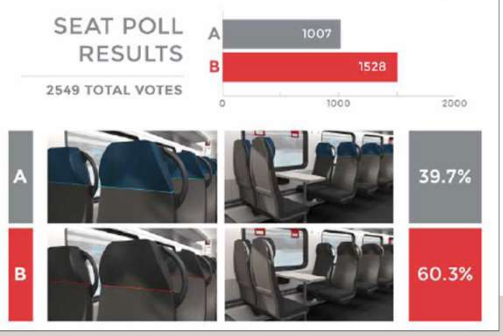
CalMod

Electric Train Seat Design

WINNING DESIGN: OPTION B

SEAT POLL RESULTS

2549 TOTAL VOTES



Caltrain

CalMod

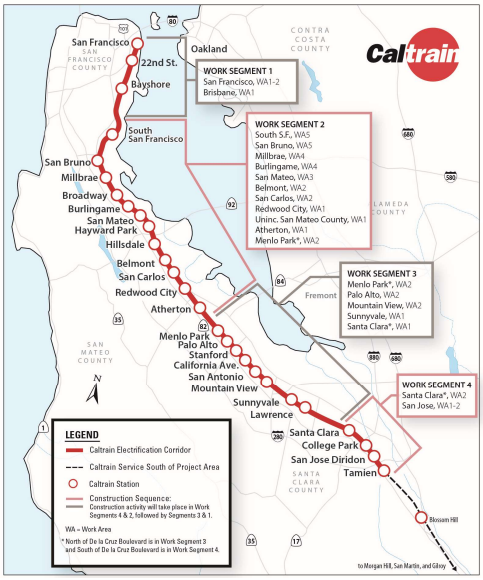
Electric Train Onboard Bike Storage Outreach

Caltrain

CalMod

Construction Phasing

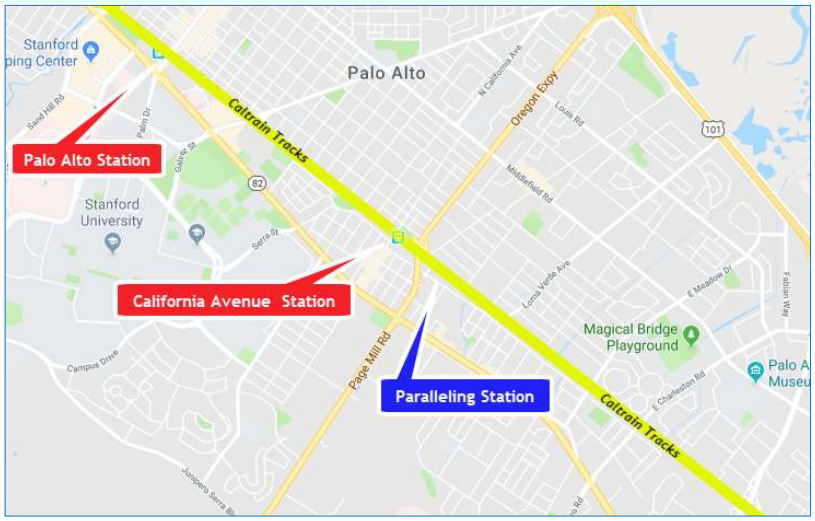
- 51 Miles Corridor
- 4 Work Segments
- 3,000 Poles
- 10 Traction Power Facilities



Caltrain

CalMod

Palo Alto – Work Segment 3



Palo Alto Work Area 3.8 miles

Caltrain

CalMod

Field Work Status

Pre-Construction Work Completed	• Utility Survey • Geotechnical Investigations • Disposal of Soil from Geotechnical Investigations • Soil Resistivity Testing • Site Surveys • Signal Cable Inspections
Pre-Construction Work In Progress	• Foundation Potholing
Future Work	• Tree Pruning and Removal • Foundation Installation • Overhead Contact System Pole Installation • Overhead Contact System Wire Installation • Paralleling Station

Caltrain

CalMod

Future Construction Activities

Palo Alto

Date	Work Activity	Expected Duration*
Summer/Fall 2018	Potholing	2-3 months
Fall 2018	Tree Pruning/Removal	2-3 months
Spring 2019	Foundation Installation	1-2 months
Summer 2019	Pole/Wire Installation	4-5 months
Summer / Fall 2019	Paralleling Station Construction	6-8 months

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

Caltrain

CalMod

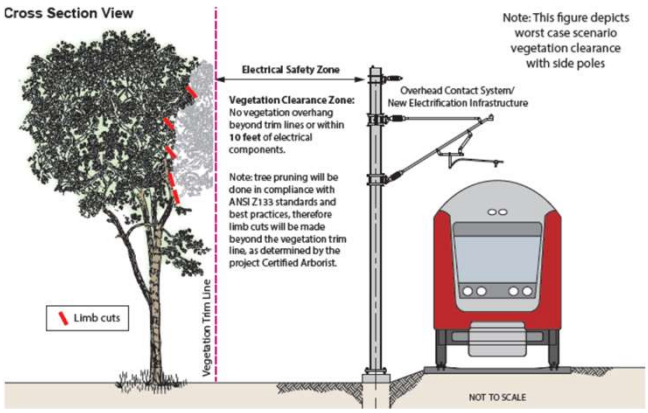
Potholing

Approx. 263 Potholes in Palo Alto

Caltrain

CalMod

Tree Pruning and Replacement



Vegetation cleared for Electrical Safety Zone

Caltrain

CalMod

City of Palo Alto: Tree Pruning and Replacement Plan

City of Palo Alto			
	Caltrain Right of Way	Public Property	Private Property
Trees Removed	52	5	0
Trees Pruned >25%	53	10	0
Trees Pruned <25%	228	91	38
120 Trees will be replaced per the Palo Alto Tree Replacement Plan			

Note: Information may change as the design progresses

Caltrain

CalMod

Foundation Construction

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

Caltrain

CalMod

Foundation Installation

On Track Equipment

Caltrain

CalMod

Pole Installation

- 3,000 Installed throughout Corridor
  - Approx. 196 poles in Palo Alto
- Pole Height: 30-45.5’
- Pole Spacing: ~180’ apart

Caltrain

CalMod

Pole Installation

Current Pole Installation

Caltrain

CalMod

Stringing Wire

On-track Equipment

Caltrain

CalMod

Traction Power Facilities

- 10 Traction Power Facilities Installed throughout Corridor
  - 1 Paralleling Station in Palo Alto
  - 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

Caltrain

CalMod

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

Caltrain

CalMod

Public Outreach

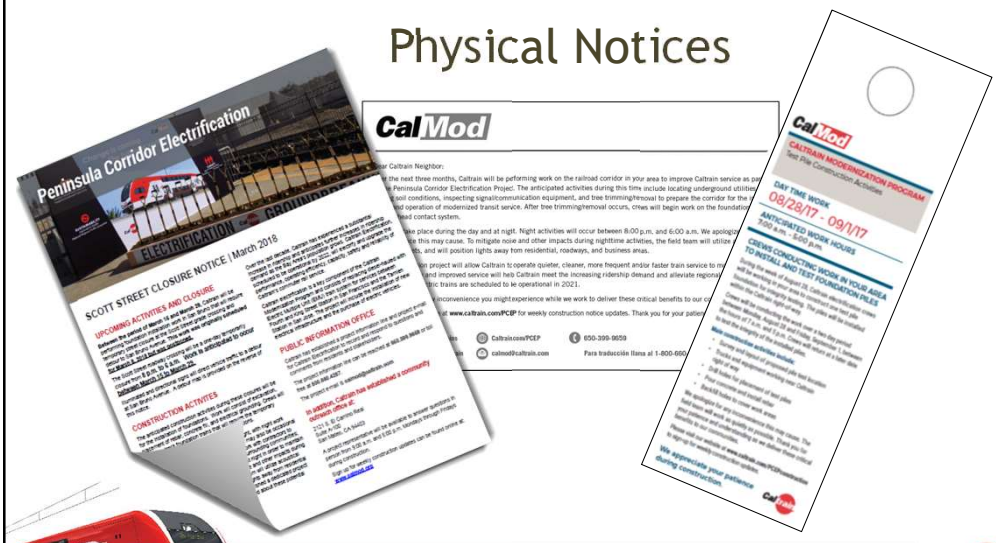
- Subscribe to Weekly Updates
  - Visit www.calmod.org
- Additional Community Meetings
  - Pole and Wire Installation
  - Paralleling Station Construction
- Social Media
- Construction Outreach Office

Caltrain

CalMod

Public Outreach

Physical Notices



Caltrain

CalMod

CALMOD CONTACT INFORMATION

WEBSITE CalMod.org

EMAIL CalMod@caltrain.com

PHONE 650-399-9659
800-660-4287 (Toll Free)

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

FACEBOOK www.facebook.com/caltrain
TWITTER @caltrain

Caltrain