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

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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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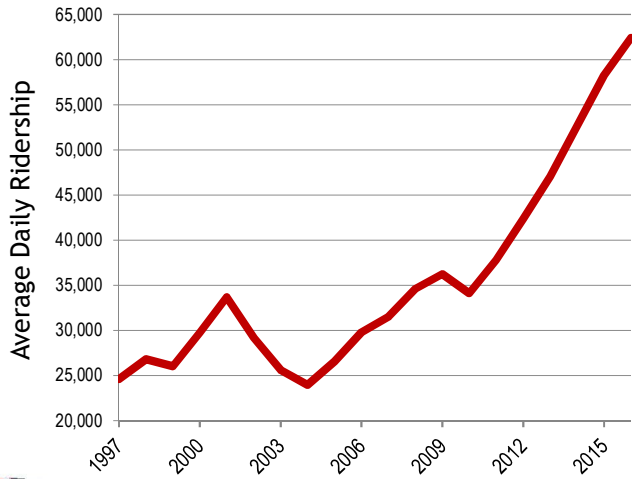
Ridership



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At Capacity Today

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

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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.

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Regional Transportation Needs

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

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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

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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

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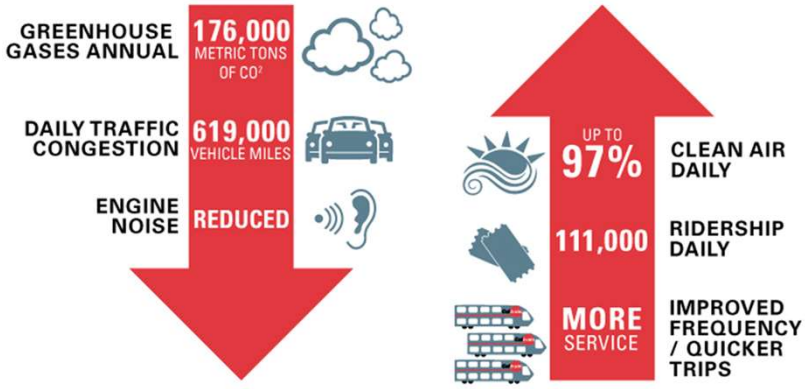
Key Regional Benefits (2040)



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

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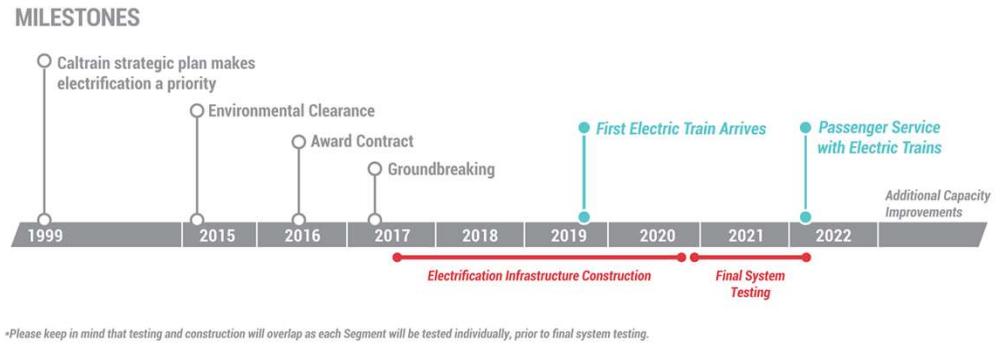
Schedule



*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 Design & Public Input

Peninsula Corridor Electrification Project

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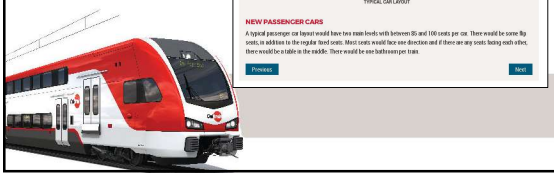
Electric Train

- 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



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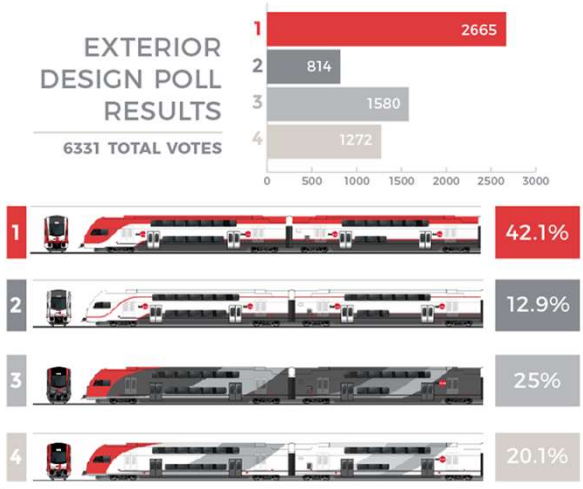
Electric Train Exterior Design Public Poll



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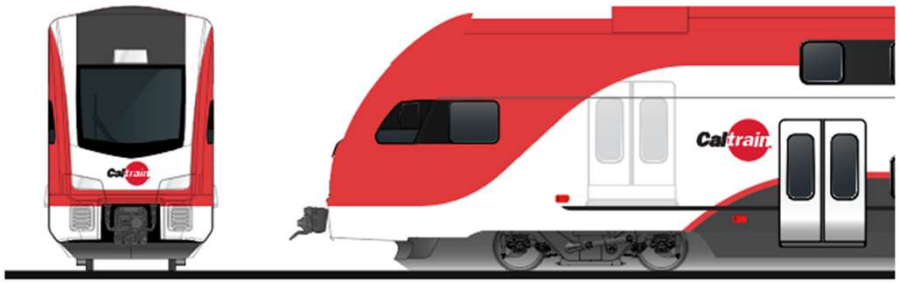
Electric Train Exterior Design

WINNING DESIGN: OPTION 1



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Electric Train Seat Design

WINNING DESIGN: OPTION B

SEAT POLL RESULTS

2549 TOTAL VOTES

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Electric Train Onboard Bike Storage Outreach

Station Outreach with Samples: August 8 to September 1

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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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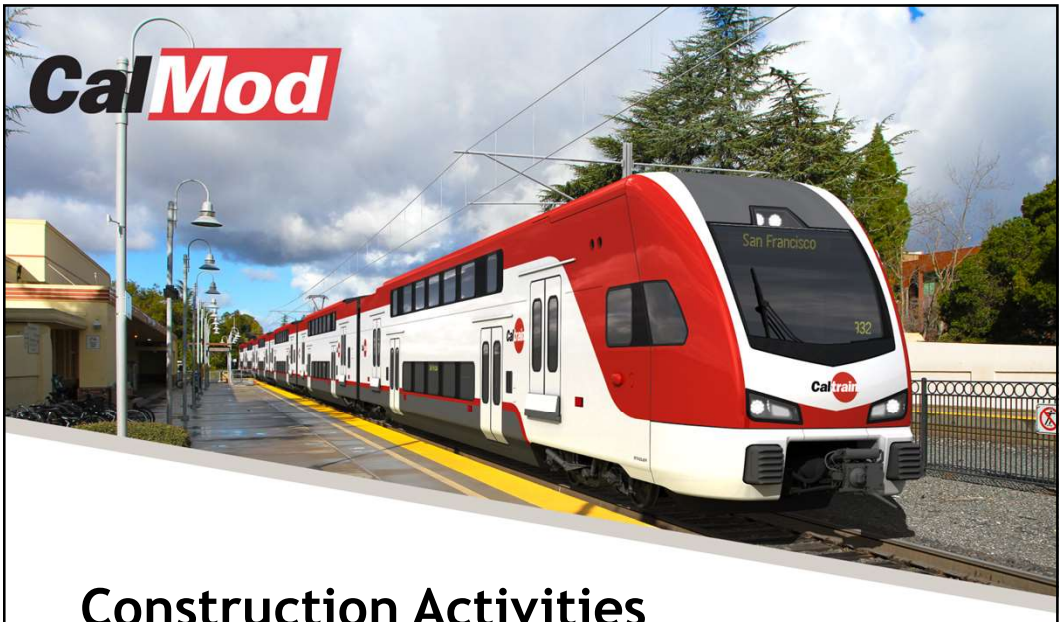

Construction Activities

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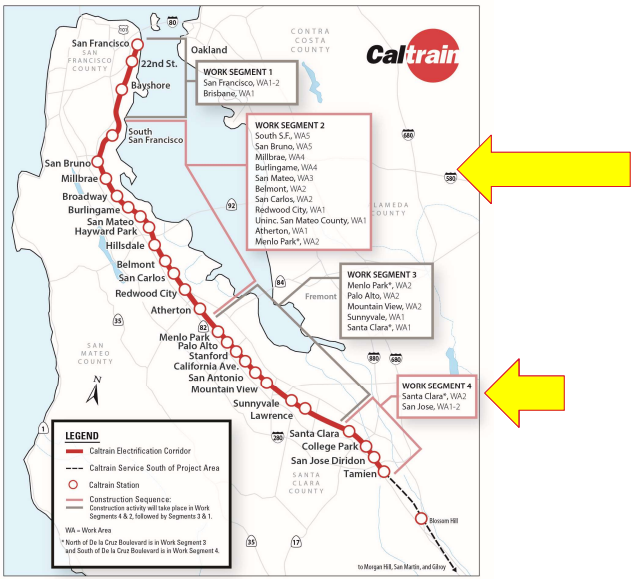
CalMod Construction Phasing

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



- Segments 2 & 4 followed by 1 & 3

CalMod Menlo Park – Work Segments 2 & 3

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

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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
Work In Progress	• Foundation Potholing • Tree Pruning and Removal
Future Work	• Foundation Construction • Overhead Contact System Pole Installation • Overhead Contact System Wire Installation

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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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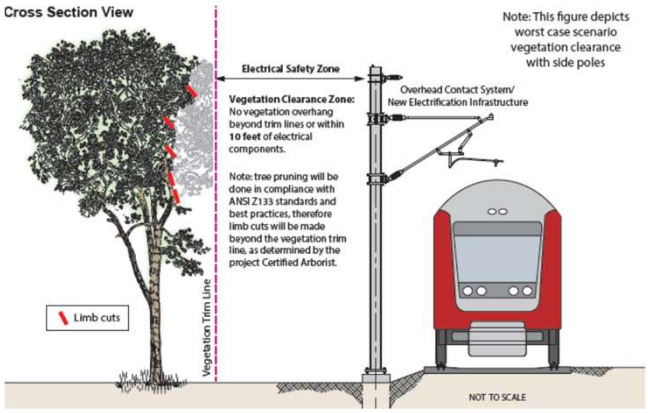
Tree Pruning and Replacement



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

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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

- 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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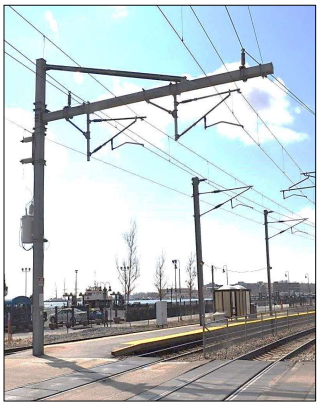
Pole Installation Menlo Park

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

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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
- Additional Community Meetings
  - Pole and Wire Installation
- Social Media
- Construction Outreach Office

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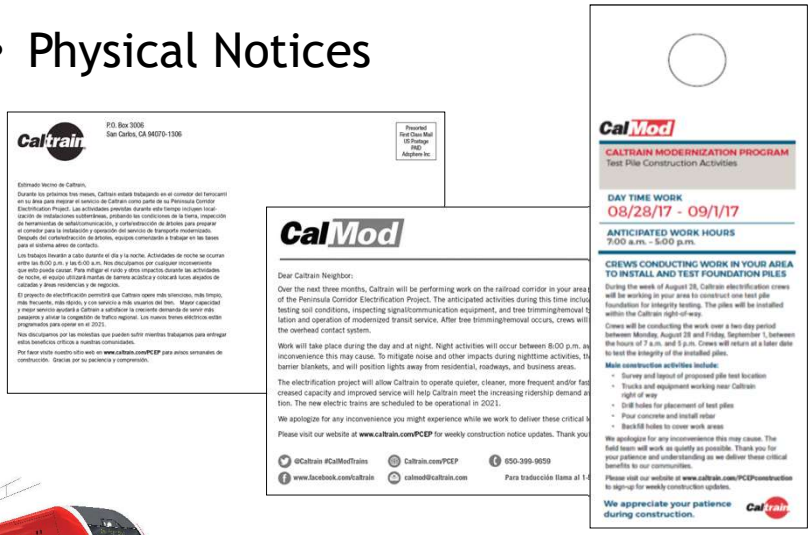
Public Outreach

- Physical Notices



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