Peninsula Corridor Electrification Update Meeting

Twin Pines Senior and Community Center
October 11, 2017

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Agenda

- Caltrain System Overview
- Project Overview
- Electric Multiple Unit (EMU) Design
- Belmont and San Carlos 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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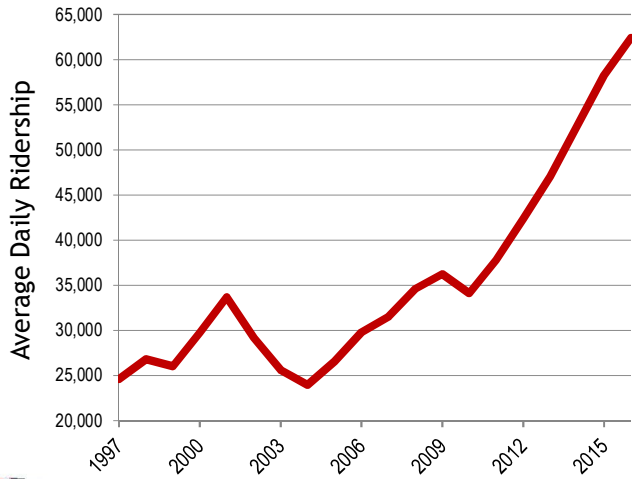
Ridership



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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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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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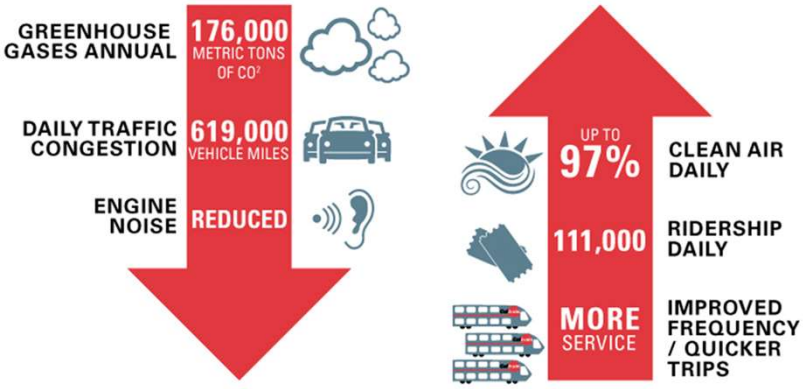
Key Regional Benefits (2040)



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

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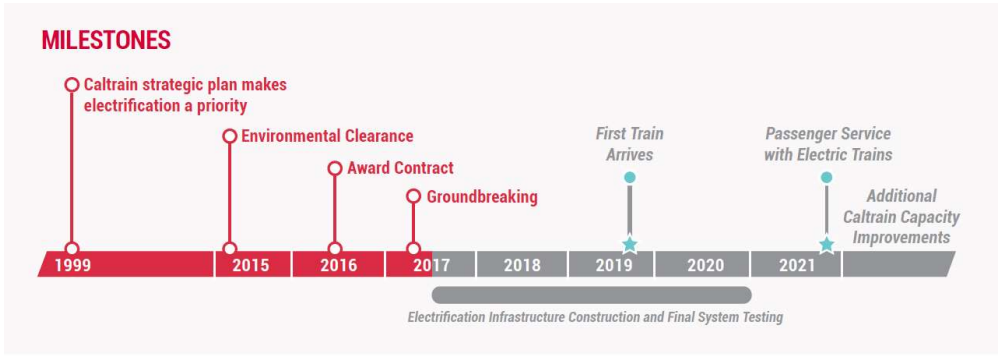
Schedule



Note: Schedule Subject to Change

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Electric Train Design & Public Input

Peninsula Corridor Electrification Project

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Electric Train Outreach: Phased

- 2016 Capacity Board Decision (bike to seat ratio, onboard bathrooms, upper doors)
- 2017 Design Progressing: Additional Public Input
- 2018 Virtual Reality 360 Tour

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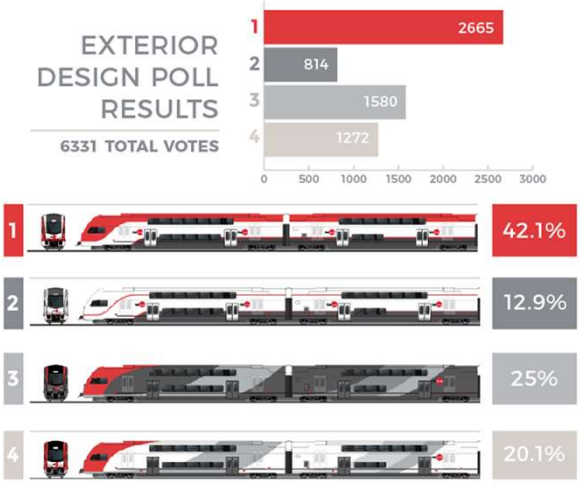
Electric Train Exterior Design Public Poll



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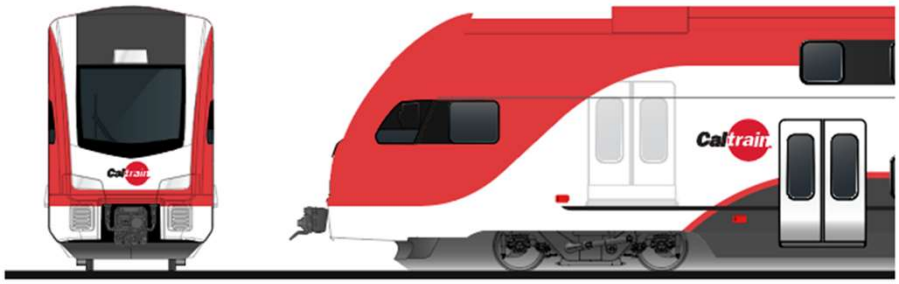
Electric Train Exterior Design

WINNING DESIGN: OPTION 1



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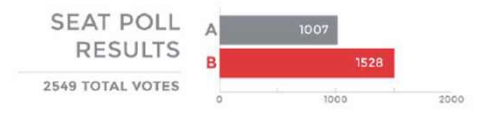
Electric Train Seat Design

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)

EMU Capacity

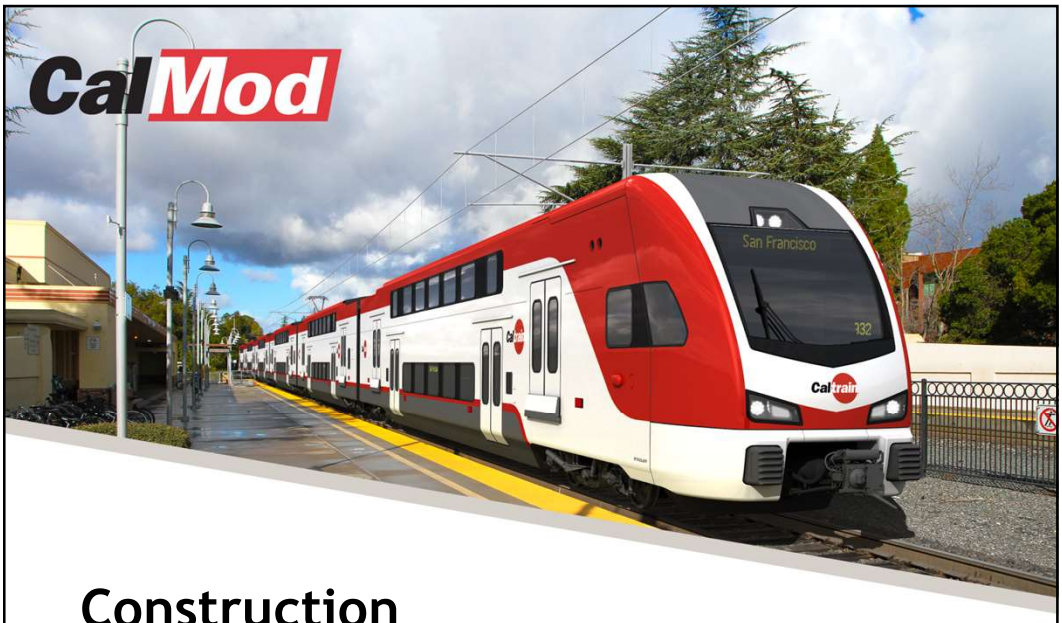
CURRENT DIESEL FLEET (Mix Of Bombardier and Gallery Cars | 5- and 6-car Train Sets)

Average Number Per Train Set			Train Sets Per Peak Hour In Each Direction		Seated Passenger and Bike Capacity per Peak Hour in Each Direction	
741 Seats	76.8 Bikes	X	5	=	3,705 Seats	384 Bikes

MIXED FLEET (Mix of 7-car Diesel Train Sets and 6-car Electric Train Sets)

Average Number Per Train Set			Train Sets Per Peak Hour In Each Direction		Seated Passenger Capacity Per Peak Hour In Each Direction	
681.3 Seats	72 Bikes	X	6	=	4,088 Seats	432* Bikes

- 12.5% increase in bike capacity
- 10.3% increase in seat capacity
- 31% increase in seat + standing capacity



Construction

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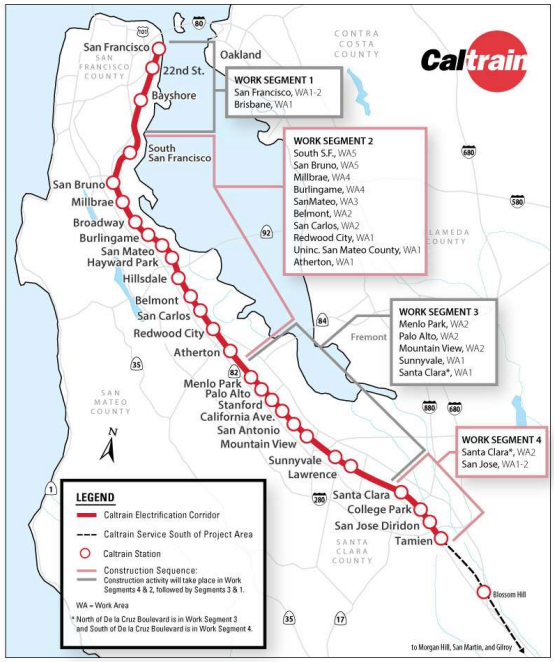

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Work Segment 2, Area 2

- Belmont
- San Carlos

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Field Work Status

Work Completed to Date	• Utility Survey • Geotechnical Investigations • Disposal of Soil from Geotechnical Investigations • Soil Resistivity Testing • Site Surveys • Signal Cable Inspections
Work In Progress and Upcoming	• OCS Foundation Potholing • Signal Cable Potholing • Tree Pruning and Removal • OCS Foundation Construction
Future Work	• OCS Pole Installation • OCS Wire Installation

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Potholing

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Future Construction Activities

Belmont and San Carlos

Date	Work Activity	Expected Duration
December 2017	Tree Pruning/Removal	2 months
Summer 2018	Foundation Construction	3-4 months
Fall 2018	Overhead Wiring Pole and Wire Installation	3-4 months

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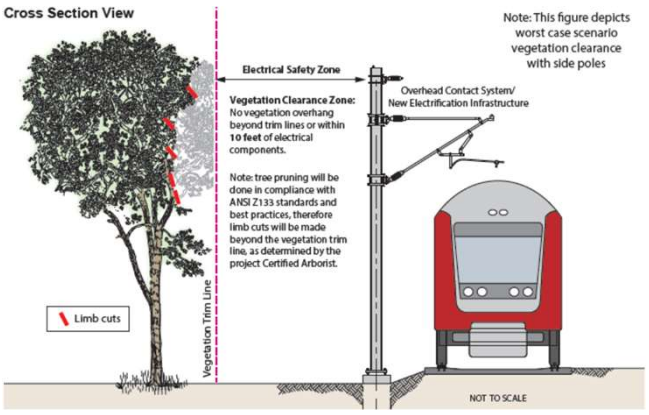
Tree Pruning and Replacement

- Vegetation cleared for Electrical Safety Zone



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Belmont: Tree Pruning and Replacement Plan

City of Belmont			
	Caltrain Right of Way	Private Property	Public Property
Trees Removed	25	0	0
Protected Tree* Pruned >25%	0	1	0
Tree Pruned >25%	9	0	0
Tree Pruned <25%	14	0	8

**Any woody, perennial plant characterized by having a single main stem or trunk of 10" or more diameter at breast height (DBH) at 4-1/2' above natural grade or multiple secondary stems totaling 10" or more DBH at 4-1/2' above natural grade.*

Note: Information may change as the design progresses

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San Carlos: Tree Pruning and Replacement Plan

City of San Carlos			
	Caltrain Right of Way	Private Property	Public Property
Trees Removed	1	0	10
Tree Pruned >25%	17	0	0
Tree Pruned <25%	9	0	43

Note: Information may change as the design progresses

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Foundation Work

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

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Foundation Specifics

- Approx. 100 poles installed in Belmont
- Approx. 130 poles in San Carlos
- Foundation size varies from 30” to 42”
- Foundation spacing approx. 180’ apart

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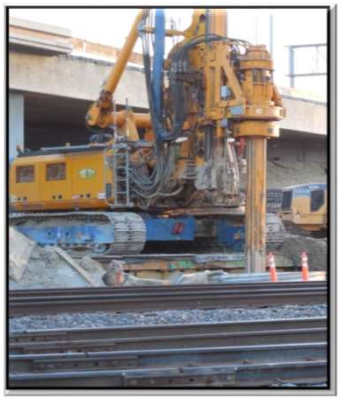
Pole Foundation Work

Will take place on and off track

DrillTech on track foundation train



DrillTech off-track OCS Drill Rig

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Pole Installation

On/off-track crane for installation

Wide flange & square poles

Foundation Rebar Cage

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Overhead Contact System (OCS)

Will take place on-track

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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 caltrain.com/pcepconstruction
- Additional Community Meetings
  - Pole and Wire Installation
- Construction Outreach Office

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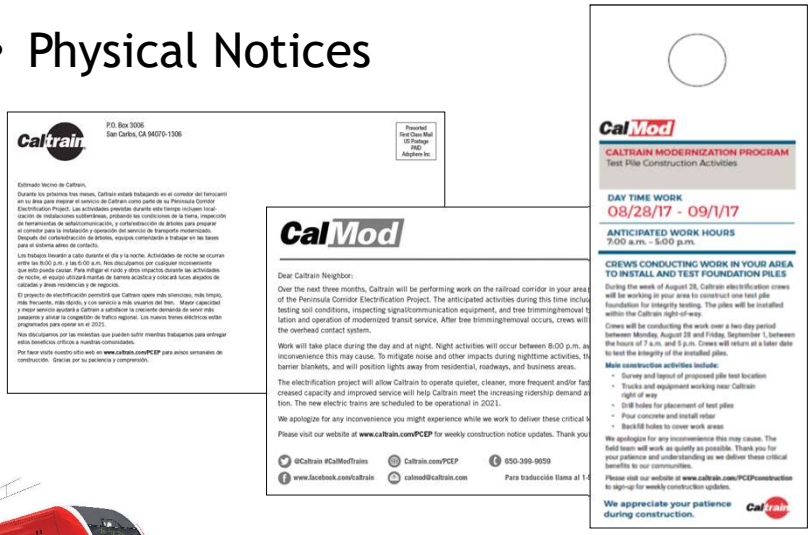
Public Outreach

- Physical Notices



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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

We appreciate your patience during construction.

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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. - 6 p.m. Monday-Friday
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