Peninsula Corridor Electrification Update Meeting

South Beach|Rincon|Mission Bay Neighborhood Assoc.

September 10, 2018

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Agenda

- Caltrain System Overview
- Project Overview
- Electric Multiple Unit (EMU) Design
- San Francisco 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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At Capacity Today

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

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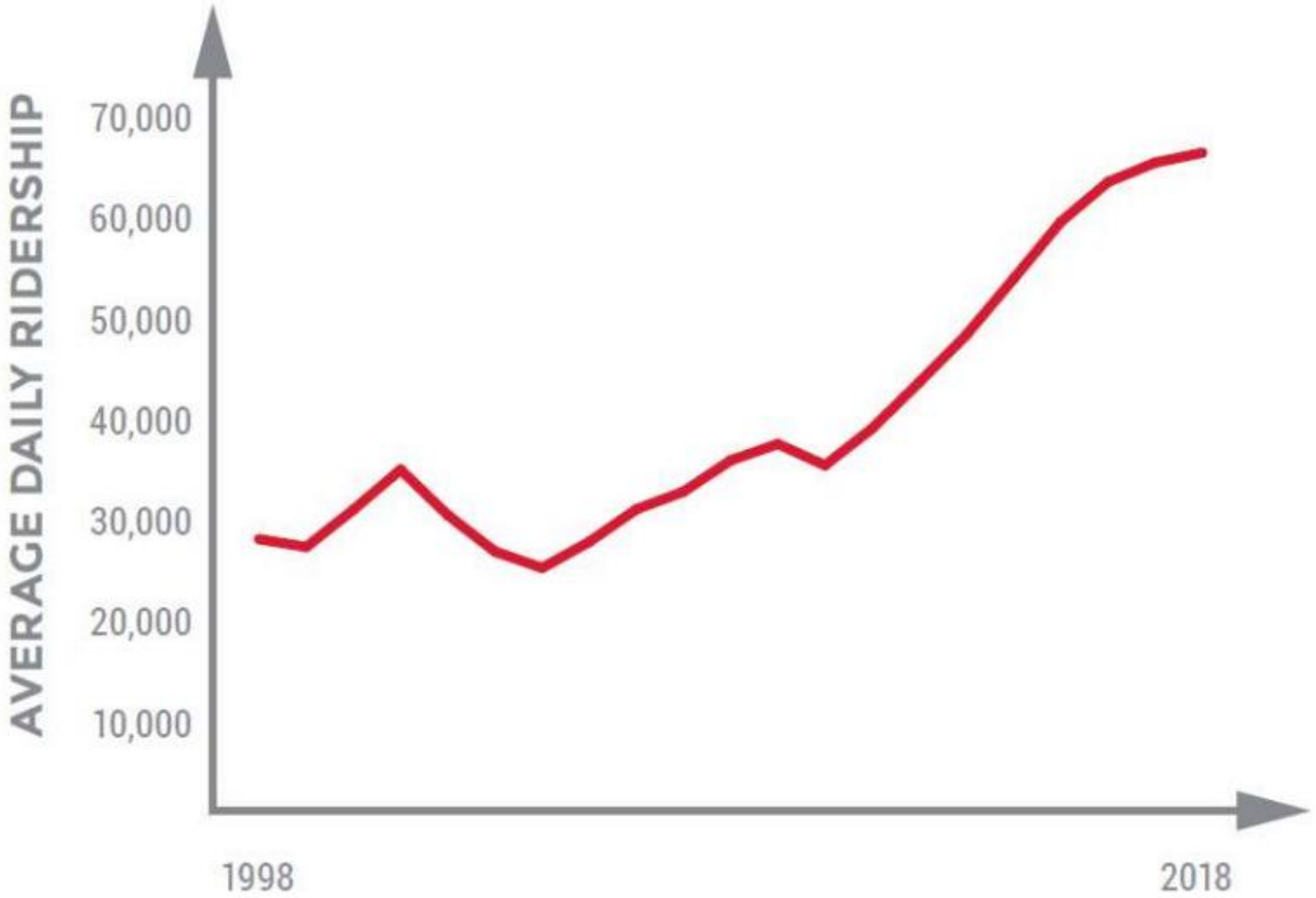
Ridership



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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.

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

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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

CLSA California Life Sciences Association

BAYAREA COUNCIL

Genentech

SAMCEDA San Mateo County Economic Development Association

facebook

Leland Stanford Junior University 1891

SILICON VALLEY LEADERSHIP GROUP

Google

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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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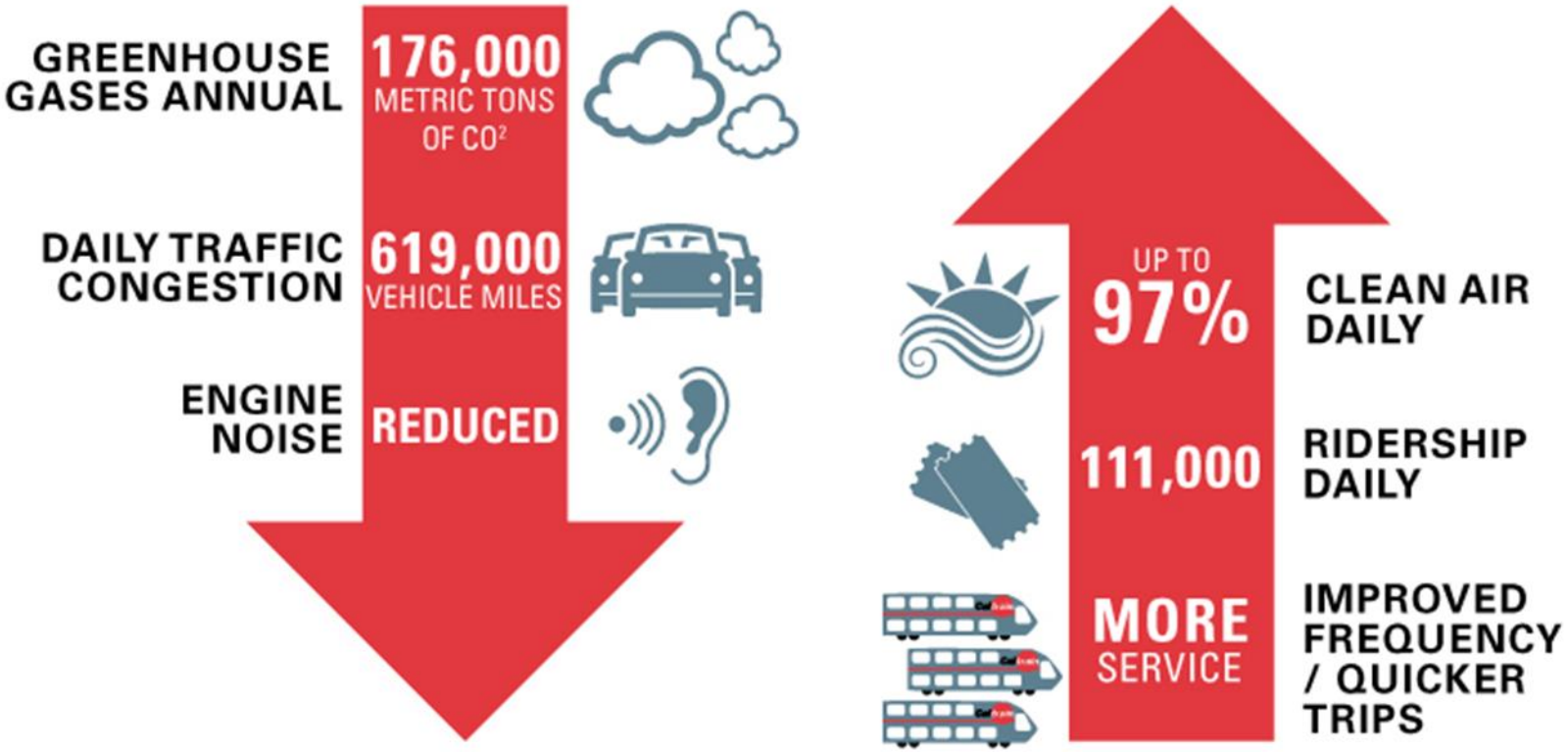
Key Regional Benefits (2040)



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

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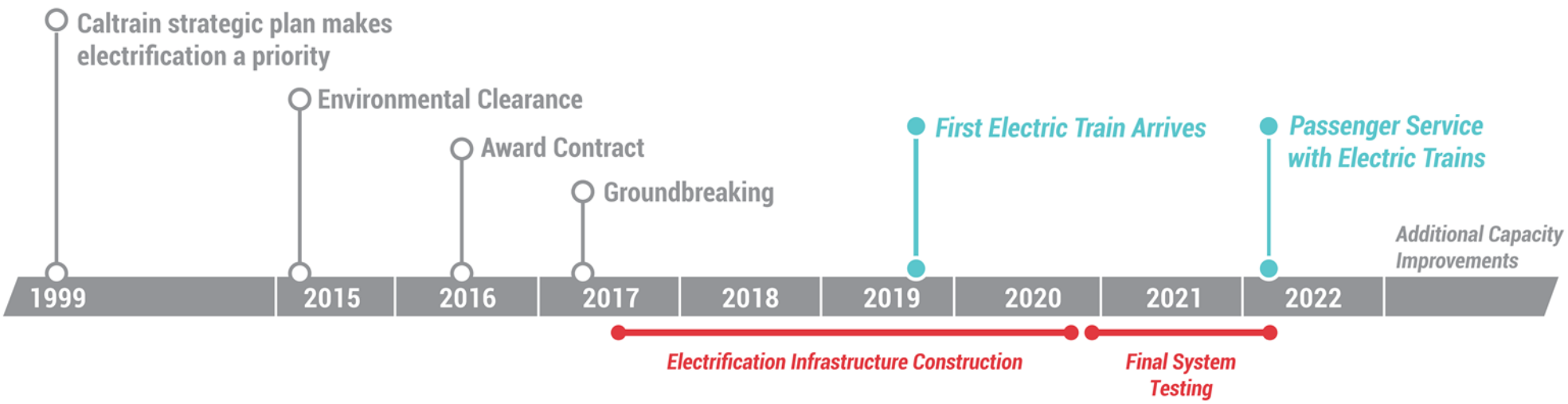
Schedule

MILESTONES

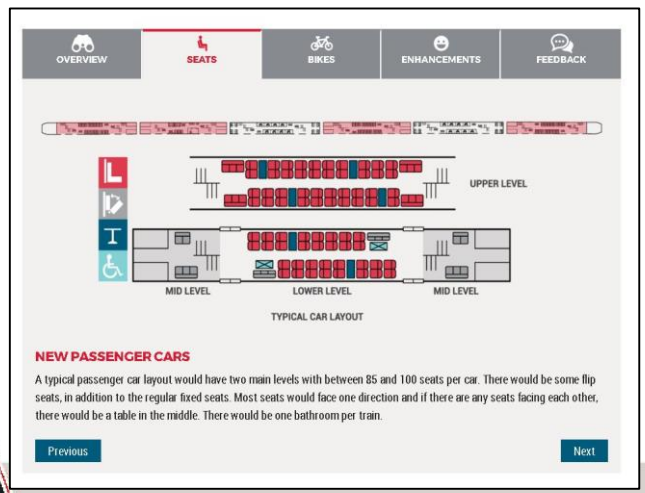


*Please keep in mind that testing and construction will overlap as each Segment will be tested individually, prior to final system testing.

Note: Schedule Subject to Change

Electric Train

- 2016 Capacity Board Decision (bike to seat ratio, onboard bathrooms, upper doors ‘not precluded’)
- 2017 Design Progressed w/ Additional Public Input (exterior design, seat colors, bike storage, ADA restroom)
- 2018 Virtual Reality 360 Tour



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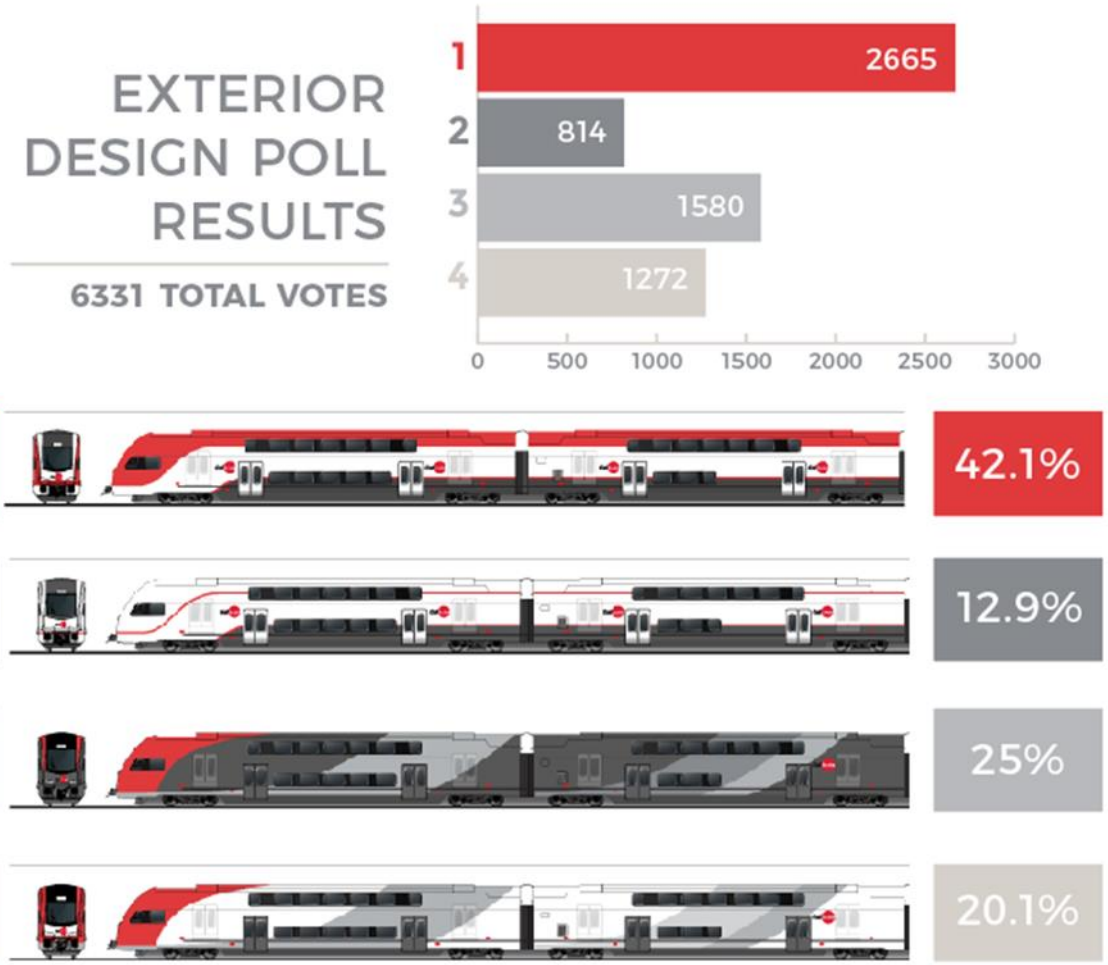
Electric Train Exterior Design Public Poll



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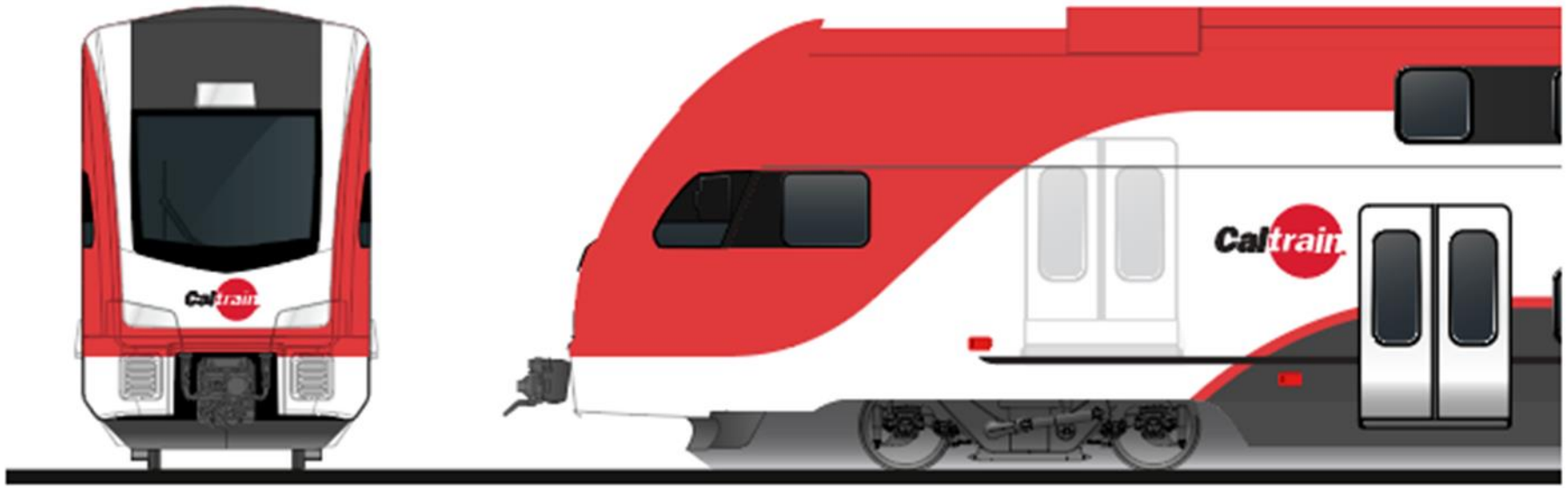
Electric Train Exterior Design

WINNING DESIGN: OPTION 1



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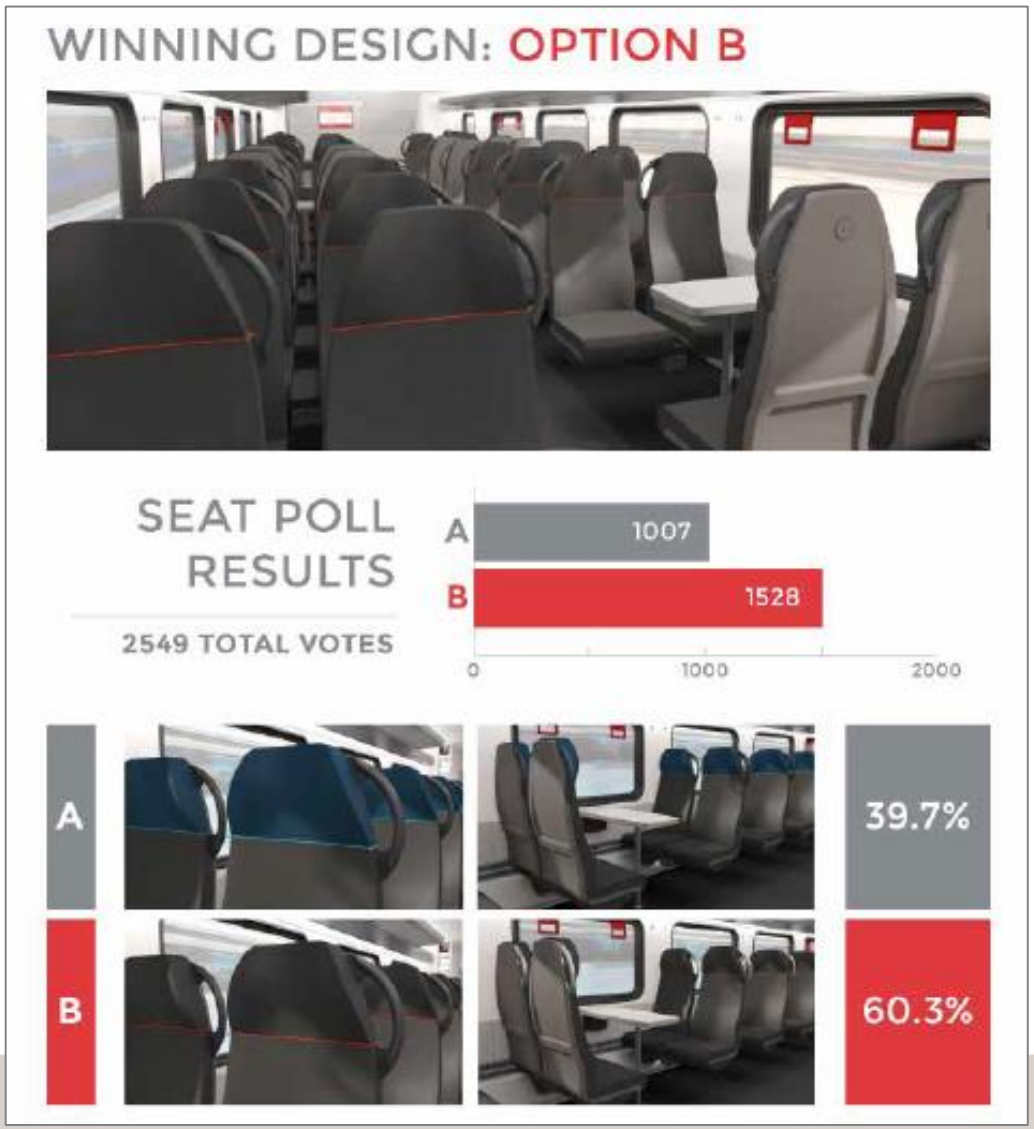
Electric Train Seat Design



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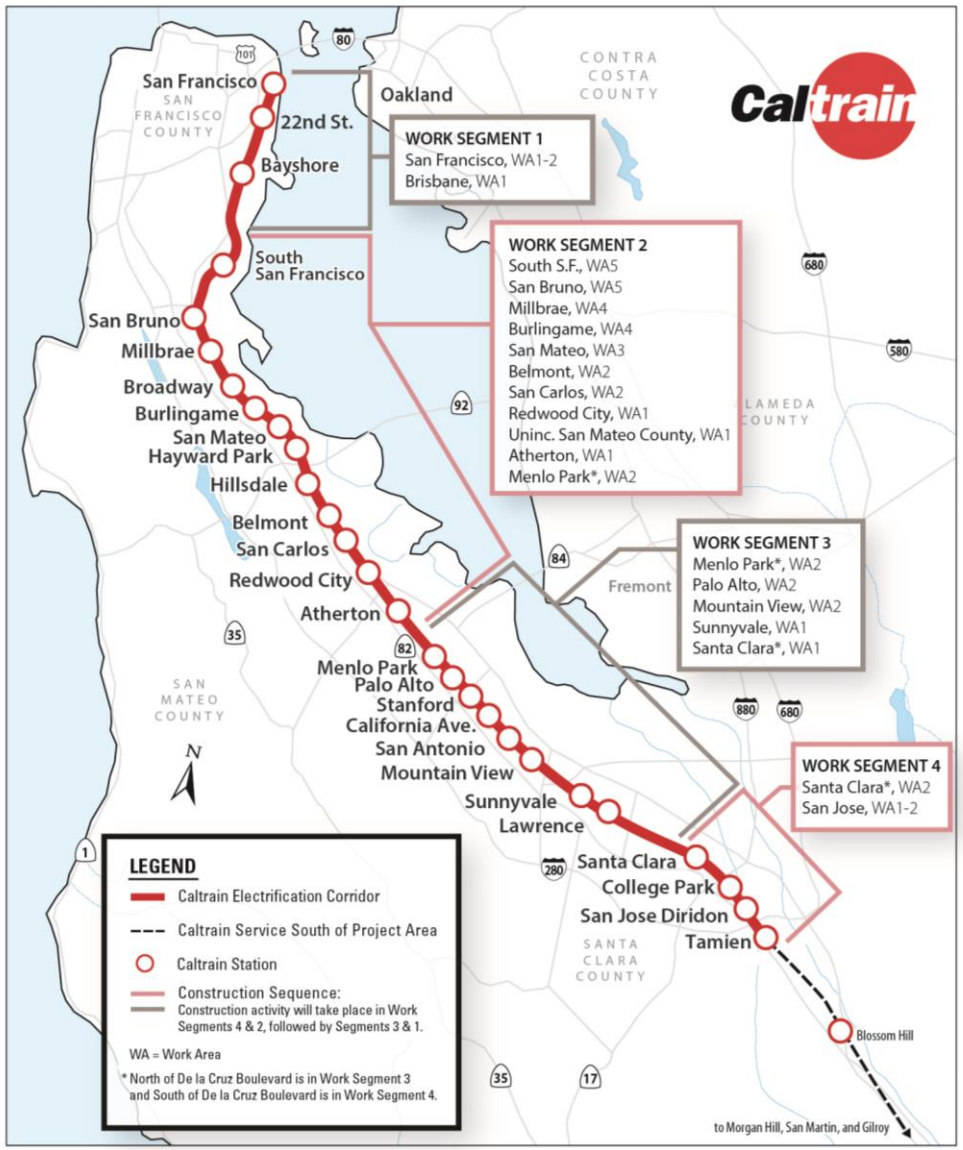
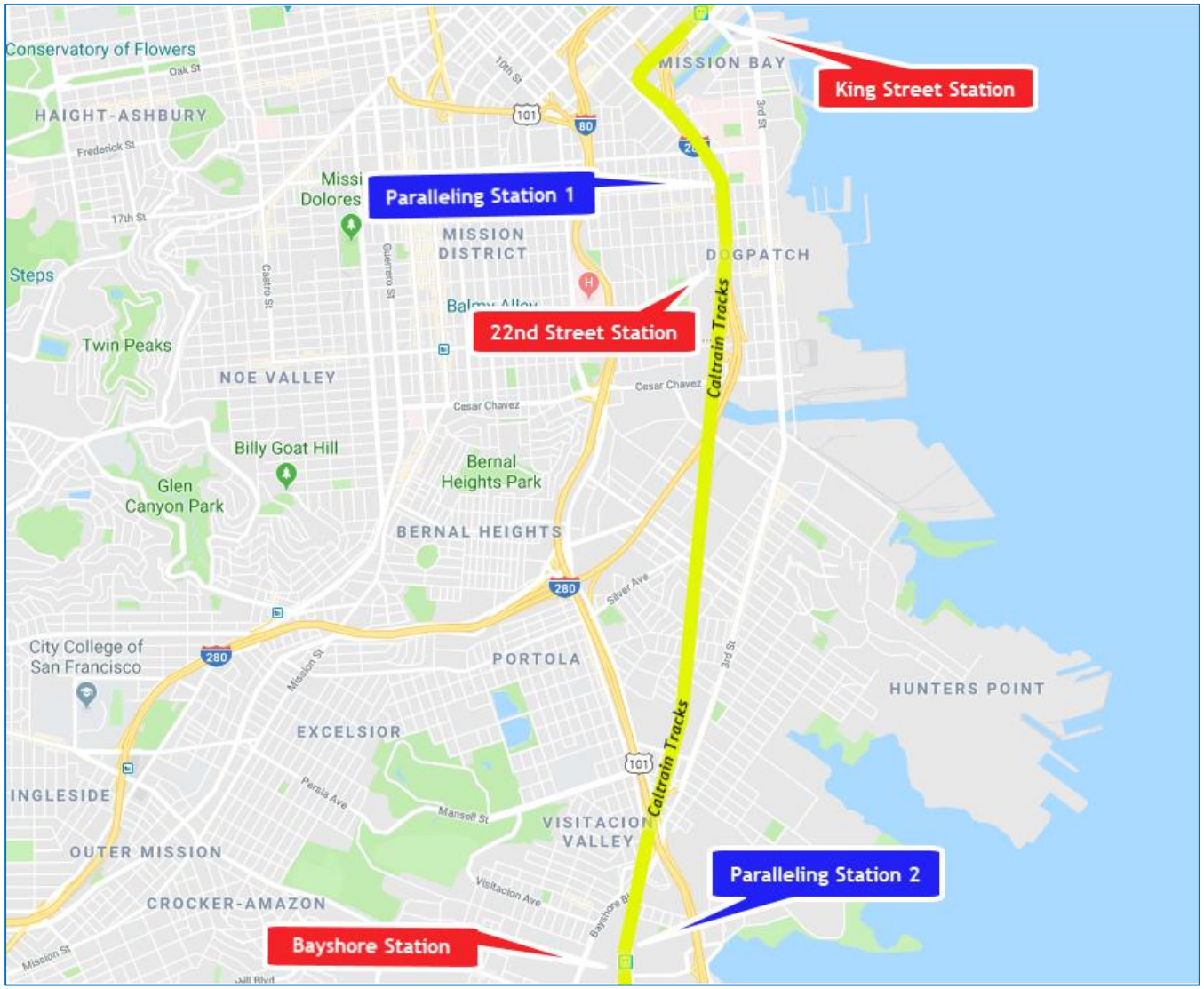
Electric Train Onboard Bike Storage Outreach

CalMod Construction Phasing

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



San Francisco – Work Segment 1



San Francisco Work Area 4.9 miles

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	• Tunnel Work • Tree Pruning and Removal • Foundation Installation • Overhead Contact System Pole Installation • Overhead Contact System Wire Installation • Paralleling Stations

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Future Construction Timeline

San Francisco

Date	Work Activity	Expected Duration*
December 2018	Potholing	3-4 months
Fall 2018	Tunnel Work	7-8 months
Winter 2018	Tree Pruning/Removal	1-2 months
Spring 2019	Foundation Installation	2-3 months
Summer 2019	Pole/Wire Installation	4-5 months
Summer 2019	Paralleling Station Construction	3-5 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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San Francisco Tunnel Work

- Work on the four San Francisco Tunnels:
  - Overhead Contact System Installation
  - Grouting and Notching
  - Drainage and Track Work
- Pre-construction: September 2018
- 24 hour/day weekend work

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Caltrain Service During Tunnel Work

- Weekends - Oct 6, 2018 to Late March
  - Caltrain service north of the Bayshore Station will be suspended on 24 consecutive weekends
  - Bus service will be provided from Bayshore to 4th and King and 22nd Street stations
- Caltrain weekday service will remain unchanged
- Caltrain service south of Bayshore will remain unchanged
- Bus schedule will be available in mid-September

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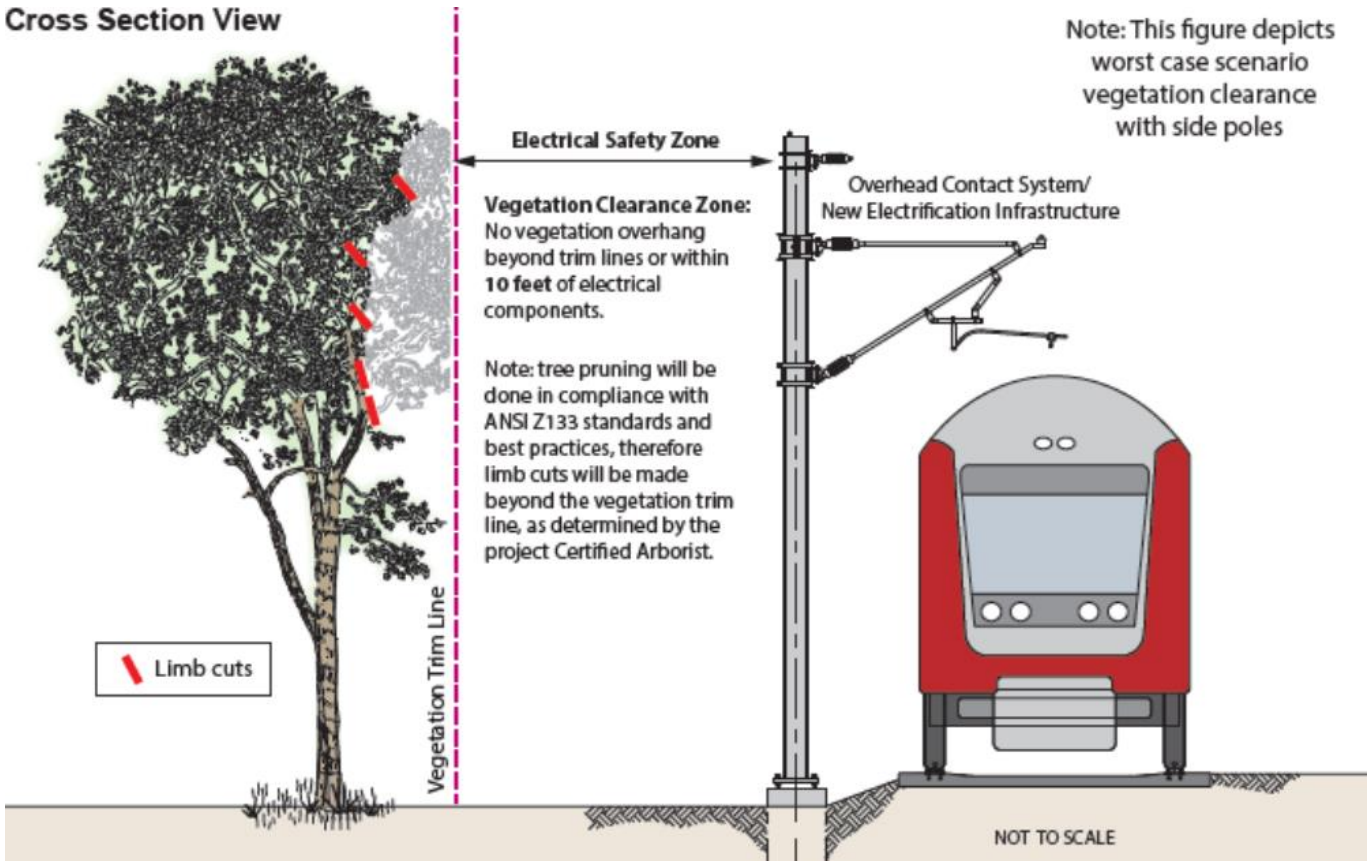
Tree Pruning and Replacement



Vegetation cleared for Electrical Safety Zone

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City and County of San Francisco: Tree Pruning and Replacement Plan

City and County of San Francisco			
	Caltrain Right of Way	Public Property	Private Property
Trees Removed	8	16	0
Trees Pruned >25%	6	6	0
Trees Pruned <25%	10	2	0
52 Trees will be replaced per the San Francisco Tree Replacement Plan			

Note: Information may change as the design progresses

4th and King Tree Information

- 16 public street trees along King Street are planned for removal
- Tree replacement locations have been coordinated with the City and County of San Francisco
- Will be planted in areas that are not affected by Electrical Safety Zone

Foundation Installation

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

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Foundation Installation

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Pole Installation

- 3,000 Installed throughout Corridor
  - Approx. 250 poles in San Francisco
- Pole Height: 30-45.5’
- Pole Spacing: ~180’ apart

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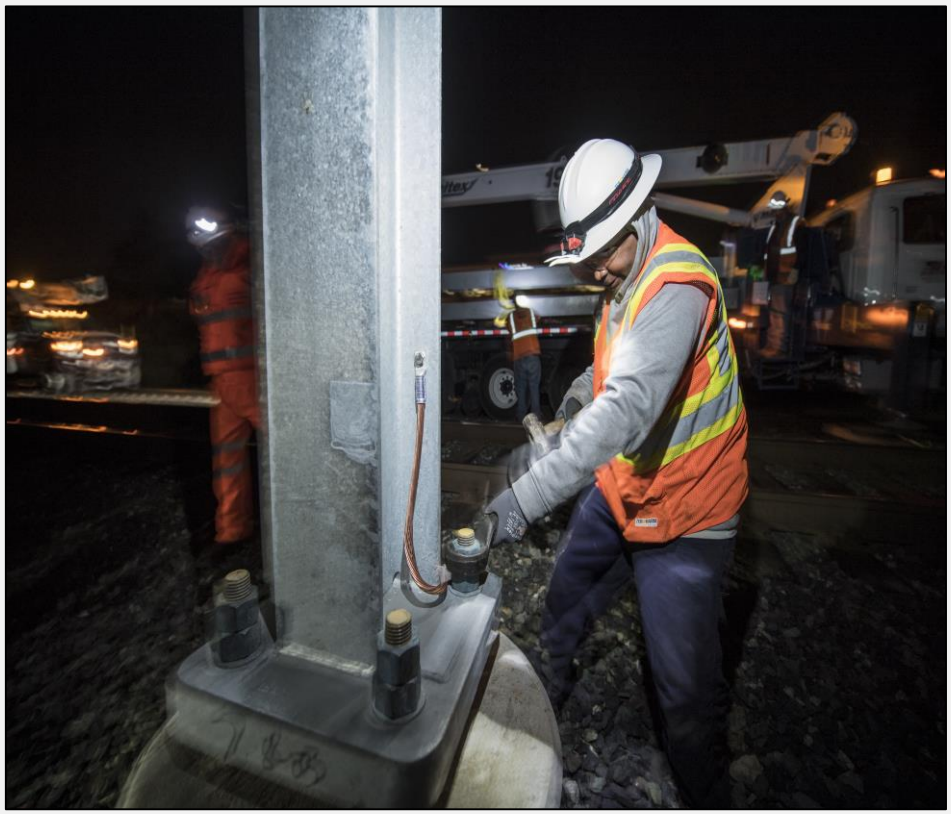
Pole Installation



Current Pole Installation

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Stringing Wire

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Traction Power Facitilies

- 10 Traction Power Facilities Installed throughout Corridor
  - 2 Paralleling Stations installed in San Francisco
  - Gantry structures up to 50’
- Provides electrical power to trains through the Overhead Contact System (OCS)
- Unmanned station
- Day and weekend construction work
- Limited night work during construction

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Construction Impacts

- Daytime work and night work from 8 p.m.- 6 a.m.
- Some 24 hour/day work on weekends
- Crews will utilize acoustical barrier blankets and position lights away from homes
- Dedicated hotline for construction complaints

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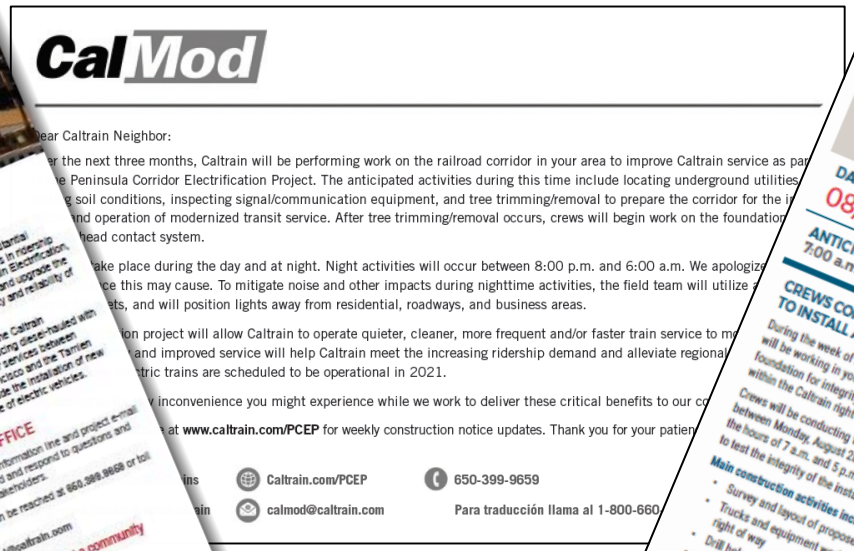
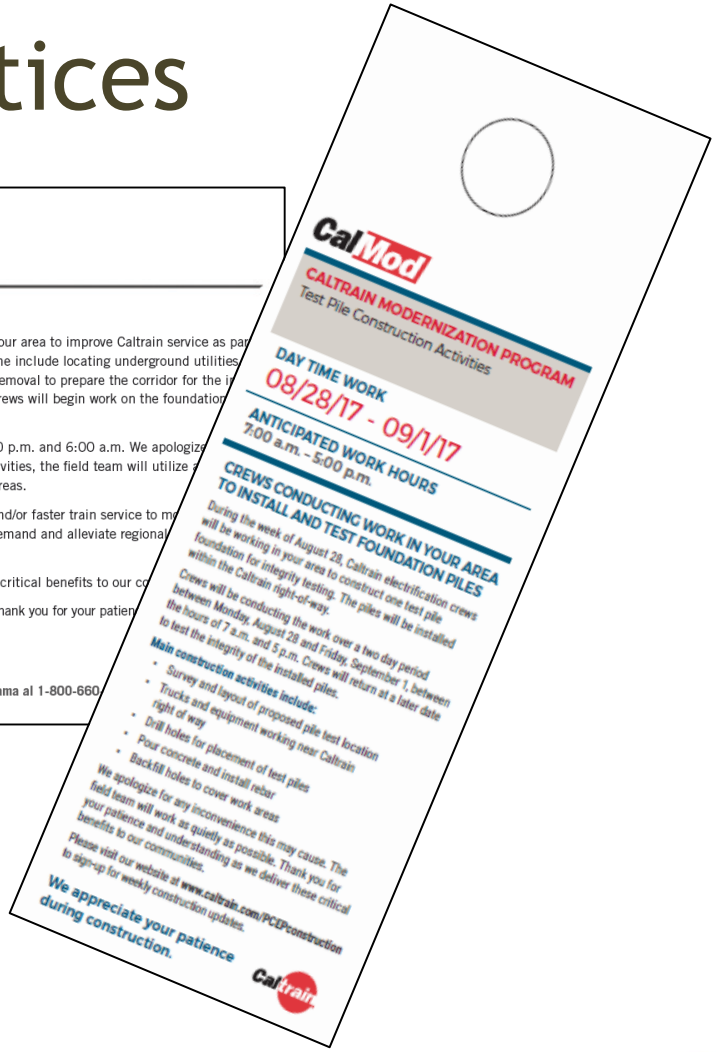
Public Outreach

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

Public Outreach

Physical Notices





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