

CalMod



Caltrain Electrification Update

United Neighborhoods of Santa Clara County
January 9, 2019



Agenda

- Caltrain System Overview
- Project Overview
- Electric Train Design
- San Jose Construction Activities
- Questions



Caltrain System

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

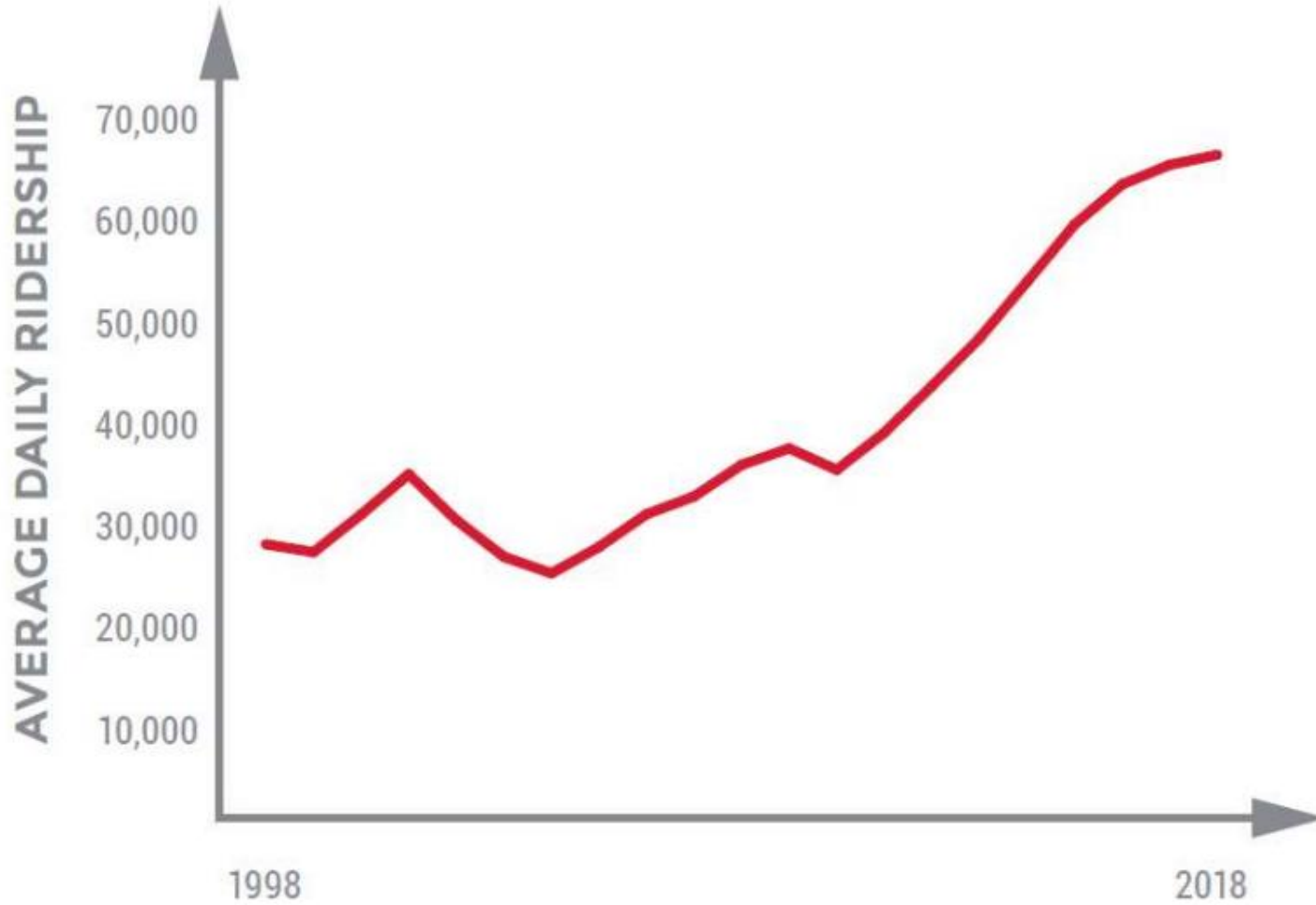


- 32 Stations Gilroy to San Francisco
- 92 Weekday Trains
- At-Grade Crossings, viaducts, and bridges
- Intermodal Connections
- Bike Commuters

Union Pacific
owns



Ridership



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	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

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



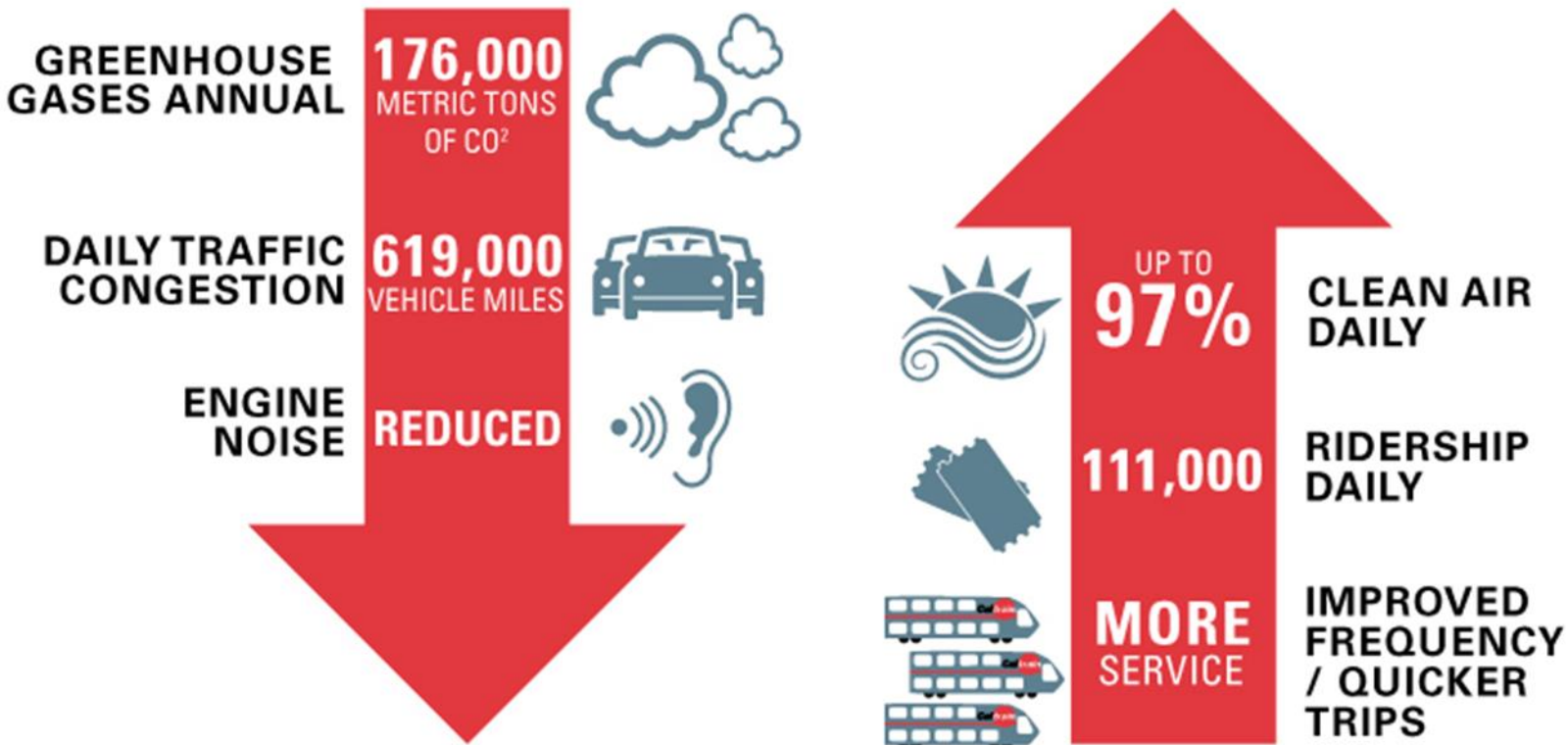
Service Benefits

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

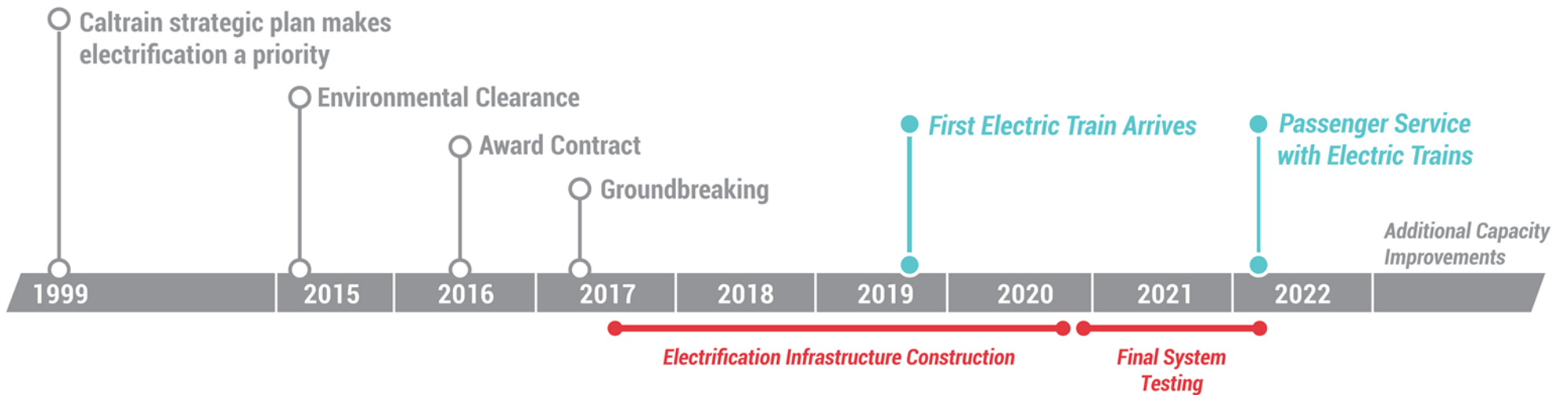
Key Regional Benefits (2040)



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

Schedule

MILESTONES



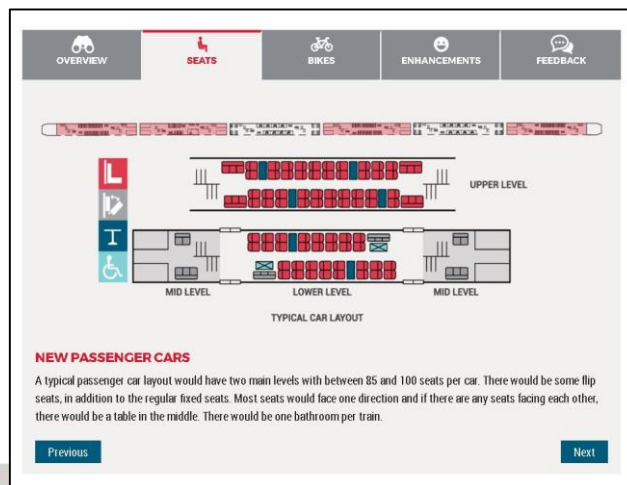
*Please keep in mind that testing and construction will overlap as each Segment will be tested individually, prior to final system testing.



Note: Schedule Subject to Change

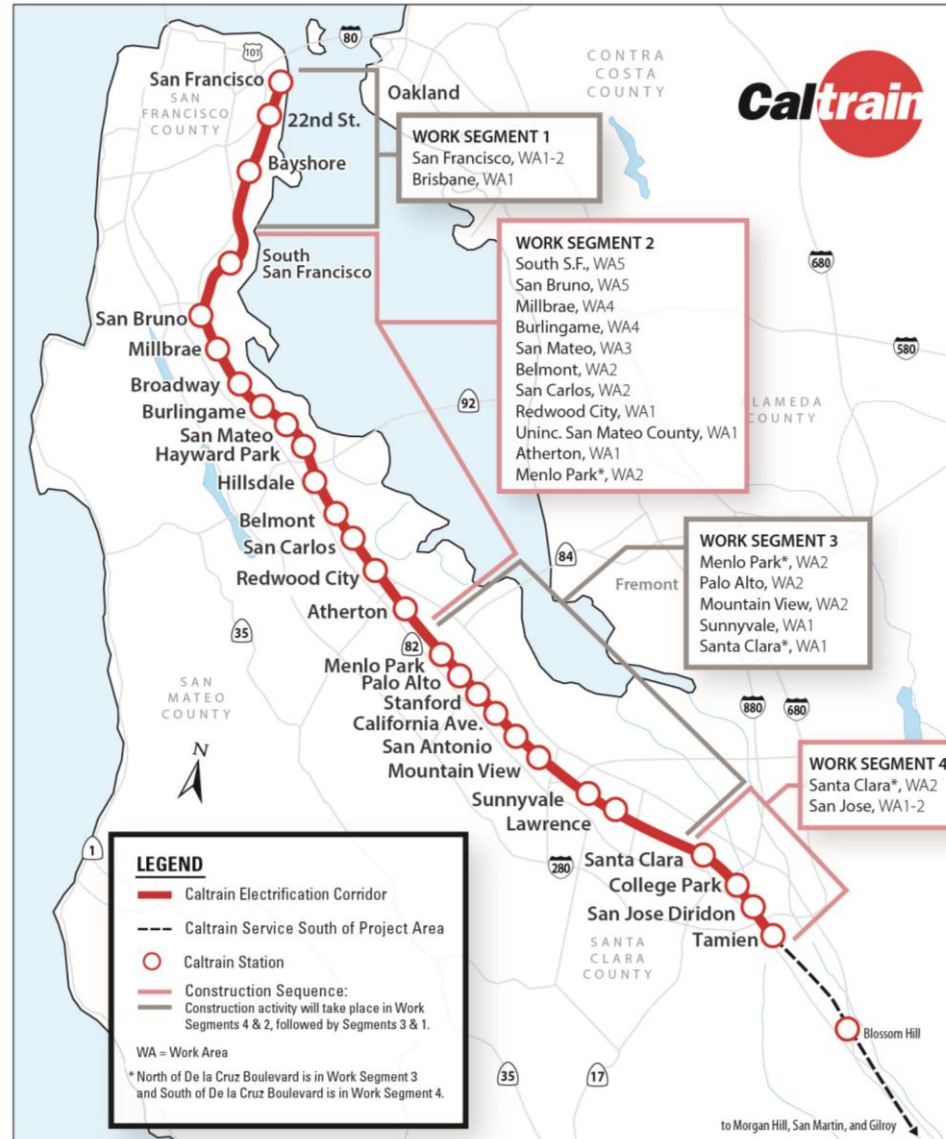
Electric Train

- 2016 Capacity Board Decision (bike to seat ratio, onboard bathrooms, upper doors ‘not precluded’)
- 2017 Design Decisions with Public Input (Exterior design, Seat colors, Bike Storage, ADA restroom)
- 2019 Virtual Reality 360 Tour

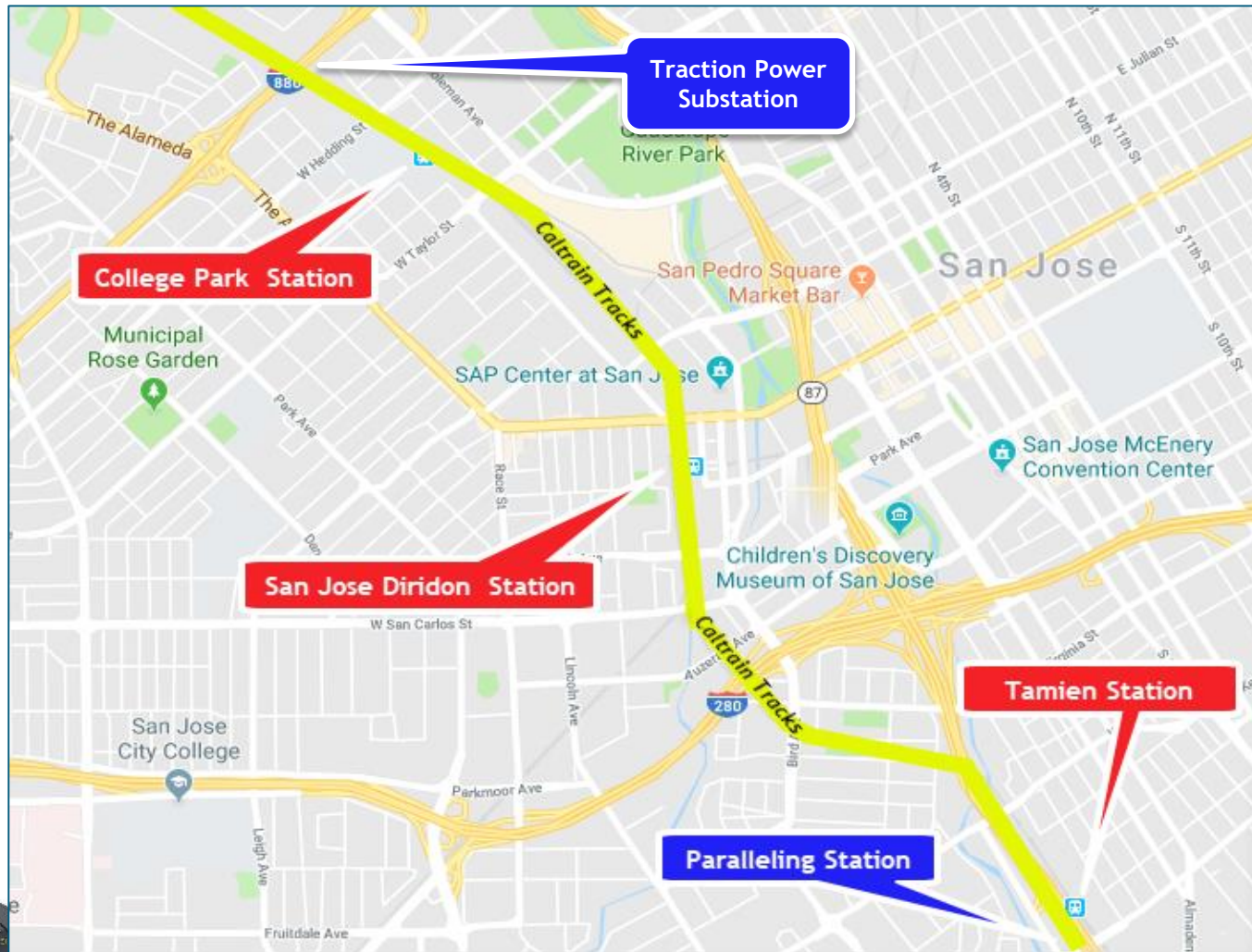


CalMod Construction Phasing

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



San Jose Work Area



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• Tree Pruning and Removal
Future Work	<ul style="list-style-type: none">• Foundation Installation• Pole Installation• Wire Installation



Future Construction Activities

San Jose

Date	Work Activity	Expected Duration*
In Progress	Potholing	2-3 months
Early 2019	Foundation Construction	3-4 months
Summer 2019	Pole Installation	3-4 months
Fall 2019	Wire Installation	3-4 months
In Progress	Traction Power Substation Construction	4-6 months
In Progress	Paralleling Station Construction	4-6 months
Spring 2019	CEMOF Facility Modifications	6-9 months



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

Potholing



Foundation Construction

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



Foundation Installation



Pole Installation

- 3,000 Installed throughout Corridor
 - Approx. 460 Poles in San Jose
- Pole Height: 30-45.5'
- Pole Spacing: ~180' apart



Pole Installation San Jose



Single Track Cantilever



Two Track Cantilever



Center



Example of Poles Currently Planned for Use in San Jose

Pole Installation San Jose



Portal

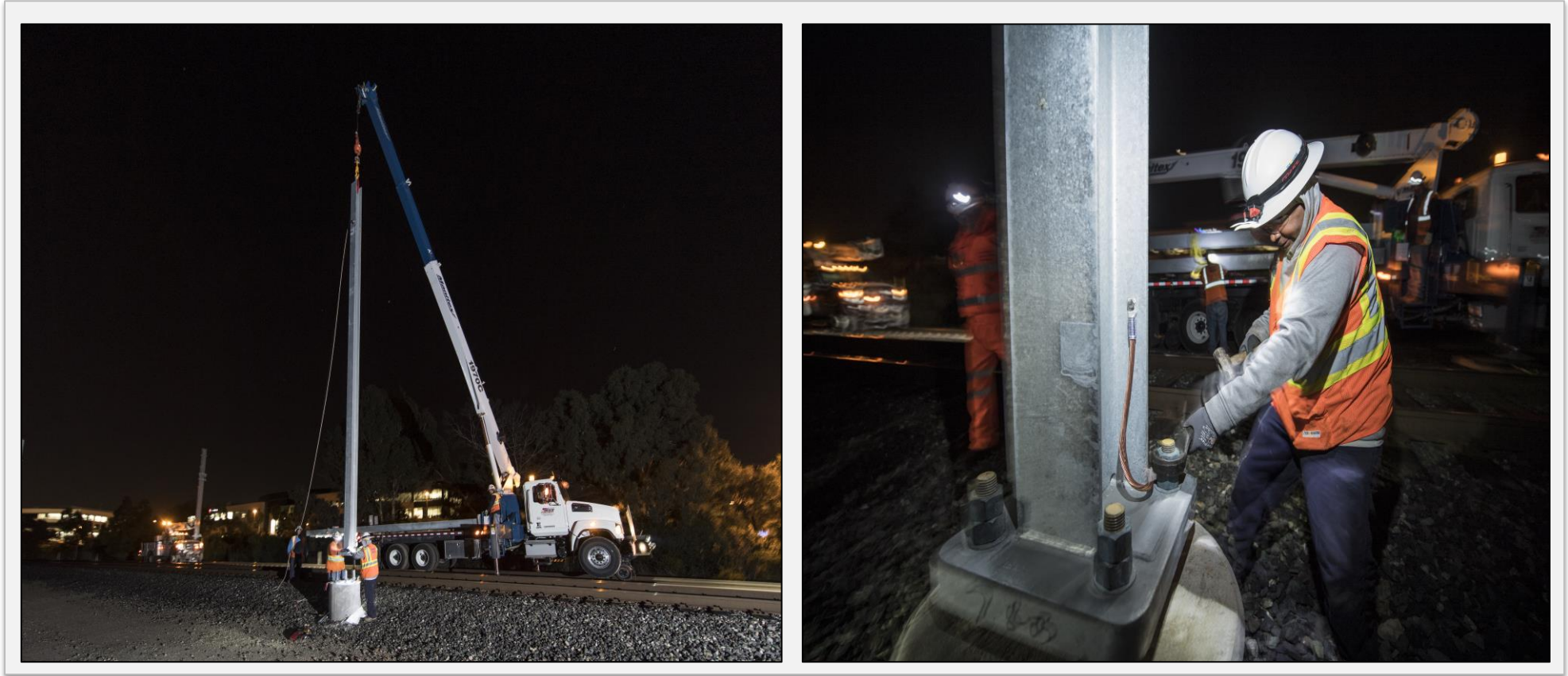


Headspan



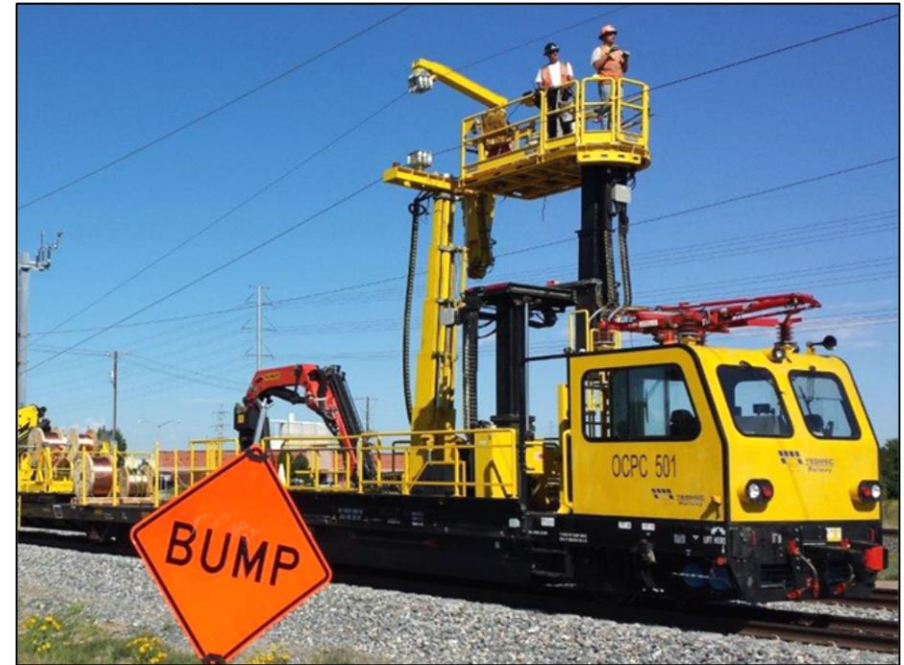
Example of Poles Currently Planned for Use in San Jose

Pole Installation



Current Pole Installation

Stringing Wire



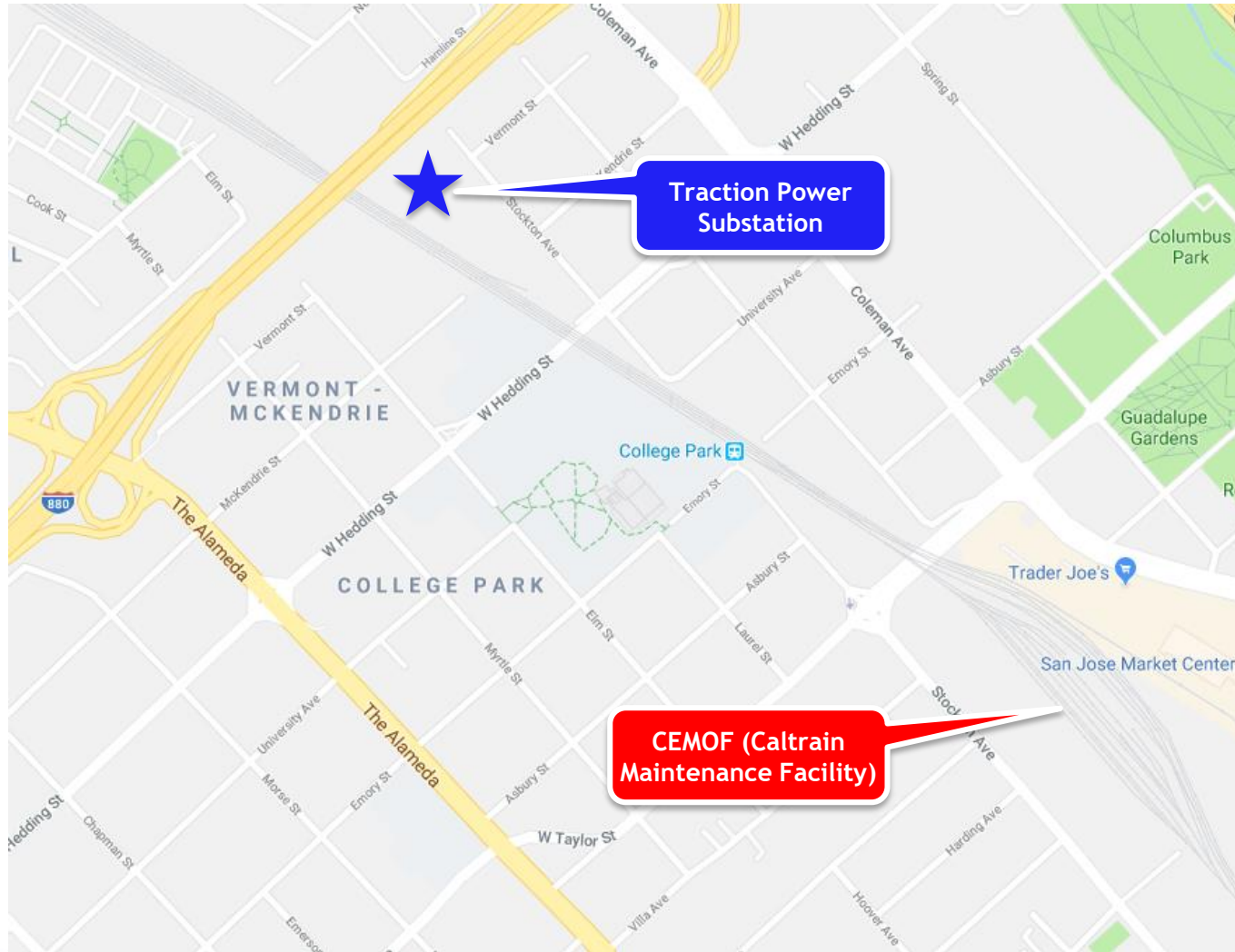
On-track Equipment

Traction Power Facilities

- 10 Traction Power Facilities Installed throughout Corridor
 - 1 Traction Power Substation installed in San Jose
 - 1 Paralleling Station in San Jose
 - 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



Traction Power Substation Location



Traction Power Substation



Example Traction Power Substation

Paralleling Station Location

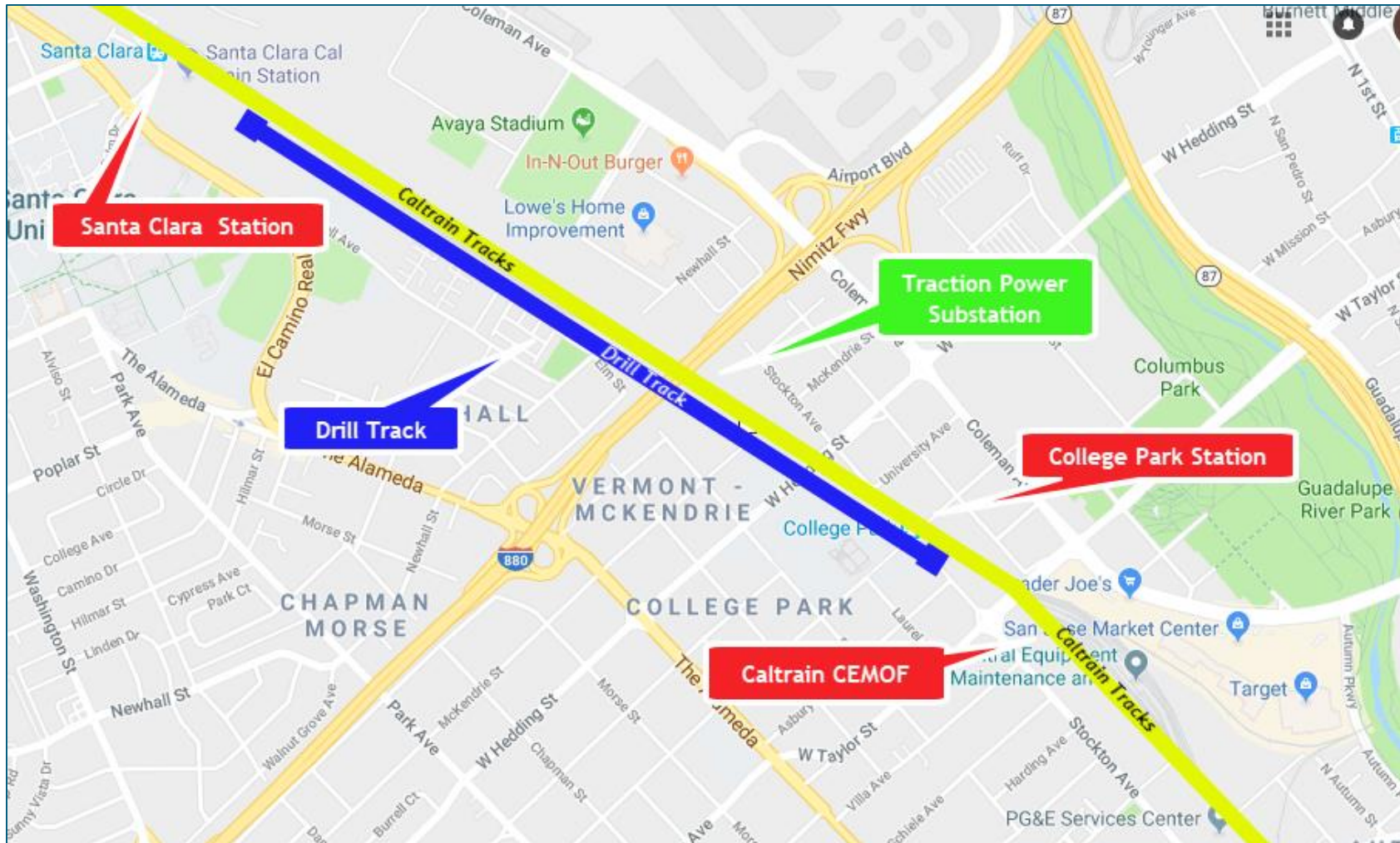


Example Paralleling Stations



Examples from Amtrak Northeast Corridor

Test Track Location



Currently existing maintenance track (no new track)

Test Track Information

- Approximately 1.5 miles of existing maintenance track (no new track)
- Located between Santa Clara Station and Caltrain CEMOF facility
- Foundations, poles and wires to be installed prior to electric train testing



Test Track Information

- New electric trains will be tested on track
- Testing to occur between Late 2019 to Spring 2022
- Testing anticipated to be during daytime





Overall Construction Information

- 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



SF Weekend Caltrain Closures

- Weekends - Oct 6, 2018 to Late Spring 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 available at caltrain.com



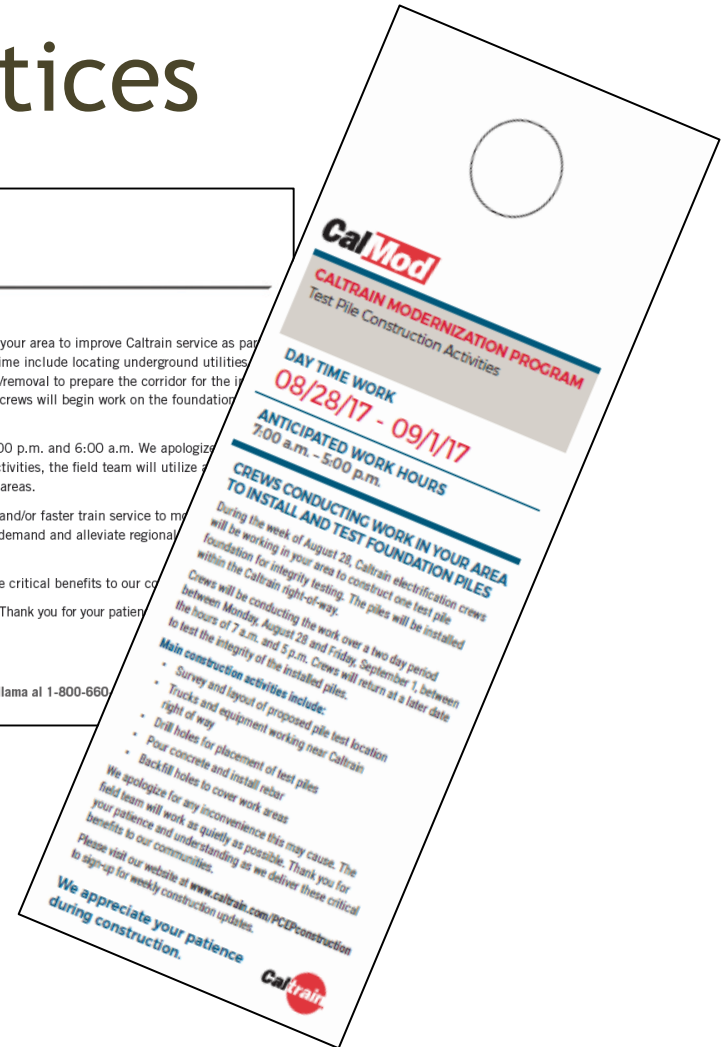
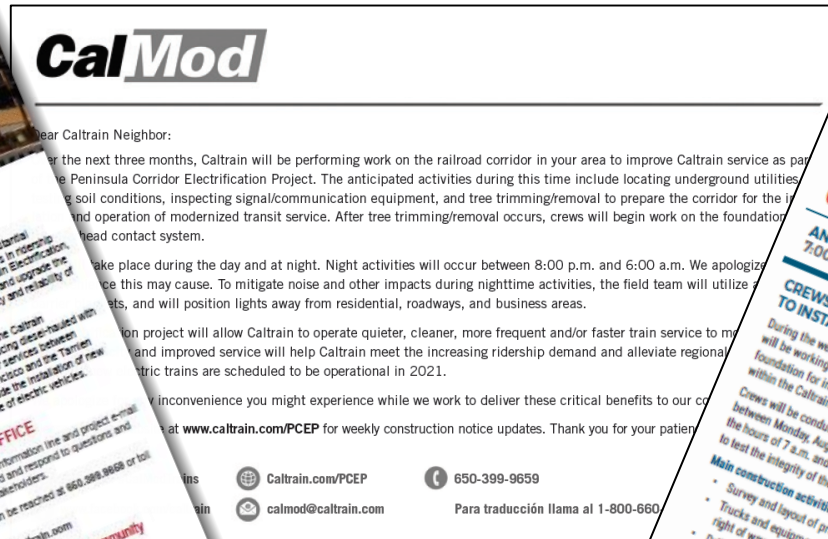
Public Outreach

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



Public Outreach

Physical Notices







CALMOD CONTACT INFORMATION

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What's Next

- Caltrain Business Plan
 - caltrain2040.org
- High Speed Rail Blended System
 - hsr.ca.gov
- Caltrain Downtown Extension
 - sfcta.org/transbay-transit-center
- Diridon Concept Plan

