

CalMod



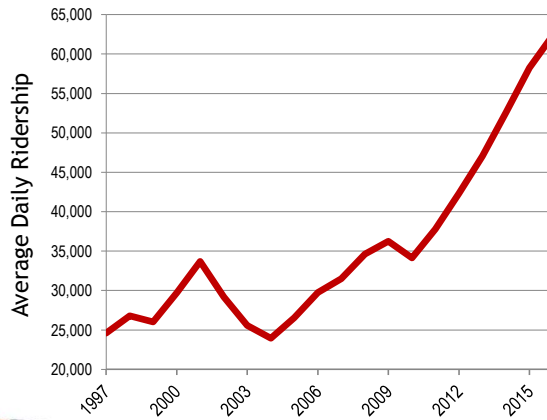
Caltrain Modernization Update

SFCTA Meeting
January 9, 2018



CalMod

Caltrain Ridership





Regional Transportation Needs

- US 101 and Interstate 280 Congested
- Corridor supports growing economy
- 75% Caltrain riders commute to work
- 60% are choice riders (have access to a car)



Aging Fleet

- Planned Retirement (Most equipment built in mid-1985's)
 - 20 of 29 locomotives
 - 73 of 134 passenger cars
 - Already 7 years past service life
- Service Failures on the Rise
 - 19 locomotive failures/month
 - 19 other equipment failures/month
- Over next 5 years, Caltrain will need to spend
 - \$180m to maintain railroad in a state of good repair
 - Of this amount, nearly \$100m needed to maintain Caltrain's existing diesel fleet





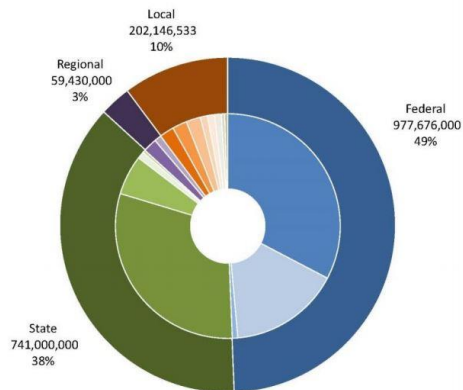
Electrification Project Description

Area	Project	Service
51 miles San Francisco to San Jose (Tamien Station)	Electrification: <ul style="list-style-type: none">Overhead WiringTraction Power Facilities Electric Trains (EMUs) <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 / directionMore station stops / reduced travel timeRestore Atherton & Broadway service Mixed-fleet service (interim period) Continue tenant service <ul style="list-style-type: none">ACE, Capital Corridor, Amtrak, Freight



Fully Funded (\$1.9B)

SF Contribution: \$60m



FTA Core Capacity Grant (\$647m) Secured May 2017





Groundbreakings



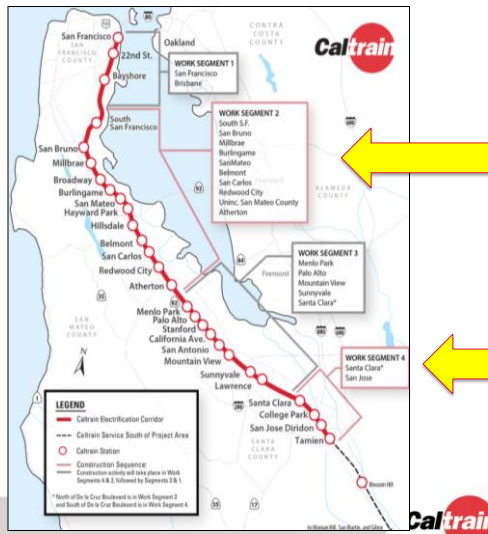
PCEP Groundbreaking
 July 21, 2017
 Gov. Jerry Brown; Reps: Pelosi, Eshoo, Speier; state and local elected officials; business leaders; environmentalists and transportation advocates joined together at the Millbrae Station for the official Caltrain Electrification Groundbreaking

Salt Lake City Vehicle Plant Groundbreaking
 October 13, 2017
 Gov. Gary Herbert and Sen. Orrin Hatch helped celebrate the groundbreaking of a new plant that will help build Caltrain's electric trains



Construction Phasing

- Segments 2 & 4 followed by 1 & 3
- 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





Electrification - Infrastructure

- Current Field Activities
 - Pre-construction activities (vegetation removal, soil testing, utility potholing etc)
 - OSC Foundation
 - Signal cable relocation
- Upcoming Field Activities
 - OCS Poles and Wires
 - Construction Traction Power SubStations
 - Installation of Bridge Barriers
- Coordination w/ cities on design review
- Other Contracts: SCADA, Tunnel Modifications, CEMOF Improvements
- Public Meetings / Notification in Advance of Work



Note: Field Activities only in Segments 2 & 4



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Electrification - Infrastructure

- San Francisco Elements

Date	Work Activity	Expected Duration
Summer 2018	Tree Pruning/Removal	2 months
Fall 2018 / Winter 2019	Tunnel Modifications	9 months
Winter 2018/2019	Foundation Construction	3 months
Winter 2018/2019	Paralleling Station 1 (PS-1)	1 year
Spring 2019	Pole and Wire Installation	6 months



Note: Schedule Subject to Change

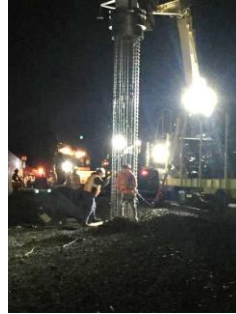


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Electrification - Infrastructure



Potholing for Utilities

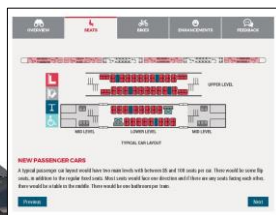


Installing Foundation Cage



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





Budget & Expenditures (in millions)

	Budget	Current Budget*	November Costs	Costs to Date	Estimate at Completion
Electrification	\$696.6	\$696.7	\$7.7	\$178.5	\$696.7
SCADA	\$0.0	\$3.4	\$0.0	\$0.0	\$3.4
EMU	\$550.9	\$551.0	\$0.0	\$60.7	\$551.0
Separate Contract & Support Costs	\$417.2	\$417.2	\$5.9	\$134.2	\$417.2
Contingency	\$315.5	\$311.9**	\$0.0	\$0.0	\$273.5
Forecasted Costs & Changes	\$0.0	\$0.0	\$0.0	\$0.0	\$38.5
PCEP Total	\$1,980.3	\$1,980.3	\$13.7	\$373.4	\$1,980.3

*Includes executed change orders and awarded contracts

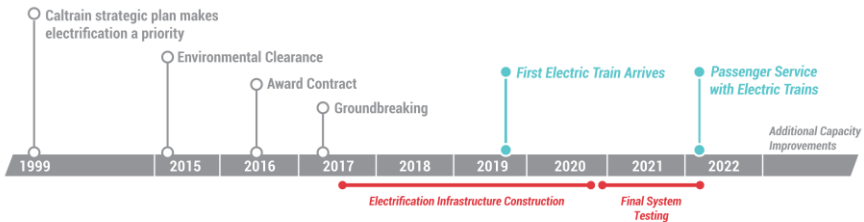


Note: Budget / Expenditures as of **November 30, 2017**



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**





Project Contact Info

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Project Office: 2121 S. El Camino Real Suite A-100 San Mateo, CA 94403 (Hours 9am-5pm)



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Future Improvements

- Transbay Downtown Extension
- Fully Electric, 8-Car Electric Trains
 - Transit and Inner City Rail Program Application
- Development Opportunities at 4th and King
- Business Plan



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Communications Based Signal System Positive Train Control (CBOSS PTC)



PTC Background

- Federally mandated safety technology on all railroads by Dec 2018
- Industry Progress
 - Struggle to implement
 - 41 active railroads implementing (8 conditionally approved)
 - 50% locomotives, 24% (passenger) routes miles equipped
 - Challenges: Interoperability, funding, resources (people and technology)



Caltrain PTC Project

- Caltrain Issued Contract to PTG (October 2011)
 - \$239M Budget
- Complete on Caltrain Corridor
 - Onboard equipment installation
 - Wayside interface unit and FRA validation testing
 - Fiber Optic Cable installation
 - Base station installation
 - Backup control center build out
 - High-Rail testing for FRA Official Critical Assets
- Terminated Contract w/ Prime PTG (Feb 2017)
 - Persistent delays, lack of performance
 - Funding partners and regulators contacted, advice sought
 - Secured program assets (Fiber etc)
- Current Status
 - Litigation with PTG
 - Pursuing alternative paths to finish implementation



Project Oversight (PTC + PCEP)

Funding Partners (SF, SFCTA, SMCTA, VTA, MTC, HSR) Protocol

1. Open Door policy w/partners	2. Partners may review progress and cost reports	3. Partners will be members of the Risk Management Team	4. Partners will assist with the development of grant amendments and funding requests
5. Partners may attend any progress meetings	6. Partners provided w/ quarterly progress report	7. Configuration Management Board will include Reps from SF, CHSRA and VTA	8. Caltrain Executive Director will present the Project status twice a year at the SF Board of Supervisors
9. partners may attend meetings w/ FTA & PMO	10. Partners may participate in consultant selection panels and proposal/bid reviews	11. Partners will provide support on funding and financing issues	12. Partners can request a meeting to receive additional information
13. Project deliverables, reports, plans and procedures available for partners review	14. Partners may monitor quality through discussions with QA Manager	15. Appropriate documentation provided to partners to assure invoices processed in a timely manner	16. Partners can request an audit and review of Project information

Full Protocol Available: <http://www.caltrain.com/projectsplans/CaltrainModernization/Documents.html>



Note: Additional Oversight from FTA, and JPB



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Questions



Caltrain

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