

Caltrain Electrification Update

San Mateo County
Transportation Authority

June 1, 2023

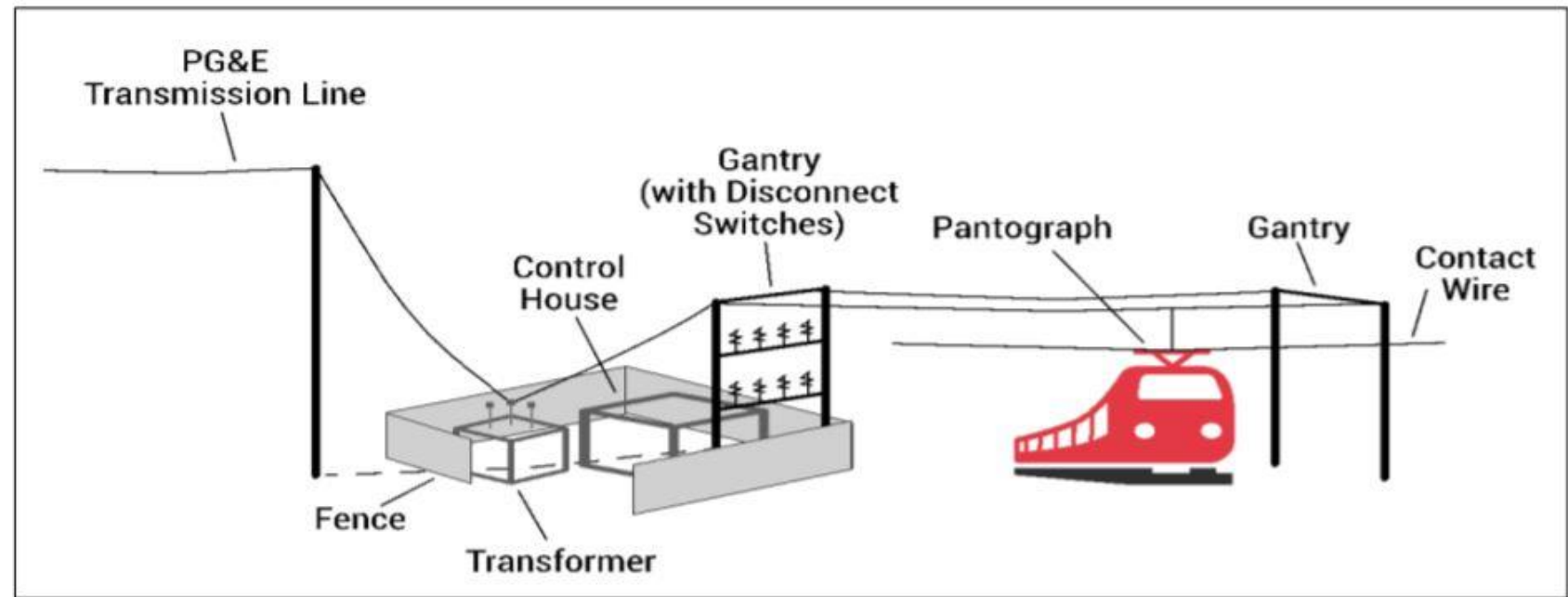


Electrification Project Overview

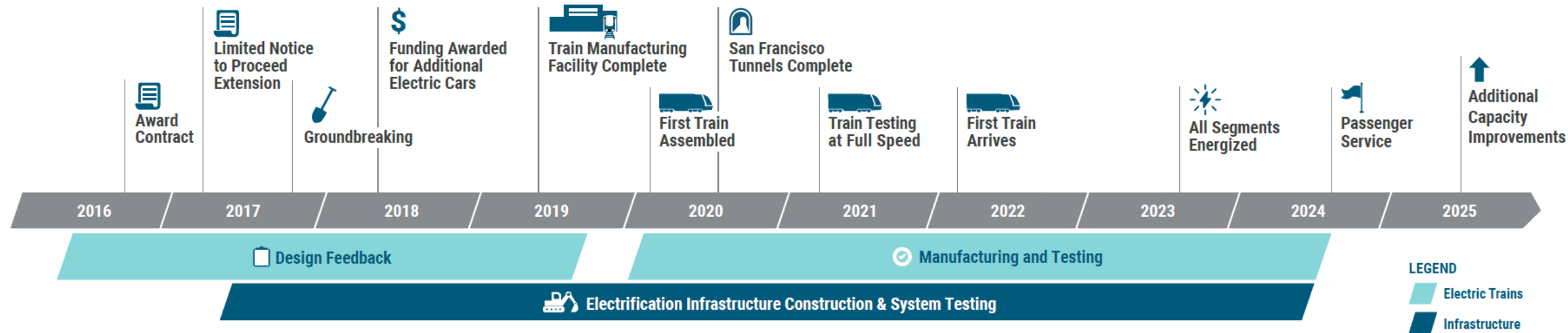
Transition from Diesel to Electric

First Electric Commuter Railroad in CA

- 25KV Overhead Contact System (used by high-speed rail system)
- 19 EMU 7-car trainsets (replaces 75% of diesel fleet)
- Two-Speed Check signal system (approved by FRA, UP and CHSRA)



Timeline



Project Fully Funded!



Project Budget

	(A)	(B)	(C)	(D)	(E)	(F) = (D) + (E)
Description of Work	Re-Baseline Budget	Current Budget	Cost This Month	Cost To Date	Estimate To Complete	Estimate At Completion
Electrification	\$1,097,149,881	\$1,097,149,881	\$13,193,833	\$917,528,775	\$179,505,106	\$1,097,033,881
EMU Procurement	\$556,072,601	\$556,248,486	\$0	\$420,210,493	\$144,452,993	\$564,663,486
Minor Construction Contracts (SSF, 25th Grade, Tunnel, CEMOF, SCADA, Non-BBI OCS)	\$67,055,072	\$68,091,194	\$0	\$64,677,734	\$3,413,459	\$68,091,194
Real Estate Acquisition & Support	\$34,914,177	\$34,914,177	\$32,986	\$24,052,357	\$10,861,820	\$34,914,177
PG&E, Utilities	\$132,088,994	\$132,088,994	\$471,589	\$204,034,318	-\$75,774,924	\$128,259,394
Management Oversight & Support	\$312,699,697	\$315,007,767	\$3,089,399	\$269,617,046	\$45,390,721	\$315,007,767
TASI Support	\$114,488,767	\$114,488,767	\$1,774,608	\$97,279,623	\$17,209,144	\$114,488,767
Finance Charges	\$9,898,638	\$9,898,638	\$0	\$9,361,780	\$536,858	\$9,898,638
Insurance	\$6,581,851	\$6,581,851	\$0	\$6,118,411	\$463,440	\$6,581,851
Other Required Projects & Services	\$9,084,176	\$10,484,176	\$352,862	\$4,216,324	\$6,467,852	\$10,684,176
Environmental Mitigation	\$14,438,866	\$13,038,866	\$434	\$1,242,663	\$11,596,203	\$12,838,866
Caltrain Capital Overhead (ICAP)	\$48,217,887	\$48,217,887	\$663,057	\$23,771,053	\$24,446,834	\$48,217,887
Contingency	\$40,000,089	\$36,480,012	\$0	\$0	\$32,010,612	\$32,010,612
Total	\$2,442,690,697	\$2,442,690,697	\$19,578,768	\$2,042,110,578	\$400,580,119	\$2,442,690,697

"Cost This Month" represents cost of work performed April 2023;

"Cost To Date" includes actuals (amount paid) and accruals (amount of work performed) as of April 2023;

"Contingency" budget is drawn down and transferred to other elements after CMB approvals as reflected in the Estimate at Completion.

As of March 31, 2023



Project Contingency and Shared Risk Pool

Item	Amount	Executed in April 2023	Executed To Date	Amount Remaining
BBII Shared Risk Pool	\$50.00M	\$1.86M	\$7.09M	\$42.91M
Project Contingency	\$40.00M	\$0.00M	\$3.52M	\$36.48M
Total	\$90.00M	\$1.86M	\$10.61M	\$79.39M

- \$1.73M for temporary generators for signal houses
- \$0.12M for track access delays and differing site conditions

Top Risks and Mitigations

- Overhead Contact System Installation Productivity
- Traction Power Substations Short Circuit Testing
- Quality Control & Quality Assurance

Signal System Update

- Electrified system requires new signal and grade crossing activation system to be installed
- 39 crossings cutover as of May 2023
- Subsequent Crossing Optimization Project (separate from Electrification) will provide real-time information between train and signal system

City	Number of Crossings	2 Speed Check Implementation
San Jose	2	Completed
Millbrae	1	Completed
Burlingame	6	Completed
San Mateo	9	Completed
South San Francisco	1	Completed
San Bruno	1	Completed
Redwood City	6	Completed
Atherton	2	Completed
Menlo Park	4	Completed
Palo Alto (Alma and Churchill)	2	Completed
Palo Alto (Charleston and East Meadow)	2	Completed
Mountain View	2	Completed
Sunnyvale	2	Completed
San Francisco	2	August 2023

Project Milestones

- Overhead Contact System
 - 99% of poles installed
 - 84% of wire installed
 - Overhead Contact System construction completion in October 2023
- Electric Trains
 - All train cars in production
 - 4 trainsets on site at Caltrain
 - Next two trainsets expected fall 2023
- Pre-Revenue Service: Spring 2024
- Revenue Service: September 2024



Foundations



Overhead Catenary System

Public Train Tours - Summer/Fall 2023



FOR MORE INFORMATION

WWW.CALTRAIN.COM



Additional Information

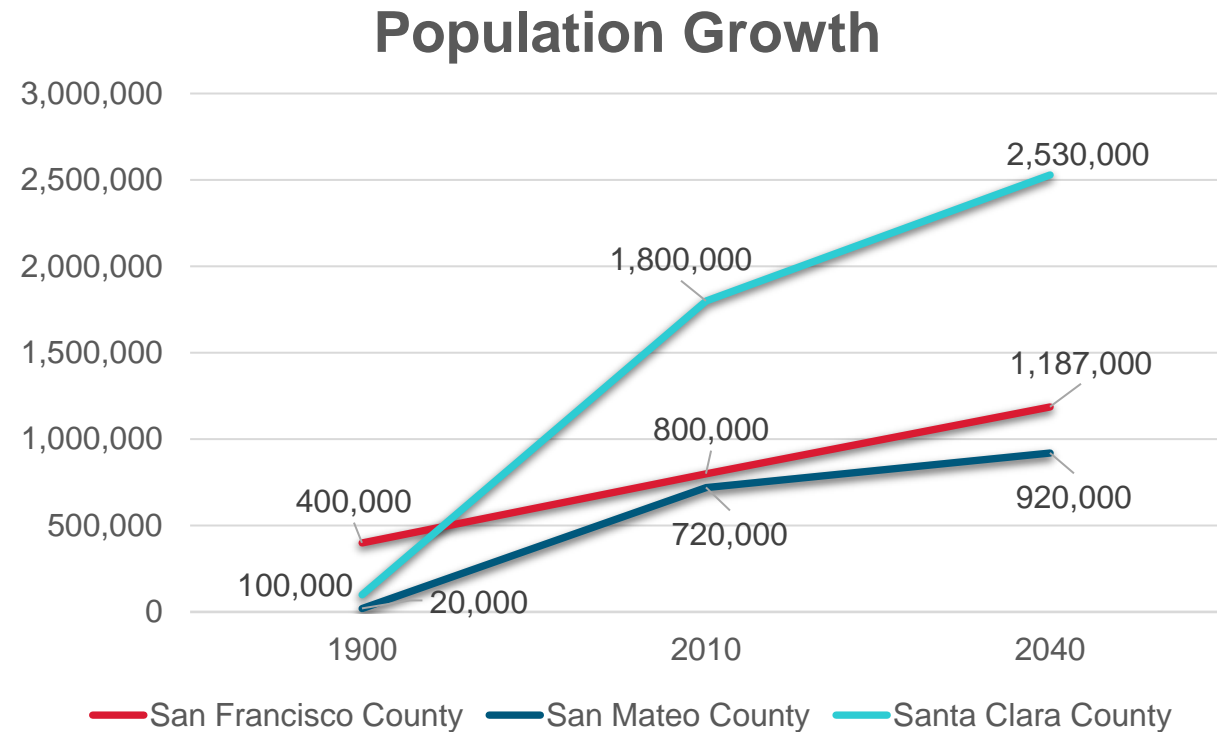
Caltrain Corridor

- 77 miles of track from end to end
- 31 stations
- Bi-directional commute
- 41 at-grade crossings
- Pre-pandemic:
 - 7th largest commuter rail in the country
 - 70% farebox recovery
 - Over 18 million Unlinked Passenger Trips (UPT) in 2019
 - Frequently overcrowded trains, standing room only



Corridor Growth 40% Increase

By 2040, an additional 1.2 million people will work and live within 2 miles of the Caltrain corridor.



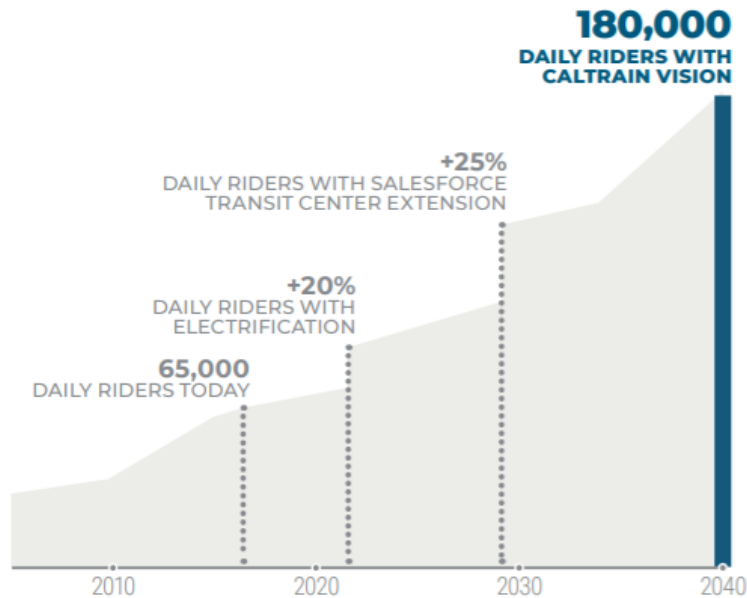
2040 Vision

Zero Emission Future

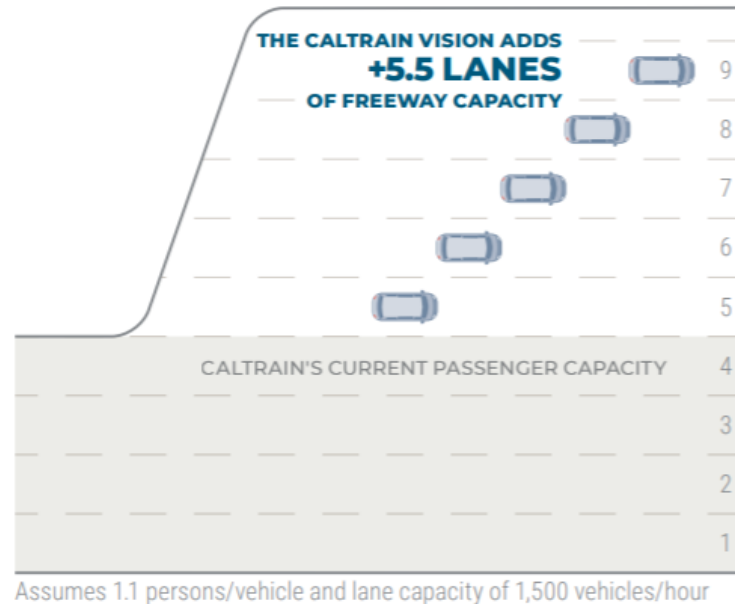
MORE TRANSPORTATION CAPACITY



CARRYING MORE PEOPLE



TRAINS VS LANES

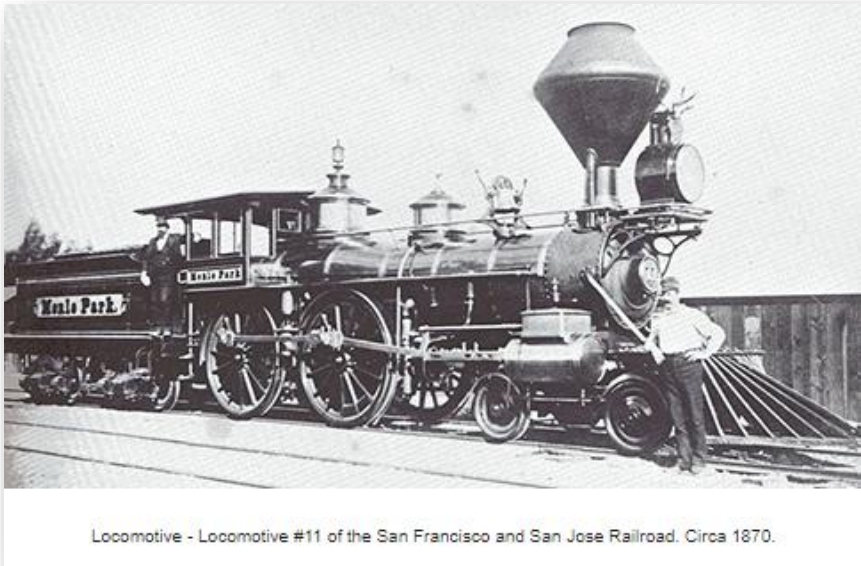


Caltrain's 2040 future service vision supports regional growth, arrival of high-speed rail, and more equitable, sustainable service.

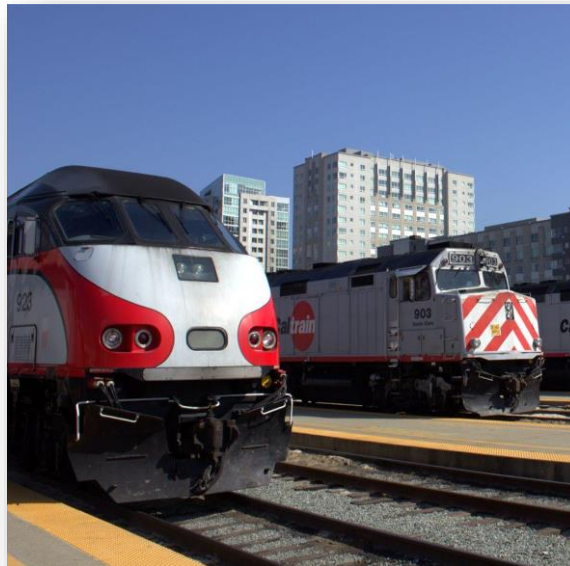


Transformational Moment

Electrification will help Caltrain become a cleaner, more efficient component of the transportation network.



Steam 1860s



Diesel 1950s to present



Electric 2024



A Connected Future

- Electrified Caltrain corridor will enable additional investments expanding the Bay Area intercity rail network.
- Existing and future tenants
 - Capital Corridor (Amtrak)
 - Altamont Corridor Express
 - California High Speed Rail
- Expansion projects
 - San Francisco Downtown Extension
 - San Jose Diridon Station Rebuild
 - Grade Separations



California High-Speed Rail, Draft Business Plan, Pg. 23

Electrification Project Benefits

Safety

- Crash energy management technology (meets FRA Alternate Compliance requirements for mixed traffic).
- Crash absorption system protecting train driver and passengers (meets FRA crashworthiness standard).
- Latest generation of vehicle control systems including detailed diagnostic features.
- Improved braking performance.



Sustainability

- Eliminates 2.09 million tons of carbon emissions.
- Future Caltrain will carry equivalent of 5½ lanes of freeway traffic.



SUSTAINABILITY

Replacing old diesel trains with new electric trains will reduce GHG emissions and improve air quality



Energy Independence

- Reduce dependence on foreign energy sources; Rely on cleaner, renewable domestic energy sources.
- California committed to renewable and zero-carbon energy resources supplying 100% electric retail sales to customers by 2045.
- EMU trains include regenerative braking for additional energy savings

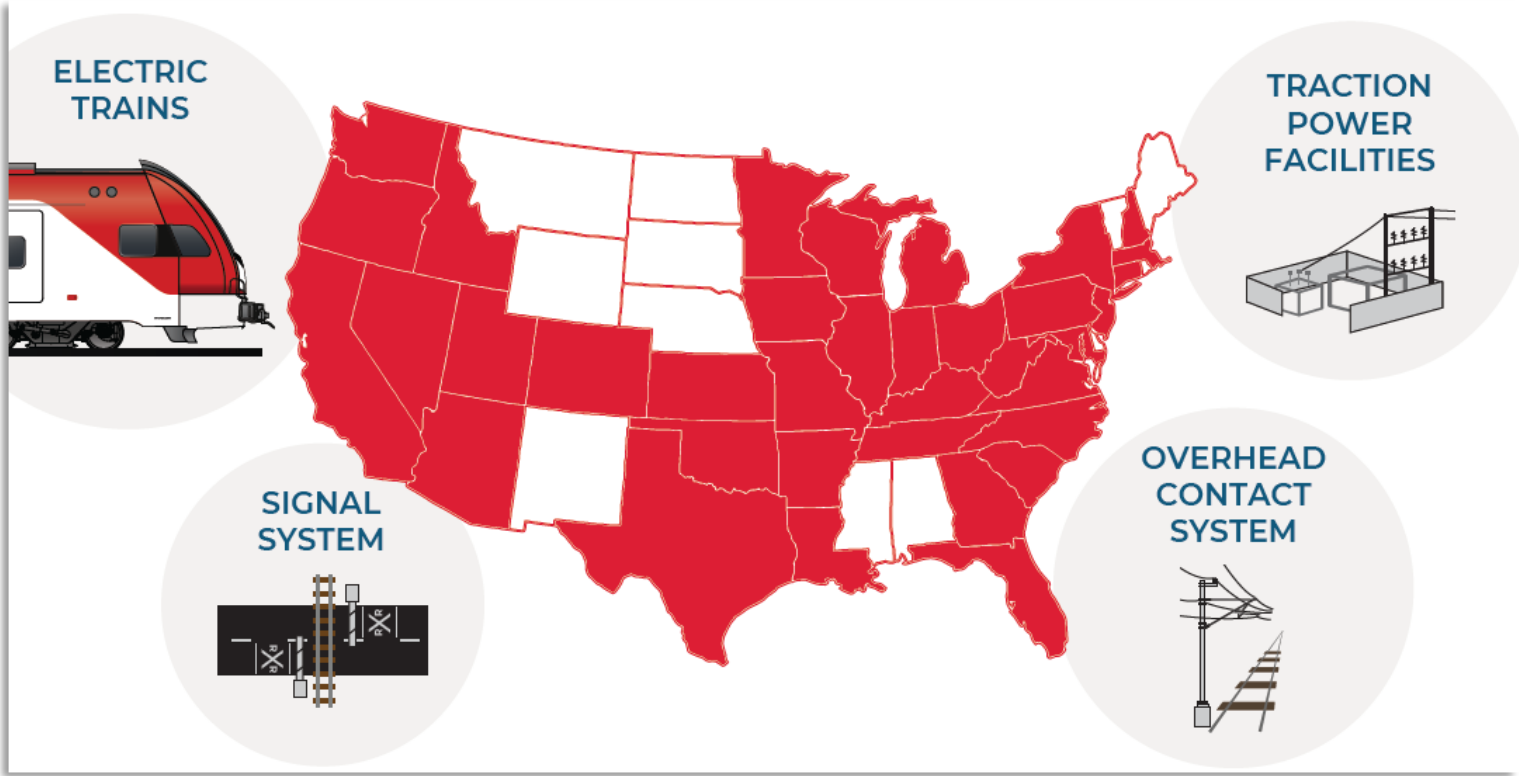


Equity

- Decreases emissions and noise pollution in communities of concern
- Benefits disadvantaged communities:
 - San Francisco (Bayview)
 - Santa Clara
 - Redwood City
 - San Bruno
 - South San Francisco
- Improves mid-day and off-peak service for essential workers

Economic Growth and Job Creation

33,000 Jobs Created in 36 States



Buy America Compliant

- Stadler (Switzerland based company) opened **first facility in the US** with guarantee of Caltrain Electrification Project contract
- Stadler Salt Lake City Facility:
 - 400+ employees
 - Local apprenticeship program
- Additional foreign suppliers opening US locations in order to be Buy America compliant

