CALTRAIN ELECTRIFICATION UPDATE

(PENINSULA CORRIDOR ELECTRIFICATION PROJECT (PCEP))

San Francisco County Transportation Authority Community Advisory Committee July 28, 2021



PROJECT INFO





PROJECT OVERVIEW

Project Area

Project Elements



- 51 miles
- San Francisco to San Jose (Tamien Station)



Electrification

- Overhead Contact System (OCS)
- Traction Power Facilities

Electric Trains*

- 19 7-car train sets
- 133 electric cars

*Includes 2018 State TIRCP Funding





PROJECT BENEFITS



Improved Train Performance, Increased Service and Greater Capacity



Improved Regional Air Quality and Reduced Greenhouse Gas Emissions



Positive Economic Benefits for the Region

Reduced Engine Noise Emanating from Trains





LONG-TERM SERVICE VISION

- Electrification sets the foundation for the future growth of the system
- Caltrain Service Vision Adopted in 2019, meets the projection regional growth in jobs and housing in the Bay Area
- Projects a tripling of ridership, increased peak and off-peak service, carrying the equivalent of 5.5 lanes of highway traffic of US 101





CONSTRUCTION PROGRESS





- Overhead Contact System Installation
 - Foundations complete south of Menlo Park Station (Segments 3 & 4)
 - Pole installation complete between Menlo Park to Santa Clara stations (Segment 3)
- Traction Power Facilities
 - Design work is complete for all 10 facilities
 - Transformers have been installed in 9 of 10 Traction Power facilities
- Electric Trains
 - 70 car shells have been shipped from Stadler Switzerland, 55 are in Stadler Salt Lake City, 15 are in transit
 - Train 1 tested at high-speeds in Pueblo, CO





OCS FOUNDATION

Foundation Locations	Number of Foundations Required	Number of Foundations Remaining	Installation Percent Complete	Anticipated Completion Date
Segment 1	535	434	19%	11/30/2021
Segment 2	1,090	210	81%	06/30/2021
Segment 3	901	Complete	100%	Complete
Segment 4	370	Complete	100%	Complete
CEMOF	85	Complete	100%	Complete

Data as of May 22, 2021





OCS POLES AND WIRE

OCS Poles

OCS Pole Locations	Number of OCS Poles Required	Number of OCS Poles Remaining	Installation Percent Complete	Anticipated Completion Date
Segment 1	440	440	0%	12/15/2021
Segment 2	956	479	50%	07/30/2021
Segment 3	750	Complete	100%	Complete
Segment 4	300	20	93%	05/31/2021
CEMOF	86	86	0%	06/14/2021

OCS Wire

OCS Wire	Installation Percent	Anticipated Installation	Testing Percent	Anticipated Testing	
Locations	Complete	Completion	Complete	Completion	
Segment 1	0 %	01/15/2022	0 %	01/31/2022	
Segment 2	20 %	09/25/2021	8 %	10/10/2021	
Segment 3	96 %	05/03/2021	47 %	05/15/2021	
Segment 4	31 %	06/30/2021	0.0 %	07/15/2021	





OVERHEAD CONTACT SYSTEM











SIGNAL SYSTEM

Signal Locations	95% Design Percent Complete	Anticipated Design Completion of 95%	Installation Percent Complete	Anticipated Installation Completion	Testing Percent Complete	Anticipated Testing Completion
Segment 1	64%	11/02/2022	21%	04/01/2023	0%	04/30/2023
Segment 2	94%	04/01/2022	23%	08/01/2022	0%	12/31/2022
Segment 3	26%	10/01/2022	21%	04/30/2023	0%	09/30/2023
Segment 4	100%	Complete	92%	05/31/2021	76%	08/30/2021

Data as of July 1, 2021





- FRA is actively participating in the cutover inspection
- Four Segment 4 signal cutovers completed
- Upcoming Segment 4 Cutovers
 - Cutover #5 (CP Shark and CP Alameda) anticipated for weekend of 7/23/21
 - Cutover #6 (CP Coast and CP De La Cruz, Reed Street) anticipated for weekend of 8/13/21





- PG&E
 - PG&E Substations at FMC (San Jose) & East Grand (SSF)
 - East Grand Substation: 83% complete
 - FMC Substation: 67% complete
 - TPSS -1 & TPSS -2 Interconnections
 - Construction at TPSS-2 Interconnection complete. Forecast connection to Temporary Power by August 2021
 - Construction at TPSS-1 began March 2021. Forecast connection to TPS-1 in January 2022

Traction Power System

- Design is complete for all traction power facilities
- Traction Power Substations 1 & 2 (TPSS-1 & TPSS-2) and Switching Station 1 (SWS-1): 90% complete
- Switchgear installation expected to start in June 2021





TRACTION POWER FACILITIES (TPS)



BBII electricians running bus conduits at the transformer and bending the conduits to size for installation at PS-5.



Excavating for site fence foundations at TPS-2.

BBII electrician installing PVC conduit for anchoring for concrete pour at PS-5.







CENTRALIZED EQUIPMENT MAINTENANCE AND OPERATIONS FACILITY (CEMOF)

- Parts Storage Warehouse installation complete; interior work ongoing
- Construction of north and south pit extension nearing completion
- Equipment testing room reconstruction will be finalized next month
- Work scheduled to be complete by June 2021, pending Change Order



Pit Extensions





ELECTRIC MULTIPLE UNITS

Production

- COVID-19-related Global safety measures have slowed production
- Switzerland production and Salt Lake City assembly delayed
- Testing
 - Dynamic type testing started at TTCI in Pueblo, CO on Train 1
 - HVAC type testing started on Train 2
 - Routine testing is in process on Train 3

Schedule

- First trainset to Caltrain now scheduled for February 2022 primarily due to Seisenbacher US bankruptcy and Seisenbacher Austria financial troubles
- Acceptance of 14th trainset now scheduled for August 2023





ELECTRIC MULTIPLE UNITS











COST & SCHEDULE RISK UPDATE





- Direct Costs
 - Signal System/Communications
 - Unknown Underground Site Conditions
 - PG&E
- Indirect Costs
 - Construction Support
- COVID Related Delays





Description	Current	DRAFT FTA Risk Refresh
Revenue Service	Quarter 3 2022	Quarter 4 2024
Cost	\$1.98B*	\$2.313B*

* Adjusted to match Caltrain accounting. Includes \$50M pre-FFGA spending and \$9M financing costs.

- Project cost has increased and schedule extended
- FTA estimate additional cost to complete: \$333M
- FTA estimate schedule extension: Q4 2024 (CY)
 Includes 6 month contingency





PROJECT SCHEDULE

(Note: Does not include 6-month schedule contingency suggested in Draft FTA Risk Refresh Report)







Discussions on-going



FUNDING





- Federal and State Funding Opportunities
 - \$52.4 million from ARPA
 - Actively pursuing other grant sources
- Issuance of tax-exempt bonds
 - Bonds secured by Measure RR to provide lowest interest cost and greatest structuring flexibility
 - Bonds structured to be payable from sale of Low Carbon Fuel Standards (LCFS) credits upon electrified revenue service
- Member agency funding
 - As provided by members
- Four Party Agreement
 - \$200M backstopped by agencies as part of FFGA approval (SFCTA, SMCTA, VTA, MTC)



NEXT STEPS





- Complete Contractor Negotiations
- Update Project Completion Plan (FTA, CHSRA)
- Update Funding Plan and Agreements
- Budget approvals





QUESTIONS / COMMENTS

