

# Caltrain Electrification Project Update

Peninsula Corridor Joint Powers Board  
May 5, 2022  
Agenda Item #13



# Project Overview

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- San Francisco to San Jose (Tamien Station)
- 51 miles
- Project Cost: \$2.44B
- Revenue Service: fall 2024



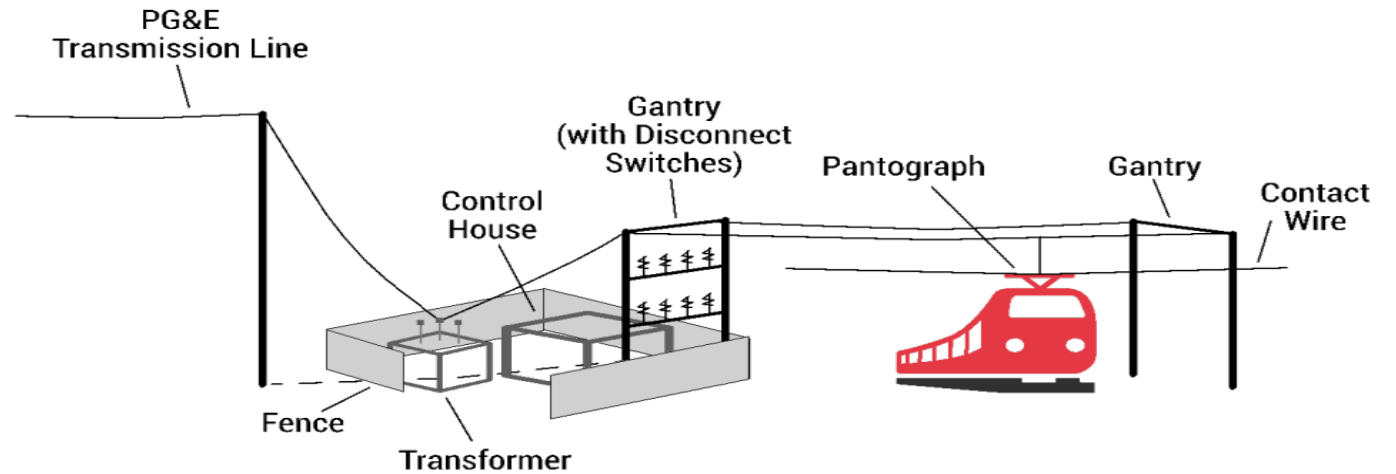
# Project Elements

- Electrification
  - Overhead Contact System (OCS)
  - Traction Power Facilities
  - Signal System

- Electric Trains

- 19 7-car train sets (133 cars)
- 75% replacement diesel fleet

*(Note: 96 cars funded by project; 37 cars funded by State TIRCP)*



# Project Benefits



Improved Train Performance,  
Increased Service and Greater Capacity



Improved Regional Air Quality and  
Reduced Greenhouse Gas Emissions



Job Creation Locally and  
Across the Country



Reduced Engine Noise  
Emanating from Trains



# Project Highlights

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- Schedule: No change to revenue service date - Fall 2024
- Budget: No change to project budget - \$2.44B
  - No draw from project contingency, incentive pool
  - Total \$375,960 drawn from shared risk pool (as of March 2022)
  - ICAP reevaluation / FTA and CHSRA review
- Construction
  - Segment 2 Signal work rescheduled to May 2 to May 20

# Safety and Security

Time Period	Reportable Injury Rate
January 1 to March 31, 2022	2.37
Since Project Start (2017)	1.74

*Note: National Average Reportable Injury Rate is 2.50.*

- Tabletop Emergency Exercise with San Jose Fire and Police Departments held on April 26
- National Construction Safety Week is First week in May
  - BBI and Caltrain Events



# Construction Update

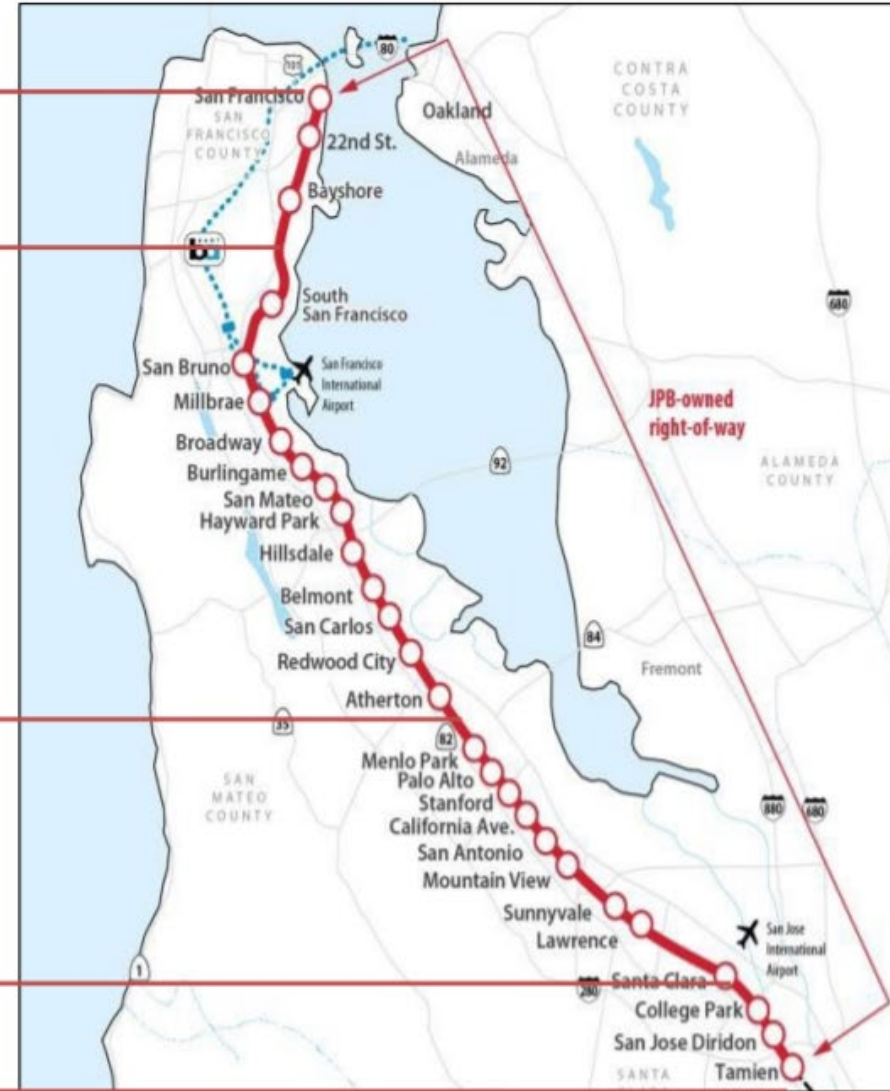
# Construction Segments

**Segment 1**  
San Francisco to Brisbane

**Segment 2**  
South San Francisco to Atherton

**Segment 3**  
Menlo Park to Santa Clara

**Segment 4**  
Santa Clara to Tamien



# Construction Update

## Overhead Contact System

Component	Segment	Installed in March	Remaining
Foundations (3,092 total)	Segments 4, 3, 2, 1	Complete	0
Poles (2,587 total)	Segments 4 / 3	Complete	0
	Segments 2 / 1	20	542
Wire (1.5M linear feet total)	Segments 4 / 3	Complete	0
	Segments 2 / 1	0	848K Linear Feet

## Traction Power Facilities

Component	Percentage Completed in March	Total Percent Complete
Traction Power Facilities (10 total)	3%	88%



# Signal System and Communication

- 2 Speed Check
  - Segment 4
    - Complete “punch list”
  - Segment 2
    - Major cutover reschedule to May
    - 17 grade crossings in Burlingame and San Mateo
    - Anticipated completion November 2022
  - Segments 1 and 3 work remaining
- Temporary service schedule: May 2 to May 20

# Temporary Service Schedule (Reminder)

- Temporary train schedule May 2 to May 20
- No change: Mid-day, evening, and weekend schedules
- Overall service reduction from 104 to 88 trains/weekday
  - Peak service reduction from 4 to 3 limited trains/hour/direction
  - No local service during peak hours
  - Suspended Baby Bullet service
- Trains single-track at Broadway, Burlingame, San Mateo, Hayward Park and Hillsdale stations

# Customer Outreach (Reminder)

- Landing page
- Organic social  
(Twitter, FB, IG, Nextdoor, Tiktok)
- Paid digital and print ads
- Station ambassadors
- Email blasts
- Mobile app alerts
- Visual messaging signage at stations
- Onboard and station announcements
- Press release
- Amplify message via elected officials, cities, counties
- Updates to key stakeholders, business groups
- 50% off fare promotion for month of April

# Electric Trains

- First two trainsets arrived March 20, 2022
- Trainsets arrive every 2-3 months, 2 per shipment
- 14<sup>th</sup> trainset anticipated arrival fall 2023
- 19<sup>th</sup> trainset anticipated arrival fall 2024
- **Trainset testing at Caltrain has commenced**



*As of April 27, 2022*

# Crossing Optimization Project



# Crossing Optimization Project

- Separate from Electrification Project Scope and Budget
- Received crossing optimization test request for FRA approval
- Pilot testing for 6 locations completed in April 2022
- Completed throughput, schedule management & communications studies
- Developed project installation and cutover schedule

# Signal Work Schedule

City	Number of Crossings	2 Speed Check Implementation	Crossing Optimization (Wireless) Implementation
San Jose	2	January 2021	Spring 2022
Millbrae	1	December 2021	Spring 2022
Burlingame	6	May 2022	Fall 2022
San Mateo	9	May 2022	Fall/Winter 2022
South San Francisco	1	Summer 2022	Winter 2022/2023
San Bruno	1	Summer 2022	Winter 2022/2023
Redwood City	6	Fall 2022	Spring/Summer 2023
Atherton	2	Fall 2022	Spring 2023
Menlo Park	4	Fall 2022	Summer 2023
Palo Alto (Alma and Churchill)	2	Fall 2022	Summer 2023
Palo Alto (Charleston and East Meadow)	2	Spring 2023	Summer 2023
Mountain View	2	Spring 2023	Spring 2023
Sunnyvale	2	Spring 2023	Fall 2023
San Francisco	2	Fall 2023	Spring 2024

Notes: Dates subject to change

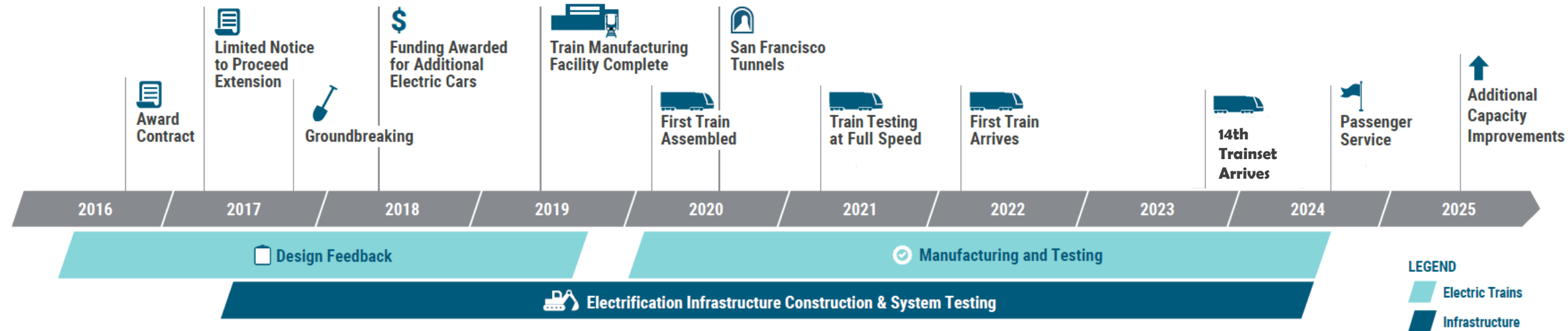
Signal Work at UPRR owned crossing in Santa Clara to be determined



# Program Management

# Program Master Schedule

Revenue Service Fall 2024



# Key Milestones

- No delay to the critical path compared to the December 2021 project re-baseline schedule.

Item	Rebaseline Date	Current Forecasted Date
Major Signal System Cutovers in Segment 2	March 2022	May 2022
Segment 4 Integrated Testing with EMU	June 2022	August 2022
Acceptance of 14 <sup>th</sup> Trainset	May 2023*	September 2023
<b>Completion of Signal System Work (Critical Path)</b>	September 2023	September 2023
BBII Electrification Substantial Completion	April 2024	April 2024
Revenue Service Date	September 2024	September 2024

\*Date represents the original baseline date

# Top Risks

Risk	Mitigation	Critical Date
Timely completion of Single-Phase Study and execution of PG&E Transmission Operating Load Agreement (TOLA) will impact Segment 4 energization to OCS/TPS Commissioning and EMU Testing	<ul style="list-style-type: none"> <li>The technical team meets with PG&amp;E weekly to finalize the number of cases required to complete the Single-Phase Study.</li> <li>Additional resources have been brought in to expedite Single-Phase Study effort.</li> <li>Caltrain leadership met with PG&amp;E representatives to outline the path forward. Both management teams meet weekly to track the status.</li> <li>Caltrain has received and reviewed TOLA agreement.</li> </ul>	September 2022
Timely completion of Segment 2 Signal/2SC cutover	<ul style="list-style-type: none"> <li>Perform comprehensive cutover planning; develop and track dashboard for each cutover, including design submittal, duct bank completion, flagger needs.</li> <li>Work closely with Rail Operations to maximize track access.</li> <li>Advance notification to the public on train schedule service changes for weekend shutdown.</li> </ul>	May 2022
Funding of \$410 million program gap	<ul style="list-style-type: none"> <li>Special task force is in place to identify federal and state grant opportunities to pursue.</li> <li>Targeted advocacy is ongoing.</li> <li>Prepare earmarks grant scope and application.</li> </ul>	June 2023
Equipment procured and installed (e.g., wayside cubical batteries and TPS cables) are not in compliance with contractual requirement or not in compliance with issue for construction (IFC) design	<ul style="list-style-type: none"> <li>Assigned focus group including technical lead and delivery director for issue resolution.</li> <li>Commence joint task force (designer, builder and PCEP Team) for quality audit with focus on wayside equipment and TPS.</li> <li>Timely address design change notice and design variance requests.</li> <li>Perform root cause analysis and correction actions to avoid future mishaps.</li> </ul>	June 2022
Project skilled resources (Contractor and Caltrain) availability	<ul style="list-style-type: none"> <li>Design-builder brought experienced project director, construction manager, systems Engineer from UK to the project. More Traction Power technical support is on its way.</li> <li>Caltrain continues reaching out to the industry to interview and secure key resources for testing, Rail Activation and project acceptance.</li> <li>Develop specialized staff plan for operations and maintenance.</li> </ul>	Ongoing

**Green** = Mitigations/actions identified and no impact to budget/schedule

**Yellow** = Mitigations/actions identified and potential impact to budget/schedule

**Red** = Impact to budget/schedule



# Program Budget

	(B)	(C)	(D)	(E)	(F) = (D) + (E)
Description of Work	Re-Baseline Budget	Cost This Month	Cost To Date	Estimate To Complete	Estimate At Completion
<b>Electrification</b>	\$1,097,149,881	\$7,671,825	\$739,333,567	\$357,816,314	\$1,097,149,881
<b>EMU Procurement</b>	\$556,072,601	\$19,541,920	\$287,690,365	\$268,514,601	\$556,204,966
<b>Minor Construction Contracts ( SSF, 25th Grade, Tunnel, CEMOF, SCADA, Non-BBI OCS)</b>	\$67,055,072	\$620,951	\$57,244,406	\$9,810,666	\$67,055,072
<b>Real Estate Acquisition &amp; Support</b>	\$34,914,177	-\$5,525	\$23,573,002	\$11,341,175	\$34,914,177
<b>PG&amp;E, Utilities</b>	\$132,088,995	\$459,789	\$191,686,187	-\$59,597,193	\$132,088,995
<b>Management Oversight &amp; Support</b>	\$312,699,697	\$2,234,948	\$233,908,990	\$78,790,707	\$312,699,697
<b>TASI Support</b>	\$114,488,767	\$1,617,504	\$74,788,466	\$39,700,301	\$114,488,767
<b>Finance Charges</b>	\$9,898,638	\$51,825	\$7,902,802	\$1,995,836	\$9,898,638
<b>Insurance</b>	\$6,581,851	\$0	\$4,581,851	\$2,000,000	\$6,581,851
<b>Other Required Projects &amp; Services</b>	\$9,084,176	\$40,964	\$2,495,823	\$6,588,353	\$9,084,176
<b>Environmental Mitigation</b>	\$14,438,866	\$64,824	\$1,205,404	\$13,233,462	\$14,438,866
<b>Caltrain Capital Overhead (ICAP)</b>	\$48,217,887	\$1,343,246	\$17,367,569	\$30,850,319	\$48,217,887
<b>Contingency (allocated)</b>	\$24,115,582	\$0	\$0	\$24,247,946	\$24,247,946
<b>Contingency (unallocated)</b>	\$15,884,507	\$0	\$0	\$15,752,142	\$15,752,142
<b>Total</b>	<b>\$2,442,690,697</b>	<b>\$33,642,271</b>	<b>\$1,641,778,432</b>	<b>\$800,912,264</b>	<b>\$2,442,690,697</b>

**Notes:**

1 "Current Budget" includes executed change orders and awarded contracts

2 "Cost This Month" represents cost of work performed March 2022

3 "Cost To Date" includes actuals (amount paid) and accruals (amount of work performed) as of March 2022



# Contingency, Risk and Incentive Details

	Project Contingency	BBII Shared Risk Pool	BBII Incentive Pool*	Total
<b>Baseline Amount</b> <i>as of 12/6/21</i>	\$40.0M	\$50.0M	\$18.5M	\$108.5M
<b>Usage / Add</b> <i>through 3/25/22</i>	(\$0.0M)	(\$0.376M)	(\$0.0M)	(\$0.376M)
<b>Remaining Balance</b>	\$40.0M	\$49.62M	\$18.5M	\$108.12M

Notes: \*Total incentive includes carryover from original budget and \$15M from BBII global settlement



# Funding Update

- **Federal Targets (\$150M)**

- Advocate for infrastructure funding for FFGA projects (FTA)
- Advocate for State Partnership for Intercity Rail grant program in partnership with HSR (FRA)
- MTC adopted strategy that is consistent with these efforts
- Seek “Community Project” funding opportunities
- Met with entire Federal Delegation to provide project updates

- **State Targets (\$260M)**

- Advocate for “TIRCP Augmentation” funding through State budget process (MTC supportive)
- AB 2197 (Mullin) for \$260M project funding effort directed to state budget process
- Assess CTC Solutions for Congested Corridors Program for eligibility and competitiveness
- May Revision will contain information about state surplus status
- Scheduling meetings with delegation and key committee staff as well as business /advocacy groups

# Upcoming Board Actions

- Authorize Execution of Change Order to Wabtec Railway Electronics For Crossing Optimization Work and Completion of Crossing Optimization Project

FOR MORE INFORMATION

[WWW.CALTRAIN.COM](http://WWW.CALTRAIN.COM)

