



Memorandum

AGENDA ITEM 8

DATE: September 18, 2019
TO: Citizens Advisory Committee
FROM: Eric Cordoba - Deputy Director for Capital Projects
SUBJECT: 09/25/19 Citizens Advisory Committee Meeting: Update on the Caltrain Modernization Program

<p>RECOMMENDATION <input type="checkbox"/> Information <input type="checkbox"/> Action</p> <p>None. This is an information item.</p> <p>SUMMARY</p> <p>As required by the Funding Partners Oversight Protocol for Caltrain’s Modernization Program, known as CalMod, the Director of Caltrain will attend a Board of Supervisors meeting twice a year to provide an update on the CalMod Program and answer questions regarding its status. With the concurrence of President Yee and Transportation Authority Chair Peskin, the first of these updates was provided at the March 12 Transportation Authority Board meeting and the second update will take place at the September 24 Board meeting. At the September 25 CAC meeting, Caltrain staff will provide an update on CalMod and answer any questions the CAC may have. Caltrain Electrification on of the key elements of CalMod is one of the signature projects of the Prop K sales tax program.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Fund Allocation <input type="checkbox"/> Fund Programming <input type="checkbox"/> Policy/Legislation <input type="checkbox"/> Plan/Study <input checked="" type="checkbox"/> Capital Project Oversight/Delivery <input type="checkbox"/> Budget/Finance <input type="checkbox"/> Contract/Agreement <input type="checkbox"/> Other: _____
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BACKGROUND

Caltrain Modernization Program (CalMod). CalMod is a \$2.26 billion suite of projects that will electrify and upgrade the performance, operating efficiency, capacity, safety, and reliability of Caltrain commuter rail service, while improving air quality. The Electrification Project, which is scheduled to be operational by 2022, has two components: electrification of the Caltrain line between San Jose and San Francisco, and purchase of electric multiple-unit vehicles to operate on the electrified railroad. CalMod also includes the Positive Train Control (PTC) Project, which is scheduled to be operational by 2020.



The CalMod Program will improve system performance with faster, more reliable service while minimizing equipment and operating costs, and is critical to the long-term financial sustainability of Caltrain. The improvements will extend for 52 miles from San Francisco to San Jose and will also prepare the alignment for the future High-Speed Rail blended system. With the signing of the Full Funding Grant Agreement by the Federal Transit Administration (FTA) in 2017, Caltrain issued notices to proceed to its contractors for corridor electrification and purchase of electric trains.

Like any large capital project, the CalMod funding plan relies on contributions from multiple funding partners such as the three Joint Powers Board member counties (San Francisco, San Mateo, and Santa Clara), the Transportation Authority, the Metropolitan Transportation Commission and the California High Speed Rail Authority. Funding contributions were codified in a series of memorandums of agreement, one of which included an oversight protocol. The three Joint Powers Board counties have a local contribution of \$80 million each to the \$2.26 billion CalMod program. The Transportation Authority has committed about \$41 million primarily from the Prop K and One Bay Area Grant programs, and all but \$4.9 million in Prop K funds have been allocated. The remaining Prop K funds will be brought to the CAC at its September 25 meeting (see Prop K allocation item on this agenda) and to the Board in October for allocation. The SFMTA has committed the remaining \$39 million of San Francisco's local contribution from the Prop AA General Obligation Bond. Of this amount, SFMTA \$14,661,000 remains to be allocated, with timing dependent on the next bond issuance and considering the project's cash flow needs.

DISCUSSION

The paragraphs below provide a brief status update on the CalMod program, including Positive Train Control and the Peninsula Corridor Electrification Project.

Positive Train Control (PTC): On March 1, 2018, Caltrain awarded a \$49.5 million contract to Wabtec Corporation for the completion of the PTC project, finalizing the transition from the contract with Parsons Transportation Group for Communications Based Overlay Signal System (CBOSS)/PTC, which was terminated on February 22, 2017 for non-performance. Caltrain staff determined that approximately 80% of the work product for CBOSS already performed would be able to be repurposed for the PTC. In December 2018, Caltrain completed FRA's required statutory substitute criteria and submitted an Alternative Schedule request for FRA approval, which was received in early January 2019. The Alternative Schedule calls for full system certification by December 2020.

The project is on track to meet the schedule. On September 7, 2019, Caltrain began operating PTC in revenue service on the mainline, and full interoperability to Gilroy is anticipated by December 2019. Caltrain anticipates submitting the final safety plan to FRA for final approval in the summer 2020.

As of July 31, 2019, expenditures and accruals reached \$238.52 million on the \$329.29 million project, with work estimated at 72.43% complete. Installations of onboard equipment



on Caltrain locomotives and cab cars is complete, except for three locomotives that are off-property for overhauls. Acceptance Testing on all PTC-installed locomotives and cab have been completed on all the vehicles on-property. Only the three that are away for overhauls remain. Interoperability coordination with tenant railroads have begun, together with the implementation of the Key Exchange Server with hosted solution from ARINC. Wabtec also completed Test Procedure for Interoperability Lab and Field Testing with UPRR and commenced Interoperability Laboratory Testing with UPRR on August 12, 2019. The goal is to achieve Interoperability with UPRR by December of 2019. Subsequently, Caltrain will commence Interoperability Testing with all other tenants on Caltrain property to achieve interoperability requirements and commence PTC-governed operation by May 2020.

Peninsula Corridor Electrification Project (PCEP):

Electrification design-build contract: In August 2016, Caltrain awarded the Design-Build Electrification contract to Balfour Beatty Infrastructure in the amount of \$697 million. The contract was issued with a \$108 million Limited Notice to Proceed, which was followed by full Notice to Proceed on June 19, 2017. As of July 31, 2019, expenditures on the PCEP reached \$743,894,528, 37.57% of the \$1.98 billion budget. Work is progressing on foundations, poles and cantilever arm installation for the overhead contact system. Work is also ongoing on the traction power substations and paralleling stations. The contractor for tunnel modifications is making good progress on the 100-year old San Francisco tunnels.

Overhead Contact System potholing, foundation, poles, and cantilever arm installation is underway. Because of encountering multiple underground utilities, work is not proceeding linearly, causing production inefficiencies. Production over the previous month improved, indicating that the mitigation measures had been effective, but production was back down this month. We will continue to monitor this work closely. Work continues on the Traction Power Substations, Paralleling Stations and Signal System, as does fabrication and testing of signal houses. Design for Scott, Linden, 16th and Mission Bay grade crossings continues, together with coordination w/ Union Pacific Railroad (UPRR) for systemwide signal system design and utility relocations. The CPUC has approved the crossing designs for Auzeais, Virginia and two pedestrian crossings in Sunnyvale representing a good forward progress in advancing the consistent warning design. Design review coordination with local jurisdictions also continues.

Balfour Beatty Infrastructure is now forecasting substantial completion on April 16, 2022, a twenty-month delay, due to various reasons, but mainly delays in the design of the Consistent Warning Time aspect of the signals system at the at-grade crossings. However, the PCEP schedule shows a substantial completion date of December 31, 2021, four months earlier. This discrepancy between forecasts is a source of concern for the funding partners. The FTA will be hosting several schedule workshops between late September and October 2019 to review project status and to provide comments on the forecasted program schedule. We will be participating in those workshops.

Vehicles: On September 6, 2016 Caltrain gave a limited Notice to Proceed to Stadler Rail for the \$551 million Electric Multiple Units (EMUs) contract to design and fabricate 96 electric vehicles. After receipt of the Full Funding Grant Agreement, Caltrain issued the full NTP on



June 1, 2017. In accordance with the Buy America provisions of the FTA funding, the vehicles are being manufactured in Salt Lake City. The EMUs are being manufactured by Stadler US at its new facility in Salt Lake City, Utah. Major systems designs have been completed except for passenger information systems, train monitoring and diagnostic systems, and passenger counting, which are scheduled for completion by fourth quarter of 2019. Final Design Review and First Article Inspection close-out continues. Prototype testing and series production is underway. Subsystem components (HVAC, propulsion, brakes, passenger seats, doors) manufacturing continues. Carshell fabrication continues, with 21 of 133 shipped to date. Truck frame and passenger-side door systems are undergoing endurance testing. PTC onboard equipment is progressing on schedule.

Stadler has been slow in establishing its supply chain in the U.S. and the resulting shortage of parts has slowed car assembly. In particular, Seidenbacher, the supplier of numerous weldments and mounting frames that are on the critical path, has been overwhelmed with orders. Stadler is securing alternative suppliers to pick up shortfall.

Revenue service demonstration for the electrified railway is scheduled from January 2022 to May 2022.

Detailed CalMod monthly reports are provided to the Caltrain Board and are publicly available:

Peninsula Corridor Electrification Project reports:

http://www.caltrain.com/projectsplans/CaltrainModernization/CalMod_Document_Library.html#electric

Positive Train Control reports (part of the JPB monthly agenda packet):

http://www.caltrain.com/about/bod/Board_of_Directors_Meeting_Calendar.html

Challenges and Opportunities: There are some challenges that may impact Caltrain's ability to deliver CalMod on time and on budget. The primary risk items that we are monitoring include:

- 1) Design and construction of grade crossing modifications that meets stakeholder and regulatory requirements, which may cost more than was budgeted and delay the revenue service date;
- 2) the extent of encountering multiple underground utilities and delays in resolving them may result in delays to the completion of the electrification contract and increases in program costs; and
- 3) track access for both the PCEP and PTC, which is also a factor for many other capital projects that Caltrain is advancing.

The funding partners held a workshop with Caltrain to address these and other issues. A follow-up meeting is scheduled for September 25.

FINANCIAL IMPACT



None. This is an information item.

SUPPLEMENTAL MATERIALS

- Attachment 1 -Caltrain Modernization update (presentation)

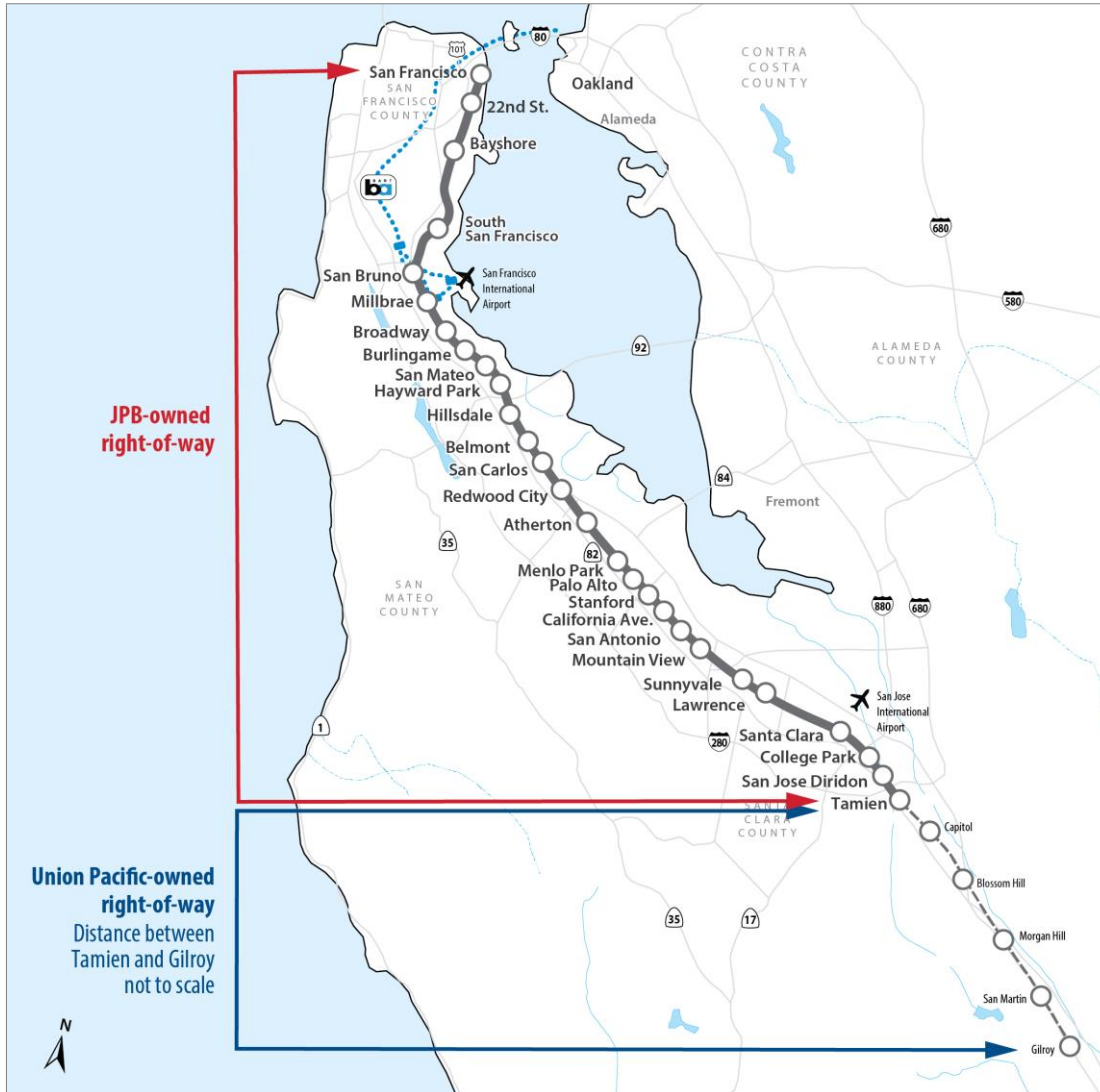
CalMod



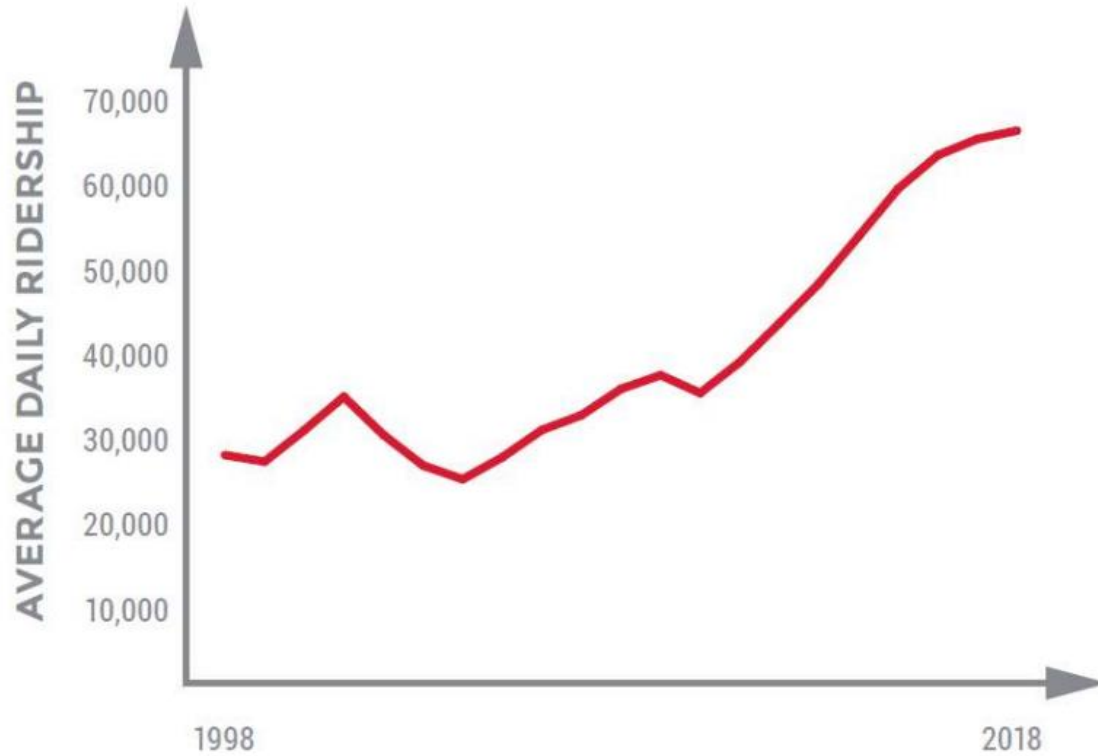
SFCTA

September 2019





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

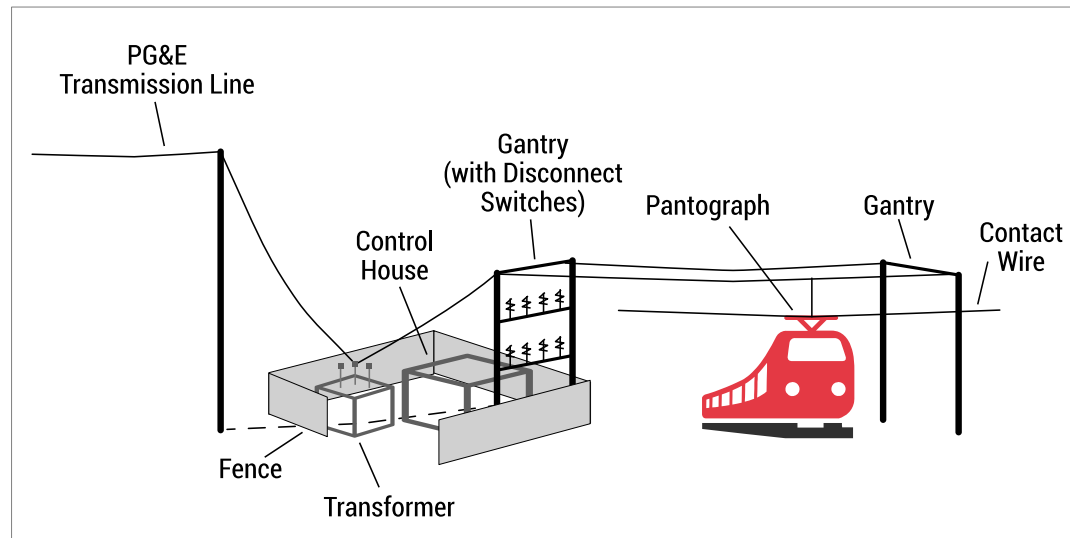


Project Area



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

Project Elements



Electrification

- Overhead Contact System (OCS)
- Traction Power Facilities

Electric Trains*

- 19 7-car train sets
- 133 electric cars

*Includes 2018 State TIRCP Funding



- Potholing
- Foundations
- Poles
- Wires
- Tunnel work
- Traction Power Facilities





BENEFITS**CONVENIENCE**

Increased frequency and reduced travel time

**COMFORT**

Amenities like destination signs and electrical plugs, more room, and reduced engine noise

**CAPACITY**

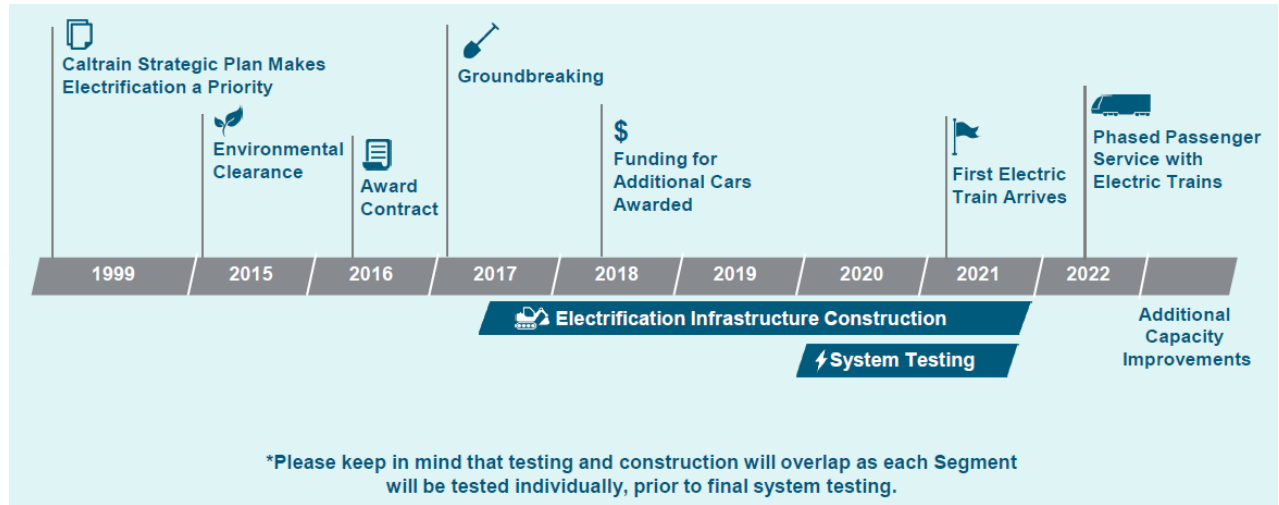
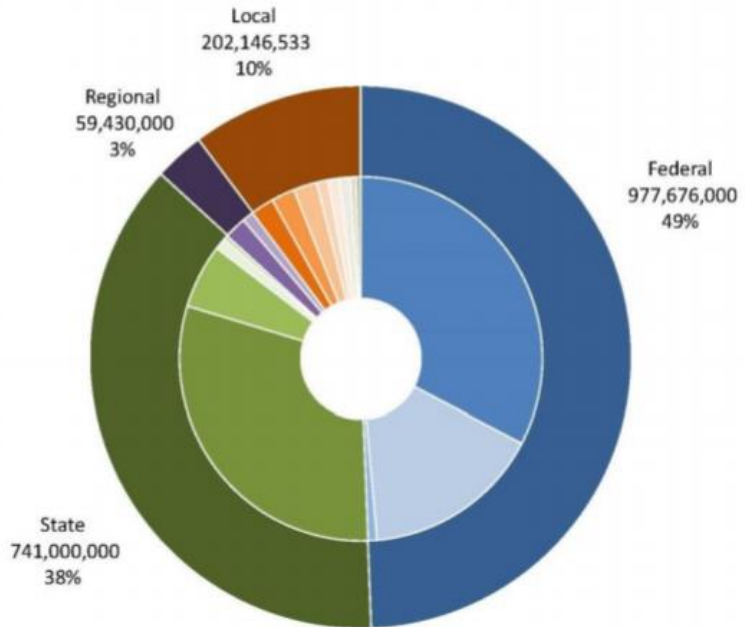
Short and long-term capacity growth potential, without degrading service

**SUSTAINABILITY**

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



- Public involved in design process
- Virtual Reality 360 Tour planned early 2020



- SF Contribution, ~\$60M

- Joint Caltrain / FTA schedule workshops schedule late September - October

PROJECT OVERVIEW

- PTC is a complex signaling and communications technology that is designed to make commuter rail even safer.
- It is a federal mandate for railroads across the country to adopt PTC by December 2020
- Caltrain's PTC system:
 - September 7, 2019: Revenue Service mainline
 - December 2019: Full Interoperability
 - Summer 2020: Safety Plan to be submitted for final approval
 - December 2020: Full System Certification

KEY BENEFITS: IMPROVING SAFETY



- Eliminates risk of train-to-train collisions
- Reduces risk of over-speed derailments
- Provides additional safety for railroad workers

BUDGET

Prop 1A - State	\$105,445
Prop 1B - State	\$28,753
Federal	\$90,446
Local	\$55,609
Total	\$280,253




CALMOD CONTACT INFORMATION

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