



## Memorandum

### AGENDA ITEM 8

**DATE:** November 10, 2020  
**TO:** Transportation Authority Board  
**FROM:** Eric Cordoba - Deputy Director for Capital Projects  
**SUBJECT:** 11/17/20 Board Meeting: Update on the Caltrain Modernization Program

<p><b>RECOMMENDATION</b>   <input checked="" type="checkbox"/> Information   <input type="checkbox"/> Action</p> <p>None. This is an information item.</p> <p><b>SUMMARY</b></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. With the concurrence of President Yee and Transportation Authority Chair Peskin, the updates since 2019 have taken place at Transportation Authority Board meetings. CalMod is a \$2.26 billion suite of projects including Positive Train Control (PTC) and the Electrification Projects. PTC is now on track for Final Acceptance in December 2020. The Electrification Project comprised of electrification of the Caltrain line between San Jose and San Francisco and the purchase of electric multiple-unit vehicles is 52.6% complete and scheduled to be operational by 2022. Production of the new trains is well underway, and the first trainset is scheduled to go to Pueblo, Colorado for the full-blown running test program in January 2021. PCEP staff anticipates that the first trainset delivery to Caltrain will take place in the third quarter of 2021. The memo below provides additional detail on CalMod progress as well as updates on challenges and risks facing the overall program.</p>	<p><input type="checkbox"/> Fund Allocation</p> <p><input type="checkbox"/> Fund Programming</p> <p><input type="checkbox"/> Policy/Legislation</p> <p><input type="checkbox"/> Plan/Study</p> <p><input checked="" type="checkbox"/> Capital Project Oversight/Delivery</p> <p><input type="checkbox"/> Budget/Finance</p> <p><input type="checkbox"/> Contract/Agreement</p> <p><input type="checkbox"/> Other: _____</p>
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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 (EMU) vehicles to



operate on the electrified railroad. CalMod also includes the Positive Train Control (PTC) Project, which is currently in Revenue Service Demonstration and is scheduled for Final Acceptance in December 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 allocated about \$41 million primarily from the Prop K sales tax and One Bay Area Grant programs. The SFMTA has committed the remaining \$39 million of San Francisco's local contribution from the Prop AA General Obligation Bond. SFMTA has allocated the full amount to the project, completing San Francisco's \$80 million contribution to CalMod.

## **DISCUSSION**

The paragraphs below provide a brief status update on the CalMod program.

**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 granted in early January 2019. The Alternative Schedule calls for full system certification by December 2020. The project is on track to meet that schedule.

On September 7, 2019, Caltrain began operating PTC in revenue service on the mainline. On Feb 26, 2020 Caltrain achieved interoperability requirements and is currently interoperable with all tenants (UPRR, ACE, Amtrak/Capitol Corridor) on its property and on the UPRR property south of San Jose. As of September 30, 2020, expenditures and accruals reached \$264.7 million on the \$329.29 million project, with work estimated at 80.38% complete. The project has been minimally impacted by the current Coronavirus situation. With the



completion of the PTC Safety Plan, which was submitted to FRA on June 25, the last remaining major milestone prior to Project Certification was reached. Project staff do not foresee any obstacles to obtaining FRA certification by the December 2020 scheduled date. At its September meeting, the PCJPB approved a follow-on maintenance agreement with the contractor.

**Peninsula Corridor Electrification Project (PCEP):** As of September 30, 2020, expenditures on the PCEP reached \$1.041 billion, 52.6 % of the \$1.98 billion budget. Work is progressing on both the Electrification and the Vehicles components of the project.

**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. Work is progressing on foundations, poles, and cantilever arm installation for the overhead contact system. 2,018 out of 3,116 (64.8%) foundations and 1,395 out of 2,591 (53.8%) poles have been installed as of the end of October. Partly because of encountering differing site conditions, together with the contractor's own procurement deficiencies, work is experiencing production inefficiencies. Work continues on the traction power substations, paralleling stations and signal system, as does the fabrication and testing of signal houses. The Consistent Warning System for the at-grade crossings has proven to be a challenge for the contractor, who is proceeding very slowly with its implementation.

Balfour Beatty Infrastructure's latest schedule is forecasting substantial completion in May of 2024 due to various reasons, but mainly delays in the design and implementation of the consistent warning time aspect of the signals system at the at-grade crossings. However, the PCEP schedule shows a substantial completion date in March 2022, over 2 years earlier. The sources of discrepancy between the contractor and PCEP staff over the completion date are under mediation. It is worth noting that, because the project's critical path runs through the vehicles' delivery, testing, and commissioning, not electrification itself, the Revenue Service date remains unchanged for August 22, 2022.

With the reduction in service due to the Coronavirus outbreak, PCEP has been able to open more and longer work windows for the contractor. The current level of service is such that single-tracking is possible all day long, allowing work to proceed unimpeded on the opposite side. However, it appears that the contractor is not taking full advantage of the opportunities provided by these developments.

**Tunnels:** Work on modifications to the 100-year old San Francisco tunnels reached Substantial Completion on September 17, 2020, and Final Acceptance is anticipated for December 2020.

**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 Notice to Proceed on June 1, 2017. Subsequently, Caltrain executed an option for an additional 37 cars, bringing the total to 133 cars. In accordance with the Buy America provisions of the FTA funding, the vehicles are being manufactured by Stadler US at its new facility in Salt Lake City,



Utah. Systems designs have been completed and Final Design Review and First Article Inspection close-out continues. Prototype testing and series production is underway

Carshell and truck frame production in Switzerland continues. Subsystem components (HVAC, propulsion, brakes, passenger seats, doors) manufacturing also continues. PTC onboard equipment is progressing on schedule. Truck frame and passenger-side door systems are undergoing endurance testing. Final car assembly in Salt Lake City also continues. 52 of 133 carshells have been shipped and 43 cars are in various stages of assembly.

Static testing of the first trainset at Salt Lake City continues, somewhat hampered by the inability of experts from Switzerland to travel to the U.S. It will be followed by dynamic testing and factory-run testing over the next few months. The trainset is scheduled to go to Pueblo, Colorado for the full-blown running test program in January 2021. PCEP staff anticipates that the first trainset delivery to Caltrain will take place on the third quarter of 2021. Phased Revenue Service is scheduled to begin in March 2022 and Revenue Service Demonstration for the electrified railway is scheduled for August 2022.

**Progress Reports:** 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](http://www.caltrain.com/projectsplans/CaltrainModernization/CalMod_Document_Library.html#electric)

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

[http://www.caltrain.com/about/bod/Board\\_of\\_Directors\\_Meeting\\_Calendar.html](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 (Consistent Warning System) 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 differing site conditions and underground utilities, coupled with delays in resolving them, may result in delays to the completion of the electrification contract and increases in program costs.
- 3) Lack of resolution on the schedule discrepancies with the Electrification contractor creates uncertainty regarding substantial completion.
- 4) Since the vehicles are in the critical path, delays in the delivery schedule have resulted in a drawdown of 77 days from the schedule contingency, which now stands at 31 days.

At the request of the funding partners, the project team conducted a full-day risk refresh workshop of the project on April 1, 2020. At the workshop, all current risks were re-evaluated



and new risks were identified. The resulting data was used in a Monte Carlo analysis to help determine if the project has the appropriate level of cost and schedule contingencies needed for its successful completion. The draft report is under review.

### **FINANCIAL IMPACT**

None. This is an information item.

### **CAC POSITION**

None as this is an information item. This update was part of the Consent Agenda at the October 28 CAC meeting.

### **SUPPLEMENTAL MATERIALS**

- Attachment 1 - CalMod presentation