Quarterly Monitoring Report – May 2018

Peninsula Corridor Electrification Project (PCEP)
Peninsula Corridor Joint Powers Board (JPB)/Caltrain
San Mateo, CA

June 11, 2018

PMOC Contract Number: DTFT60-14-D-00018
Task Order Number: 005
Project Number: DC-27-5346
Work Order Numbers: 06
OPs Referenced: 25 - Recurring Oversight and Related Reports
01 - Administrative Conditions and Requirements

PMOC Firm: **Kal Krishnan Consulting Services, Inc. (KKCS)**
800 South Figueroa Street, Suite 1210
Los Angeles, CA 90017

PMOC Lead: Michael B. Eidlin
Length of Time Firm Assigned to Project: 2 Years, 11 months
Length of Time Person Assigned to Project: 2 Years, 11 months

2) Executive Summary

A. Project Description

The Project Sponsor is the Peninsula Corridor Joint Powers Board (JPB) which operates rail service as Caltrain. The JPB is responsible for managing and delivering the project.

The Peninsula Corridor Electrification Project (PCEP) corridor is approximately 51 miles in length. This Core Capacity Improvement Project (CC) includes two components: infrastructure and rolling stock. The infrastructure component is comprised of the installation of Traction Power Substations (TPSS) and the Overhead Contact System (OCS) over the tracks beginning at the 4th and King Caltrain Station in San Francisco and ending at Tamien Station in San Jose. The infrastructure work also includes modifications to the wayside signal system and grade crossing signals to accommodate the new electrified rail system. In addition, four (4) existing rail tunnels will be enlarged to accommodate the expanded clearance envelope of the electrified vehicles.

The rolling stock component includes the design and procurement of ninety-six (96) Electric Multiple Unit (EMU) rail vehicles to replace approximately 75 percent of the existing diesel rolling stock. Caltrain's Central Equipment Maintenance and Operation Facility (CEMOF) will also be modified to service the electrified vehicles.

The PCEP is part of a larger JPB initiative known as the Caltrain Modernization Program (CalMod). The CalMod program is separately installing a Communications Based Overlay Signal System - Positive Train Control (CBOSS-PTC), which is an advanced signal system that includes federally-mandated safety improvements.

The project will be constructed primarily in the existing Caltrain corridor on right-of-way (ROW) controlled by JPB/Caltrain. Additional ROW will be required to accommodate the TPSS and related facilities as well as elements of the OCS system; any ROW transactions will be made in accordance with the Uniform Relocation Act.

The PCEP Final Environmental Impact Report (FEIR) forecasts Caltrain ridership of 69,151 daily boardings in the year 2020 and 111,427 daily boardings in 2040, including service in 2040 to the Transbay Transit Center. This ridership represents an increase of 21.1% and 32.1% respectively, over the projected Caltrain ridership in those years without the core capacity improvements.

B. Project Status

- The FFGA for the project was executed on May 23, 2017.
- The project is in construction. The JPB issued a full Notice to Proceed (NTP) to the EMU supplier on June 1, 2017 and a full NTP to the Electrification design-build contractor on June 19, 2017.
- The JPB conducted a Risk Refresh Workshop on September 18-19, 2017; this was the first comprehensive risk update since the award of the FFGA. The PCEP team held the second quarterly risk management meeting with the Electrification contractor in January 2018.
- *The PMOC conducted its quarterly on-site monitoring visit and meetings on May 7-9, 2018. The most recent Quarterly Progress Review Meeting (QPRM) was held on March 8, 2018.*
- *The JPB received a single bid on May 10, 2018 for the notching of four (4) rail tunnels located in Segment 1 of the project; the bid is under review.*

C. Core Accountability Information through March 2018

FFGA Core Accountability Items			
Project Status: **In Construction**		Original at FFGA	Current Estimate (EAC)
Cost	Cost Estimate	$ 1,930,670 934	$ 1,930,670 934
Contingency	Unallocated Contingency[1]	$ 162,620,294	*$131,401,146*
	Total Contingency[1] (Allocated plus Unallocated)	$ 315,533,611	*$234,585,667*
Schedule	Final Completion Date	August 22, 2022	August 22, 2022
		Amount ($)	Percent
Planned Value to Date[2]	Total budgeted cost of work scheduled to date[3]	*$461,386,442*	*23.90%*
Earned Value to Date	Budgeted cost of work completed to date, i.e., actual total value of work earned or done[3]	*$292,913,824*	*15.17%*
Actual Cost[4]	Total cost of work completed to date (actual total expenditures)[3]	*$255,127,901*	*13.21%*
Contracts		Amount ($)	Percent
	Total contracts awarded to date[4]	*$1,454,018,289*	*75.31%*
	Total construction contracts awarded to date[5] (construction & vehicle contracts only)	*$1,306,537,619*	*67.67%*
	Physical construction work completed[6,7] (amount of construction contract work actually completed)	*$255,127,901*	*19.53%*
Major Issue	Status	Comments/Actions/Planned Actions	
Progress on OCS construction work much slower than anticipated.	*The contractor's progress has been impacted by unexpected in-ground obstacles, resulting in redesign of some pole locations and inefficient foundation construction. OCS pole erection has commenced, but has not progressed as planned due to the limited number of sequential foundations available.*	*The contractor has increased the number of potholing rigs to provide more cleared foundation locations. The JPB is considering its options to improve the progress of the work.*	

Constant Warning Time (CWT) for Grade Crossings	Conceptual solution subject to confirmation by the Union Pacific Railroad (UPRR), the Federal Railroad Administration (FRA) and the California Public Utilities Commission (CPUC).	Prototype design underway. *JPB met with FRA in Washington, D.C. on March 7, 2018; the next step is a conference call with the FRA Region in Sacramento, California.*
Construction of PG&E sub-station modifications to provide permanent power for rail operations.	Execution of Supplement 4 to the PG&E contract delayed by the JPB to review PG&E's proposed allocation of costs.	The JPB states that PG&E thinks that construction can be completed in time to support the final testing and commencement of EMU service.
Date of Next Monitoring Visit:		*TBD - August 2018*
Date of Next Quarterly Review Meeting:		*TBD - September 2018*

Core Accountability Table Footnotes:

[1] Current estimate is the remaining balance which includes known change orders that will draw from Contingency funds, Allocated and Unallocated.

[2] Planned Value to Date is based upon the Program Schedule and Estimate (Rev. 4B) that were updated in October 2017 to reflect the FFGA delay.

[3] Work is defined as construction or manufacturing by Balfour Beatty, Stadler, PG&E, CEMOF, Tunnel Modification, and Required Projects.

[4] *Percentage is based on a project value of $1,930,670,934.*

[5] Total construction contracts awarded to date (construction & vehicle contracts only) includes design costs and executed change orders.

D. Major Problems and/or Issues

- Construction progress on the Overhead Contact System (OCS) is much slower than anticipated. Progress has been slowed by potholing operations encountering numerous unanticipated obstructions in planned pole locations, track access issues attributable to both the contractor and the JPB, and in some cases external factors such as a change in clearance requirements by the UPRR. In some cases, poles must be relocated resulting in additional potholing and potential re-design work. Foundation construction, which follows successful potholing, has been impacted as pole locations change and re-design is required. *The contractor has responded by bringing on additional design support services to expedite re-design.* The erection of the OCS poles was expected to begin, and proceed generally uninterrupted in sequence, as large numbers of foundations were available to accept the poles. That activity has not occurred and pole erection has been temporarily postponed by the contractor until sufficient foundations are available for efficient use of its resources. The PMOC is concerned that if this rate of progress continues on the remaining Segments and Work Areas, the planned completion schedule may be impacted.

- The Electrification contractor may be unable to develop grade crossing modifications that meet operational requirements prior to scheduled testing and commissioning of the system, which may delay commissioning. As noted above, the Electrification contractor has proposed a conceptual solution to provide CWT, which is acceptable to the JPB and has been agreed to by the UPRR, subject to its final review and demonstration. Design of two (2) crossings in Segment 4 using the proposed system is underway. *The JPB has also*

authorized the Electrification contractor to proceed with the design of the remaining crossings based on the assumption that the CWT solution will be approved by all parties. The final approval of an acceptable CWT system rests with the California Public Utilities Commission (CPUC), following FRA review. *A meeting between the JPB and the FRA was held on March 7, 2018, and a follow-up conference call with the local FRA Regional staff is being planned.*

- Much of the Electrification contractor's OCS foundation work must be performed during periods when rail operations have been partially restricted by contractually established work windows. The JPB reports that there continue to be problems in maximizing the available track access time, whether as a result of the contractor's actions, or in some cases because of rail operations' issues. *Most recently, the JPB's 25th Avenue Grade Separation Project in San Mateo, which is not a part of the PCEP, was allocated exclusive track access in an area also needed by the Electrification contractor. This issue is under discussion within the JPB, but was unresolved at the time of the PMOC's visit.* These issues are resulting in additional costs to the project and are reducing production. *The JPB advised the PMOC that any additional costs to the PCEP will be paid by the JPB.*
- *The JPB executed a contract with Wabtec on March 1, 2018 to complete implementation of Caltrain's PTC system using Wabtec's Interoperable Electronic Train Management System (I-ETMS) technology. I-ETMS is a different technology than the Incremental Train Control System (ITCS) that was being installed for the CBOSS-PTC system. The JPB believes that most of the wayside equipment already installed for the CBOSS-PTC system can be used for the new system, but the possibility exists that there may be some impact to the scope of the Electrification contractor's signal work if changes within the signal houses are required.* Execution of the Wabtec contract will allow Stadler to finalize the on-board PTC equipment for the EMUs, an activity that had been on-hold. *The PMOC remains concerned that testing of the PTC system, and the possibility that implementation of PTC may initially degrade the reliability of revenue operation, may cause impacts to the PCEP.*
- The JPB's progress in acquiring the needed real estate is still behind the original plan; however, progress continues to improve. *The refinement of the design for the overhead contact system (OCS) and the traction power system (TPS) has resulted in the identification of several new parcels in Segment 2; the acquisition of these parcels may result in some delays to construction.*
- *The JPB recently identified a conflict between the planned location of Paralleling Station #3 (PS-3) and a future grade separation project in the City of Burlingame that will require the relocation of PS-3. The JPB is evaluating alternate locations, which will likely require additional National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) filings.*
- The JPB has identified an alternative location for Paralleling Station #2 (PS-2) that is within its Bayshore Station property. This alternative location resolves the property acquisition issue identified in the PMOC's November 2017 report. The JPB is currently working with the City and County of San Francisco (CCSF) to define appropriate traffic mitigation measures for this new location. Some additional NEPA/CEQA filings will be necessary as a result of this change.
- Pacific Gas & Electric (PG&E) must modify two (2) existing electrical sub-stations to provide the power necessary to operate the electrified rail system. The design and

construction of these sub-station modifications are now on the project's critical path. A Master Agreement between the JPB and PG&E is in place and Supplements 1, 2, 3 and 5 to the Master Agreement have been executed. The JPB approved execution of Supplement 4 at its February 2018 meeting; this Supplement includes the cost of constructing the work, and the allocation of costs between the parties. *The JPB requested additional review of the cost allocation provisions before the Supplement is executed; that work continues and the Supplement remains unexecuted. The PMOC understands that PG&E will not finalize its construction contracts until the Supplement is executed; however, the JPB believes that PG&E will be able to expedite its construction schedule to deliver permanent power as planned.*

- *The JPB now believes that the cost allocation arrangement with PG&E is subject to review and approval by the Federal Energy Regulatory Commission (FERC) rather than the CPUC as previously understood. The PMOC has encouraged the JPB to consult with specialized legal counsel on this matter to determine the applicable regulatory process and the rules applied to this type of allocation. The PMOC recommends that the JPB verify the authority having jurisdiction and the process and rules to be followed in completing this regulated transaction before expending additional resources on non-productive activities.*

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4) Significant PMOC Observations

This monitoring report covers the period from February 24, 2018 through May 10, 2018. Quarterly Progress Review Meeting (QPRM) No. 6 was held on March 8, 2018; that meeting is documented in the Report dated April 24, 2018. This report contains information obtained during site visits, meeting attendance, document reviews, telephone conversations and general interaction with the project sponsor's personnel.

A. Project Status

Environmental Process

The JPB prepared an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) and received a Finding of No Significant Impact (FONSI) from FTA in 2009. The JPB, in conjunction with the FTA and other federal and state agencies including the National Fish and Wildlife Service, National Marine Fisheries Service, and the State Historic Preservation Office (SHPO), decided to review the FONSI and the FEIR, considering the time that had passed since the FONSI's issuance and recent changes in the context of the project. The FTA issued a letter to the JPB on February 11, 2016, accepting the findings of the environmental re-evaluation of the PCEP conducted by the JPB; this action completes the NEPA process for the PCEP. The JPB formally certified its Final Environmental Impact Report (FEIR) under the California Environmental Quality Act (CEQA) on January 8, 2015 and subsequently adopted Addendum No. 1 to the 2015 PCEP FEIR on February 4, 2016. The JPB also approved inclusion of the new site for Paralleling Station 7 (PS 7) for the PCEP.

The JPB completed an environmental assessment of the modifications to the two (2) PG&E substations and the interconnection between the substations and PCEP's TPSS #1 and TPSS #2. The JPB adopted Addendum #3 to the PCEP Final Environmental Impact Report (FEIR) and approved inclusion of PG&E substation improvements and interconnections to the JPB Substations for PCEP at its October 5, 2017 meeting. The NEPA Re-evaluation documentation of these project changes is under FTA review. *The JPB mentioned that it may be necessary to update the documentation related the PG&E interconnections as a result of changing transmission tower heights.*

The JPB determined that it would be unable to acquire the real property needed for Paralleling Station No. 2 (PS-2) and has relocated PS-2 to a site controlled by the JPB. The JPB also learned recently that the planned site for PS-3 conflicts with a future Caltrain/City of Burlingame grade separation project and that PS-3 must be relocated. The JPB is preparing the environmental documentation to support these two actions and expects to submit the PS-2 package to the FTA for review in late-May or early-June 2018, and the PS-3 package in late-June or July 2018.

Support Services and Design

The JPB awarded contracts in early 2014 for Program Management Consultant Services; EMU Vehicle Consultant Services; and Electrification Services. The scope and status of work for each of the consultant contracts is described as follows:

Program Management: The consultant team provides various program management support services such as document control, project controls including estimating and scheduling, quality assurance, risk management and contract administration during implementation of the PCEP.

EMU Services: The consultant team provides EMU management and oversight support services which included development of the vehicle procurement documents, and now encompasses vehicle design reviews, vehicle-related Buy America compliance services, monitoring and inspection during vehicle manufacture/assembly, integration of on-board systems with the JPB's PTC Project, design of modifications to the CEMOF; and support during the delivery, testing and commissioning of the EMUs.

The EMU Services team is currently working on the following tasks:

- *Final Design reviews of the EMU are mostly complete and the Design Packages are being finalized.*
- *Monitoring vehicle manufacturing and testing activities; the first complete car shell is being assembled at the factory.*
- *Completing the IFB package for CEMOF Modifications.*
- Continue to support the JPB in discussions with the FRA on EMU compliance issues.
- *Addressing system-wide interface issues involving the emerging EMU design and the existing wayside infrastructure.*
- Continue to support the procurement of two (2) used AEM-7 electrified locomotives to be used for initial testing of the newly electrified tracks. *The purchase agreement will be presented to the JPB for its approval at the June 2018 meeting.*

Electrification Services: The consultant provides management and oversight support services which included development of the procurement documents and participation in negotiation of the design-build contract. The consultant now provides design reviews and monitoring, and support of manufacture/assembly of products, construction, installation, integrated testing, and commissioning related to overhead catenary systems, traction power substations, communications, supervisory control and data acquisition (SCADA), rail signaling, and train controls. *The Electrification Services team also performed the design work for the Tunnel Notching contract and will provide design support during construction (DSDC) for that contract once it is awarded.*

The Electrification Services team is currently working on the following activities:

- Providing oversight and direction to the Balfour-Beatty Infrastructure, Inc. (BBII) team.
- Continued to support the JPB in various ways related to resolution of the Constant Warning Time issue at grade crossings. These activities include interaction with BBII, the UPRR, and FRA and will soon involve the CPUC. *Final resolution of the CWT issue is impacting BBII's schedule for signal system design and installation.*
- Supporting discussions and negotiations with BBII related to various change orders.
- *Monitoring and reporting on BBII's field activities including tree-trimming, pot-holing of OCS pole locations, OCS foundation construction and OCS pole erection.*
- Participating in weekly meetings with the JPB's PTC management team.
- Providing oversight and direction to ARINC, the SCADA supplier.

- *Providing technical direction, as needed, to BBII related to PG&E's design of temporary and permanent power connections to the traction power system.*
- Supporting the JPB's staff in identifying utilities located within the corridor and working with the utilities to develop relocation plans, as necessary.
- Reviewing submittals and other materials prepared by BBII and ARINC.

Other Design Work: Design work is underway to support the following two (2) construction contracts:

Tunnel Notching (four tunnels) for vehicle clearance: *This design work was carried out by members of the Electrification consultant's design team. The Tunnel Notching contract was advertised on February 19, 2018, and bids were opened on May 10, 2018. The design team supported the JPB's procurement activities during the bidding phase and will perform design support during construction (DSDC) following contract award.*

On-call Construction Management Services for the PCEP: The JPB plans to request proposals for On-call Construction Management Services to support the tunnel notching work, the modifications to the CEMOF, and other work as needed.

Modifications to the CEMOF facility to accommodate the new EMU vehicles: This design work is being performed by members of the vehicle consultant's design team.

An internal review of the contract package for the CEMOF is scheduled for May 21, 2018; the CEMOF Modification contract is expected to be advertised in May or June 2018. Construction is scheduled to start in October 2018 and will follow electrification of the yard by BBII. The CEMOF Modifications are expected to be complete by October 2019.

Concurrent Non- Project Activities: The JPB has an on-going capital construction program that includes several projects that will share some common elements with the PCEP. These projects have been designated as Concurrent Non-Project Activities (CNPAs), and the project elements that will be constructed for the benefit of the PCEP will be appropriately segregated for cost purposes. The JPB has identified the following CNPAs:

- Drainage improvements for tunnels 1 and 4: *A single bid was received as part of the Tunnel Notching package on May 10, 2018; the bid is under review by the JPB.*
- OCS foundations as part of the South San Francisco Station construction: This work is in construction.
- OCS foundations as part of the 25th Avenue Grade Separation Project in San Mateo: This work is in construction.
- OCS foundations as part of the Los Gatos Bridge project: This work is complete.
- Trackwork on the Santa Clara Drill Track. This work was originally planned to be done under the Los Gatos Bridge Project, but that did not occur. The JPB is considering options to complete the work. *Initial shifting of the track to allow OCS foundation construction to take place was performed by BBII and is complete.*
- New Control Point at CP Brittan: This work is currently on-hold.

Value Engineering (VE): The project sponsor did not undertake a formal VE effort. However, the PCEP team undertook a significant cost reduction effort in late 2014 which identified an estimated $84.3M in potential cost savings achieved by eliminating or deferring certain tasks previously included in the baseline program. In addition, the procurement process for the Electrification D-B contract included the submission of alternate technical proposals (ATP) to reduce cost or improve schedule. In addition to those ATPs that were incorporated into the Electrification contract, that contract contains a Value Engineering Change Proposal (VECP) clause whereby any savings that result from an accepted VECP are shared by the contractor and the JPB.

Procurement – Executed Contracts and Changes

The following Electrification and EMU contracts comprise the majority of the PCEP scope:

Electrification: The electrification of the corridor is being performed using a design-build contract which was awarded to Balfour-Beatty Infrastructure, Inc. (BBII) and executed on August 15, 2016. The JPB issued a full NTP to BBII on June 19, 2017.

Electrification Contract Changes: The JPB issued a $9.6 million Change Order (CO) to BBII to address the delayed issuance of the full NTP.

Additional change orders are being processed to address differing site conditions encountered in the field, track access delays and other changes.

EMU Vehicles: The 96 EMUs are being supplied by Stadler US under a contract that was executed on August 15, 2016. The JPB issued a full NTP to Stadler on June 1, 2017. Design of the vehicles is being performed in Switzerland and final assembly of the vehicles will occur at a location near Salt Lake City, Utah.

EMU Contract Changes:

- *The JPB issued a $490,000 CO to Stadler to address the delayed issuance of the full NTP.*
- *Additional COs are routinely processed to address changes in the technical specifications for the EMUs.*
- *A CO will be needed to address the cost and schedule impacts of the substitution of Wabtec as the supplier of the on-board PTC equipment.*

Systems Control and Data Acquisition (SCADA) Equipment: The JPB executed a sole-source contract with ARINC, Inc., for the supply of SCADA equipment in September 2017. *The equipment will be used to control the traction power system and design and integration activities are underway.* The SCADA contract is being managed by the Electrification consultant and installation of the SCADA equipment will be performed by BBII under the Electrification contract.

Consultant Contracts: *The JPB requested updated staffing plans from each of the PCEP's primary consultants to cover its FY 2019 budget for the project. Review of the staffing plans is underway, followed by preparation of cost proposals, negotiations, and issuance of new work directives. This process is expected to be complete by the end of June 2018.*

Upcoming Procurements

Tunnel Modifications: *The JPB opened bids on May 10, 2018 for the notching of the four (4) rail tunnels located in Segment 1 of the project as well as drainage improvements in two (2) of the tunnels. A single bid was received from Proven Management, Inc. of Oakland, CA in the amount of $41,837,777 compared to the Engineer's Estimate of $29,759,511. Proven also submitted a bid in the amount of $19,639,614 for the optional installation of OCS in the tunnels; this compares to the Engineer's Estimate of $9,892,900 for that work. The OCS installation in the tunnel was intentionally excluded from the Electrification contract. The total bid price for the Base work plus the OCS Option was 61,477,391, compared to the Engineer's Estimate of $39,652,411, for a difference of $21,824,980. The JPB also received a price from BBII for the installation of the OCS in the tunnels. The JPB is evaluating the bid and its options. The PMOC notes that the work to improve drainage in two (2) of the tunnels is a Concurrent Non-Project Activity (CNPA) and will be paid for by the JPB for its own account.*

Construction work on the tunnels is now scheduled to begin in October 2018, in coordination with Electrification construction in Segment 1, to take advantage of track outages in that Segment. Both the Tunnel Notching and Electrification work are being scheduled to avoid impacting Caltrain service during the Major League Baseball season.

CEMOF Modifications: *A contract for modifications to the CEMOF is expected to be advertised for competitive bids in late-May or June 2018, with an October 2018 construction start date.* Construction of the modifications will follow electrification of the yard and is expected to be complete by July 2019.

Used Electrified Locomotives: The JPB plans to acquire two (2) used electrified locomotives to perform initial testing of the electrification system. The objective is to avoid inadvertent damage to the new EMUs by using them to test the electrification system. The locomotives were previously leased by Amtrak and have been returned to their owner. One unit will be used for testing and the second unit will be used for spare parts in the event of breakdown. The locomotives will be disposed of after testing has been completed. *The purchase agreement will be presented to the JPB for its approval at the June 2018 meeting.*

Project Delivery

Electrification Design-Build Contract

Design and Design-related Activity: Balfour-Beatty Infrastructure, Inc. (BBII) is responsible for the Final Design of the electrification and related facilities under the terms of its D-B contract with the JPB. PGH Wong Engineering, Inc., is the Engineer of Record for the work. Work was initiated following the JPB's issuance of an LNTP on September 6, 2016; this was followed by issuance of a full NTP to BBII on June 19, 2017. The following design and design-related activities are currently under way:

- Preparation of contractually required plans and submittals.
- Advancing OCS design in Segments 2 and 4.
- *Line-of-sight studies in Segment 2 continue.*
- *Work continues to address Caltrans' requirements for bridge protection barriers.*

- *Pile testing is planned for mid-May 2018.*
- A preferred solution to provide Constant Warning Time (CWT) at grade crossings has been identified, and tentatively agreed to by the UPRR. Design work continues on the Virginia and Auzerais crossings in Segment 4, which will serve as prototypes for the proposed solution. The designs for these crossings will be reviewed by the UPRR prior to presentation to outside agencies. *Design for the remainder of the signalized crossings is being held at the 65% level until the CWT solution is approved. A meeting to discuss the next steps in resolving CWT has been set for May 19, 2018 at Wabtec's office in Florida.*
- *95% OCS Layouts and Material Allocation for CEMOF, Segment 4A*
- Continued potholing of OCS foundation locations in Segments 2 and 4 in advance of construction.
- Design of the 115kV interconnection with PG&E at the TPSS-2 location continues.

Construction Activity: The JPB provided the following report on construction activity:

- *Tree trimming and tree removal in Segment 3, WA 2.*
- *Relocation of signal cable conflicts in Segment 2 WA 4, Segment 4A.*
- *OCS Potholing in Segment 2 WA 3 and utility potholing in Segment 2 WA 4.* Potholing continues to encounter a significant number of differing site conditions, which has slowed progress. BBII's sub-contractor recently increased the number of potholing rigs and crews to improve the overall production rate. The JPB's Construction Management team continues to issue Field Orders to remove the obstacles and compensate the contractor for the impact of these conditions.
- *OCS Pole Setting and Grounding in Segment 2 WA 5.*
- *BBII is now operating out of the Burlingame and Redwood City siding areas for upcoming foundation work.*
- *The JPB and BBII held a regularly scheduled Partnering session in April 2018.*
    - **PMOC Observation:** Foundation productivity has declined and is of concern. Productivity has been affected by the need to clear foundation locations of unexpected obstacles, including fiber optic cable installed earlier by the JPB's CBOSS-PTC contractor. In some cases this requires relocation and redesign of the foundations. Productivity has also been affected by occasional problems in achieving timely access to on-track work areas during the prescribed work windows. *A second potholing sub-contractor has recently been added which should improve the clearance process.* Earlier in 2018, the JPB altered its position regarding providing Transit America Services, Inc. (TASI) signal maintainer support during the movement of rail mounted equipment through grade crossings; this has resulted in the cancellation of some planned work by the contractor. *The JPB and BBII have developed a procedure to allow the contractor's crews to activate crossing protection; however, the issue is not completely resolved and the parties continue their discussions. BBII continues to state that it is experiencing delays as a result of this situation.*

- **PMOC Recommendation:** The PCEP team, with the support and assistance of Caltrain Operations, should take steps to promptly resolve the recent issue related to the safe movement of construction equipment through grade crossings, and/or work by crews in close proximity to the crossings.

  The JPB should track and segregate the extra costs incurred to relocate foundations or otherwise avoid or relocate the fiber optic cable installed by the CBOSS-PTC contractor. The JPB should produce a report documenting the sources of funds used for the original installation of the CBOSS-PTC cabling, and documenting the costs incurred to date by the PCEP as described above. The report should also document any specifications or other technical direction given to the CBOSS-PTC contractor that required that contractor to avoid the areas and locations where the interferences have, or in the future occur. *The JPB should provide the FTA and the PMOC a schedule for completing this report by QPRM No. 7.* To the extent that the CBOSS-PTC contractor is found to have installed the fiber optic cable in contravention of the applicable contractual requirements, thus leading to the conflicts and remedial actions by the PCEP, the JPB should consider initiating a back charge or other action to recover its extra costs. The PMOC notes that the FTA may decline to participate in costs associated with remediating the CBOSS-PTC fiber optic conflicts.

Real Estate Acquisition

Background Information

The PCEP is acquiring real estate for three (3) primary purposes: (1) for placement of Overhead Contact System (OCS) poles; (2) for the two (2) primary Traction Power Substations (TPSS); and (3) to provide electrical clearance and safety zones for the OCS wires. The corridor has been sub-divided into four (4) segments numbered from north to south to more effectively manage the electrification and other related work. Initial Electrification construction is taking place in Segments 4 and 2, and will be followed by construction in Segments 1 and 3. Segment 4 includes electrification of a test track for testing and acceptance of the EMUs. Real estate acquisition is being coordinated with Electrification construction activities. New access dates were agreed to as part of the negotiation of a change order related to the late award of the FFGA. Those dates are tied to the contractor's schedule need dates in each of the Segments and Work Areas. These new dates allow additional time for the JPB to complete acquisition of the properties.

The corridor spans three counties and the JPB must collaborate with Santa Clara County on the south, its home county of San Mateo, and the City and County of San Francisco on the north to exercise eminent domain power as necessary during the ROW acquisition process. The JPB executed an agreement with the Santa Clara Valley Transportation Authority (VTA) to exercise eminent domain on behalf of the JPB for property acquired in Santa Clara County, which includes all of Segment 4 and some portions of Segment 3. The JPB also executed an agreement with the San Mateo County Transit District (SamTrans) to act as the condemning agency for all property in San Mateo County. San Mateo County includes all properties in Segment 2 and some properties in Segments 1 and 3. The JPB has been unsuccessful in reaching an agreement with the City Supervisor for the City of San Francisco related to the

City's exercise of eminent domain powers on behalf of the JPB for properties located within the City and County of San Francisco (CCSF). The CCSF includes only properties in Segment 1 that will be needed later in the construction schedule.

Real Estate Activities

The VTA Board adopted a Resolution of Necessity (RON) on behalf of the JPB at its April 5, 2018 meeting on one Segment 3 parcel needed for an electrical safety zone in Santa Clara County; this is the first step in the eminent domain process for that parcel.

The JPB reported that progress has slowed on the acquisition of the UPRR property needed for PS-7; the transaction is apparently being tied by the UPRR to finalizing the location of OCS poles on UPRR property.

The JPB will be requesting the FTA's approval for administrative settlements exceeding $50,000 on two (2) parcels in Segment 3 and its concurrence on an updated appraisal that now exceeds the $500,000 threshold.

The JPB reported that several new parcels have been identified for acquisition in Segment 2 as a result of the shifting of OCS pole locations. The JPB also reported that hazmat determinations are being performed for several parcels in segment 1.

The status of real estate activity is presented in Table 1 below.

Table 1 – Real Estate Status (*3-31-2018*)

Segment	No. of Parcels Needed	Appraisals Completed	Offers Presented	*Offers Accepted*	Acquisition Status		
					Escrow Closed	Eminent Domain Action Filed	Parcel Possession
1	8	2	0	0	0	0	0
2	27	26	25	*22*	*20*	*3*	*20*
3	10	9	*8*	*5*	0	0	*1*
4	9	9	8	1	0	1	0
Additional Parcels	3	0	*0*	*0*	*0*	*0*	*0*
TOTAL	**57**	**46**	***41***	***28***	**20**	**4**	***21***

Notes:
1. During design development, the real estate requirements may adjust to accommodate design refinements. Parcel requirements will adjust accordingly. The table in this report reflects the current property needs for the Project.
2. The two (2) remaining parcels in Segment 2 are owned by JPB's member agency SamTrans and the UPRR.
3. *The JPB has reached a verbal agreement with the UPRR on its parcel in Segment 4.*
4. Four (4) of the Segment 4 parcels are owned by one owner, PG&E.
5 *The three (3) newly identified parcels are in Segment 2.*

- **PMOC Observation:** The progress of real estate acquisition continues to be slower than anticipated. The PMOC expects that the Electrification contractor is likely to request compensation for some delays associated with the late delivery of real estate parcels.

  The JPB's receipt of possession of the site for TPSS #2, and relocation of the owner and tenant, clears the way for demolition of the structure, and start of

work on TPSS #2. The completion of TPSS#2 is required for electrification of the test track in Segment 4 and the testing of the EMU vehicles.

- **PMOC Issues/Concern:** *The JPB has identified the need for an alternate location for Paralleling Station #3 (PS-3) at its Burlingame Station site. The initial location conflicts with a future grade separation of the Broadway crossing.*
- *The continued appearance of new parcels as a result shifts in the placement of OCS poles is problematic if possession is needed before foundations can be constructed. The PMOC understands that BBI's designers are attempting to avoid or minimize such situations.*

Third-party Agreements and Coordination

A significant number of third-party agreements were required to support the PCEP. These agreements are grouped into the following general categories, with status comments as appropriate to each:

Jurisdictional Agreements for Construction and Maintenance

The JPB reports that as of May 8, 2018, it has executed all agreements except those with the Town of Atherton (Segment 2), and the City of Palo Alto (Segment 3). *The agreement with the City of Palo Alto continues to progress; The JPB provided comments to the City's attorney on the most recent draft and the agreement is being finalized. The JPB is no longer pursuing an agreement with the Town of Atherton. The only remaining action by the Town of Atherton is issuing a traffic control permit to the contractor, and the Town staff has been cooperative to date.*

Jurisdictional Agreements for Exercise of Eminent Domain Powers

The JPB has executed agreements with the Santa Clara Valley Transportation Authority (VTA) and the San Mateo County Transportation District (SamTrans) under which VTA and SamTrans will exercise eminent domain authority on behalf of the JPB, if such action is required, to acquire the real property rights located in the respective counties for the PCEP. It now appears unlikely that the CCSF will approve an agreement.

Utility Relocation Agreements

The JPB's right to relocate utilities that exist within its PCEP corridor exists by virtue of the property rights it acquired when it purchased the corridor from the Southern Pacific Transportation Company (SP) in November 1991. The JPB has the right to cause the relocation of both overhead and underground utilities to accommodate its railroad activities upon thirty (30) days' notice to the utilities at the utilities expense.

- *The next Utility Coordination meeting is scheduled for the week of May 7, 2018.*
- The JPB reports that PG&E is continuing to relocate its power lines.
- *The JPB reports that Verizon is moving ahead to complete the overhead relocation of its Communication lines by the end of 2018.* Any associated costs will be payable to the JPB. The JPB will provide necessary flagging support to allow Verizon to complete the work.

- The JPB reports that Silicon Valley Power has produced a schedule for relocation of its lines, but also reports that the company has already consumed considerable schedule float.
- The JPB reported that Palo Alto Power has acknowledged financial responsibility for relocation of its lines. Because the community has an ordinance that prohibits tall utility poles, the relocated lines will be placed under the tracks as permitted by the JPB's standards. *The JPB has declined to fund the undergrounding of the power lines and the issue is being discussed at the Executive level.*

The Electrification contractor, in the course of moving some of its rail-mounted construction equipment, has encountered conflicts with overhead electric utility lines crossing Caltrain's tracks. The contractor is taking additional measures to precisely identify and mark any locations where conflicts may exist, and the JPB is working with PG&E to raise the lines. *The JPB reports that Segment 2 is clear and no conflicts were present in segment 4.*

The JPB is also negotiating specialized agreements with the following entities:

Pacific Gas & Electric (PG&E)

PG&E will supply power from two (2) existing substations to the new PCEP Traction Power System. Both substations must be modified to provide the required power. The JPB has executed a Master Agreement with PG&E as well as Supplements 1, 2, 3 and 5 to that agreement. Supplement 1 is for scoping and design services; Supplement 2 is for PG&E oversight of design and construction; Supplement 3 includes the costs for engineering and design of the modifications and funding for the procurement of long lead-time equipment; and Supplement 5 is for the supply of temporary power for initial system and vehicle testing. Supplement 3 was approved by the JPB at its July 6, 2017 meeting and executed thereafter. The JPB approved execution of Supplement 4 at its February 2018 meeting; this Supplement includes the cost of constructing the work, and the allocation of costs between the parties. *The JPB requested additional review of the cost allocation provisions before the Supplement is executed and that work is continuing. The JPB has engaged additional technical and legal resources to assist it in this matter.* The PMOC understands that PG&E will not finalize its construction contracts until the Supplement is executed. PG&E's supply of permanent power to the PCEP is on the project's critical path.

California Public Utilities Commission (CPUC)

The CPUC has responsibility for grade crossing safety in California. The PCEP's proposed solution to providing Constant Warning Time at grade crossings must be approved by the CPUC before the modifications can be installed and the crossings returned to service. *The JPB met with the FRA in Washington, D.C. in March 2018 and received positive comments on its plan. The next step is a conference call with the FRA Regional office in Sacramento to gain its concurrence. No date has been established for a meeting with the CPUC.*

The CPUC is the State Safety Oversight Agency (SSOA) for California. The CPUC is currently in Stage 3 of the federal SSO certification process; the State has submitted all required documents to the FTA and is engaged in a dialogue with the FTA to address comments and questions. Where applicable, all required legislation has been enacted. If the CPUC fails to complete the federal certification requirements prior to April 15, 2019, federal law does not allow the FTA to award any federal public transportation funds to any public transportation agencies throughout that state until certification is achieved.

Union Pacific Railroad (UPRR)

The JPB is engaged in on-going confidential negotiations with the UPRR regarding a variety of issues. The UPRR is a tenant and operates service on tracks owned by Caltrain in the PCEP corridor; Caltrain operates service on tracks owned by the UPRR south of the PCEP corridor. The UPRR is considering selling its rights to operate freight service in the Caltrain corridor to a short line operator. This arrangement, if completed, could simplify bringing the freight service operator into conformance with the JPB's CBOSS-PTC system.

The UPRR recently imposed an increased lateral clearance requirement of 15 ft. between its MT-1 (northbound) track in Segment 4 of the corridor and some of the planned OCS pole locations. The typical clearance for railroad tracks is 8 ft. 6 in. *The PCEP team reports that it is experiencing difficulty in resolving the final locations of the remaining poles with UPRR and continues to work with the railroad to resolve the remaining conflicts. It appears that resolution of this issue is now delaying the real estate transactions between the parties.*

California High Speed Rail Authority (CHSRA)

The California High-Speed Rail Authority (CHSRA) proposes to operate in blended service with Caltrain in the PCEP corridor in the future. *The CHSRA recently published its 2018 Business Plan; that plan calls for initial construction of the Silicon Valley to Central Valley line from Diridon Station in San Jose to Bakersfield. The plan would also expand electrification of the Caltrain corridor south of San José to Gilroy. CHSRA continues to be in discussions with Caltrain, Caltrans, the City of San José, Santa Clara County, Union Pacific Railroad and other partners about right of way and operational options, including how passenger and diesel freight trains could share the corridor. This may potentially allow enhanced electrified service all the way to Gilroy, eliminating the need to use passenger diesel trains in the corridor and potentially allow the line to be used for express high-speed rail operations between San Francisco and Gilroy.*

The JPB has been continuously involved in technical discussions with the CHSRA to ensure that the facilities being constructed as part of the PCEP are consistent with those being planned by the CHSRA. Representatives of the CHSRA are now participating regularly in a variety of PCEP meetings.

The JPB reported that it is moving forward with a plan to relocate a number of the OCS poles to permit future curve-straightening by the CHSRA without impacting the electrification system. Straightening of some curves will allow the CHSRA to achieve higher operating speeds. Prior to the issuance of a change order to BBII, the CHSRA will complete an environmental assessment to ensure that there are no new or substantially significant environmental impacts beyond those that were environmentally cleared in the PCEP EIR and EA. This documentation will be shared with the FTA. All costs associated with the pole relocation work will be paid for by the CHSRA. The JPB adopted the Final Environmental Impact Report (FEIR) Addendum #2: Inclusion of Overhead Contact System (OCS) pole and wire relocations to accommodate California High Speed Rail Authority (CHSRA) Service, at its October 5, 2017 meeting. The NEPA Re-evaluation documentation of this project change is under FTA review.

The JPB recently established a separate project, led by its planning group, to support the CHSRA as a stakeholder. The JPB is represented on several working groups including

Infrastructure and Operations. Funding for the JPB's participation in this effort comes from the CHSRA.

Federal Railroad Administration (FRA)

The JPB met with the FRA in Washington, D.C. on March 7, 2018 to discuss the proposed solution to the CWT issue and a follow-up conference call with the local FRA Regional staff in Sacramento is being planned. The FRA conducted an on-site visit during the week of May 26, 2018. The JPB continues to hold monthly conference calls with the FRA.

- **PMOC Observation:** Gauging the progress on PG&E and UPRR issues continues to be difficult because of confidentiality restrictions placed on the participants.

B. Project Management Plan (PMP) and Sub-Plans

The JPB has recently provided updates to the following management plans and sub-plans:

- Fleet Management Plan (FMP) Rev. 1, August 1, 2017
- Program Management Plan (PMP) Rev. 2, October 16, 2017
- Quality Management Plan (QMP) Rev. 2, November 2017
- Risk Identification and Mitigation Plan (RIMP) Rev. 1, December 1, 2017
- Cost Contingency Development Process and Reporting, September 7, 2017
- Schedule Contingency Development Process and Reporting, November 9, 2017

The PMOC plans to review selected updates in the coming months.

C. Project Management Capacity and Capability

John Funghi was appointed CalMod Chief Officer in February 2018. Mr. Funghi was most recently employed by the San Francisco Municipal Transportation Agency (SFMTA) as Program Director for the Central Subway Project. The most recent PCEP organization chart is attached as Appendix D.

The JPB reported the following recent changes to its organization and that of the PCEP:

- *Ron Clark (LTK), PCEP Systems Integration Lead, has left the project; he was replaced by John Moore from the Gannett Fleming team.*

  - **PMOC Observation:** *Mr. Funghi is making his presence felt as he becomes increasingly familiar with the PCEP and its individual team members. Some personnel changes have occurred with resulting uncertainty among the project team. The sooner organizational changes can be completed, the better for the stability and performance of the team. Some team members expressed that Mr. Funghi is looking at challenging issues without preconceptions and that may help suggest new approaches or solutions.*

  - **PMOC Recommendations:** *The PMOC recommends adding field staff to monitor the progress of an increasing mix of Electrification construction activities during both day and night shifts. Additional office engineering assistance is also required to stay current pace with change related documentation.*

D. Project Cost

Table 2 below presents the PCEP cost estimate, dated November 16, 2016, as the estimate was revised and incorporated into the FFGA. The JPB is re-forecasting the estimated cost at completion (EAC) monthly and will likely re-baseline the Capital Cost Estimate following the execution of the last two (2) major contracts in the late summer or fall of 2018.

Table 2 – Project Cost

STANDARD COST CATEGORY	Base Year Dollars w/o Contingency (X000)	Base Year Dollars Allocated Contingency (X000)	Base Year Dollars TOTAL (X000)	YOE Dollars TOTAL (X000)
10 GUIDEWAY & TRACK ELEMENTS (51 route miles)	9,930,050	3,443,415	13,373,465	14,256,739
20 STATIONS, STOPS, TERMINALS, INTERMODAL (NONE)	0	0	0	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	1,727,666	396,732	2,124,398	2,265,200
40 SITEWORK & SPECIAL CONDITIONS	197,354,697	42,465,878	239,820,575	255,072,402
50 SYSTEMS	429,641,995	46,687,882	476,329,877	504,445,419
60 ROW, LAND, EXISTING IMPROVEMENTS	26,526,146	8,447,380	34,973,526	35,675,084
70 VEHICLES (96)	564,044,890	8,364,433	572,409,323	625,544,147
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	279,886,974	29,338,981	309,225,955	323,793,010
90 UNALLOCATED CONTINGENCY			150,353,131	162,620,295
100 FINANCE CHARGES			6,600,802	6,998,638
Total Project Cost (10 - 100)			**1,805,211,052**	**1,930,670,934**

Note: Totals may not add due to rounding.

Project Expenditures

The status of the PCEP budget and expenditures through March 31, 2018, in SCC format, is shown on Table 3. The JPB states that the costs associated with extension of the LNTPs to the NTP date will be drawn from contingency and no increase in the overall Estimated Cost at Completion (EAC) is expected.

PMOC Note: The JPB publicly reports expenditures against a total project budget of $1,980,252,533. This higher amount includes expenditures prior to the project's entry into the PD phase, which is excluded from the FTA's project budget. Costs incurred prior to the project's entry into the PD phase were removed from the estimate at the FTA's request during its review of the FFGA materials.

Table 3 – Project Expenditures in SCC Format (3-31-2018)

Description of Work	Approved Budget (A)	Cost This Month (B)	Cost To Date (C)	Estimate To Complete (D)	Estimate At Completion (E) = (C) + (D)
10 - GUIDEWAY & TRACK ELEMENTS	**$ 14,256,739**	**$ -**	**$ -**	**$ 14,356,739**	**$ 14,356,739**
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)	$ 2,500,000	$ -	$ -	$ 2,600,000	$ 2,600,000
10.07 Guideway: Underground tunnel	$ 8,110,649	$ -	$ -	$ 8,110,649	$ 8,110,649
10.07 Allocated Contingency	$ 3,646,090	$ -	$ -	$ 3,646,090	$ 3,646,090
30 - SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	**$ 2,265,200**	**$ -**	**$ -**	**$ 2,265,200**	**$ 2,265,200**
30.03 Heavy Maintenance Facility	$ 1,344,000	$ -	$ -	$ 1,344,000	$ 1,344,000
30.03 Allocated Contingency	$ 421,200	$ -	$ -	$ 421,200	$ 421,200
30.05 Yard and Yard Track	$ 500,000	$ -	$ -	$ 500,000	$ 500,000
40 - SITEWORK & SPECIAL CONDITIONS	**$ 260,473,484**	**$ 3,906,650**	**$ 65,523,477**	**$ 219,263,674**	**$ 284,787,151**
40.01 Demolition, Clearing, Earthwork	$ 3,077,685	$ 159,000	$ 449,000	$ 2,803,685	$ 3,252,685
40.02 Site Utilities, Utility Relocation	$ 93,455,599	$ 2,597,000	$ 19,100,869	$ 88,854,731	$ 107,955,599
40.02 Allocated Contingency	$ -	$ -	$ -	$ -	$ -
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	$ 2,200,000	$ -	$ -	$ 2,200,000	$ 2,200,000
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks	$ 32,579,208	$ 73,125	$ 360,375	$ 32,318,833	$ 32,679,208
40.05 Site structures including retaining walls, sound walls	$ 568,188	$ -	$ -	$ 568,188	$ 568,188
40.06 Pedestrian / bike access and accommodation, landscaping	$ 804,933	$ -	$ -	$ 740,933	$ 740,933
40.07 Automobile, bus, van accessways including roads, parking lots	$ 284,094	$ -	$ -	$ 284,094	$ 284,094
40.08 Temporary Facilities and other indirect costs during construction	$ 107,343,777	$ 1,077,525	$ 45,613,233	$ 71,333,210	$ 116,946,444
40.08 Allocated Contingency	$ 20,160,000	$ -	$ -	$ 20,160,000	$ 20,160,000
50 - SYSTEMS	**$ 502,766,044**	**$ 4,902,989**	**$ 21,495,244**	**$ 478,484,250**	**$ 499,979,494**
50.01 Train control and signals	$ 96,789,149	$ -	$ 1,000,000	$ 101,552,149	$ 102,552,149
50.01 Allocated Contingency	$ 2,451,000	$ -	$ -	$ -	$ -
50.02 Traffic signals and crossing protection	$ 23,879,905	$ -	$ -	$ 23,879,905	$ 23,879,905
50.02 Allocated Contingency	$ 1,140,000	$ -	$ -	$ 1,140,000	$ 1,140,000
50.03 Traction power supply: substations	$ 70,671,121	$ 569,129	$ 4,732,622	$ 65,938,499	$ 70,671,121
50.03 Allocated Contingency	$ 28,464,560	$ -	$ -	$ 28,464,560	$ 28,464,560
50.04 Traction power distribution: catenary and third rail	$ 253,743,010	$ 4,333,860	$ 15,762,622	$ 240,635,680	$ 256,398,302
50.04 Allocated Contingency	$ 18,064,000	$ -	$ -	$ 9,310,157	$ 9,310,157
50.05 Communications	$ 5,455,000	$ -	$ -	$ 5,455,000	$ 5,455,000
50.07 Central Control	$ 2,090,298	$ -	$ -	$ 2,090,298	$ 2,090,298
50.07 Allocated Contingency	$ 18,000	$ -	$ -	$ 18,000	$ 18,000
60 - ROW, LAND, EXISTING IMPROVEMENTS	**$ 35,675,084**	**$ 719,163**	**$ 11,267,482**	**$ 24,407,603**	**$ 35,675,084**
60.01 Purchase or lease of real estate [1]	$ 25,927,074	$ 719,163	$ 11,243,284	$ 14,683,790	$ 25,927,074
60.01 Allocated Contingency	$ 8,748,010	$ -	$ -	$ 8,748,010	$ 8,748,010
60.02 Relocation of existing households and businesses	$ 1,000,000	$ -	$ 24,198	$ 975,803	$ 1,000,000
70 - VEHICLES (96)	**$ 625,755,807**	**$ 682,082**	**$ 81,763,053**	**$ 543,992,754**	**$ 625,755,807**
70.03 Commuter Rail [1]	$ 590,716,951	$ 682,082	$ 81,763,053	$ 507,068,849	$ 588,831,901
70.03 Allocated Contingency	$ 8,134,924	$ -	$ -	$ 10,019,974	$ 10,019,974
70.06 Non-revenue vehicles	$ 8,140,000	$ -	$ -	$ 8,140,000	$ 8,140,000
70.07 Spare parts	$ 18,763,931	$ -	$ -	$ 18,763,931	$ 18,763,931
80 - PROFESSIONAL SERVICES (applies to Cats. 10-50)	**$ 325,532,351**	**$ 5,732,951**	**$ 192,917,077**	**$ 138,050,163**	**$ 330,967,240**
80.01 Project Development	$ 130,350	$ -	$ 280,180	$ (149,830)	$ 130,350
80.02 Engineering (not applicable to Small Starts) [2]	$ 181,346,859	$ 3,506,515	$ 146,132,409	$ 42,391,483	$ 188,523,892
80.02 Allocated Contingency	$ 1,742,144	$ -	$ -	$ -	$ -
80.03 Project Management for Design and Construction [1], [2]	$ 72,910,901	$ 1,961,374	$ 37,360,527	$ 35,550,374	$ 72,910,901
80.03 Allocated Contingency	$ 9,270,000	$ -	$ -	$ 9,270,000	$ 9,270,000
80.04 Construction Administration & Management [2]	$ 23,677,949	$ 162,009	$ 3,419,257	$ 20,258,692	$ 23,677,949
80.04 Allocated Contingency	$ 19,537,000	$ -	$ -	$ 19,537,000	$ 19,537,000
80.05 Professional Liability and other Non-Construction Insurance	$ 4,305,769	$ -	$ 2,555,769	$ 1,750,000	$ 4,305,769
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.	$ 6,341,599	$ 103,052	$ 3,156,049	$ 3,185,550	$ 6,341,599
80.06 Allocated Contingency	$ 556,000	$ -	$ -	$ 556,000	$ 556,000
80.07 Surveys, Testing, Investigation, Inspection	$ 3,287,824	$ -	$ 12,887	$ 3,274,937	$ 3,287,824
80.08 Start up	$ 1,797,957	$ -	$ -	$ 1,797,957	$ 1,797,957
80.08 Allocated Contingency	$ 628,000	$ -	$ -	$ 628,000	$ 628,000
Subtotal (10 - 80)	**$ 1,766,724,709**	**$ 15,943,835**	**$ 372,966,332**	**$ 1,420,820,382**	**$ 1,793,786,714**
90 UNALLOCATED CONTINGENCY	**$ 156,947,587**	**$ -**	**$ -**	**$ 129,885,582**	**$ 129,885,582**
Subtotal (10 - 90)	**$ 1,923,672,296**	**$ 15,943,835**	**$ 372,966,332**	**$ 1,550,705,964**	**$ 1,923,672,296**
100 FINANCE CHARGES	**$ 6,998,638**	**$ 305,829**	**$ 2,878,272**	**$ 4,120,366**	**$ 6,998,638**
Total Project Cost (10 - 100)	**$ 1,930,670,934**	**$ 16,249,664**	**$ 375,844,604**	**$ 1,554,826,330**	**$ 1,930,670,934**

Notes:

[1] 60.01, 70.03, 80.03 - Cost this month includes decreases in agency labor ICAP against a prior period resulting in an overall reduction of $192K.

[2] 80.02, 80.03, 80.04 - Cost this month is adjusted to report March 2018 accrual estimates and includes an offset for inaccurate accruals in the January and February 2018 periods.

Project Funding

The PCEP is relying on several sources of funding to complete the project. Table 4 below summarizes the JPB's funding plan, as updated through June 23, 2017. The updated funding plan shows total funding of $1,930,670,934 including $647 million in Section 5309 funds. The plan also includes federal funding from the Section 5307 Urbanized Area Formula program of $287,150,000.

The JPB also has in-place an interim financing agreement for up to $150 million to provide additional cash flow flexibility to address differences in the timing of contractor invoices and the availability of drawdowns from funding sources.

The State of California recently awarded the JPB a $164,522,000 grant under its Transportation and Intercity Rail Capital Program (TIRCP). The grant will fund the purchase of additional EMUs using options included in the base contract with Stadler. The grant also includes targeted funding for 8-car platforms, improves wayside bicycle facilities (bike sharing and bike parking), and installs a broadband communications system that expands onboard Wi-Fi and enhances reliability by creating the capability to conduct remote diagnostics and optimize ongoing operations and maintenance.

Table 4 – Project Funding Summary

Funding Source	Planned/Budgeted*	Committed*	Total ($x1000)
Local	$0	$996,521	$996,521
Federal	0	$934,150	$934,150
Total	**$574,043**	**$1,356,628**	**$1,930,671**

* Definitions from Guidelines and Standards for Assessing Local Financial Commitment, FTA, June 2007

E. Project Schedule

The FFGA was executed on May 23, 2017.

The JPB completed a re-baselining of its Master Project Schedule (MPS) in December 2017; the current schedule reflects the execution of the FFGA, the issuance of the final NTPs to the EMU and Electrification contractors, and the impacts to the overall project resulting from these delays. The following is based on a review of the contractors' schedules:

- *BBII, the Electrification contractor, is reporting that the substantial completion date has slipped to February 21, 2021. The JPB reports that this is due to issues related to Constant Warning Time (CWT) and the parties are working on a second Time Impact Analysis (TIA) to address the delay in arriving at an acceptable solution to the CWT issue as well as potential mitigation measures.*
- *The delivery of the first EMU trainset to the JPB is scheduled for July 2019, this is approximately three (3) months later than originally planned.* The delivery of the first six (6) EMU trainsets will be delayed, but no impact is expected to the deliveries of the remaining trainsets.

The PCEP's most recent schedule includes a soft opening for revenue service on April 22, 2022, with a partial fleet of EMU vehicles, and a full Revenue Service Date (RSD) of August 22, 2022.

- **PMOC Observation:** *Construction progress in Segment 2 has been much slower than planned due to the presence of numerous unanticipated underground obstructions, and various factors that have resulted in less on-track work time for the contractor's crews. Similar obstacles have been encountered by potholing in Segment 4, and these conditions are likely to persist for the remainder of the corridor. BBII has added a second potholing sub-contractor to increase productivity. The overall pace of the OCS work is controlled by the completion of foundations; however, efficient erection of the OCS poles can only occur when a continuous line of foundations is available for work crews. BBII has slowed OCS pole erection until enough foundations are in place to allow it to proceed effectively. The in-ground obstacles have forced the relocation of a significant number of the OCS poles; each requiring some re-design effort before the new location can be cleared and the foundation placed. BBII has increased design resources to reduce the impacts of this re-design activity. The impact of these various factors is highlighted by comparing BBII's actual billings thru April 2018 of $210.6 million to its projected billings of $406.3 million. Although the OCS work is not on the project's critical path, continuing low productivity may result in it becoming critical. The contractor's ability to significantly increase the amount of OCS work put in place during any given period of time will be limited by the time allowed for on-track work.*

- The JPB recently revised its schedule for weekend interruptions of rail service in Segment 1 to permit Electrification construction and concurrent work on the Tunnel Notching contract. The service interruptions must now take place following the close of the 2018 Major League Baseball season. This constraint was not present at the time the Electrification contract was awarded and it is not clear how this will impact the Electrification contractor's accepted baseline schedule. The PMOC's opinion is that the JPB's decision will likely result in a Change Request from the Electrification contractor.

Table 5 below, which is based on the MPS C16.06 with a Data Date of April 1, 2018, shows the current projected dates for completion of various significant project activities.

Table 5 – Schedule Status

Milestone	Baseline	Grantee Forecast	PMOC Forecast
New Starts/Core Capacity Grant Agreement:	Not in MPS	5/23/2017 (A)	5/23/2017 (A)
Design/Build Notice to Proceed:	12/08/15 (P)	6/19/2017 (A)	6/19/17 (A)
Arrival of First EMU at JPB	*7/29/19*	*7/15/19*	*7/15/19*
Final Engineering (FE) Completion:	04/03/18 (P)	3/14/2018	*9/13/19*
Systems Integration Testing Completed:	01/29/19 (P)	*11/30/20*	*11/30/20*
First Eight Miles of Electrification Complete to Begin Testing	*11/21/19*	*4/24/20*	*4/24/20*
Design/Build Completion	02/16/19 (P)	8/10/20	8/10/20
PG&E Provides Permanent Power	*9/9/21*	*9/9/21*	*9/9/21*
Pre-Revenue Operation Completed:	05/07/20 (P)	12/9/21 (P)	12/9/21
Revenue Service – Soft Opening		4/22/22	4/22/22

Revenue Operations Date:	05/07/20 (P)	8/22/2022	8/22/2022
(P) Planned Date (A) Actual Date			

Appendix E presents the PCEP's summary schedule C16.06 with a Data Date of April 1, 2018, as contained in its March 2018 Monthly Report.

- **PMOC Recommendation:** *The JPB's leadership team should obtain the services of a senior scheduling consultant on an as-needed basis to test various what-if scenarios related to the current rate of Electrification construction progress, as well as other project activities, and the impact of alternate management strategies to mitigate delays and improve performance. The PMOC's opinion is that the PCEP's scheduling resources are currently fully occupied with schedule management and have insufficient time to devote to this type of activity.*

F. Quality Assurance / Quality Control (QA/QC)

The JPB provided a preliminary draft update to its Quality Management Plan, Rev. 2, to the PMOC for its review in August 2017, and the PMOC provided comments to the JPB. The JPB recently issued the updated QMP Rev. 2, dated November 2017.

The PCEP's Quality Manager reported the following:

- *Four (4) design audits were conducted during April 2018: traction power facilities, traction power systems, civil works, and signals (95% or IFC).*
- *PGH Wong, the Engineer of Record for BBII, is the best in quality adherence; however, there have been three (3) recent findings with respect to the PGH Wong work.*
- *Other sub-contractors such as FH Associates and Alstom, initially had issues closing findings.*
- *BBII and PGH Wong currently have approximately fifty (50) design variance requests for QA/QC and inspection issues/concerns. Gannett Fleming's team reviews any drawings or other technical materials.*
- *A field quality audit has been rescheduled to the last week in May.*
- *A Material Control audit was conducted of BBII's SSF Warehouse and yielded three (3) findings, which are still open.*
- *Two (2) Non-conformance Reports (NCR) were issued against the BBII supplier of OCS Poles, Structural Steel Products, for rejected welds and inadequate Magnetic Particle and Ultrasonic Test reports. The subject poles were repaired, the reports corrected and the NCRs are closed.*

The JPB's Procurement Department has issued an RFP for On-Call Special Inspection and Testing Services to support both the PCEP and the JPB's Capital program; proposals are due June 11, 2018.

- **PMOC Observations and Recommendations:** The PMOC's opinion is that the additional quality resources requested previously are needed, and may be

inadequate to address the full range of quality activities on a project of the scale of the PCEP.

The PMOC recommended that PCEP make use of appropriate staff from the San Carlos office to augment the PCEP quality program. The PCEP QA Manager commented that he would have to conduct appropriate quality training before unqualified staff conduct quality activities.

The PMOC plans to conduct a focused review of the PCEP Quality Management program in the coming months.

G. Safety and Security

The JPB reported a minor incident in April 2018 when one of the drilling subcontractor's flat cars derailed at the Santa Clara siding due to a broken wheel flange. The contractor responded by instituting an inspection of all its rail mounted equipment.

The issue noted above in Section 4.A under Construction Activities, involves the JPB's recent change in its position regarding providing TASI signal maintainer support during the movement of rail mounted equipment through grade crossings. This Electrification contractor and its drilling sub-contractor notified the JPB that they disagree with this change. As a result, the JPB performed a Hazard Analysis of the situation which determined that the revised procedure would adequately address the hazard. *A procedure has been developed to allow the contractor's crews to trigger signal activation for movement of their equipment with verification by the Roadway Worker in Charge (RWIC); however, the issue is not completely resolved and discussions continue between the parties.*

The JPB submitted its Draft SSMP, Rev. 4, on April 11, 2017 for PMOC review. The PMOC completed its review of the Rev. 4 Draft and provided comments and recommendations to the PCEP's safety team in August 2017. The SSMP Update Review report is currently being finalized.

The PCEP safety team continues to monitor the safety performance of BBII's field activities including compliance with Site Specific Work Plans.

The PCEP's safety management team continues to hold regular monthly meetings of the Fire and Life Safety Committee and the Safety and Security Certification Review Committee. *The next meetings are set for May 23, 2018.*

H. Americans with Disabilities Act (ADA)

The new EMU vehicles will be equipped with powered on-board lifts to provide assistance to passengers using mobility devices. The JPB requested the FTA's concurrence to reduce the number of on-board lifts from 32 per train set to 16 per train set, and to phase the installation of the lifts. The JPB's proposal calls for initial installation of two (2) lifts per train set, one (1) each in the northernmost car and one (1) in the following car, which will be equipped with an accessible restroom. The remaining four (4) lifts per train set are to be installed prior to the start of blended service with the CHSRA trains. The FTA considered the JPB's proposal and initiated a conference call with the JPB on November 3, 2017, which included representatives of the FTA's Civil Rights Office, to discuss the proposal. The FTA, following its review of the JPB's proposal and further clarification provided by the conference call, concurred with

the JPB's proposed reduction in the total number of vehicle lifts per train set. The phased installation of the lifts was also discussed and associated grant timing considerations.

The new EMU vehicles must comply with the FTA's current ADA requirements and the guidance in FTA Circular 4710.1.

I. Buy America

- The FTA concurred in November 2016 with the JPB's determination that the EMU contract is governed by a 60% domestic content requirement based on the General Public Interest Waiver provisions in the FTA's current Buy America regulations.
- The JPB reports that it has received guidance from the FTA confirming the acceptability of a protocol for certifying compliance of PG&E substation modifications with Buy America requirements. The JPB also reported that PG&E has determined that it will not need to install Gas Insulated Switchgear when it modifies its FMC substation to supply power to the JPB's TPSS #2. This determination by PG&E eliminates a major concern related to Buy America compliance because Gas Insulated Switchgear is not manufactured in the U.S.
- The EMU vehicle consultant visited Stadler's Salt Lake City facility during late January 2018 to verify its Buy America compliance and its progress in arranging for American equipment suppliers.
- *The project's QA Manager reports that he routinely reviews Buy America documentation as a part of his audit of vendor files.*

J. Vehicles

The PCEP has placed an order for ninety-six (96) new bi-level EMU vehicles to be produced by Stadler US, Inc. and delivered in six-car train sets. The EMU contract contains an option for JPB to purchase up to ninety-six (96) additional EMUs at prices based on the date when the option is exercised. The EMU contract also contains an option for Stadler to maintain the vehicles; the JPB has decided not to exercise this option and the vehicles will be maintained by TASI, the JPB's current rail operator. The JPB states that Stadler will provide on-site training and assistance for TASI's personnel for two (2) years following vehicle acceptance.

The EMUs will be delivered with two (2) sets of doors, one set at approximately 22" above top of rail, and one at approximately 50.5" above top of rail. Initially, only the lower set of doors will be activated, and a small step will automatically deploy outside the vehicle to reduce the boarding height to the current platforms. Later, when the EMUs operate in blended service with the CHSRA vehicles, the high-level doors will be operated to provide level boarding at the higher CHSRA platforms at those stations served by both systems.

The JPB has negotiated a change order to reduce the number of interior lifts from twelve (12) to six (6) in each trainset. This topic is discussed in more detail in Section H, Americans with Disabilities Act, above. A second change order has been issued to increase the capacity of lifts that provide ADA access to restrooms in those cars so equipped; this change order is in response to recent change in the standards for such lifts.

The JPB previously reported that it has finalized the on-board bicycle parking arrangement, and will continue to stack bikes as is currently done.

The JPB reported that work on Stadler's new assembly facility and test track in Salt Lake City, Utah, is progressing and erection has begun on the pre-engineered building that will house the operation. This facility will be used for production of most of the EMUs for the PCEP Project.

A first article inspection has been performed on the first cab car shell, and the second cab car shell has been sent to Dresden, Germany, for structural validation testing.

Regulatory Issues

The JPB sent the FRA a request for interpretation, dated September 19, 2017, related to use of the high-level doors in lieu of emergency egress windows in passenger intermediate seating levels. *The JPB followed that request with a letter, dated December 21, 2017, formally requesting a waiver of the requirements of 49 CFR 238.113(a)(3) and 238.114(a)(3) for the EMU cars A, B, C and E. The FRA's Safety Board was expected to discuss the JPB's waiver request at its meeting on April 10, 2018; however, the FRA has not issued its decision in this matter. The JPB has learned informally that the FRA is considering denying the waiver request, or approving the request with conditions. The JPB's opinion is that a denial could be less restrictive than approval with conditions.*

The JPB reported that a customer has complained about the plan to store bicycles in the area immediately in front of the emergency exit windows in the new EMU bicycle cars, and that the customer has also brought the issue to the attention of the FRA. The JPB states that if it complies with the requirement, it will reduce the number of bicycles that can be carried in each trainset. The JPB established a ratio of one (1) bicycle for every eight (8) seats in each six-car EMU trainset after considering public comments. It is unclear how the reduced bicycle capacity might impact total passenger capacity of each trainset, which was a major consideration in the FTA's evaluation of the JPB's Core Capacity grant application.

The FRA was on-site during the week of April 30, 2018 to meet with TASI representatives and review signals protocols.

The FRA granted the JPB's request for a waiver of compliance from a portion of 49 CFR §238.113(a)(2), Emergency window exits for the restroom car of their new 6-car EMU trainsets, on February 9, 2018.

5) Project Risk and Contingency

The PCEP has been implementing its RIMP since its development in 2014. The PCEP's Risk Management Specialist conducts weekly updates of a sub-set of the Risk Register and the project's Risk Management Committee meets monthly to review those risks proposed for retirement, risks with a major change in severity, and proposed additions to the Risk Register.

The JPB conducted a Risk Refresh Workshop on September 18-19, 2017; this was the first comprehensive risk update since the award of the FFGA and issuance of full NTP to both major contractors. The JPB's workshop was preceded by a half-day risk management meeting with the Electrification contractor to discuss the contractually required risk management plan. The Electrification contractor's risk management plan includes periodic risk meetings with the JPB and regular reviews of contractor-owned risks. One outcome of the Risk Refresh Workshop was the incorporation of the contractor's risks into the PCEP risk register. The JPB also re-ran its Monte Carlo risk model and updated the cost and schedule contingency requirements.

The PCEP team held the second quarterly risk management meeting with the Electrification contractor in January 2018.

The top risks, with risk number, shown on the current PCEP risk register are:

(279) BBII may be unable to develop grade crossing modifications that meet regulatory requirements prior to scheduled testing and commissioning of the system.

(223) A complex and diverse collection of major program elements and current Caltrain capital works projects may not be successfully integrated with existing operations and infrastructure.

(101) PG&E may not be able to deliver permanent power for the project within the existing budget and in accordance with the project schedule.

(242) JPB's ability to deliver work windows to contractor as dictated per contract.

(281) Additional work in the form of signal/pole adjustments may be required to remedy sight distance impediments arising from modifications to original design.

(287) Design changes may necessitate additional implementation of environmental mitigations not previously budgeted.

(67) Relocation of overhead utilities must precede installation of catenary wire and connections to TPSs. Relocation work will be performed by others and may not be completed to meet BBII's construction schedule.

(263) Collaboration across multiple disciplines to develop a customized rail activation program may fail to comprehensively address the full scope of issues required to operate and maintain an electrified railroad and decommission the current diesel fleet.

(276) BBII may be unable to get permits required by jurisdictions for construction in a timely manner.

(294) UPRR does not accept catenary pole offsets from centerline of track, necessitating further negotiation or relocation of poles.

(297) Cost and schedule of Stadler contract could increase as a result of this change in PTC system. Delay of PTC may delay acceptance of EMUs.

(298) Cost and schedule of BBII contract could increase as a result of this change in PTC system.

Appendix F is a listing of the top project risks from the most recent PCEP Risk Register.

- **PMOC Recommendation:** The PMOC recommends that the JPB consider ways to mitigate operational impacts to committed Electrification contractor work windows that may result from unexpected problems with initial operational testing of the PTC system. Mitigation strategies should also address continuing impacts from the same cause.

6) Discussion of Monitoring Plan Items

The PMOC will continue to monitor the Project's overall progress including progress in acquiring real estate and completing the remaining third-party agreements, including the PG&E supplements, and any required utility relocation agreements. The PMOC will also

continue to monitor design and construction progress including work performed by PG&E, procurement activities, and identified CNPAs.

Caltrain's CBOSS-PTC project is an independent part of the CalMod Program and not part of the PCEP. The completion of the CBOSS-PTC project has been substantially delayed; the JPB terminated its prime contractor; and the JPB and the contractor are involved in opposing litigation. The JPB's recent execution of a contract with Wabtec to complete implementation of Caltrain's PTC system is a positive step which will allow Stadler to proceed with finalizing the on-board PTC equipment for the EMUs, an activity that had been on-hold. The PMOC will continue to track the project's progress in start-up and integration through its review of the PCEP's system integration activities, which include PTC items, and will also be alert for any impacts resulting from PTC on-track activities.

7) Action Items

Table 6 – Action Items

No.	Action Item	Discussion	Agreed Due Date	Responsibility Agency/Name	Status
05.01	JPB to provide a slide showing a detailed schedule for PG&E substation activities.	The schedule obtained from PG&E should have sufficient detail that it can be monitored by the PMOC.	NLT QPRM #6	Couch/Larano	*Completed 3-08-2018*
5.02	JPB to prepare a brief White Paper explaining why the delay in award of the FFGA resulted in change orders to the awarded contracts.	FTA noted that the JPB had pre-award authority for the EMU contract.	ASAP	Couch/Larano	*Completed 2-23-2018*
5.03	JPB to prepare a simple handout for future meetings with additional detail on Change Orders and resultant changes in contingency.		NLT QPRM #6	Larano	*Completed 3-08-2018*
5.04	JPB to prepare and update an exhibit showing project progress over time.	JPB noted that this exists as the Percent Complete exhibit.	NLT QPRM #6	Larano	*Completed 3-08-2018*
5.05	JPB to have a follow-up conversation with the FTA to discuss how the federal interest in the PG&E-JPB interconnection will be preserved if this becomes the property of PG&E.	This issue is unresolved and part of the negotiation of Supplement #4.	When the issue becomes ripe for discussion.	JPB: Legal Counsel FTA: Wu	*Issue is Ripe as of QPRM #6*

No.	Action Item	Discussion	Agreed Due Date	Responsibility Agency/Name	Status
5.06	JPB to prepare and distribute an 11"x17" map of the corridor showing Stations, Segments, Work Areas, Traction Power facilities, Tunnels, and the CEMOF.		NLT QPRM #6	Larano	*Completed 3-08-2018*
6.01	*JPB to prepare a schedule showing the critical path to readiness for EMU testing in Segment 4 and include in future meeting materials.*		*NLT QPRM #7*	*Funghi*	*Draft Received 5-03-2018*
6.02	*JPB to add PTC as a new Concurrent Other Caltrain Project.*		*NLT QPRM #7*	*Bouchard*	

Legend: Each Action Item indicates the number of the Quarterly Progress Review Meeting where the Action Item was identified. Colored italics indicate a new entry from the previous version. Shaded cells indicate a completed item. Items are removed from the Action Item list for the second report following the report in which they are reported complete.

Appendix A: List of Acronyms

Acronyms	List of Terms
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ATP	Alternate Technical Proposal
BAAQMD	Bay Area Air Quality Management District
BAFO	Best and Final Offer
BART	Bay Area Rapid Transit District
BBII	Balfour-Beatty Infrastructure, Inc.
Caltrans	California Department of Transportation
CBOSS	Communications Based Overlay Signal System
CC	FTA's Core Capacity Improvement Program
CCB	Change Control Board
CCIP	Contractor Controlled Insurance Program
CCSF	City and County of San Francisco
CEL	Certified Elements List
CEMOF	Central Equipment Maintenance and Operations Facility
CEQA	California Environmental Quality Act
CGA	Construction Grant Agreement
CHSRA	California High-Speed Rail Authority
CIG	FTA's Capital Investment Grant Process
CIL	Certifiable Items List
CM/GC	Construction Manager/General Contractor
CNPA	Concurrent Non-Project Activity
CO	*Change Order*
CPUC	California Public Utilities Commission
CSCG	City/County Staff Coordinating Group
CWT	Constant Warning Time
D-B	Design-Build
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise
DBFOM	Design-Build-Finance-Operate and Maintain
DEIR	Draft Environmental Impact Report
DQP	Design Quality Plan
DRB	Disputes Review Board
DSDC	*Design Support During Construction*
EA	Environmental Assessment
EAC	Estimate at Completion
EE	Entry into Engineering
EIR	Environmental Impact Report
EMU	Electric Multiple Unit Rail Vehicle
ETB	Electrified Trolley Buses
FCD	Final Completion Date

Acronyms	List of Terms
FD	*Final Design*
FEIR	Final Environmental Impact Report
FERC	*Federal Energy Regulatory Commission*
FFGA	Full Funding Grant Agreement
FMOC	Financial Management Oversight Consultant
FMP	Fleet Management Plan
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GO	General Order (issued by the CPUC)
HSR	High-Speed Rail
I-ETMS	*Interoperable Electronic Train Management System*
IFC	Issued for Construction
IFB	Invitation for Bids
IGA	Inter-Governmental Agreement
Cal ISO	California Independent System Operator
ITCS	*Incremental Train Control System*
JPB or PCJPB	Peninsula Corridor Joint Powers Board
KKCS	Kal Krishnan Consulting Services, Inc.
LNTP	Limited Notice to Proceed
LONP	Letter of No Prejudice
LPMG	Local Policy Makers Group
MCC	Management Capacity and Capability
MOU	Memorandum of Understanding
MPS	Master Project Schedule
MTC	Metropolitan Transportation Commission
NCR	Non-conformance Report
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NTO	Notice to Owner (for Utility Relocation)
NTP	Notice to Proceed
OCS	Overhead Contact System/Overhead Catenary System
PCEP	Peninsula Corridor Electrification Program
PCWG	Peninsula Corridor Working Group
PD	Project Development Phase
PG&E	Pacific Gas and Electric
PHA	Preliminary Hazard Assessment
PMOC	Project Management Oversight Contractor
PMP	Project Management Plan
PS	Paralleling Station for Traction Power Supply
PTC	Positive Train Control
PTG	Parsons Transportation Group

Acronyms	List of Terms
QA	Quality Assurance
QAP	Quality Assurance Plan
QC	Quality Control
QMP	Quality Management Plan
QPRM	Quarterly Progress Review Meeting
RAMP	Real Estate Acquisition Management Plan
RFMP	Rail Fleet Management Plan
RFP	Request for Proposal
RIMP	Risk Identification and Mitigation Plan
RON	Resolution of Necessity (for Eminent Domain purposes)
ROW	Right of Way
RSD	Revenue Service Date
RWIC	*Roadway Worker in Charge*
RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit District
SCADA	Supervisory Control and Data Acquisition
SCC	Standard Cost Category
SCVTA/VTA	Santa Clara Valley Transportation Authority
SF	City of San Francisco
SFCTA	San Francisco County Transportation Authority
SFMTA	San Francisco Municipal Transportation Agency
SHPO	State Historic Preservation Office
SJ	City of San Jose
SMCTA	San Mateo County Transportation Authority
SME	Subject Matter Expert
SOGR	State of Good Repair
SONO	Statement of No Objection
SP	Southern Pacific Transportation Company
SSI	Sensitive Security Information
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
TASI	Transit America Services, Inc.
TEAM	Transportation Electronic Award Management System
TIA	Time Impact Analysis
TIRCP	*Transportation and Intercity Rail Capital Program*
TJPA	Transbay Joint Powers Authority
TPS	Traction Power System
TPSS	Traction Power Substation
TrAMS	Transportation Award Management System
TVA	Threat and Vulnerability Analysis
TVM	Transit Vehicle Manufacturer
UPRR	Union Pacific Railroad
USFWS	United States Fish and Wildlife Service

Acronyms	List of Terms
VE	Value Engineering
VECP	Value Engineering Change Proposal
VTA	Santa Clara Valley Transportation Authority
YOE	Year of Expenditure

Appendix B: Safety and Security Checklist

Project Overview			
Project Mode	Commuter Rail		
Project Phase	FFGA – Construction		
Project Delivery Method	Design-Build, Design-Bid-Build		
Project Plans	**Version**	**Review by FTA**	**Status**
Safety and Security Management Plan (SSMP)	Rev 4	Y	Under Review
Safety and Security Certification Plan (SSCP)	Rev 0		Under Review
System Safety Program Plan (SSPP)	Rev 7		Under Review
System Security Plan or Security and Emergency Preparedness Plan (SEPP)	Rev 0		SSP being revised
Construction Safety and Security Plan (CSSP)	V3 Part C of SPs		In Contract Documents

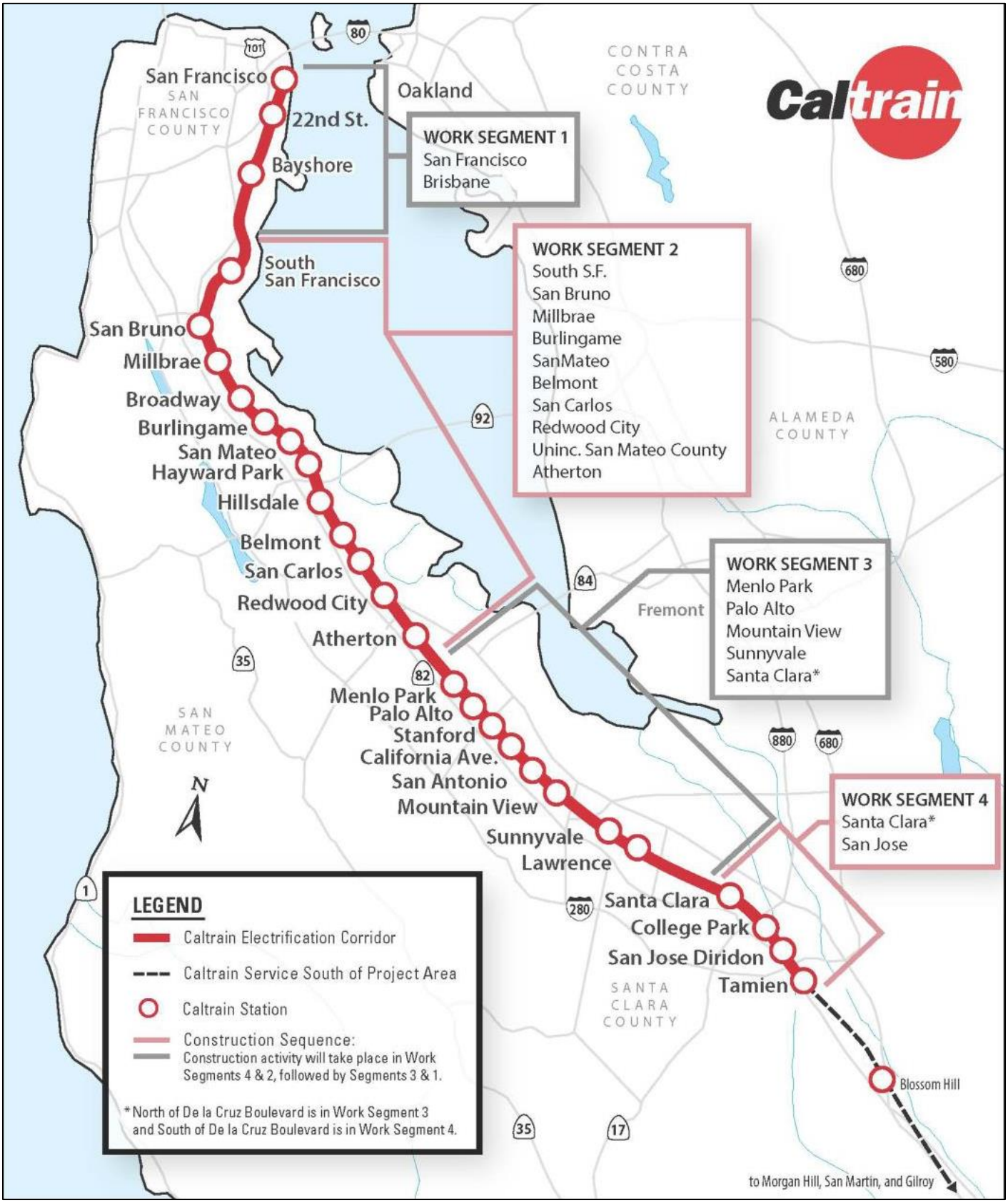
Area of Focus	**Y/N**	**Notes/Status**
Safety and Security Authority		
Is the Project Sponsor subject to 49 CFR Part 659 state safety oversight requirements?	Y	
Has the state designated an oversight agency as per 49 CFR Part 659.9?	Y	California Public Utilities Commission is SSOA
Has the oversight agency reviewed and approved the Project Sponsor's Security Plan or SSPP as per 49 CFR Part 659.17?	TBD	Not known at this time
Did the oversight agency participate in the last Quarterly Program Review Meeting?	*N*	*QPRM No. 6 held March 8, 2018*
Has the Project Sponsor submitted its safety certification plan to the oversight agency?	TBD	SSCP submitted Rev. 0 which is currently under review.
Has the Project Sponsor implemented security directives issued by the Department of Homeland Security and/or Transportation Security Administration?	Y	No directives have been received at this time; Transit Police is the liaison between DHS and Caltrain.
SSMP Monitoring		
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y	
Does the Project Sponsor review the SSMP and related project plans to determine if updates are necessary?	Y	
Does the Project Sponsor implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify.	Y	In the SSMP and Section 11.0 of the PMP.
Does the Project Sponsor maintain a regularly scheduled report on the status of safety and security activities?	Y	Safety & Security activities are reported in the monthly PCEP report.
Has the Project Sponsor established staffing requirements, procedures and authority for safety and security activities throughout all project phases?	Y	Section 3.0 of SSMP

Area of Focus	Y/N	Notes/Status
Does the Project Sponsor update the safety and security responsibility matrix/organizational chart as necessary?	Y	
Has the Project Sponsor allocated sufficient resources to oversee or carry out safety and security activities?	Y	
Has the Project Sponsor developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases?	Y	PHA Rev. 1, APR 16
Does the Project Sponsor implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?	Y	Yes, in Safety and Certification Committee meetings which started in December 2016 on a project level and through our "Capital Safety Committee" which meets monthly. IndustrySafe is also being used to track safety activities.
Does the Project Sponsor monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	Y	Yes, through the Safety & Security Certification Committee and the Fire/Life Safety Committee which are ongoing committees throughout the life of the project.
Does the Project Sponsor ensure the conduct of preliminary hazard and vulnerability analyses? Please specify the analyses conducted.	Y	PHA Rev. 1 APR 16, Under review. TVA Rev. 1 APR 16, Under review. OHA is currently being developed.
Has the Project Sponsor ensured the development of safety design criteria?	Y	
Has the Project Sponsor ensured the development of security design criteria?	Y	
Has the Project Sponsor ensured conformance with safety and security requirements in design?	Y	Design Criteria checklists are currently being developed and reviewed by the Safety & Security Certification Review Committee.
Has the Project Sponsor verified conformance with safety and security requirements in equipment and materials procurement?	Y	Through the Safety & Security Certification Process.
Has the Project Sponsor verified construction specifications conformance?	Y	*Currently only for foundation construction and OCS pole erection which is under way.*
Has the Project Sponsor identified safety and security critical tests to be performed prior to passenger operations?	Y	Addressed in SSMP as required by D/B Contractor during construction.
Has the Project Sponsor verified conformance with safety and security requirements during testing, inspection and start-up phases?	Y	Addressed in SSMP and SSCP.
Has the Project Sponsor evaluated change orders, design waivers, or test variances for potential hazards and/or vulnerabilities?	Y	Through the Change Management Board.
Has the Project Sponsor ensured the performance of safety and security analyses for proposed work-arounds?	Y	This is included in the Rail Activation Committee scope during testing/startup activities. BBII's Safety & Security Certification flow chart identifies the process.

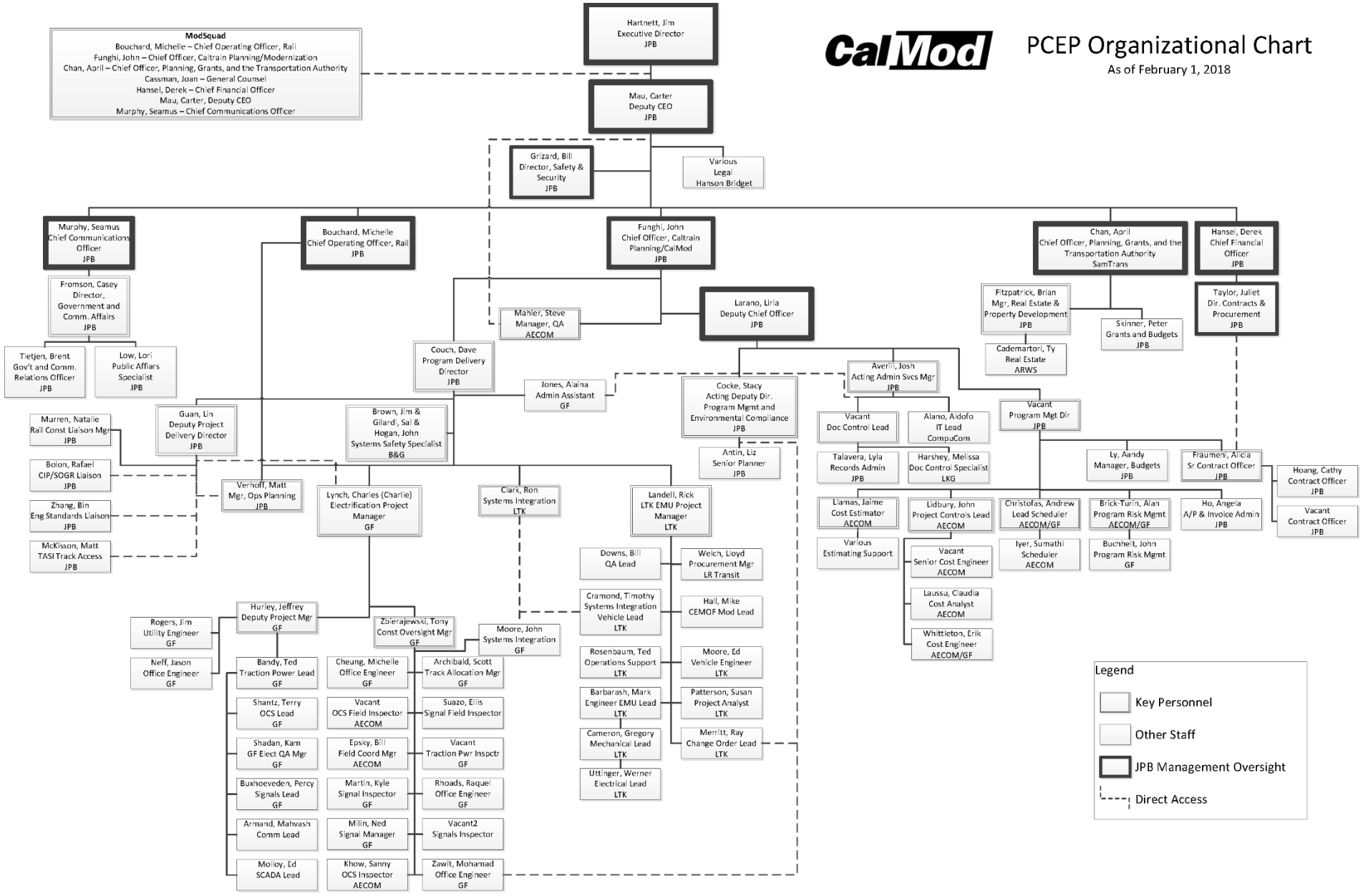
Area of Focus	Y/N	Notes/Status
Has the Project Sponsor demonstrated through meetings or other methods the integration of safety and security in the following: • Activation Plan and Procedures • Integrated Test Plan and Procedures • Operations and Maintenance Plan • Emergency Operations Plan	 Y Y N N	 Activation plan currently being developed. Integrated Test Plan & Procedures developed.
Has the Project Sponsor issued final safety and security certification?	N	Project is in construction. Final Completion Date is 8-22-2022.
Has the Project Sponsor issued the final safety and security verification report?	N	Project is in construction. Final Completion Date is 8-22-2022.
Construction Safety		
Does the Project Sponsor have a documented/implemented Contractor Safety Program with which it expects to comply?	Y	The Design/Build contractors "Construction Safety Program" and "Health and Safety Plan" have been accepted.
Does the Project Sponsor's contractor(s) have a documented company-wide safety and security program plan?	Y	System Safety Plan submitted and Approved 2/1/2017
Does the Project Sponsor's contractor(s) have a site-specific safety and security program plan?	Y	Rev. 2 submitted and Approved 12/9/2016
How do the Project Sponsor's OSHA statistics compare to the national average for the same type of work?		*The Design Build contractor's reported OSHA statistics for the project showed a Total Recordable Incident Rate of 1.51 through October 2017compared to the most recent (2016) BLS rate of 2.8 for Heavy and Civil Engineering construction.*
If the comparison is not favorable, what actions are being taken by the Project Sponsor to improve its safety record?		NA
Federal Railroad Administration		
If shared track: has the Project Sponsor submitted its waiver request application to FRA? (Please identify specific regulations for which waivers are being requested.)	Y	Waivers approved 1/13/2016 for 49 CFR: 49 CFR 238.203, Static end strength; 238.205, Anti- climbing mechanism; and 238.207, link between coupling mechanism and car body.
If shared corridor: has the Project Sponsor specified specific measures to address safety concerns?	Y	In Caltrain/TA Services/UP Passenger Train Emergency Preparedness Plan and Caltrain System Safety Program Plan
Is the Collision Hazard Analysis underway?	*Y*	*Car body testing and Collision Analysis is Underway.*
Other FRA required Hazard Analysis – Fencing, etc.?	TBD	This is an operating ROW and no service change is expected.
Does the project have Quiet Zones?	TBD	This is an operating ROW and no service change is expected.
Does FRA attend the Quarterly Review Meetings?	*N*	*FRA attended QPRM No. 6 on March 8, 2018.*

Appendix C: Project Map

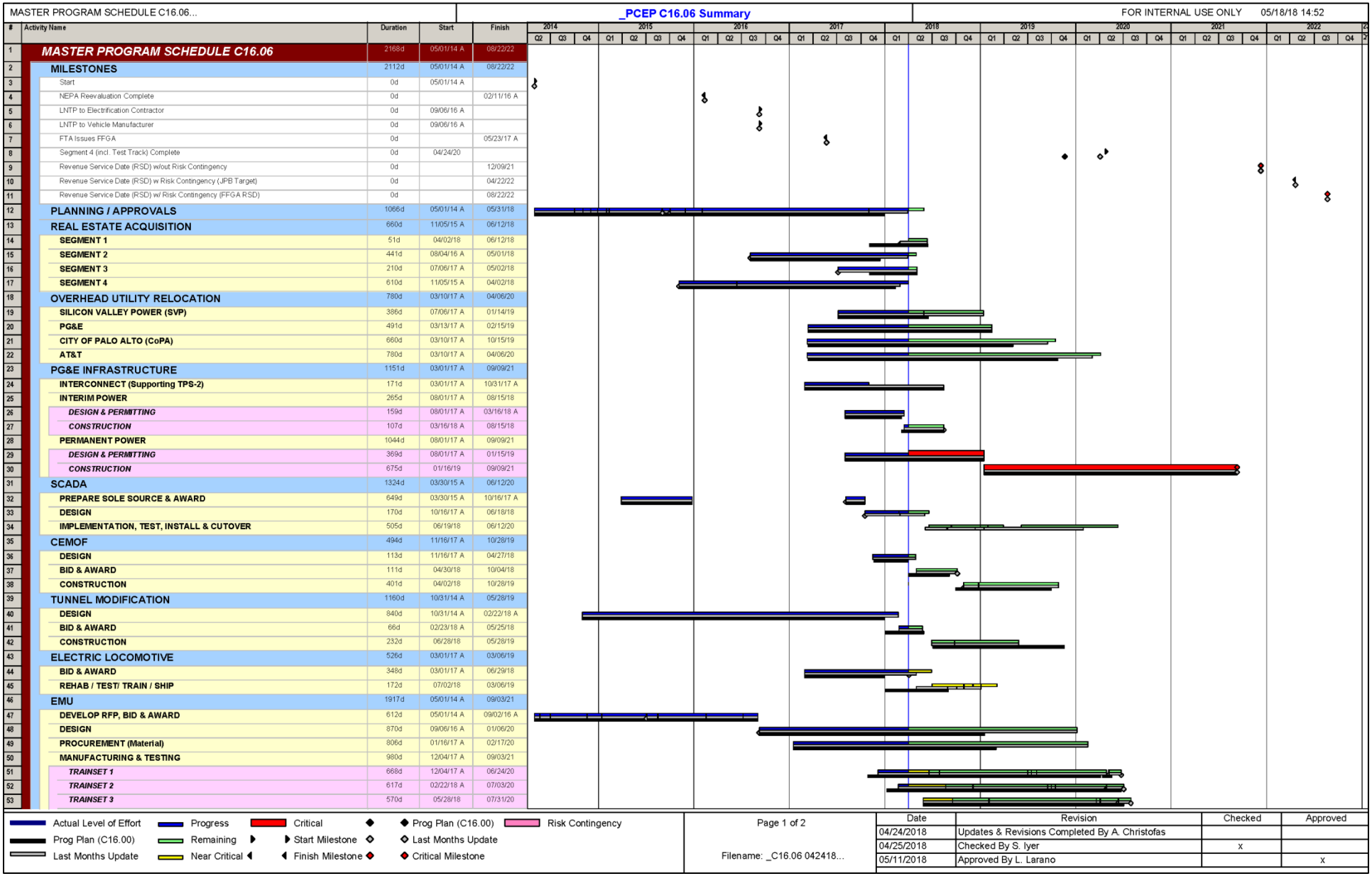
Figure 1
Peninsula Corridor Electrification Project Map

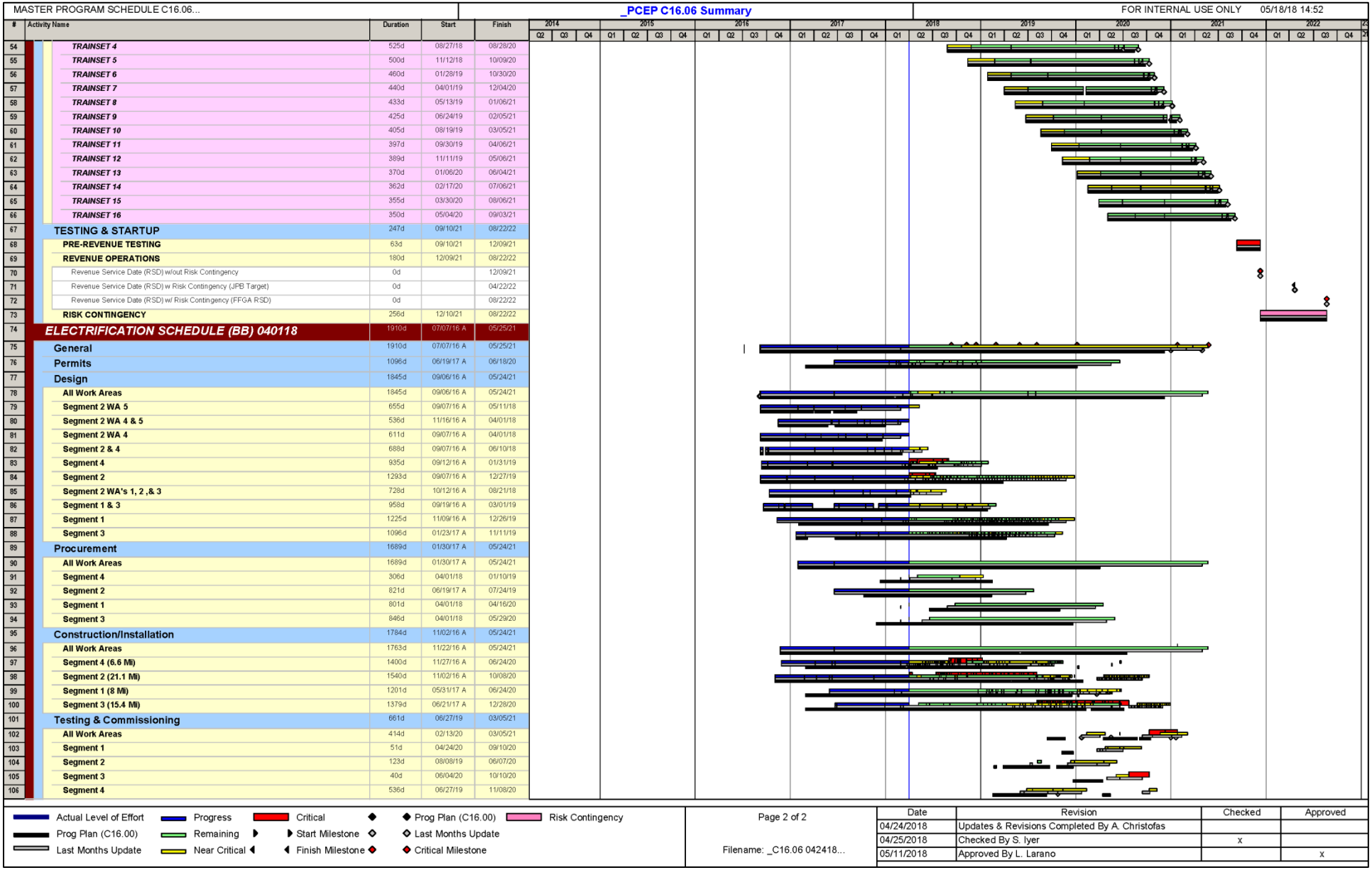


Appendix D: PCEP Organization Chart



Appendix E: Summary Project Schedule

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55 TRAINSET 5 500d 11/12/18 10/09/20
56 TRAINSET 6 460d 01/28/19 10/30/20
57 TRAINSET 7 440d 04/01/19 12/04/20
58 TRAINSET 8 433d 05/13/19 01/06/21
59 TRAINSET 9 425d 06/24/19 02/05/21
60 TRAINSET 10 405d 08/19/19 03/05/21
61 TRAINSET 11 397d 09/30/19 04/06/21
62 TRAINSET 12 389d 11/11/19 05/06/21
63 TRAINSET 13 370d 01/08/20 06/04/21
64 TRAINSET 14 362d 02/17/20 07/06/21
65 TRAINSET 15 355d 03/30/20 08/06/21
66 TRAINSET 16 350d 05/04/20 09/03/21
67 TESTING & STARTUP 247d 09/10/21 08/22/22
68 PRE-REVENUE TESTING 63d 09/10/21 12/09/21
69 REVENUE OPERATIONS 180d 12/09/21 08/22/22
70 Revenue Service Date (RSD) w/out Risk Contingency 0d 12/09/21
71 Revenue Service Date (RSD) w Risk Contingency (JPB Target) 0d 04/22/22
72 Revenue Service Date (RSD) w/ Risk Contingency (FFGA RSD) 0d 08/22/22
73 RISK CONTINGENCY 256d 12/10/21 08/22/22
74 ELECTRIFICATION SCHEDULE (BB) 040118 1910d 07/07/16 A 05/25/21
75 General 1910d 07/07/16 A 05/25/21
76 Permits 1096d 06/19/17 A 06/18/20
77 Design 1845d 09/06/16 A 05/24/21
78 All Work Areas 1845d 09/06/16 A 05/24/21
79 Segment 2 WA 5 655d 09/07/16 A 05/11/18
80 Segment 2 WA 4 & 5 536d 11/16/16 A 04/01/18
81 Segment 2 WA 4 611d 09/07/16 A 04/01/18
82 Segment 2 & 4 688d 09/07/16 A 06/10/18
83 Segment 4 935d 09/12/16 A 01/31/19
84 Segment 2 1293d 09/07/16 A 12/27/19
85 Segment 2 WA's 1, 2 ,& 3 728d 10/12/16 A 08/21/18
86 Segment 1 & 3 958d 09/19/16 A 03/01/19
87 Segment 1 1225d 11/09/16 A 12/26/19
88 Segment 3 1096d 01/23/17 A 11/11/19
89 Procurement 1689d 01/30/17 A 05/24/21
90 All Work Areas 1689d 01/30/17 A 05/24/21
91 Segment 4 306d 04/01/18 01/10/19
92 Segment 2 821d 06/19/17 A 07/24/19
93 Segment 1 801d 04/01/18 04/16/20
94 Segment 3 846d 04/01/18 05/29/20
95 Construction/Installation 1784d 11/02/16 A 05/24/21
96 All Work Areas 1763d 11/22/16 A 05/24/21
97 Segment 4 (6.6 Mi) 1400d 11/27/16 A 06/24/20
98 Segment 2 (21.1 Mi) 1540d 11/02/16 A 10/08/20
99 Segment 1 (8 Mi) 1201d 05/31/17 A 06/24/20
100 Segment 3 (15.4 Mi) 1379d 06/21/17 A 12/28/20
101 Testing & Commissioning 661d 06/27/19 03/05/21
102 All Work Areas 414d 02/13/20 03/05/21
103 Segment 1 51d 04/24/20 09/10/20
104 Segment 2 123d 08/08/19 06/07/20
105 Segment 3 40d 06/04/20 10/10/20
106 Segment 4 536d 06/27/19 11/08/20
2014 2015 2016 2017 2018 2019 2020 2021 2022
Q2 Q3 Q4 Q1 Q2 Q3 Q4
Actual Level of Effort
Prog Plan (C16.00)
Last Months Update
Progress
Remaining
Near Critical
Critical
Start Milestone
Finish Milestone
Prog Plan (C16.00)
Last Months Update
Critical Milestone
Risk Contingency
Page 2 of 2
Filename: _C16.06 042418...
Date Revision Checked Approved
04/24/2018 Updates & Revisions Completed By A. Christofas
04/25/2018 Checked By S. Iyer x
05/11/2018 Approved By L. Larano x

Appendix F: Top Project Risks

Program Risk Register

Version Date: May 11, 2018 - All Risks

	1	2	3	4	5
	LOW	MEDIUM	HIGH	VERY HIGH	SIGNIFICANT
Probability	< 10%	10% - 50%	50% - 75%	75% - 90%	> 90%
Cost	< $500 K	$500 K - $2 M	$2 M - $10 M	$10 M - $20 M	$20 M - $60 M
Schedule	< 1 Month	1 - 3 Months	3 - 6 Months	6 - 12 Months	> 12 Months

ID	RBS FUNC. (P)	RBS FUNC. (S)	RISK DESCRIPTION	EFFECT(S)	TYPE	IMPACT PROBABILITY	IMPACT COST	IMPACT SCHEDULE	PRIORITY GRADING	OWNER	MITIGATION ACTIONS	RETIREMENT DATE(S)	NOTES	A - C	STATUS & REMARK(S)
67	Elect.	Stakeholder-Ext	Relocation of overhead utilities must precede installation of catenary wire and connections to TPSs. Relocation work will be performed by others and may not be completed to meet BBII's construction schedule.	Delay in progress of catenary installation resulting in claims and schedule delay.	T	2	2	2	16	Hurley	1. Complete comprehensive survey of potential conflicts and develop standard mitigation agreement with utility owners; Completed 2. Incorporate results as an Appendix in the RFP. - Completed 3. Encase utilities in overhead bridges - will not encase any new utilities into bridges. 4. Exercise Franchise rights 5. Engage a utility coordinator - Completed 6. Conduct utility coordination meetings. - ongoing 7. Perform Light Detection and Ranging (LIDAR) surveys to locate heights of overhead utilities. Completed.	Upon completion of relocation all overhead utilities per CPUC's approved Caltrain Electrification Rules.	There is no program utility schedule yet. So the date shows the start of the last stringing of wire. Current Utility Relocation schedules provided by PG&E, Palo Alto and Silicon Valley Power will delay the contractor. Based on the current utility schedules (Assumed NTP of 09/01) utilities will not be out of the way to facilitate the contractor's current schedule to install the feeder wire and OCS poles in certain locations. To mitigate delay and potential claims from the contractor, mitigation actions have been advanced.	A	Attached is the status for segment 4. All crossings have been scheduled except three and I need to backcheck my records to make sure that I don't already have the schedule dates for these three. Location 122 does not exist. 124 is a 115kV circuit that is already high enough and does not have to be raised. Location 120 was placed underground by PG&E on 8-27-2015. Segment 2 should follow shortly. - J. Rogers 5/4/2016
101	Elect.	Stakeholder-Ext	PG&E may not be able to deliver permanent power for the project within the existing budget and in accordance with the project schedule	Additional project costs; potential delay to revenue service date	T	4	5	3	32	Guan	1. CalMod team has developed initial scope of work for a PG&E power study to determine if existing infra-structure can support a load and if infra-structure upgrades will be needed. - Done 2. Infra-structure requires an upgrade to meet demand. Caltrain will build the connection, which will then be owned by PG&E. 3. Infra-structure upgrade is needed PG&E recommendations need to conform to Caltrain approval. 4. PG&E will require sub-station improvements. The extent is yet to be determined. 5. The scope has been confirmed through final design. Costs will be shared by PG&E and Caltrain. 6. PG&E and Caltrain are collaborating on design and cost-sharing. A third party has been engaged to assist with negotiations for cost-sharing.	Start of Integrated testing	Project budget for PG&E improvements is approximately $60 million). PG&E currently estimates $100 to $200 million in costs (which includes a high contingency and does not include the new cost sharing components). Risk description and grading revised per consultation with Z. Guan and A. Christofas 12/22/2017.	A	Delegation of Authority of $62M for Supplement No.4 was approved at the February 2015 Board Meeting. Staff is continuing in negotiations with PG&E on the terms of the agreement, including cost allocation and cost reimbursement. PG&E and JPB have discussed an approach to proceed with the agreement and leave the cost allocation for the regulatory bodies, such as FERC, to determine. The agreement is now targeted for completion in May. - L. Guan 4/20/2016
242	Elect.	Construction	JPB's ability to deliver work windows to contractor as dictated per contract	Delays to construction schedule and associated delay claims.	T	5	3	3	30	Zbierajewski	We established a schedule for work windows that will accommodate the DB contractor. We are confident that the windows can be met and that no further mitigation steps are anticipated. There are no issues with manpower for operations. Manpower planning for TASI support is almost wrapped up	Completion of Construction	Added to Risk Register per Risk Refresh - 7/12/2017 Although I feel confident that we can support the work windows with our next timetable, I am waiting on the simulation results from LTK. Once I have the output reports, I can officially state that it can be supported. I am hoping to have this answer by COB on Monday August 29th. - M. Yarhoff 8/17/2016 For 242 we have used the agreed work windows in the DB contract. Any modification to those would result in a change order. I do no see a reason to use anything about a simulation as the status. - D. Couch - 20160815 Reassign to Tony Z. per D. Couch 12/1/2017		We are continuing to work with operations to improve our work windows It's an ongoing process - Tony Zbierajewski 4/16/2018
262	R	Interface	Construction	Collaboration across multiple disciplines to develop a customized rail activation program may fail to comprehensively address the full scope of issues required to operate and maintain an electrified railroad and decommission the current diesel fleet.	Delay in testing of EMUs. Delay in Revenue Service Date. Additional costs for Stadler and BBII due to overall schedule delays.	T	2	2	2	16	Burns	1. Develop a schedule of activities associated with rail activation. 2. Assign a rail activation committee. 3. Conduct/delegate activities on rail activation plan/schedule. 4. Maintain progress tracking on all activities. 5. Rail activation committee to meet every 2 weeks initially; more frequently in the future. 6. Develop rail activation document (R. Clark). Using Houston plan as a model.	Prior to arrival of first EMU.		There are no updates to 262. Last Rail Activation Committee meeting was cancelled. We will have a committee meeting on Wednesday and any updates from it I will forward Need O&M manuals fro Stadler equipment. Public outreach - everyting on hold. - D. Burns - 4/20/2018
276	R	Elect.	Construction	BBII may be unable to get permits required by jurisdictions for construction in a timely manner.	Additional cost and time resulting from delays to construction	T	2	2	2	16	DB/CM		Completion of Construction		Added per Risk Refresh - 9/19/2017
279	R	Elect.	Construction	BBII may be unable to develop grade crossing modifications that meet regulatory requirements prior to scheduled testing and commissioning of the system.	Crossing operations will not be acceptable to CPUC and FRA and therefore delay commissioning.	T	5	4	5	45	DB/Signals	Perform R&D under Allowance item 1.d.1 item # 10. URRR equip short line operator. Put in grade separation. Design multiple crossing solutions; phase in unproven crossing solutions	0-Jan-00		Risk #156 retired and combined into Risk #279 per Risk Assessment Committee - 10/10/2017
281	R	Elect.	Construction	Additional work in the form of signal/pole adjustments may be required to remedy sight distance impediments arising from modifications to original design.	Add repeater signals, design duct bank; would result in increased design and construction costs.	T	5	2	2	20	DB/Signals	Continue line of sight studies, move poles where possible.	Completion of Segment 4		Added per Risk Refresh - 9/19/2017
287	R	Elect.	Construction	Design changes may necessitate additional implementation of environmental mitigations not previously budgeted.	Increased cost for environmental measures and delays to construct and overall delay in construction schedule	T	5	2	2	20	DB/ENV	Reevaluate ESZ limits	Completion of Design		Added per Risk Refresh - 9/19/2017

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Program Risk Register

Version Date: May 11, 2018 - All Risks

	1	2	3	4	5
	LOW	MEDIUM	HIGH	VERY HIGH	SIGNIFICANT
Probability	< 10%	10% - 20%	20% - 70%	70% - 90%	> 90%
Cost	< $500 K	$500 K - $2 M	$2 M - $10 M	$10 M - $20 M	$20 M - $80 M
Schedule	< 1 Month	1 - 3 Months	3 - 6 Months	6 - 12 Months	> 12 Months

ID	RBS		RISK DESCRIPTION	EFFECT(S)	TYPE	IMPACT			PRIORITY	OWNER	MITIGATION ACTIONS	RETIREMENT DATE(S)	NOTES	A-C	STATUS & REMARK(S)
	FUNC. (P)	FUNC. (S)				PROBABILITY	COST	SCHEDULE	GRADING						
304	R	Elect.	Stadler-Est	UP does not accept catenary pole offsets from centerline of track necessitating further negotiation or relocation of poles	Delay to construction and additional costs for redesign and ROW acquisition.	T	3	3	3	L5	Gauth	1- Executive level communications between Caltrain and UPRR 2 - Project Delivery communications with UPRR 3= Communications between Electrification consultant and UPRR	Approval of all EID designs	Working with UPRR legal staff to resolve open contract and legal issues. Project Delivery director and Electrification calls and email communication.		UPRR horizontal distance resolved. New issue with vertical clearance identified by UPRR to be resolved at executive level - D. Gauth 4/23/2018
307	R	Elect.	Construction	Cost and schedule of Stadler contract could increase as a result of this change in PTC system Delay of PTC may delay acceptance of EMUs.	1) Full integrated testing between EMU and wayside cannot be conducted without PTC in place. 2) Delay in EMU final design for PTC and potential RFE interfaces. Need to finalize braking system sequence priority.	T	3	3	4	L5	Landell	1. Stadler to work through interfaces and operations of train onboard and what comes from Wabtec; requires negotiation with Stadler as to what is included in current contract;	conditional Acceptance of first trainset	Risk divided into JPB risk and D/B risk per Risk Assessment committee - 2/27/2018		Wabtec slow to respond to Stadler's inquiries. No significant progress to date. - R. Landell 04/23/2018
308	R	Elect.	Construction	Cost and schedule of BBII contract could increase as a result of this change in PTC system	Balfour contract; changes in datafiles could affect what Balfour provides, could delay timing for testing, could change tracks that RFA had to review Delay in testing and increased costs	T	3	3	3	L5	Lynch	1) Full integrated testing between EMU and wayside cannot be conducted without PTC in place. 2) Delays to completion of signal system could result in conflicts with PTC testing and FCEF construction and integrated testing 3) Potential for claims for D/B contractor.	completion of integrated testing	Risk divided into JPB risk and D/B risk per Risk Assessment Committee - 2/27/2018		We are having regular bi-weekly meetings with the PTC project to get up to speed on the changes from bringing WABTEC on board. The PTC project will begin testing this summer and the goal is to get a Ravenna Srvine Demonstration section of about 10 miles in Segment 3 in service. We are coordinating to minimize impacts to FCEF. We plan on scheduling a meeting with BBII and PTC so that BBII can understand what they are doing. We are meeting internally first. - C. Lynch 3/26/2018

Appendix G: PMOC Team

The report was prepared by the Task Order Manager, **Mike Eidlin**, J.D. (KKCS) who has more than 40 years of complex project management experience including over 26 years in transit. Mr. Eidlin possesses a B.S. degree, a graduate Degree of Engineer, and a Juris Doctor degree. He is a licensed attorney in the State of Oregon. He has been working as a PMOC for 14 years.

Brett L. Rekola, **P.E. (KKCS)**, contributed to the preparation of the report and provided the Quality Assurance of the report. Mr. Rekola is the Program Manager for KKCS' FTA PMOC prime contract. He is a California professional civil engineer with more than thirty (30) years of experience managing railroad maintenance, planning, and design, construction, and rail operations. He has served as a program manager delivering port/rail/public works projects and programs.

The administrative Quality Control review of this report was done by **Janice Johnson, (KKCS)**, who also serves as the Contracts & Terms Manager. Ms. Johnson has a background in English Studies and over twenty (20) years of experience providing quality review checks of PMOC work products.