Project Monitoring Report (PMR)
June 2024

Peninsula Corridor Electrification Project (PCEP)
San Francisco to San Jose, CA

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

Draft Submitted: July 25, 2024
Final Submitted: August 9, 2024

PMOC Contract Number: 69319519D000019
Task Order Number: 69319523F30077N

OPs Referenced: 01 - Administrative Conditions and Requirements
25 - Recurring Oversight and Related Reports

PMOC Firm: **Kal Krishnan Consulting Services, Inc. (KKCS)**
2101 E. El Segundo Blvd., Suite 302
El Segundo, CA 90245

PMOC Lead: Michael B. Eidlin
Length of Time Firm Assigned to Project: 9 Years, 1 Months
Length of Time Person Assigned to Project: 9 Years, 1 Months

Table of Contents

1.0 Executive Summary 3

1.1 Project Description 3
1.2 Project Status 3
1.3 Major Issues and/or Concerns 5
1.4 Status of Key Indicators Dashboard 5
1.5 Core Accountability Items through May 31, 2024 6
Grant Information 7

2.0 PMOC Observations and Findings 7

2.1 Summary of Monitoring Activities 7
2.2 Oversight Triggers 8
2.3 Project Management Plan (PMP) and Sub-Plans 8
2.4 Management Capacity and Capability 9
2.5 NEPA Process and Environmental Mitigation 9
2.6 Project Delivery Method and Procurement 9
Consultant Contracts 9
Electrification Design-Build Contract 10
Supervisory Control and Data Acquisition (SCADA) Equipment 10
Tunnel Notching, OCS Installation, and Drainage Improvements 10
Used Electrified Locomotives 10
CEMOF Modifications 11
PG&E Interconnection Construction 11
Current Procurements 11
2.7 Design 11
2.8 Value Engineering and Constructability Reviews 11
2.9 Real Estate Acquisition and Relocation 12
Real Estate Activities 12
2.10 Third-Party Agreements and Utilities 12
Jurisdictional Agreements for Construction and Maintenance 12
Jurisdictional Agreements for Exercise of Eminent Domain Powers 12
Utility Relocation Agreements 12
Pacific Gas & Electric (PG&E) 13
California Public Utilities Commission (CPUC) 13
Union Pacific Railroad (UPRR) 13
California High Speed Rail Authority (CHSRA) 13
Federal Railroad Administration (FRA) 14
2.11 Construction 14
Supervisory Control and Data Acquisition (SCADA) 15
Concurrent Non-Project Activities: 15
2.12 Vehicle Technology and Procurement 15
2.13 Project Cost 16
Cost Contingency Status 18
Contingency Management – Electrification 18
Change Orders 20

2.14 Project Schedule 20
Infrastructure Schedule 20
EMU Schedule 21
Recent Significant Schedule Changes 23
Completion of Final System Testing 23
Critical Path 23
Schedule Contingency Status 24
2.15 Project Risk 25
FTA Risk Refresh 25
Current Risk Activities 25
2.16 Quality Assurance / Quality Control (QA/QC) 26
2.17 Safety and Security 27
2.18 Americans with Disabilities Act (ADA) 28
2.19 Buy America 29
2.20 Start-Up, Commissioning, Testing 29
Electrification Contract (OCS, Traction Power, Signals and Communications) 29
EMU Contract 30
SCADA Contract 30
Readiness for Electrified Rail Operations 30
2.21 Before-and-After Study Reporting 31
2.22 Lessons Learned 31
Attachment A List of Acronyms A-1
Attachment B Safety and Security Checklist B-1
Attachment C Action Items C-1
Attachment D *Top Project Risks (June 2024)* D-1
Attachment E Awarded Contracts E-1
Attachment F Rolling Stock Vehicle Status Report F-1
Attachment G Project Milestones / Key Events G-1
Attachment H Roadmap to Electrified Rail Service H-1
Attachment I Project Map I-1
Attachment J PCEP Executive Team Organization J-1
Attachment K PMOC Team K-1

1.0 Executive Summary

Kal Krishnan Consulting Services, Inc. (KKCS) is the Federal Transit Administration's (FTA) Project Management Oversight Contractor (PMOC) for the Peninsula Corridor Electrification Project (PCEP). The Peninsula Corridor Joint Powers Board (JPB) is the grantee which operates commuter rail service as Caltrain. The FTA awarded a $647 million Full Funding Grant Agreement (FFGA) to the JPB on May 23, 2017. The FTA accepted the JPB's Recovery Plan, with an updated Required Completion Date (RCD) of December 31, 2024, and a revised budget of $2,393,109,098 on November 28, 2023.

1.1 Project Description

The PCEP corridor is approximately 51 miles in length. This Core Capacity Improvement Project (CC) includes two (2) components: infrastructure and rolling stock. The infrastructure component is comprised of the construction of Traction Power Substations (TPSS), the connection of those substations to the local utility system, and the installation of 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 have been enlarged to accommodate the expanded clearance envelope of the electrified vehicles. An alignment map is provided as information in Attachment I.

The rolling stock component includes the procurement of ninety-six (96) Electric Multiple Unit (EMU) rail vehicles to replace approximately 75% of Caltrain's existing diesel rolling stock. The initial EMU order was supplemented in December 2018 when the JPB exercised an option to purchase an additional thirty-seven (37) EMUs; the resulting electrified fleet will consist of nineteen (19) seven-car trainsets. The additional thirty-seven (37) EMUs are not part of the JPB's Core Capacity grant. Caltrain's Central Equipment Maintenance and Operation Facility (CEMOF) is being 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 separately installed a Positive Train Control (PTC) system, which is an advanced signal system that includes federally mandated safety improvements. The PTC system is in operation and received final Federal Railroad Administration (FRA) approval on December 17, 2020.

1.2 Project Status

The FTA, based on the results of a December 2020 Risk Refresh effort, designated the PCEP an "At-Risk" project in a letter dated June 30, 2021. The FTA took this action because the PCEP has experienced significant cost overruns and schedule delays. The FTA requested that the JPB submit a Project Recovery Plan for the PCEP. The plan was originally due by October 8, 2021; however, the FTA agreed to defer receipt of the plan until the JPB completed a planned Risk Refresh and other project reviews following a change in the PCEP's leadership in September 2021. The JPB submitted its Recovery Plan to the FTA on April 1, 2022. The FTA and the PMOC have reviewed the draft Recovery Plan and provided comments to the JPB. The JPB submitted its final Recovery Plan to the FTA on September 30, 2022. The FTA informed the JPB by letter dated November 28, 2023, that it "finds the Recovery Plan with the proposed RCD of December 31, 2024, and the proposed budget of $2.393 billion, sufficient to advance the PCEP to completion."

The JPB's Board approved an increased budget totaling $2.44 billion for the PCEP at a Special Board Meeting held on December 6, 2021. The increased budget is based on the successful negotiation in late 2021 of a global settlement with Balfour Beatty Infrastructure, Inc. (BBII), the electrification

design-build (D-B) contractor, and a contemporaneous scrub of the PCEP budget. The increased budget supports the completion of the project and delivery of electrified service in 2024.

BBII, the JPB's design-build contractor, has achieved substantial completion of its Electrification Design-Build contract. The majority of BBII's efforts are now focused on punch list corrections, remaining testing and commissioning activities, including documentation, and completing the small amount of remaining construction. The status of major project elements can be summarized as follows:

- Scope – The scope remains as planned.
- Schedule – The JPB is implementing a plan proposed by BBII which was intended to reach substantial completion of the contract by the end of the calendar year 2023. This plan required significant targeted (localized) changes to Caltrain's operating schedule on weekends, with support by bus bridges, to provide BBII with longer uninterrupted periods of access to the corridor. BBII was not successful in achieving substantial completion by December 31, 2023, and had refocused its effort on achieving its contractual milestone of April 1, 2024, for substantial completion. Unfortunately, the peninsula south of San Francisco was hit by a severe storm on February 3-4, 2024, with significant damage to the PCEP OCS infrastructure in two (2) locations, which has now been repaired. Despite the storm damage and associated delays, BBII was able to achieve substantial completion on May 3, 2024, later than its previous target date of April 30, 2024. *BBII's most recent schedule update shows a Final Acceptance date of September 6, 2024, which is two (2) days earlier than the contractual Final Acceptance date of September 8, 2024.* The JPB is planning an incremental soft launch of revenue service in early August 2023. The JPB's FFGA Required Completion Date of December 31, 2024, remains unchanged.
- Cost – The FFGA budget is $1.931 billion in year of expenditure (YOE) dollars. The JPB completed a "budget scrub" following its global settlement with BBII, which produced a revised PCEP budget of $2.44 billion. The JPB approved this revised budget at its Special Meeting on December 6, 2021. This new budget reflects a total increase of $509 million from the FFGA budget. The JPB received $410 million in additional funding from state and federal sources; this satisfies the funding gap created by the revised budget of $2.393 billion. The JPB's revised budget, for FTA reporting purposes (excluding pre-Project Development costs), is $2,393,109,098. JPB reports that as of May 31, 2024, the forecasted remaining contingency is $34.5 million out of the $90 million total established in the scrubbed budget approved by the Board in December 2021. The JPB expects further reductions in total contingency as the project moves toward completion.
- Significant Project Activities and/or Key Milestones
    - *BBII's achieved substantial completion on May 3, 2024; contractual Final Acceptance is scheduled for September 8, 2024.*
    - *BBII completed Power Simulation Testing and Dry Service Runs with 8 EMUs on June 8-9, 2024.*
    - *A total of twelve (12) EMUs have been delivered to Caltrain. The next delivery of EMUs is planned for August 2024. Eight (8) of the EMU trainsets have accumulated the required 1,000 miles of burn-in mileage and the ninth (9th) trainset is now in the burn-in process.* Installation of the on-board Wi-Fi equipment is underway both in Salt Lake City and on the trainsets already received at Caltrain.
    - *The JPB completed FRA required EMU PTC Testing and additional brake testing.*

- One (1) of the EMU trainsets suffered damage to two (2) of the coaches during a repositioning move at the CEMOF in February 2024. *The coaches were shipped back to Stadler's assembly plant in Salt Lake City for examination. The coaches will require significant structural repairs which are not expected to be complete until early 2025. The JPB and Stadler continue discussions regarding accelerating the completion of trainset seventeen (17) so that fourteen (14) trainsets plus two (2) spares are available for revenue service.*
- *The JPB now plans its "soft launch" of revenue service on August 11, 2024, preceded by a single special train on August 10, 2024. The soft launch consists of replacing two (2) diesel hauled trains in the normal operating schedule with two (2) EMUs on a weekly basis until full electrified revenue service between San Francisco and San Jose is achieved with the full complement of fourteen (14) trainsets on September 21, 2024.*

1.3 Major Issues and/or Concerns

None at this time.

1.4 Status of Key Indicators Dashboard

KEY INDICATORS DASHBOARD (POST-GRANT STATUS)					
Project Sponsor:				Peninsula Corridor Joint Powers Board (JPB)	
Project Name:				Peninsula Corridor Electrification Project (PCEP)	
Date:				May 31, 2024	
Project Detail					
Oversight Frequency:				Monthly	
Element	Status			Prior Status (G/Y/R)	Issue or Concern
	G	Y	R		
PMP	●			●	The PMP, when combined with the Rail Activation Plan (RAP) and Close-out Plan, adequately addresses the requirements for testing and commissioning and close-out of the PCEP.
MCC	●			●	The JPB is retaining staff and using additional resources to address specific requirements leading to project completion.
Cost	●			●	The JPB reports that the forecasted remaining contingency is $35.4 million out of the $90 million in the scrubbed budget.
Schedule	●			●	BBII achieved substantial completion on May 3, 2024, and is now working toward a Final Acceptance date of September 8, 2024, for the BBII contract. *The JPB plans a soft opening of electrified revenue service with a single VIP train on Saturday, August 10, 2024, followed by two (2) EMUs in regular service beginning on Sunday, August 11, and adding two additional EMUs to the in-service fleet on August 17, 24, 31.* The new fall schedule goes into effect starting on September 21, 2024. Based on recent progress, the project should be completed prior to its Required Completion Date of December 31, 2024.

KEY INDICATORS DASHBOARD (POST-GRANT STATUS)					
Quality	●			●	BBII successfully completed the eight-train power contingency test on June 8-9, 2024. The JPB reports that all category A and B punch list items have been completed and the number of open Category C items has been reduced significantly. Several Design Variance Requests (DVR) and Non-Compliance Reports remain open.
Safety	●			●	There has been one (1) recordable incident in 2024; it occurred in April. BBII's Recordable Incident Rate (RIR) for 2024 is 0.60 and remains below the national average.
Risk	●			●	The number and severity of risks continues to decline.
Key Indicators Legend					
Green	Satisfactory: No Corrective Action necessary.				
Yellow	Caution: Risk/Issues exist. Corrective Action may be necessary.				
Red	Elevated for immediate Corrective Action: Significant risk to the health of the project.				

1.5 Core Accountability Items through May 31, 2024

Project Status: In Construction		Original (FFGA)	Current Forecast [1]	PMOC Assessment of Current Forecast
Cost	Cost Estimate	$1,930,670,934	$2,393,109,098	Forecast based on JPB's approved budget, adjusted to remove pre-PD costs.
Contingency	Allocated Contingency	$152,913,317	$25,776,076	Current contingency usage is being tracked closely and has been modest since the global settlement.
	Unallocated Contingency	$162,620,294	$8,734,710	
	Total Contingency	$315,533,611	$34,510,785	
Schedule	Required Completion Date	August 22, 2022	December 31, 2024	As accepted by the FTA in the JPB's Recovery Plan.

Project Progress		Amount ($)	Percent of Total
Total Expenditures [4]	Actual cost of all eligible expenditures completed to date [5]	$2,175,253,434	91.91%
Planned Value to Date [2]	Estimated value of work planned to date [3]	$1,925,397,857	80.46%
Actual Value to Date	Actual value of work completed to date [3]	$2,175,253,434	91.91%

Contracts Status		Amount ($)	Percent
Total Contracts Awarded	Value of all contracts (design, support, construction, equipment) awarded; % of total value to be awarded [6]	$2,281,372,329	96.83%
Construction Contracts Awarded	Value of construction contracts awarded; % of total construction value to be awarded [5]	$1,853,107,428	100%
Physical Construction Completed	Value of physical construction (infrastructure) completed; % of total construction value completed	$1,592,478,493	86.78%

Rolling Stock Vehicle Status	Date Awarded	No. Ordered	No. Delivered
Electric Multiple Unit (EMU) commuter rail vehicles	08/2016 (A)	133	70
Next Monthly Meeting Date:		July – TBD	
Next Quarterly Review Meeting Date:		July 16, 2024	

NOTES:

[1] "Current estimate" is based on the re-baseline budget adopted by the JPB Board in December 2021 and incorporated into the JPB's Recovery Plan and approved by the FTA in November 2023.

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

[3] "Work" is defined as all construction as well as non-construction scopes (all project costs). Excludes unbudgeted upfront cost for PG&E's share of substation improvements prior to PG&E reimbursement.

[4] "Actual Cost" is determined as follows:

Costs: Inception – January 2024	$2,265,965,004
Pre-FFGA Costs	($49,581,599)
Post-FFGA Costs	$2,216,383,405

[5] "Percentage" is calculated based on a project new estimate of $2,393,109,098

[6] "Percentage" is calculated based on Contracts as budgeted in the Re-Baseline Budget excluding remaining forecasted contingency:

Budgeted Contracts (Pre-FFGA) – Re-Baseline Budget	$2,442,690,697
Pre-FFGA Costs	($49,581,599)
Forecasted Remaining Contingency	($43,785,778)
Budgeted Contracts (Post-FFGA)	$2,349,323,320

[7] "Total construction contracts awarded to date (construction & vehicle contracts only)" includes design costs and executed change orders. Does not include Re-Baseline until executed for Contract amendment.

[8] "Percentage" is calculated based on the total of the executed contract value of construction contracts and forecasted (including Re-Baseline items) changes to the contracts:

Executed value of Construction Contracts	$1,853,107,428
Forecasted Construction Contract Changes	0
Forecast of Value of Construction Contracts	$1,853,107,428

Grant Information

Dollars in thousands reported as of March 31, 2024; this information is updated quarterly.

FAIN (Source)	Funds Committed*	Funds Disbursed	% Disbursed
Local	$1,363,521	$1,224,777	90%
Federal	$1,029,830	$958,717	93%
Total	**$2,393,351**	**$2,183,495**	**91%**

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

2.0 PMOC Observations and Findings

This progress report covers June 2024. The information contained in this report is based on the PMOC's virtual project meeting attendance, document reviews, telephone conversations, and general interaction with the project sponsor's personnel.

2.1 Summary of Monitoring Activities

The PMOC continues to monitor the PCEP on a regular basis through the activities described above and prepares routine monitoring reports on the project. The FTA designated the PCEP an at-risk project and the PMOC is monitoring the project on a monthly basis; quarterly oversight will resume once the JPB has satisfied the FTA's concerns related to the risk factors that led to the at-risk designation.

The PMOC's oversight will also address the following activities.

- The PMOC is closely following the JPB's rail activation, systems integration, and quality assurance activities.

- Continue monitoring the progress of the PCEP team as it implements the initiatives put in place by CalMod's Chief Officer (CO). An important gauge is the continued effective use of the Issue Resolution Log (IRL) and the associated "zipper" dispute resolution and elevation process to minimize Change Orders.
- The PMOC is continuing to monitor the PCEP's schedule, scheduling resources, and schedule management practices, including the team's ability to provide useful schedule documentation. The PCEP's leadership has discontinued the preparation of its integrated master schedule due to the effort required to produce it. Activities are being monitored using BBII's detailed look-ahead schedules and weekly meetings with the various contractors. PCEP has increased its scheduling effort focused on Rail Activation activities and the critical path leading to the start of revenue service. As noted earlier, BBII achieved substantial completion on May 3, 2024. BBII's next milestone is achieving final acceptance which is scheduled for September 8, 2024.
- The PMOC will continue to monitor the JPB's quality team's progress in obtaining the appropriate Buy America documentation from BBII to complete the current review.
- *The PMOC continues to meet regularly with the PCEP and the FTA in the context of its current Programmatic OP-54 Readiness for Service Review. The current efforts of the PMOC and PCEP teams are focused on assembling the remaining documents, reviewing the available documents, clarifying issues, and developing the Draft OP-54 Report.*
- *The PMOC conducted an in-person site visit on June 25 - 27, 2024, including staff interviews and field tours, as part of its programmatically funded OP-54 Readiness for Service Review.*

2.2 Oversight Triggers

The FTA, as noted in Section 1.2 above, designated the PCEP an At-Risk project because of cost overruns and schedule delays. As a result of the FTA's at-risk designation, the PCEP is now on a monthly oversight schedule until the uncertainties are resolved to the satisfaction of the FTA. The JPB, as noted above, formally adopted a revised budget for the PCEP at its meeting on December 6, 2021; the revised budget is based on project completion and the initiation of electrified rail service in 2024. The JPB submitted its final Recovery Plan to the FTA on September 30, 2022. The FTA accepted the JPB's Recovery Plan, with an updated Required Completion Date (RCD) of December 31, 2024, and a revised budget of $2,393,109,098 on November 28, 2023. The PMOC will continue to monitor and report on the JPB's progress relative to its adopted plans and schedule. *BBII's achievement of Substantial Completion on May 3, 2024, reduces overall project risk.*

2.3 Project Management Plan (PMP) and Sub-Plans

The JPB delayed updating its PMP for the testing and commissioning phase of the project, as well as its Rail Fleet Management Plan (RFMP) and Quality Management Plan (QMP) because of the change in project leadership. The JPB provided its updated PMP in June 2022 and the PMOC has completed its review of this plan. The JPB provided an updated QMP in July 2022, however, the changes to the plan were limited to updates related to the JPB's and PCEP's organizational changes and no further review was performed.

The JPB provided a copy of its updated Rail Activation Plan to the PMOC on October 19, 2023. The PMOC's initial cursory review confirms that this version includes the organization's readiness to operate an electrified railroad. The JPB's EMU consultant reports that the JPB has accepted the Rail Storage Plan. The JPB has also accepted the Interim Operating Plan, which is focused on exercising the EMUs once they begin electrified running. The JPB has accepted a plan for the retirement of Caltrain's legacy fleet of diesel hauled equipment after regular EMU service is initiated. The EMU

consultant recently updated the JPB's Rail Fleet Management Plan. The PMOC has received copies of these plans as requested.

2.4 Management Capacity and Capability

The PCEP organization continues to make minor adjustments to its staffing to respond to developments in construction and the testing and commissioning activities. A copy of the current organization chart is located in Appendix J.

- **PMOC Comment:** BBII's achievement of substantial completion is a major milestone and the JPB/PCEP team and its partners are to be congratulated. However, a significant number of Category C (not required for revenue service) punch list items remain to be completed along with the critical documentation required by its contract. Both teams appear to be focused on achieving final acceptance as soon as all conditions are satisfied.
- The PMOC observes that the JPB and PCEP leadership have augmented the testing and commissioning resources to keep pace with the contractor's activities and its own schedules. The PMOC recommends that the PCEP team continue to monitor the progress of close-out activities and provide additional resources as needed to meet schedule requirements.

2.5 NEPA Process and Environmental Mitigation

The JPB submitted a report to the State Historic Preservation Office (SHPO) on January 19, 2024, to document its pre-disturbance investigations and findings related to two (2) small areas, in accordance with its Programmatic Agreement. The JPB reports that the SHPO approved its plan, and the remaining work is in progress.

The JPB is initiating permanent traffic mitigation measures in accordance with its environmental mitigation plan. The JPB is coordinating with the City of Atherton regarding the timing of completing the mitigation at one location where current traffic projections are significantly lower than anticipated. The PCEP team met with the FTA and the PMOC on March 14, 2024, to discuss the timing and scope of the traffic mitigation measures and agreed to prepare a memorandum for the FTA describing its proposals with additional details. *The JPB has completed its meetings with the other affected jurisdictions regarding its proposed traffic mitigation measures, and as agreed, provided materials to the FTA in late May 2024, further describing its proposed approach to satisfying its Traffic Mitigation obligations. The FTA and the PCEP team met on June 25, 2024, to further discuss the issue and the FTA's response. The PCEP team will provide a copy of the proposed Memorandum of Understanding with the jurisdictions for the FTA's review.*

The JPB also continues to monitor the compliance of its construction contractors with the requirements of its FFGA and the supporting environmental documents. Annual surveys are being conducted as required. The PCEP reports that tree pruning and removal is nearing completion; the number of replacement trees is higher than expected because of minor shifts in the location of the OCS. The JPB has started planning for the final inspection of the corridor as part of its final acceptance of BBII's work.

2.6 Project Delivery Method and Procurement

The JPB completed all major procurements as of September 2019.

Consultant Contracts

The JPB awarded contracts in early 2014 for Program Management Consultant Services; EMU Vehicle Consultant Services; and Electrification Services. The JPB awarded a five-year contract to

Jacobs Project Management Company (Jacobs) of Oakland, CA in 2019 to support electrification construction, the tunnel notching contract, modifications to the CEMOF, reconstruction of the Santa Clara Drill Track, installation of mini-high block platforms, and other work, as needed. The JPB is apparently using its bench contracts to augment the PCEP staff as needed to address the demands of testing and startup.

Electrification Design-Build Contract

JPB is using the Design-Build (D-B) project delivery method for the electrification and related facilities. BBII was selected as the D-B Contractor and was provided NTP in June 2017. Primary design work is essentially complete except for some remaining low-voltage wayside power units. Design-support activities continue with respect to issues encountered during the testing and commissioning of the completed work. BBII achieved substantial completion on May 3, 2024.

Supervisory Control and Data Acquisition (SCADA) Equipment

The JPB executed a sole-source contract with Aeronautical Radio, Incorporated (ARINC), for the supply of SCADA equipment in September 2017. The SCADA contract is being managed by the Electrification consultant and installation of the SCADA equipment is being performed by BBII under the Electrification contract. The equipment, following its installation, is being used to control the traction power system including the traction power substations (TPS), wayside power cubicles (WPC), and the OCS. The JPB completed the negotiation of a $1.04 million modification of the SCADA contract to align its completion with the new project schedule. The SCADA system has been integrated with the base operating system for Caltrain Operations and Control, which is the Rail Operations Center System (ROCS). A separate control console has been established for the Power Director. The hardware has been installed in the Central Control Facility (CCF) and the backup CCF (BCCF) and testing and training activities continue.

Tunnel Notching, OCS Installation, and Drainage Improvements

A contract was awarded to ProVen Management, Inc. of Oakland, California, for Tunnel Notching and Drainage Improvements on the tunnels in Segment 1 of the PCEP corridor. The contract consists of two (2) main elements: notching of the four (4) tunnels to increase clearance for the new EMU vehicles; and drainage improvements in tunnels 1 and 4 for the benefit of Caltrain operations. The drainage improvements were performed as a Concurrent Non-Project Activity (CNPA), and the work was paid for by Caltrain. The JPB issued a Notice to Proceed to the contractor on October 6, 2018. Installation of the Overhead Contact System (OCS) in the tunnel bores was later added by Change Order. Inspection of the OCS in the tunnel bores has been completed and the contractor has demobilized. The JPB has negotiated a settlement with ProVen that covers both the Tunnel Notching and CEMOF Modifications contracts. Close-out of both ProVen contracts is in progress.

Final testing of the OCS in the tunnel has been accomplished as part of BBII's live-run testing in Segment 1. Some groundwater impacts to the new OCS in the tunnels have been noticed recently. The PCEP has completed its investigations and is implementing several mitigation strategies to remove the existing calcareous deposits and avoid the reoccurrence.

Used Electrified Locomotives

The JPB acquired and overhauled two (2) used AM-7 electrified locomotives to perform initial testing of the electrification system. The locomotives were placed in long-term storage after their delivery in June 2019 until needed for testing of the electrified system. The used locomotives were not used in the start-up and testing of the newly installed OCS or TPS systems. Caltrain Operations reports that the electric locomotives will be used as rescue vehicles once electrified operations begin.

CEMOF Modifications

The JPB awarded a contract to ProVen Management, Inc. for $6,550,777 to modify the Central Equipment Maintenance and Operations Facility (CEMOF) to accommodate the new EMUs. ProVen was issued a full Notice to Proceed (NTP) on September 16, 2019. The CEMOF contract was the last of the PCEP's major construction contracts. The JPB, as noted above, has negotiated a settlement with ProVen that covers both the Tunnel Notching and CEMOF Modifications contracts. ProVen completed work on the CEMOF modification on July 13, 2022. The JPB reports that it is nearing completion of the close-out of this contract.

PG&E Interconnection Construction

The JPB executed a modification of its Master Agreement with PG&E to construct the interconnections between PG&E's two (2) substations and the JPB's two (2) corresponding TPSS. Construction of the interconnection between PG&E's FMC substation in San Jose and the PCEP's TPSS 2 was completed on January 18, 2021.

The Transmission Load Operating Agreement (TLOA) between PG&E and the JPB was executed following the completion of the southern section of the Single-Phase Study. Energization of the PG&E interconnection and TPSS-2 occurred on August 27, 2022.

Current Procurements

The JPB concluded an agreement with Transit America Services, Inc. (TASI), its contract rail operator, to perform operating and maintenance functions for the new Traction Power System (TPS) and Overhead Contact System (OCS). TASI continues to staff up and train its personnel for duties on the electrified railroad. TASI staff took over the isolation responsibilities for the energized OCS in Segments 3 and 4 on October 1, 2023, and subsequently, for the remainder of the alignment.

2.7 Design

BBII is responsible for the Final Design (FD) 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 (EOR) for the electrification work. Alstom is the EOR for the signals work including Two Speed Check Grade Crossing Approach Warning System (2SC). All primary OCS, TPS, and Signals design work is complete. The following issues remain active:

- Some design work remains active to support the installation of new low-voltage wayside power units. Design-support activities also continue with respect to issues encountered during the testing and commissioning of the completed work as well as preparation of documentation required for Final Acceptance.

2.8 Value Engineering and Constructability Reviews

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 (ATPs) to reduce costs or improve the 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.

2.9 Real Estate Acquisition and Relocation

The project is being constructed primarily in the existing Caltrain corridor on right-of-way (ROW) controlled by JPB/Caltrain. The PCEP is acquiring real estate for three (3) primary purposes: (1) for the 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.

Real Estate Activities

The large majority of real estate activities have been completed. The remaining challenges facing real estate are any design changes that would impact already acquired properties and design changes requiring new or re-defined acquisitions.

- Bayshore Property (Segment 1 South of tunnels) – The parties have reached a final agreement on price and construction was completed using permits issued by the owner, pending completion of the transaction. The JPB submitted a draft request for concurrence to the FTA. The FTA provided comments and requested an explanatory letter from the JPB's legal counsel. The JPB provided a package of the requested materials to the FTA following the Quarterly Progress Review Meeting (QPRM) #25. The FTA concurred in the settlement proposed by the JPB on April 17, 2024.
- Staff continues to review electrical safety zones (ESZs) for potential changes due to OCS pole relocations.
- The Real Estate Department is assisting Rail Operations in acquiring areas/buildings for storage of spare parts and equipment needed to support the electrified railroad. The JPB is acquiring a license agreement and will purchase a small area in fee from SamTrans, for poles, and appurtenances in the vicinity of the Switching Station.

2.10 Third-Party Agreements and Utilities

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 has executed all agreements except the one with the Town of Atherton (Segment 2), which is no longer being pursued. The Town of Atherton must issue traffic control permits 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 the VTA and SamTrans will exercise eminent domain authority on behalf of the JPB, when such action is required, to acquire the real property rights located in the respective counties for the PCEP. The City and County of San Francisco (CCSF) declined to approve an agreement for the use of its eminent domain powers on behalf of the PCEP.

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 JPB also has in place 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 through 5 to that agreement. Supplement 4, which includes the cost of constructing the substation modifications, was fully executed on October 18, 2018. The parties disagreed on the allocation of costs for the work, and following discussions between the parties, PG&E filed an application with the CPUC for a cost allocation plan. The CPUC's Administrative Law Judge announced a decision on May 7, 2020, that adopted a modified order affirming the cost allocation principles agreed to by the JPB and PG&E. The cost allocation process requires audited costs for PG&E's sub-station improvements. Those costs were expected to be available for inclusion in PG&E's 2023 General Rate Case which was filed in 2021. However, due to construction delays, only approximately 95% of audited costs are available. PG&E petitioned the CPUC to consider including the 95% of costs that have been audited in PG&E's current rate case. That petition was positively received by the CPUC. The JPB requested that PG&E make earlier payments of the funds that are due to the JPB under the cost allocation agreement to improve the PCEP's cash flow position. The JPB reports that PG&E made its First Reimbursement Payment of $87,586,392.10 on February 22, 2024; and Caltrain made the first of the Equivalent One Time Payments (EOTP) of $5,157,067.62 to PG&E on February 29, 2024. PG&E accommodated the JPB's request to reschedule the remaining short-circuit tests following the severe storm in early February 2024. The final short-circuit test was successfully conducted on April 5, 2024. *Modifications to the TLOA will be required to address the regeneration of power by the EMUs, but this will not impact the planned start of revenue service.*

California Public Utilities Commission (CPUC)

The CPUC is the FTA's Certified State Safety Oversight Agency (SSOA) for the State of California and also has responsibility for grade crossing safety in the state. The JPB has worked with both CPUC and the FRA to develop the 2SC solution to provide the required grade crossing warning time after the system is electrified. CPUC and the FRA observed the initial cutovers at the signal locations in Segment 4 and were satisfied with the results. All signal cutovers are now complete.

The JPB must file General Order (GO) 88B forms for each modified grade crossing for approval by the CPUC; these plans are developed in conjunction with the local jurisdictions. The JPB reports that the CPUC has issued all GO 88B permits. *The PCEP will send a GO-88 Form G to the CPUC once all required modifications are completed in a jurisdiction.* The FRA does not approve the crossings but has both regulatory and enforcement authority if the crossings do not perform as required by its regulations.

Union Pacific Railroad (UPRR)

The JPB has a continuing relationship with the UPRR, which 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.

California High Speed Rail Authority (CHSRA)

The California High-Speed Rail Authority (CHSRA) is a funding-partner for the PCEP and proposes to operate in blended service with Caltrain in the PCEP corridor in the future. The JPB has relocated

some 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. All costs associated with the pole relocation work will be paid for by the CHSRA. Representatives of the CHSRA now participating regularly in a variety of PCEP meetings. The JPB has submitted the final Project Remediation Plan for the CHSRA; the plan is a requirement of the funding agreement between the parties. The plan was reviewed by the CHSRA and appropriate portions of the plan were incorporated into the Recovery Plan accepted by the FTA on November 28, 2023.

Federal Railroad Administration (FRA)

The FRA has authority over the JPB's rail operations. As noted above and elsewhere in this report, the JPB is coordinating with the FRA on several issues, including technical issues related to the EMUs and implementation of the 2SC issue. The JPB's PTC program has received FRA approval. Issues related to the EMUs are discussed in Section 2.12 of this report. The JPB continues to hold monthly conference calls with the FRA to discuss EMU issues, and another call to discuss any open questions related to the 2SC implementation. The FRA approved, by letter dated February 8, 2024, the JPB's request to extend the existing waiver for the Stadler KISS units for the life of the equipment, as discussed in Docket Number FRA-2018-0067.

Independent of the PCEP, the JPB filed a test request with the FRA on November 29, 2021, for the installation of a Crossing Optimization Project. The project proposes to modify grade crossing controls to improve gate down-time performance. Wabtec, the JPB's contractor for the crossing optimization project, continues to install the wireless crossing modifications on the remaining grade crossings, all of which have been successfully cutover for 2SC operation.

The FRA will be conducting an on-site audit of Caltrain's Passenger Train Emergency Preparedness Plan (PTEPP) in the near future. The JPB has submitted an update to its PTEPP to address the newly electrified system. The audit typically occurs within 180 days following the conditional approval of a new plan or significant amendment. The JPB reports that it has been in contact with the FRA and the field visit will now occur after the EMUs enter revenue service.

The rail industry has submitted a Request for Amendment (RFA) to the FRA for modification of the on-board software used in Positive Train Control systems; Caltrain is a participant in that request. The FRA has advised the industry that it expects to issue its decision approximately July 22, 2024. The JPB has also submitted an RFA to the FRA related to its 2SC crossing system and its wireless crossing activation system. The FRA expects to issue its decision on the request approximately August 5, 2024. It is the PMOC's understanding that Caltrain cannot place its EMUs in revenue service until the FRA approves both RFAs.

2.11 Construction

The JPB reports that all Category A and B punch list items have been satisfactorily addressed. The completion of the Category A and B items is a pre-requisite for substantial completion of the Electrification contract. Punch list walks have been completed and work is underway to complete the Category C punch list items. *The JPB reported that approximately 32,000 Category C items remained to be corrected as of June 13, 2024.*

The JPB reported that BBII successfully completed the last remaining short-circuit test of the traction power system on April 5, 2024.

- BBII completed its end-to-end live-run testing at the maximum allowable speed of 79 mph on April 27 and 28, 2024.
- The last remaining bridge barrier has been approved by CalTrans.

- Fencing restoration and removal of spoils along the ROW continues.
- *The JPB reported to its Change Control Board on June 19, 2024, that 13 of 118 low-voltage connections remain to be completed.*

Signal System

Cutover of the signal system is complete as of August 20, 2023. Submission and approval of final documentation will continue until completed. Installation of the JPB's wireless crossing optimization system will continue; this work does affect rail operations. A signal cutover typically involves numerous signals and control points. A control point (CP) is a named location where tracks merge or cross. Early completion of the signal cutovers is incentivized (See Table 6) in the global settlement.

Current signals and communications systems work includes:

- *Minor software updates to the 2SC system have been completed.*
- Completion of installation and testing of the wireless crossing system is scheduled for May through July 2024.
- *Fiber optic cable splicing is complete following completion of the Guadalupe River bridge replacement.*
- Continued installing Low Voltage connection conduits for signal locations.

Supervisory Control and Data Acquisition (SCADA)

- *The SCADA software has been installed and tested and has been placed in production mode.*
- *A Field SCADA Endurance Test and Office SCADA Availability and Reliability tests remain to be completed after the system is placed in revenue service.*

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 Guadalupe Bridge Replacement Project continues at the south end of Segment 4. The OCS that was temporarily removed to facilitate bridge construction has been reinstalled and live run testing of the southerly portion of the project between Diridon and Tamien was completed in March 2024.

The installation of additional flip-up seats in EMU bike cars, which is locally funded, will remain open until all cars are delivered.

2.12 Vehicle Technology and Procurement

The JPB placed an order for ninety-six (96) new bi-level EMU vehicles to be produced by Stadler US, Inc. and delivered in six-car trainsets. The JPB ordered an additional thirty-seven (37) EMUs in December 2018 using an option in the Stadler contract. The JPB has now ordered an electrified fleet of one hundred thirty-three (133) EMUs configured as nineteen (19) seven-car trainsets. The JPB has remaining options to purchase up to fifty-nine (59) more EMUs at prices based on the date when the option is exercised.

The JPB exercised part of its remaining options in August 2023 to purchase four (4) additional EMU trainsets; these vehicles will not be funded by the PCEP. The JPB also purchased a single hybrid Battery Electric Multiple Unit (BEMU) to provide wireless electrified service from San Jose to Gilroy at the south end of Caltrain's system.

The EMU contract contained an option for Stadler to maintain the vehicles; the JPB did not 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 were ordered with two (2) sets of doors, one set at approximately 22" above the top of the rail, and one at approximately 50.5" above the top of the 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. The PCEP's Change Management Board, at its September 2019 meeting, approved the JPB's request for a change order to install temporary panels in place of the high-level doors until the trains operate in blended service with the CHSRA. The high-level doors will be placed in storage until they are installed for blended service with the CHSRA. 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. See additional discussion under Regulatory Issues below.

PCEP and Stadler reported the following progress on the vehicles:

- *A total of ten (12) trainsets are now on Caltrain property. The last (2) trainsets arrived on June 3, 2024.*
- *Stadler has completed its inspection of the two (2) damaged coaches in trainset 311 and projects that repairs will not be completed until early 2025.*
- *Eight (8) of the twelve (10) trainsets that have been delivered have completed the 1,000 mile "burn-in" test and burn-in of a ninth (9^{th}) trainset is underway*. Burn-in testing is a prerequisite for final acceptance.
- Refresher training of the EMU operators is continuing on the Santa Clara Drill Track during daylight hours.
- The fleet storage plan has been approved for the EMUs as they arrive on the property. Some minor adjustments to the plan are being made to accommodate current conditions. *Arrangements have been made to store the diesel trainsets off site when they are removed from service.*

2.13 Project Cost

The FFGA budget for the PCEP is $1.931 billion in year of expenditure (YOE) dollars. The JPB adopted a revised budget of $2.44 billion ($2.39 billion for FTA reporting purposes) on December 6, 2021. This new budget reflects a total increase of $462 million from the FFGA budget. The new budget has been incorporated into the JPB's Recovery Plan, which was accepted by the FTA on November 28, 2023.

Table 1 below presents the PCEP costs as of May 31, 2024. The JPB re-forecasts the estimated cost at completion (EAC) monthly.

Table 1 – Project Cost Table at 5-31-2024 ($ millions)[1]

FTA SCC Monthly - MPR Appendix D — with CCOs — Per 108 - 2024-05

	Description of Work	FFGA Grant Budget (A)	Re-Baseline Budget (B)	Approved Budget with Approved CCOs (B2)	Cost This Month (C)	Cost To Date (D)	Estimate To Complete (E)	Estimate At Completion (F) = (D) + (E)
10 - GUIDEWAY & TRACK ELEMENTS		**$14,256,739**	**$34,031,358**	**$32,998,866**	**$0**	**$30,957,439**	**$2,041,427**	**$32,998,866**
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	$2,500,000	$2,387,096	$2,387,096	$0	$369,077	$2,018,019	$2,387,096
10.07	Guideway: Underground tunnel	$8,110,649	$31,644,262	$30,611,770	$0	$30,588,362	$23,408	$30,611,770
10.07a	Allocated Contingency	$3,646,090	$0	$0	$0	$0	$0	$0
30 - SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		**$2,265,200**	**$10,046,714**	**$10,466,497**	**$0**	**$9,871,391**	**$595,105**	**$10,466,497**
30.03	Heavy Maintenance Facility	$1,344,000	$9,846,714	$10,266,497	$0	$9,871,391	$395,105	$10,266,497
30.03a	Allocated Contingency	$421,200	$200,000	$200,000	$0	$0	$200,000	$200,000
30.05	Yard and Yard Track	$500,000	$0	$0	$0	$0	$0	$0
40 - SITEWORK & SPECIAL CONDITIONS		**$255,072,402**	**$438,895,518**	**$454,232,319**	**$4,314,330**	**$432,769,679**	**$18,308,680**	**$451,078,359**
40.01	Demolition, Clearing, Earthwork	$3,077,685	$10,748,067	$10,748,067	$69,907	$10,829,941	($81,874)	$10,748,067
40.02	Site Utilities, Utility Relocation	$62,192,517	$103,275,822	$101,479,160	$248,142	$95,891,681	$6,033,412	$101,925,093
40.02a	Allocated Contingency	$25,862,000	$2,370,765	$2,370,765	$0	$0	$2,370,765	$2,370,765
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	$2,200,000	$12,042,192	$12,042,192	$0	$11,992,193	$50,000	$12,042,192
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	$32,579,208	$20,989,303	$20,560,800	$374,991	$8,082,057	$9,458,850	$17,540,908
40.05	Site structures including retaining walls, sound walls	$568,188	$0	$0	$0	$0	$0	$0
40.06	Pedestrian / bike access and accommodation, landscaping	$804,933	$2,735,000	$2,735,000	$323,740	$2,826,883	($91,883)	$2,735,000
40.07	Automobile, bus, van accessways including roads, parking lots	$284,094	($0)	($0)	$0	$0	($0)	($0)
40.08	Temporary Facilities and other indirect costs during construction	$107,343,777	$264,435,606	$293,761,485	$3,297,549	$303,146,924	($9,965,439)	$293,181,485
40.08a	Allocated Contingency	$20,160,000	$22,298,763	$10,534,850	$0	$0	$10,534,850	$10,534,850
50 - SYSTEMS		**$504,445,419**	**$679,821,865**	**$680,710,337**	**$430,031**	**$644,680,498**	**$36,029,839**	**$680,710,337**
50.01	Train control and signals	$97,589,149	$112,460,517	$113,249,592	$94,000	$145,543,184	($32,293,592)	$113,249,592
50.01a	Allocated Contingency	$1,651,000	$4,950,000	$4,147,742	$0	$0	$4,147,742	$4,147,742
50.02	Traffic signals and crossing protection	$23,879,905	$79,475,273	$80,494,900	($117,479)	$32,290,479	$48,204,421	$80,494,900
50.02a	Allocated Contingency	$1,140,000	$500,000	($519,626)	$0	$0	($519,626)	($519,626)
50.03	Traction power supply: substations	$69,120,009	$127,642,222	$130,502,598	$153,336	$128,039,771	$2,462,827	$130,502,598
50.03a	Allocated Contingency	$31,755,013	$2,861,411	($998,964)	$0	$0	($998,964)	($998,964)
50.04	Traction power distribution: catenary and third rail	$253,683,045	$336,585,173	$337,123,694	$180,771	$330,084,193	$7,039,501	$337,123,694
50.04a	Allocated Contingency	$18,064,000	$6,350,000	$4,841,019	$0	$0	$4,841,019	$4,841,019
50.05	Communications	$5,455,000	$5,547,000	$8,866,542	$119,403	$8,722,871	$143,670	$8,866,542
50.05a	Allocated Contingency		$3,150,000	$2,702,573	$0	$0	$2,702,573	$2,702,573
50.07	Central Control	$2,090,298	$300,269	$300,269	$0	$0	$300,269	$300,269
50.07a	Allocated Contingency	$18,000	$0	$0	$0	$0	$0	$0
60 - ROW, LAND, EXISTING IMPROVEMENTS		**$35,675,084**	**$33,344,581**	**$30,812,121**	**$31,040**	**$23,568,867**	**$7,243,255**	**$30,812,121**
60.01	Purchase or lease of real estate	$25,927,074	$33,160,590	$30,628,130	$31,040	$23,434,875	$7,193,255	$30,628,130
60.01a	Allocated Contingency	$8,748,010	($1)	($1)	$0	$0	($1)	($1)
60.02	Relocation of existing households and businesses	$1,000,000	$183,992	$183,992	$0	$133,992	$50,000	$183,992
70 - VEHICLES (96)		**$625,544,147**	**$694,286,192**	**$691,869,359**	**$17,040,542**	**$576,707,384**	**$114,531,975**	**$691,239,359**
70.03	Commuter Rail	$589,167,291	$642,183,381	$653,701,191	$17,040,542	$561,447,432	$91,623,759	$653,071,191
70.03a	Allocated Contingency	$9,472,924	$15,555,307	$2,000,000	$0	$0	$2,000,000	$2,000,000
70.06	Non-revenue vehicles	$8,140,000	$17,239,237	$17,239,237	$0	$538,280	$16,700,958	$17,239,237
70.06a	Allocated Contingency		$379,335	$0	$0	$0	$0	$0
70.07	Spare parts	$18,763,931	$18,928,931	$18,928,931	$0	$14,721,672	$4,207,259	$18,928,931
80 - PROFESSIONAL SERVICES (applies to Cats. 10-50)		**$323,793,010**	**$464,899,724**	**$473,180,318**	**$2,261,200**	**$468,815,237**	**$5,535,082**	**$474,350,318**
80.01	Project Development	$130,350	$289,233	$289,233	$0	$289,233	($0)	$289,233
80.02	Engineering (not applicable to Small Starts)	$180,227,311	$241,386,730	$241,347,615	($138,635)	$244,168,014	($2,820,395)	$241,347,615
80.02a	Allocated Contingency	$1,866,000	$500,000	($2,430,361)	$0	$0	($2,430,361)	($2,430,361)
80.03	Project Management for Design and Construction	$72,029,265	$151,617,659	$157,778,816	$1,237,420	$152,769,606	$5,819,210	$158,588,816
80.03a	Allocated Contingency	$9,388,080	($0)	($0)	$0	$0	($0)	($0)
80.04	Construction Administration & Management	$23,677,949	$50,737,213	$55,051,237	$676,621	$51,702,575	$3,348,662	$55,051,237
80.04a	Allocated Contingency	$19,537,000	($0)	($0)	$0	$0	($0)	($0)
80.05	Professional Liability and other Non-Construction Insurance	$3,500,000	$6,581,851	$6,581,851	$0	$6,291,001	$290,850	$6,581,851
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	$7,167,275	$10,183,908	$10,850,898	$14,935	$7,628,387	$3,582,511	$11,210,898
80.06a	Allocated Contingency	$556,000	$650,000	$650,000	$0	$0	$650,000	$650,000
80.07	Surveys, Testing, Investigation, Inspection	$3,287,824	$210,957	$318,853	$0	$61,782	$257,071	$318,853
80.08	Start up	$1,797,957	$392,173	$464,093	$470,859	$5,904,638	($5,440,545)	$464,093
80.08a	Allocated Contingency	$628,000	$2,350,000	$2,278,080	$0	$0	$2,278,080	$2,278,080
Subtotal (10 - 80)		**$1,761,052,001**	**$2,355,325,952**	**$2,374,269,817**	**$24,077,143**	**$2,187,370,494**	**$184,285,364**	**$2,371,655,858**
90	**UNALLOCATED CONTINGENCY**	**$162,620,295**	**$27,884,507**	**$8,940,642**	**$0**	**$0**	**$8,734,710**	**$8,734,710**
Subtotal (10 - 90)		**$1,923,672,296**	**$2,383,210,460**	**$2,383,210,460**	**$24,077,143**	**$2,187,370,494**	**$193,020,074**	**$2,380,390,568**
100	**FINANCE CHARGES**	**$6,998,638**	**$9,898,638**	**$9,898,638**	**$191,859**	**$12,141,895**	**$576,635**	**$12,718,530**
Total Project Cost (10 - 100)		**$1,930,670,934**	**$2,393,109,098**	**$2,393,109,098**	**$24,269,002**	**$2,199,512,389**	**$193,596,709**	**$2,393,109,098**
	Allocated Contingency	$152,913,317	$62,115,582	$25,776,076	$0	$0	$25,776,076	$25,776,076
	Unallocated Contingency	$162,620,295	$27,884,507	$8,940,642	$0	$0	$8,734,710	$8,734,710
	Total Contingency	**$315,533,612**	**$90,000,089**	**$34,716,719**	**$0**	**$0**	**$34,510,786**	**$34,510,786**

[1] Caltrain Capital Overhead includes actuals to date using the new method ICAP as reported in Budget Scrub.

PMOC Note: The JPB publicly reports expenditures against a total project budget of $1,980,252,533; this translates to the revised budget of $2,442,690,697. This higher amount includes expenditures prior to the project's entry into the Project Development (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. The revised budget for FTA reporting purposes is $2,393,109,098.

Cost Contingency Status

Table 2 below summarizes the project contingency as of May 31, 2024, for the revised project budget.

Table 2 – Contingency Status ($ millions) [3]

Contingency Category	Original Baseline Contingency (YOE)	Revised Contingency Budget (YOE)	Current Contingency (YOE)	% of Construction Complete and % Revised Contingency Remaining[2]
Allocated	$152.9	$62.1	$25,776,076	**86.78%**
Unallocated	$162.6	$27.9	$8,734,710	
TOTAL[1]	**$315.5**	**$90.0**	$34,510,786	**38.3%**

[1] Totals may not add due to rounding.
[2] Estimate at Completion
[3] Data as of May 31, 2024.

The PCEP cost contingency balances have been updated based on the $2.44 billion budget. A new cost contingency drawdown curve has been established with new hold-points.

The JPB presented the following information at its Change Management Board meeting on July 17, 2024. The information consolidates both the contingency balance in the $50 million shared risk pool established in the Global Settlement with BBII and the $40 million in the PCEP program contingency.

Table 3 Contingency Drawdown as of June 2024

PCEP | June 2024	Total	BBII Risk Pool	Allocated	Unallocated	*Program $40M*
PCEP Contingency	**$90,000,088**	**$50,000,000**	**$24,115,581**	**$15,884,507**	**$40,000,088**
Drawn Contingency	($55,108,497)	($17,183,209)	($24,115,581)	($13,809,706)	($37,925,287)
Remaining Contingency	**$34,891,592**	**$32,816,791**	**$0**	**$2,074,801**	**$2,074,801**
Forecasted Changes	($4,820,965)	($3,853,565)	$0	($967,400)	($967,400)
Forecasted Remaining Contingency	**$30,070,626**	**$28,963,225**	**$0**	**$1,107,401**	**$1,107,401**

Contingency Management – Electrification

The global settlement with BBII included the establishment of a shared risk pool of $50 million which is considered part of the PCEP contingency. Upon final acceptance of the work, any balance remaining in the pool will be shared equally between BBII and the JPB. The objective of this pool is to reduce the number of change orders and incentivize collaboration between the JPB and BBII. The pool consists of 27 identified risk items, each with a forecast risk amount, with an aggregate total of $49.95 million, including $12 million in contingency, plus one minor unidentified item valued at $0.54 million. As changes are identified in the course of the work, they are added to an Issue Resolution Log (IRL), screened against the identified risk items, and negotiated by the parties. The cost of the change, as negotiated, is deducted from the appropriate shared risk item, or if outside the shared risk list, from project contingency. *Table 4 below provides some metrics related to the effectiveness of the IRL through July 9, 2024. The total value of changes approved through the*

shared risk pool as of July 9, 2024, remains at $17,198,732. The IRL metrics are routinely shared with the PCEP's Change Management Board.

Table 4 – Issue Resolution Log Metrics (July 9, 2024)

DESCRIPTION	QTY	%
Total Quantity of IRL Items Opened	402	-
IRL Items Closed without Commercial Implication	135	33.6%
IRL Items Pending Technical Resolution	22	5.5%
Technical Resolution Agreed, Pending Commercial Agreement	13	3.2%
Tech. Resolution & Comm. Implications Agreed (Pending Signature)	14	3.5%
Technical Resolution & Commercial Implications Agreed (< $10k)	14	3.5%
Total IRL Items Approved	204	50.7%

Project Funding

The JPB approved a new budget of $2.44 billion for the PCEP at its Special Meeting on December 6, 2021. That budget must be supported by additional funding of $462.4 million beyond the original funding plan which applied to the original project cost of $1.930.7 billion. Figure 1 below is the awarded funding as of January 31, 2023. The approved budget is now fully funded.

Figure 1 – PCEP Funding to Support Budget Increase

TYPE	SOURCE	AMOUNT
Federal	ARPA Supplemental CIG	$52.4 million
Federal	Supplemental FFGA CIG	$33 million
Federal	FTA Community Project	$10 million
State	California TIRCP	$367 million
	TOTAL	**$462.4 million**

The following details relate to the successful funding strategy shown above.

Additional Federal Funding

The JPB received $52.4 million in Supplemental Capital Investment Grant funds from the 2022 American Rescue Plan Act (ARPA). The JPB recently received an additional $43 million from the Consolidated Appropriations Act of 2023; $33 million in supplemental FTA CIG FFGA funding, and $10 million in Community Project funding.

California State Funding

The FY 2023 State budget has been signed into law. It includes $4.2 billion for high-speed rail and $7.65 billion for transit. $900 million is set aside for existing projects to leverage federal and local fund reserves. The PCEP was awarded $367 million from the State of California's Transit and Intercity Rail Capital Program (TIRCP).

Original PCEP Funding Plan

The PCEP is relying on several sources of funding to complete the project. The Grants Table in the Executive Summary summarizes the JPB's funding plan, as updated through June 30, 2023. The updated funding plan includes the original FFGA funding of $1,930.7 billion which included $647 million in Section 5309 funds and $287 million from the Section 5307 Urbanized Area Formula program. The JPB has drawn down a total of $1,927.735 million as of June 30, 2023, or 81% of the combined federal and local funds of $2,393.351 million. This total includes recently received funding from the State of California and $43 million in new federal funds.

The JPB 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 awarded the JPB a $164.5 million grant in 2018 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.

Change Orders

PCEP Changes: *The Change Management Board (CMB) approved the following expenditures at its June 19, 2024, meeting.*

- *A draw from Project Contingency in the amount of $540,000 to fund extraordinary communications costs associated with the roll-out of electrified train service.*
- *Three (3) draws from the shared risk pool totaling $134,767 for a corona camera, and track access delays during February and March 2024.*

Electrification Contract Changes: No change order activity during this period.

EMU Contract Changes: No activity this period.

SCADA Contract: No activity this period.

Tunnel Contract Changes: No activity this period.

CEMOF Contract Changes: No activity this period.

PG&E Contract Changes: No activity this period.

2.14 Project Schedule

The FFGA was executed on May 23, 2017, with a Required Completion Date of August 22, 2022. The JPB, for reasons discussed previously, adopted the PMOC's recommended September 26, 2024, as the revised Required Completion Date (RCD) for the project. The JPB did not formally adopt a particular schedule document when it approved the revised PCEP budget of $2.44 billion at its December 6, 2021, meeting; however, the revised budget is based on completing the project by September 26, 2024. The JPB proposed an FFGA RCD of December 31, 2024, in its Recovery Plan submitted September 30, 2022. The FTA accepted the JPB's Recovery Plan on November 28, 2023, which establishes December 31, 2024, as the RCD for PCEP.

Infrastructure Schedule

BBII has developed, and the JPB has accepted, a Re-forecast Schedule which has a data date of January 1, 2023. This schedule is intended to include all activities through final acceptance (FA)

and will be the basis for monitoring through the completion of the contract. BBII's schedule labeled December 2022 Reforecast 1222E" was returned marked "SONO with comments" on March 29, 2023. BBII has been submitting monthly schedule updates, as required; the latest update was for April 2024 with a Data Date of May 1, 2024.

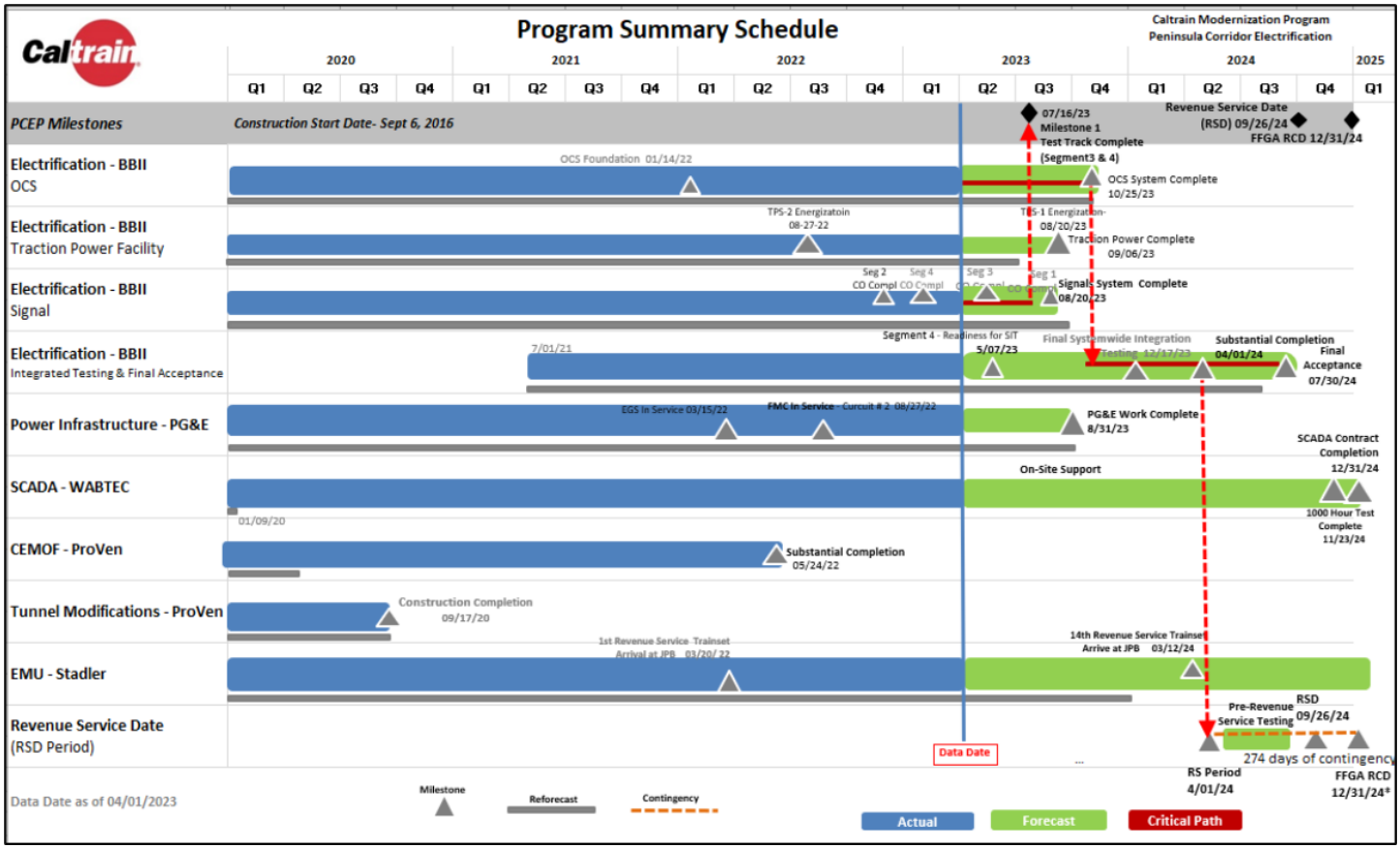
The PCEP team is providing monthly tracking of BBII's progress and is also continuing to work on completing the integration of the JPB's Rail Activation activities, and the details of BBII's Testing and Commissioning schedule with the existing Integrated Master Schedule (IMS). The current IMS, data date February 1, 2024, includes the BBII January 2024 update, Stadler, and ARINC schedules as well as the Rail Activation schedule dates. The PCEP has discontinued the preparation of its IMS because of the difficulty in preparing the schedule, the short duration of the remaining activities, and the team's ability to closely monitor the respective BBII, Stadler, ARINC, and Rail Activation from the individual schedules.

EMU Schedule

The PCEP team accepted a re-baselined schedule from Stadler for the completion of the EMU order. Stadler's re-baselined schedule was converted into P6 format and has been incorporated into the IPS. The JPB is currently forecasting the delivery of the 14th trainset in July 2024, and commencement of initial Revenue Service with its new EMUs in July 2024. As noted elsewhere in this report, the JPB now plans to have a total of sixteen (16) EMUs to support full revenue service; this includes two (2) spares. The JPB has issued a change order for the installation of Broadband Wi-Fi equipment on the new EMUs. Part of the fleet will have the equipment installed by Stadler in Salt Lake City prior to shipment to JPB. The remaining units, including those already received by the JPB, will be modified at the CEMOF prior to being placed into revenue service. The PCEP team continues to work with Stadler to refine schedule details related to receiving, testing, and burn-in of the EMUs. *As noted above, Caltrain received two (2) additional trainsets in June 2024 for a total of eleven (11) on-site when the damaged TS-311 is considered. Two (2) more trainsets are scheduled to arrive in late-July 2024.* Stadler expects that repairs to TS-311 will not be completed until early 2025. The JPB and Stadler continue discussions related to an expedited delivery of trainset 17.

Attachment G – Project Milestones / Key Events shows the currently projected dates for the completion of various significant project activities.

Figure 2 – Summary Project Schedule (Data Date 4-1-2024)



The forecasted dates above are based on BBII's and Stadler's March 2024 schedule updates with Data Dates of April 1, 2024.

Figure 3 – *Critical Path to Substantial Completion, Data Date June 1, 2024*

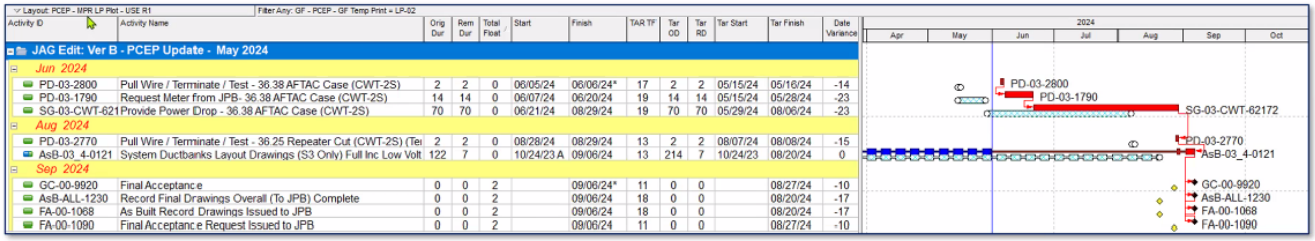


Table 5 below presents the JPB's analysis of BBII's May 2024 Schedule Update.

Table 5 – Project Schedule Milestone Analysis

Milestones	Reforecast Dates (Dec '22)	Current Dates (Oct '23)	Milestone Finish Date Variance	Total Float	Remarks
Substantial Completion	4/1/24	5/3/24 (A)	*-32*	*0*	Completed.
Scheduled Final Acceptance	*9/8/2024*	*9/6/24*	2	*2*	*The most recent schedule shows Final Acceptance occurring on September 6, 2024, two (2) days earlier than the contractually modified date of September 8, 2024.*
Revenue Service Date (RSD)	9/26/24	9/21/24	5	N/A	RSD may have to be with 15 Trainsets including one (1) spare.
FFGA Required Completion Date (RCD)	12/31/24	12/31/24	0	N/A	
Legend: Actual (A) Estimated (E)					

Recent Significant Schedule Changes

PG&E Low Voltage Energization

The duration of PG&E design and construction continues to be a concern due to the continued slower than desired lack of progress. Several locations have required re-design by PG&E or additional procurement of materials, which may affect the overall low voltage completion date. *Thirteen (13) wayside power units remain to be installed as of June 19, 2024.*

Completion of Final System Testing

BBII completed the last remaining short-circuit test on April 5, 2024. BBII completed its end-to-end live runs at the maximum allowed speed on April 27-28, 2024. As noted earlier, BBII achieved Substantial Completion on May 3, 2024.

Critical Path

The PCEP is a core capacity project. The core capacity completion objective will be satisfied when the JPB operates a total of fourteen (14) seven-car trainsets in electrified service. Now that BBII has achieved substantial completion, the next major milestone is the soft start of electrified revenue service on August 10, 2024. Final Acceptance of the BBII electrification contract is scheduled for September 8, 2021, followed by full electrified revenue service between San Francisco and San Jose on September 21, 2024. The Required Completion Date for the PCEP under its Full Funding Grant Agreement is December 31, 2024.

The late installation of the permanent low-voltage power drops will not prevent the JPB from placing the line in revenue service because temporary power can be provided by generators, as is currently the case in multiple locations. The PCEP team is meeting regularly with PG&E in an effort to improve PG&E's design and installation schedule; this work can only be performed by PG&E or its own contractors. The PCEP scheduling team has removed installation of the low-voltage power drops from the IMS schedule and is tracking them separately because, due to the use of temporary generators, they are not required to safely operate the railroad. Completion of the power drops is a contractual requirement for final acceptance in the BBII contract.

Schedule Contingency Status

BBII achieved Substantial Completion on May 3, 2024, and the contractual Final Acceptance date is September 8, 2024. No change is expected in the JPB Required Completion Date of December 31, 2024.

The JPB's global settlement with BBII includes incentives for early completion of signal cutovers, early substantial completion, and early achievement of revenue service. The schedule incentives are shown in Table 6 below.

Table 6 – BBII Schedule Performance Incentives

Objective	Date of Completion	Amount	*Awarded*
Achieve Electrified Revenue Service prior to the Final Acceptance Date of July 31, 2024	On or before 4/30/2024 Between 5/1 and 5/31/2024 Between 6/1 and 6/30/2024	$3,000,000 $2,000,000 $1,000,000	
Achieve Overall Substantial Completion prior to April 30, 2024	On or before 3/31/2024 After 2/29 and before 3/31/2024 After 1/31 and before 2/29/2024 On or before 1/31/2024	$4,100,000 $30,000/day $40,000/day $50,000/day **Max $8,000,000**	
Completion of all 2SC Cutovers in Segment 2	On or before 11/10/2022		$2,000,000
Completion of 2SC cutovers in all 4 Segments	On or before 9/30/2023		$2,000,000
Maximum Schedule Incentives Available		**$15,000,000**	

Revenue Service Date

The JPB is planning for a slightly modified "soft launch" of revenue service on August 11, 2024. Caltrain will run a single EMU trainset for invited guests from the downtown San Francisco station at 4th and King to the Millbrae station and return on Saturday, August 10, 2024. Revenue service will begin on Sunday, August 11, 2024, with two (2) EMU trainsets replacing two (2) diesel hauled trainsets running the current schedule. This process will be repeated on the following four Saturdays until there are ten (10) EMU trainsets in service. The full fourteen (14) trainset electrified service will commence on September 21, 2024, with the introduction of Caltrain's new fall electrified schedule.

The JPB previously decided that an additional two (2) EMUs should be available as spares when full revenue service is initiated. The availability of two spares at the start of full revenue service may not be possible because of the damage to TS-311, and Stadler's ability to deliver a 17th trainset early enough for the unit to be burned-in prior to the September 21, 2024 RSD.

PMOC Observations:

- The JPB states that it has arrived at an agreement with BBII on revisions to the wording of its Contract Closeout Specification (SP01700). The revision includes a comprehensive spreadsheet listing the specific requirements for achieving Substantial Completion and Final Acceptance under the contract. The JPB intends to issue the revised specification as a no-cost change order. *The listing of the requirements was exchanged between the JPB and BBII during the Substantial Completion process.*
- The PMOC is pleased to see the additional focus on the Rail Activation schedule and the assignment of a scheduler to assist the rail activation team. The current rail activation schedule contains significantly more detail which will be beneficial to the entire team.

The JPB conducted a Monte Carlo schedule risk analysis in July 2023 using the Integrated Master Schedule with a data date of July 1, 2023. The risk modeling determined that the final acceptance date would be September 8, 2024, at a 65% confidence level; this compares to the July 30, 2024, date in the current forecast. This analysis suggests that the program schedule contains sufficient contingency if all mitigation measures can be realized with BBII.

- The PMOC continues to encourage the JPB to employ proven schedule management practices including enforcing timely receipt of required updates, prompt review and resolution of contractor schedule issues, regular identification of the controlling operation(s), and the timely development of workarounds and Plan Bs to avoid unpleasant surprises.

2.15 Project Risk

The PCEP has been implementing its Risk Identification and Mitigation Plan (RIMP) since its development in 2014. The PCEP's Risk Management Lead conducts weekly updates of a sub-set of the Risk Register and the project's Risk Management Committee generally meets monthly to review those risks proposed for retirement, risks with a major change in severity, and proposed additions to the Risk Register. The Top Risks, with risk numbers, are shown in Attachment D.

PMOC Note: Risks graded 9 or higher are now considered Top Risks. Prior to the recent re-grading of the Risk Register, risks graded 18 or higher were considered Top Risks.

The JPB/PCEP leadership team conducted several risk workshops with BBII during the course of negotiating the global settlement. An internal PCEP risk refresh was conducted on September 28, 2021; the quantitative results of that effort have not been released. The Interim Chief Officer (ICO) also initiated an external peer review of project risk that was conducted on October 26-27, 2021. The PMOC participated in both events. The JPB's most recent internal Risk Refresh Workshop was held on April 1, 2020.

FTA Risk Refresh

The PMOC conducted an FTA-led virtual Risk Refresh workshop on December 8, 10, 15, and 17, 2020. The objective of the Risk Refresh was to confirm the likelihood of the project completing within budget and in accordance with the FFGA schedule. As noted elsewhere in this report, the JPB accepted the PMOC's recommendations for a revised project budget and a new Recommended Completion Date for the project. The FTA, as a consequence of the results from the Risk Refresh and the project's history of schedule delays and cost overruns, has designated the PCEP as an "At Risk" project. The FTA requested that the JPB prepare and submit a Recovery Plan for the PCEP by October 8, 2021. The JPB retained a new executive to lead the PCEP and conducted a comprehensive review of the project, including a risk refresh. The JPB requested additional time to prepare the Recovery Plan and the FTA agreed to defer receipt of the Recovery Plan. The JPB delivered its final Recovery Plan to the FTA on September 30, 2022. The FTA, as noted elsewhere in this report, accepted the JPB's Recovery Plan with a proposed RCD of December 31, 2024, in a letter dated November 28, 2023.

Current Risk Activities

The JPB was able to conduct its Monte Carlo cost and schedule risk analysis update in December 2023 following the late receipt of BBII's October schedule update. The summary results of this risk update are shown in the following Table 7.

Table 7 – Monte Carlo Cost Risk Results (December 2023)

Cost Risk Component	Source	Dollars (millions) Jul. 2023	Dollars (millions) Dec. 2023
Direct Cost ("Known Unknowns")	Monte Carlo Analysis – P65 (Risk Register)	$20.7	$21.7
Indirect Cost (Schedule)	Monte Carlo Analysis – P85 (Baseline Schedule)	$2.51 RSD 8/20/2024	$7.19
Management Reserve	0.5% x cost to complete	$1.0	$1.0
Total Cost of Risk	Sum of direct and indirect costs and management reserve	$24.2M	$29.89

The PCEP's Risk lead re-ran the Monte Carlo Cost Risk model in December 2023 in keeping with the quarterly schedule established with the Change Management Board (CMB) members, although somewhat delayed as noted above. Monte Carlo analysis was conducted on the risks appearing on the then current risk register. The direct cost of risk, to a probability of 65% (P65) is $21.7 million, a slight increase from the $20.7 million calculated in July 2023. No schedule results were reported other than an increase in the indirect (schedule) cost of risk increased to $7.19 million compared to the $2.51 million reported in July 2023.

The forecast remaining cost contingency on February 29, 2024, was $35.4 million, a decrease from the $43.8 million balance on January 31, 2024. The contingency drawdown associated with the BBII contract continues at a modest pace. The PCEP team continues to be confident that there will be a positive contingency balance at the completion of the PCEP.

- **PMOC Observation:** BBII's achievement of Substantial Completion on May 3, 2024, is a major milestone. The BBII work remaining and the expected completion dates are well documented in the documents exchanged between the JPB and BBII to document Substantial Completion.

2.16 Quality Assurance / Quality Control (QA/QC)

The PCEP Quality team is monitoring BBII's resolution of open Non-Conformance Reports (NCR) and Design Variance Requests (DVR) as part of the preparation for Final Acceptance. Resolution of the remaining punch list items continues, as does the completion of all required training and documentation.

The PCEP Quality team reported the following activities at QPRM #26.

Infrastructure Quality Program

Audits/Surveillance Audits

- BBII performed three (3) surveillance audits and two (2) project audits, during the last quarter of 2023. JPB Quality reviewed all BBII audit reports, audit findings, and corrective/preventative actions.
- JPB completed one project audit on as-built drawings and three (3) surveillance audits including surveillance of the punch list procedure. All audit findings and observations and associated preventative/corrective actions are tracked to closure.

Non-Conformance

- Issued and tracked NCRs/CDRs to assure compliance with the approved CalMod Quality Management Plan (QMP).
- Monitored corrective and preventative actions for compliance with QMP and the effectiveness of these actions.
- 137 total NCRs
- 117 BBII NCRs issued, 107 BBII NCRs closed.
- 20 JPB NCRs issued, 12 JPB NCRs closed.
- This quarter, five (5) new NCRs were issued (4 JPB, 1 BBII) and two (2) NCRs (BBII) were closed.

EMU Quality

- Several critical tests of the EMUs are scheduled for June 2024.
    - Stadler AW2 Ride Quality & Truck Fatigue Test – June 15-16
    - Stadler AW0 Ride Quality & Truck Fatigue Test – June 22-23
    - Stadler Truck Fatigue Test – June 29-30
- The PCEP continues to work with Stadler to improve their Salt Lake City based QC/QA processes.
- The PCEP is focused on workmanship non-compliances and hold point inspections.
- Quality and consistency are improving as the workforce has stabilized.

➢ **PMOC Observations and Recommendations:** The PMOC supports the increased emphasis on Systems Integration, Testing and Commissioning, and quality management. Timely completion of the necessary documentation continues to be a challenge. The PMOC acknowledges the significant contribution of the PCEP's Systems Integration and Rail Activation managers, and the various discipline leads, in moving the program forward.

2.17 Safety and Security

The JPB contracts for safety and security consulting services to support the PCEP. The PCEP safety team also provides support as needed to the JPB and its Director of Safety, QA/QC. The project safety professionals from the JPB, PCEP, TASI, and BBII are collaborating in joint visits to the project work sites to demonstrate to the workers that the leadership of these organizations takes their safety seriously.

There was one (1) recordable injury (knee inflammation) in April 2024 and BBII's RIR for 2024 is now 0.76. BBII's RIR for 2023 is 1.88; BBII's RIR from inception to date is 1.95 and remains below the national average of 2.5.

Theft of copper cables remains the top risk. The JPB is increasing security and working with local jurisdictions to prevent damage to its newly acquired EMUs and prevent theft of newly installed copper cables along the right-of-way. *A number of portable light towers are being deployed at different locations accompanied CCTV cameras. Additional security is also being installed at the 4th and King station.*

The PCEP safety team continues to monitor the safety performance of the various contractors and subcontractors working on the project, including their compliance with Site Specific Work Plans.

The safety team has completed training for first responders in the Caltrain corridor. Safety related information has been shared with the public outreach team which is providing appropriate messaging to the general public as more frequent electrified train operations occur. Recent safety related activities include:

- The safety special task force working group which includes TASI, Rail Operations, and PCEP continues to address communications, process, and procedure improvements. The EEPS has been deployed in a test configuration and Wabtec is making changes to address issues that have been identified.

2.18 Americans with Disabilities Act (ADA)

Early in the development of the project, the PMOC raised a question regarding the need for the PCEP to demonstrate Equivalent Facilitation under the Americans with Disabilities Act (ADA) with respect to either the new EMU vehicles or the infrastructure. A conference call was held on November 6, 2015, between members of the PCEP team. FTA Region IX staff, the PMOC, and the FTA's Office of Civil Rights to discuss the issue. The representative of the Office of Civil Rights stated that based on information presented by PCEP's representatives, the project will not need to demonstrate Equivalent Facilitation because the current access to the vehicles will remain unchanged. This complies with the requirements of the ADA.

The new EMU vehicles will be equipped with powered onboard lifts to aid passengers using mobility devices. The JPB requested the FTA's concurrence to reduce the number of onboard 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 the 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, following its review of the JPB's proposal and further clarification provided by a conference call, concurred with the JPB's proposed reduction in the total number of passenger lifts per train set. The phased installation of the lifts was also discussed and associated grant timing considerations. Caltrain's Rail Operations Department recently requested the interim removal of the two (2) onboard lifts until the EMUs operate in blended service with the CHSRA trains. The justification for this request is that the space occupied by the onboard lifts will interfere with the movement of passengers using the stairs where the lifts are installed. Further, the accommodation of passengers using mobility devices and wishing to use the restroom can be accomplished by de-boarding the passenger and repositioning the train at any station, a procedure currently in use. The change was approved by the Change Management Board at its September 2019 meeting.

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

The FRA conducted an on-site design review of EMU TS1 at Stadler's assembly facility in Salt Lake City, Utah in July 2020. During the review, the FRA expressed concerns related to possible interference between stored bicycles, passengers seated in the bike cars, and access to the emergency egress points in the bike cars. Stadler completed the design of the barrier, a Change Order was executed for the installation of the barriers, and the barriers are being installed on all trainsets. The FRA observed the new configuration of the bike cars during its Sample Car Inspection on February 16, 2022, and expressed no concerns or objections to the arrangement.

The JPB conducted a test on October 13, 2022, of the portable ADA ramp carried onboard each EMU trainset to facilitate the boarding of a passenger using a mobility device. The ramp exceeds current ADA load requirements and satisfies the test requirements.

The PCEP team has discovered some locations where the gap between the station platform and the new EMU boarding threshold is longer than the portable ADA ramp. The PCEP team completed its survey of all of the station platforms and has developed a plan to temporarily correct the problem until new longer ramps are received from Stadler.

The JPB is installing additional mini-high block platforms at its stations to assist those passengers needing a level boarding condition.

2.19 Buy America

The PMOC continues to review the JPB's compliance with Buy America (BA) requirements related to manufactured products and rolling-stock systems. The JPB has provided documentation related to the compliance of its three (3) major contractors, and that material has been reviewed by the PMOC's Buy America experts. The JPB's Quality team reported the following Buy America activities during QPRM #26: Continued Buy America compliance verification:

- Continued to review BBII Material Receiving Reports for BA compliance.
- Developing:
  - Indented Bill of Materials list
  - File of all Buy America Documentation for QA check
  - Provide Certificates of Compliance (COC) for Buy America compliance from Proven and Rockwell Collins from the Tunnel and SCADA Projects.
- Continued to perform oversight of PCEP projects to verify compliance with BA.
- BBII has provided Buy America backup documentation. Documentation includes materials receiving and inspection reports and a preliminary indented bill of materials. The material receiving and inspection reports are being transmitted via Aconex with the new Contract Data Requirements List (CDRL) package number.
- Reviewing COCs from Proven and Rockwell Collins for compliance.
- BBII is expected to submit an updated Buy America cost report.

The PMOC and its Buy America consultant met with the JPB/PCEP quality team and BBII representatives to discuss BBII's recently submitted indented bill of materials. The PMOC's Buy America consultant provided guidance related to the appropriate classification of non-rolling stock systems materials compared to manufactured products, or items made of iron and steel. BBII will revise its classifications as appropriate and resubmit its documentation to the JPB for review.

The JPB's vehicle consultant conducted a Post-Delivery Buy America audit on June 28 and 29, 2022, and produced its audit report on July 11, 2022. The auditors found that the Stadler EMUs contain an average of 74.3% domestic content per seven-car trainset, which is more than the required 60% for this contract. The PMOC recommends that the JPB continue to monitor Stadler's Buy America performance through the completion of the order.

2.20 Start-Up, Commissioning, Testing

The JPB and PCEP team have several activities focused on the start-up and testing of both the infrastructure elements of the project as well as the EMU vehicles. Each of the three (3) primary contractors is responsible for developing and conducting test and commissioning plans for its work elements. The PCEP team is responsible for the integration of the major elements and the overall start-up of electrified rail operations. The PCEP's Director of Systems Integration and Testing holds weekly meetings with representatives of each discipline or technical leads from the various organizations.

Electrification Contract (OCS, Traction Power, Signals and Communications)

- End-to-end live-run testing of the entire alignment was conducted on April 27-28, 2024.
- TASI staff took over the isolation responsibilities for the energized OCS in Segments 3 and 4 on October 1, 2023, and subsequently, for the remainder of the alignment.

- BBII continues to participate in the project-wide Systems Integration, Safety and Security Certification Committee, Testing and Commissioning, and Rail Activation meetings.

EMU Contract

- *Eight (8) of the EMUs have completed the 1,000-mile burn-in process, which is part of the final acceptance requirements.*
- Installation of the Broadband WiFi equipment is continuing in Salt Lake City and at the CEMOF.
- EMU trainset 311 was shipped to Stadler's assembly plant in Salt Lake City where Swiss structural engineers conducted inspections of the two (2) damaged coaches. Stadler now expects that repairs will be completed in early 2025.
- The JPB and Stadler are discussing potential acceleration of trainset 17 to replace the damaged trainset so that fourteen (14) trainsets (plus two spares) are available for full revenue service.
- Testing of the EMUs with 25 kV power is continuing on the Segment 3 and 4 main tracks and on the Santa Clara Drill Track (SCDT). Based on initial results, the 1,000-mile burn-in process can be completed in approximately seven (7) days on the current shortened alignment.
- EMU operators will continue to receive refresher training on the vehicles during the live-run testing of the EMUs.
- Stadler is participating in the project-wide Systems Integration and Safety and Security Certification Committee meetings.
- Stadler also continues to conduct training of maintenance and operations personnel on the EMUs.

SCADA Contract

- Wabtec (formerly ARINC) continues to support the Systems Integration and Rail Activation activities. *Office SCADA is now operating in production mode.* The SCADA contract has a time extension through December 2024 which allows the availability test to be performed during Revenue Service before final acceptance of Office SCADA.

Readiness for Electrified Rail Operations

PCEP's Rail Activation Committee (RAC) meets regularly on a weekly basis. The RAC includes representatives from the PCEP's technical consultants and the JPB's Rail Operations group. The current focus has expanded beyond preparing for initial live wire testing, which is now underway, to include more of the elements necessary for the railroad to operate safely and reliably. These include staffing for supervisory and non-supervisory positions; completion of the necessary training for operations and management personnel; acquisition and storage of spare parts and special tools; resolution of any outstanding third-party issues, timely completion of the various required plans; and completion of the safety and security certification requirements. The RAC also tracks the JPB's progress in acquiring the necessary real estate and buildings to support the storage of Maintenance of Way (MOW) equipment and materials.

The Rail Activation Manager completed a re-write of the Rail Activation Plan (RAP) and the plan has been finalized. This new RAP is more comprehensive than the previous version and elaborates on the agency's preparations to assume electrified rail operations.

The Rail Activation Manager has completed a Draft Pre-Revenue Operations (PRO) Plan. This plan describes the Caltrain PCEP Project Pre-Revenue Operations and Maintenance (O&M) requirements. The Plan also establishes the framework for Caltrain's its safe operation and maintenance as the PCEP program advances from active construction to final revenue service; and

how Caltrain expects to successfully integrate all the components into a fully compliant electrified, passenger rail system. *The Rail Activation Manager has completed a draft Revenue Operations and Maintenance Plan to cover normal operations following the soft launch on August 11, 2024.*

The JPB conducted a rail activation risk assessment workshop on December 4, 2023. The PMOC has previously encouraged this activity to take advantage of the prior experience of new personnel who have joined the project following the change in leadership in 2021. The PCEP's risk lead distributed questionnaires to the invitees and collected a significant number of new potential risks, which were then discussed and elaborated on during the workshop. The designated risk owners are currently reviewing and scoring the assigned risks and developing mitigation strategies. The workshop focused on risks as viewed from the standpoint of Caltrain Rail Operations as opposed to the PCEP. Inter-related risks have been identified and shared with PCEP, however, the two (2) risk registers will remain independent.

The Rail Activation Schedule developed by the RAC has now been integrated with the other project schedules such as Testing and Commissioning, Systems Integration, Electrification, EMU, and SCADA to provide a truly integrated project schedule. The RAC continues to add detail to the various activities required to ready Caltrain for electrified service. The most recent Rail Activation Schedule is shown in Attachment H-2. Any additional detail should be incorporated into the IMS as soon as possible.

- **PMOC Observations:** *The PMOC is meeting regularly with the PCEP and the FTA in the context of its current Programmatic OP-54 Readiness for Service Review. The current efforts of both teams is focused on reviewing documents, clarifying issues and preparing the draft report.*
- The PMOC continues to monitor the activities of the RAC as well as the other project activities related to start-up and testing and safety certification. The PMOC continues to encourage all parties to communicate openly to avoid confusion. The PMOC observes that overall, coordination and cooperation between the JPB and BBII have improved under the PCEP's new leadership and through the renewed vigorous partnering effort.
- Unexpected issues continue to arise as the contractors and the PCEP teams perform punch list reviews of the constructed work and continue the testing and commissioning process. Completion of the electrification contract is getting closer and leadership on both sides is urging all personnel to remain focused, work safely, and produce a quality job.

2.21 Before-and-After Study Reporting

The PMOC verified that the JPB had prepared a Before and After (B&A) Study Plan during its evaluation of the PCEP's readiness to receive an FFGA. The B&A Plan was reviewed by FTA headquarters staff as part of the FFGA preparation process. The PMOC verified that the JPB has archived Before and After Documentation as of the Entry into Engineering (August 12, 2016). The materials were assembled according to the specifications in Appendix A of the Plan for the Before-and-After Study. The PMOC is in the process of verifying that the JPB has archived the required materials for Milestone 2, FFGA award. The PMOC will also follow-up with the JPB to encourage early planning to address the "After" requirements of the plan.

2.22 Lessons Learned

The PMOC routinely encourages the PCEP team to identify and document lessons learned during the course of the PCEP. The PMOC discovered, during a routine review using ACONEX, the project's document control system, that a Draft Lessons Learned Log and two (2) examples of

elaborated lessons learned had already been produced. Further inquiry produced the following information.

The PCEP Risk Manager conducted a series of interviews (not for attribution) with members of the PCEP team in 2018, with the objective of developing a list of Lessons Learned. The interviews produced a log of 35 issues which was distilled into two (2) for elaboration as an example of how the material could be further developed. The two topics that were further developed were Contractor Construction Work Windows and Land Acquisition Lesson Learned.

The Lessons Learned materials described above were reproduced as an attachment to the PMOC's Final Monitoring Report under Task Order 005; the report was submitted in June 2020.

The PCEP team, with encouragement from the PMOC, has undertaken a second round of lessons learned interviews. The interviews are complete, and the material has been compiled in the form of a summary table which was shared with the PMOC at QPRM #17 in July 2021. The JPB's Risk Manager reports there is currently no plan to elaborate on the various Lessons.

The PCEP's Director of Signal and Transmission Power reports that the signal team is keeping lessons learned for each signal cutover. Although many are site specific, it is likely that valuable trends will become apparent upon a comprehensive review.

Attachment A List of Acronyms

Acronyms	List of Terms
2SC	Two Speed Check Grade Crossing Approach Warning System
ADA	Americans with Disabilities Act
ARINC	Aeronautical Radio, Incorporated
ATP	Alternate Technical Proposal
BBII	Balfour-Beatty Infrastructure, Inc.
BCCF	Back-up Central Control Facility
BEMU	Battery Electric Multiple Unit
Cal/OSHA	California Office of Occupational Safety and Health
Caltrans	California Department of Transportation
CAR	Corrective Action Request
CC	FTA's Core Capacity Improvement Program
CCF	Central Control Facility
CCSF	City and County of San Francisco
CDR	Construction Discrepancy Report
CDRL	Contract Data Requirements List
CEMOF	Central Equipment Maintenance and Operations Facility
CHSRA	California High-Speed Rail Authority
CIG	FTA's Capital Investment Grant Process
CIL	Certifiable Items List
CMB	Change Management Board
CM/GC	Construction Manager/General Contractor
CNPA	Concurrent Non-Project Activity
CO	Change Order
CO	Chief Officer (CalMod)
COC	Certificate of Operational Conformance
CP	Control Point
CPUC	California Public Utilities Commission
D-B	Design-Build
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise
DQCP	Design Quality Control Process
EA	Environmental Assessment
EAC	Estimate at Completion
EE	Entry into Engineering
EEPS	Enhanced Employee Protection System
EOR	Engineer of Record
EOTP	Equivalent One Time Payment (PG&E)
EMI	Electromagnetic Interference
EMU	Electric Multiple Unit Rail Vehicle
EPREP	Emergency Preparedness Plan
ESZ	Electrical Safety Zone
FA	Final Acceptance
FAI	First Article Inspection
FD	Final Design
FFGA	Full Funding Grant Agreement
FLSC	Fire Life Safety Committee
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal Year
IBOM	Indented Bill of Material
ICO	Interim Chief Officer

Acronyms	List of Terms
IMS	Integrated Master Schedule
IRL	Issue Resolution Log
JPB or PCJPB	Peninsula Corridor Joint Powers Board
Jacobs	Jacobs Project Management Company
KKCS	Kal Krishnan Consulting Services, Inc.
LF	Linear Feet
MCC	Management Capacity and Capability
MOW	Maintenance of Way
MRR	Material Receiving Report
MPS	Master Project Schedule
NCR	Non-conformance Report
NEPA	National Environmental Policy Act
NTP	Notice to Proceed
NTSB	National Transportation Safety Board
OCS	Overhead Contact System/Overhead Catenary System
OHA	Operational Hazard Analysis
PCEP	Peninsula Corridor Electrification Program
PD	Project Development Phase
PG&E	Pacific Gas and Electric
PHA	Preliminary Hazard Assessment
PGHW	PGH Wong
PMOC	Project Management Oversight Contractor
PMP	Project Management Plan
PRO	Pre-Revenue Operations Plan
ProVen	ProVen Management, Inc.
PS	Paralleling Station for Traction Power Supply
PTC	Positive Train Control
PTCSP	Positive Train Control Safety Plan (FRA)
PTEPP	Passenger Train Emergency Preparedness Plan
QA	Quality Assurance
QAP	Quality Assurance Plan
QC	Quality Control
QMP	Quality Management Plan
QPRM	Quarterly Progress Review Meeting
RAC	Rail Activation Committee
RAMP	Real Estate Acquisition and Management Plan
RAP	Rail Activation Plan
RCD	FFGA Required Completion Date
RE	Resident Engineer
RFA	Request for Amendment
RFI	Request for Information
RFMP	Rail Fleet Management Plan
RFP	Request for Proposal
RIMP	Risk Identification and Mitigation Plan
RIR	Recordable Incident Rate (Safety)
ROW	Right of Way
RSD	Revenue Service Date or Revenue Service Demonstration
RWP	Roadway Worker Protection
SamTrans	San Mateo County Transit District
SCADA	Supervisory Control and Data Acquisition
SCC	Standard Cost Category
SCDT	Santa Clara Drill Track
SCVTA/VTA	Santa Clara Valley Transportation Authority
SF	City of San Francisco

Acronyms	List of Terms
SHPO	State Historic Preservation Office
SIT	System Integrating Testing
SLC	Salt Lake City
SONO	Statement of No Objection
SP	Southern Pacific Transportation Company
SSCP	Safety and Security Certification Plan
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSWP	Site Specific Work Plan
SWS	Switching Station
TASI	Transit America Services, Inc.
TIRCP	Transportation and Intercity Rail Capital Program
TLOA	Transmission Load Operating Agreement
TPS	Traction Power System
TPSS	Traction Power Substation
TrAMS	Transportation Award Management System
TUN/TUP	Temporary Use Notice/Temporary Use Permit
TVA	Threat and Vulnerability Analysis
UPRR	Union Pacific Railroad
UK	United Kingdom
VAT	Vehicle Acceptance Test
VE	Value Engineering
VECP	Value Engineering Change Proposal
VTA	Santa Clara Valley Transportation Authority
WPC	Wayside Power Cubicle
YOE	Year of Expenditure

Attachment B Safety and Security Checklist

Safety and Security Checklist			
Project Overview			
Project Mode	Commuter Rail		
Project Phase	FFGA – Construction/Start-up and Testing		
Project Delivery Methods	Design-Build, Design-Bid-Build		
Project Plans	**Version**	**Review by FTA**	**Status**
Safety and Security Management Plan (SSMP)	Rev 8	Y	Rev. 8 was approved by PCEP on 6/5/2023 and provided to the PMOC for review.
Safety and Security Certification Plan (SSCP)	Rev 0	N	Accepted by the JPB
System Safety Program Plan (SSPP)	Rev 1	N	Rev. 1 was approved by PCEP on 3/4/2021 and provided to the PMOC for review.
System Security Plan or Security and Emergency Preparedness Plan (SEPP)	Rev 0	N	SSP was audited by CPUC in March 2021 with no findings
Construction Safety and Security Plan (CSSP)	V3 Part C of SPs		In Contract Documents

Safety and Security Checklist		
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; the FTA certified California's SSOA program on October 23, 2018.
Has the oversight agency reviewed and approved the project sponsor's Security Plan or SSPP as per 49 CFR Part 659.17?	Y	CPUC audited the System Security Plan in March 2021; there were no findings.
Did the oversight agency participate in the last Quarterly Review Meeting?	Y	QPRM No. 26 was held on April 23, 2024
Has the project sponsor submitted its safety certification plan to the oversight agency?	Y	SSCP submitted Rev. 2, was reviewed and accepted on 2-22-2018.

Safety and Security Checklist		
Area of Focus	**Y/N**	**Notes/Status**
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. Caltrain's Safety and Security Department is the direct contact for DHS. The JPB's Information Technology network administrators receive periodic updates on cyber-security risks from the Cybersecurity & Infrastructure Security Agency (CISA) and implement appropriate actions to respond to those risks.
SSMP Monitoring		
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this	Y	Rev 7 was approved by PCEP on 6/11/2021 and provided to the PMOC for review.
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
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	Updated PHA and OHA documents have been prepared and are under review by the D-B contractor prior to submission to the JPB.
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 quarterly. In addition, meetings are conducted with the contractor monthly to review project incidents, lessons learned, hazards, vulnerabilities, and mitigations. IndustrySafe is also being used to track safety activities.

Safety and Security Checklist		
Area of Focus	**Y/N**	**Notes/Status**
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	Updated PHA and OHA documents have been prepared and are under review by the D-B contractor prior to submission to the JPB.
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 have been developed and reviewed by the Safety & Security Certification Review Committee.
Has the project sponsor verified construction specifications conformance?	Y	All facets of the Electrification construction are underway, OCS, TPS, Signals, and Communication.
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 the 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 workarounds?	Y	This is included in the Rail Activation Committee scope during testing/startup activities. BBII's Safety & Security Certification flow chart identifies the process.
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 *Y* *Y*	A Rail Activation Plan has been prepared and has been revised to include more operational details. The Rail Activation Committee has been meeting regularly since May 2019 and a Rail Activation Schedule has been prepared and an Integrated Test Plan and Procedures developed. A Rail Activation Risk Workshop was held on December 5, 2023.
Has the project sponsor issued the final safety and security certification?	N	The project is in the testing and commissioning phase. The required completion date has been revised to 12-31-2024.
Has the project sponsor issued the final safety and security verification report?	N	The project is in the testing and commissioning phase. The Required Completion Date has been revised to 12-31-2024.
Construction Safety		

Safety and Security Checklist		
Area of Focus	**Y/N**	**Notes/Status**
Does the project sponsor have a documented/implemented Contractor Safety Program with which it expects to comply?	Y	The Design/Build contractor's "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. An update was provided on 6/28/21.
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?		There were nine (9) recordable incidents in 2023. BBII's Recordable Incident Rate for 2023 is 1.88. Overall, since the project's inception, the RIR remains below the national average of 2.5.
If the comparison is not favorable, what actions are being taken by the project sponsor to improve its safety record?		The D-B contractor reviews all incidents with its employees at its monthly safety meetings.
Federal Railroad Administration		
If a shared track, has the project sponsor submitted its waiver request application to FRA? (Please identify specific regulations for which waivers are being requested.)	Y	FTA approved, by letter dated 2-8-2024, the JPB's request to extend the existing waiver for the Stadler KISS units for the life of the equipment as discussed in Docket Number FRA-2018-0067.
If a shared corridor, has the project sponsor specified specific measures to address safety concerns?	Y	Caltrain has submitted an updated Emergency Preparedness Plan (EPREP) to the FRA and preparations are underway for an on-site visit by FRA personnel to review the revised EPREP. The FRA visit did not occur in 2023 as expected; FRA expects to conduct the visit during initial revenue operations.
Is the Collision Hazard Analysis underway?	Y	Car body testing and Collision Analysis have been completed and the report sent to FRA.
Other FRA required Hazard Analysis – Fencing, etc.?	TBD	This is an operating ROW, and no service change is expected. Additional right of way fencing is being installed.
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	QPRM No. 26 was held on April 23, 2024.

Attachment C Action Items

The following table presents the open Action Items as of the date this report was prepared. New items are indicated by colored text, items whose status has changed from the prior listing are italicized and completed items have been shaded.

No.	Action Item	Discussion	Agreed Due Date	Responsibility Agency/Name	Status
13.02	JPB to submit a Request for Amendment (RFA) to Caltrain's Positive Train Control Safety Plan (PTCSP) under 49 CFR Sec. 236, Subpart I; the RFA will document the design and performance of its 2SC grade crossing warning system.	FRA has determined that JPB should submit a combined RFA for both the 2SC solution and the Crossing Optimization Process. Because both 2SC and Crossing Optimization Projects have FRA approved Test Plans, completion of the RFA(s) is not and will not impact work for either project.	Likely mid-2024.	Cocke	All cutovers have been completed. The RFA will be submitted after the completion of the 2SC installations and after the completion of the Crossing Optimization program. The JPB is staying in close touch with the FRA, and the FRA has witnessed the cutovers.

Attachment D *Top Project Risks (June 2024)*

The top risk remains unchanged from prior reports. Risks 350 and 352 moved up with the demotion of Risk 317. Risk 353 is new and Risk 010 rejoins the list of top Risks. Changes from the prior report are indicated in italics.

Risk No.	Risk Category		Risk Description	Status
	Cost	Sched.		
331	X	X	Delays to project because the system (or portions of the system) cannot be energized without impedance bonds.	BBII is implementing mitigation measures to deter theft of the impedance bonds while a longer-term solution is investigated.
350	X		Use of generators for temporary, low voltage power – both additional generators and longer use of current generators until permanent power. (33 locations did not need new PG&E).	1. Added resources to manage the issue; added technical resources. 2. Withhold funding from shared risk should BBII fail to make progress. 3. No longer an allowance item.
352	X	X	Interface and integration of broadband project with EMUs and Electrification Infrastructure may impact EMU burn-in and Revenue Service.	1. Coordination with Broadband and Stadler about doing on-board installations in Salt Lake City by Stadler, change order for broadband work is in negotiation. 2. Involve the PCEP team in the design review of the broadband project to address any potential incompatibility wayside construction. 3 Coordinate track access and CEMOF access to minimize impacts to PCEP construction and testing. 4. Review EMU production and delivery schedule including broadband equipment in support of the Revenue Service plan.
353		*X*	*EMU equipment could be damaged during testing.*	*1. Testing occurs before turnover to Caltrain.* *2. Caltrain provides EMU test vehicles* *3. Contractor to perform robust sub-system testing prior to integration testing* *4. JPB review/approval of test procedures, witness testing, test reports approval, and punch-list walks* *5. Contractor to fix any items damaged from testing, prior to hand-over*
010		*X*	*Potential for Stadler's sub-suppliers to fall behind schedule or delays in parts supply chain result in late completion of vehicles.*	*Stadler expediting parts and developing 2nd sources to address problematic suppliers. Stadler focused on keeping supply chain flowing.*
Top five (5) risks as listed on the Risk Register presented during the Change Management Board meeting on June 19, 2024.				

Attachment E Awarded Contracts

The current list of contracts numbers is 216. One hundred six (106) contracts have values over $50,000, ninety (90) have values over $100,000, and forty (40) have values over $1,000,000. The total value of awarded contracts is provided in the Core Accountability Table of this report. The following tabulation is all contracts with current values of $1 million or higher as of May 31, 2024.

Contractor Name	Contract Value
BALFOUR BEATTY INFRASTRUCTURE, INC	$ 1,097,149,880.96
STADLER US INC	$ 564,986,270.86
TRANSITAMERICA SERVICES, INC. - Other scopes	$ 139,389,648.62
PACIFIC GAS & ELECTRIC COMPANY - SA scopes	$ 124,106,400.00
GANNETT FLEMING TRANSIT & RAIL SYSTEMS	$ 67,743,400.00
PROVEN MANAGEMENT, INC. - Tunnel scope	$ 47,059,351.90
URS CORPORATION	$ 36,361,332.00
JACOBS PROJECT MANAGEMENT CO.	$ 35,500,000.00
LTK CONSULTING SERVICES, INC.	$ 29,177,672.96
B & G TRANSPORTATION GROUP, LLC	$ 12,663,882.94
RAIL SURVEYORS AND ENGINEERS, INC.	$ 10,525,980.30
HNTB CORPORATION	$ 10,282,762.98
Hatch Associates Consultants, Inc	$ 9,833,905.62
PROVEN MANAGEMENT, INC. - CEMOF scope	$ 9,476,816.16
JPMORGAN CHASE BANK, N.A.	$ 7,466,394.00
ARINC INCORPORATED	$ 5,523,853.39
ICF JONES & STOKES, INC.	$ 5,151,318.14
FIRST AMERICAN TITLE COMPANY	$ 4,609,074.60
NC 2121 SEC VENTURES LLC	$ 4,394,220.07
RREF III-P TOWER PLAZA LLC	$ 4,234,673.53
SAN MATEO COUNTY TRANSIT DISTRICT	$ 3,655,752.74
STATE OF CALIFORNIA	$ 3,629,200.00
PRICE FORBES & PARTNERS, LTD	$ 2,804,082.05
DCONSULT, LLC.	$ 2,471,349.92
SHIMMICK/DISNEY JOINT VENTURE	$ 2,400,000.00
HATCH ASSOCIATES CONSULTANTS	$ 2,216,434.03
NORMAN E. MATTEONI ATTORNEY BAR TRUST	$ 2,016,000.00
USI INSURANCE SERVICES NATIONAL, INC.	$ 1,993,650.50
WSP USA INC	$ 1,893,572.33
PROVEN MANAGEMENT, INC. - SSF scope	$ 1,866,575.18
BENDER ROSETHAL, INC.	$ 1,713,196.74
COMPUCOM SYSTEMS, INC.	$ 1,627,504.82
WELLS FARGO INSURANCE SERVICES USA, INC	$ 1,493,268.60
SFO AIRPORTER, INC.	$ 1,400,000.00
ASSOCIATED RIGHT OF WAY	$ 1,327,389.50
DLT SOLUTIONS, LLC	$ 1,241,700.75
CDM SMITH, INC.	$ 1,228,957.33
MNS ENGINEERS, INC.	$ 1,093,716.58
WABTEC TRANSPORTATION SYSTEMS LLC	$ 1,023,099.27

Attachment F Rolling Stock Vehicle Status Report

- **Manufacturer/Model Year/Vehicle Model or Type/Propulsion:** Stadler Bi-level Electric Multiple Unit (EMU) Commuter Rail vehicles (a variant of Stadler's "KISS" product line. The JPB plans to operate the vehicles initially in 7-car trainsets and later expand to 8-car trainsets.
- **Piggyback or Option:** The contract contains an option for up to 96 additional EMUs, with the price varying depending on the date the option is exercised. Option vehicles ordered prior to December 31, 2018, are purchased at the original price.
- **Number of Vehicles:** Initial Order of 96 EMUs to be delivered as 6-car trainsets; the current order is 133 EMUs delivered as 7-car trainsets. The JPB exercised some of its remaining options and purchased four (4) additional trainsets prior to the option expiration date of August 15, 2023; these options will not be funded by the PCEP. JPB also purchased one additional hybrid battery-electric multiple unit trainset to provide demonstration service between San Jose and Gilroy.
- Contract Advertisement Date: August 21, 2015
- Contract Award Date: August 15, 2016
- Price per Vehicle (Initial Order): $26,408,000 per 6-car trainset
- Planned Date of First Vehicle Delivery /Actual: March 20, 2022 (Actual)
- Conditional Acceptance of First Trainset (TS-3): July 25, 2022
- Initial Vehicle Order (Number of Vehicles and Configuration): 96 EMUs delivered as 6-car trainsets.
- Number of Option Vehicles Included in Contract: 96
- Buy America Domestic Content Percentage Required: 60%
- Domestic Content Percentage per Pre-award Audit: 79.38%
- **Latest Domestic Content Percentage Reported and Date:** The Post-Delivery Buy America Audit Report states that the overall average domestic content of a seven (7) car trainset is 74.3%. The domestic content was reported to vary from 70% to 77% for the four (4) different car type variants.
- Date of Pre-Award Audit: May 25-26, 2016
- Pre-award Audit Report Date: June 21, 2016
- Intermediate Buy America Audit Date: An intermediate review was conducted March 19-21, 2018. Stadler provided a virtual Buy America status update to the JPB's Buy America team on June 22, 2020. The JPB conducted an Intermediate Buy America Audit on October 25-27, 2021; however, the auditors were unable to verify the domestic content because the required information was not provided by Stadler.
- Date of Post-Delivery Audit: June 27-28, 2022
- Post-Deliver Audit Report Date: July 11, 2022

EMU Delivery Status

Trainset Number	*Projected Delivery*
3 & 4	Delivered
2 & 5	Delivered
6 & 9	Delivered
1 & 11	Delivered
10 & 12	Delivered
13 & 14	*Delivered*
7 & 8	July 2024
15 & 16	August 2024
17, 18, 19	December 2024

Attachment G Project Milestones / Key Events

Milestone	Baseline	Grantee Forecast	Summary of Milestone / Event
New Starts/Core Capacity Grant Agreement:	Not in MPS	05/2017 (A)	
Design/Build Notice to Proceed:	12/2015	06/2017 (A)	
Arrival of the first EMU in Pueblo, CO	N/A	2/27/2021 (A)	
Arrival of First EMU at JPB	07/2019	4/20/2022(A)	
Final Engineering (FE) Completion:	04/2018	8/10/2024 (P)	
Systems Integration Testing Completed:	01/2019	4/5/2024 (P)	
Segment 4 Complete to Begin EMU Testing:	11/2019	7/15/2023 (A)	
Revised Milestone 1 (Segments 3 and 4) Complete	N/A	9/15/2023 (A)	
Completion of Interconnection from PG&E to TPSS 2	N/A	1/29/2021 (A)	
Design/Build Substantial Completion:	02/2019	5/3/2024 (A)	
Conditional Acceptance of First EMU Trainset:		7/25/2022 (A)	
PG&E Provides Permanent Power:	09/2021	8/27/2022(A)	
Pre-Revenue Operation Completed:	05/2020	*09/09/2024 (P)*	
Revenue Service Date (without Risk Contingency):	12/2021	*09/10/2024 (P)*	
Revenue Service Date (with Risk Contingency)	N/A	*09/21/2024 (P)*	
FFGA Required Completion Date (RCD):	05/2020	12/31/2024 (P)*	
(A) Actual; (P) Projected			

*The JPB's revised RCD was accepted by the FTA on 11/28/2023.

The JPB's target to begin a soft opening of revenue service (RSD) is now Sunday, August 11, 2024.

Attachment H Roadmap to Electrified Rail Service

The electrification contractor achieved substantial completion on May 3, 2024. The railroad in Segments 1 through 4, the CEMOF, and the Santa Clara Drill Track are electrified and are being used for testing and burn-in of the newly delivered EMUs.

Electrified operations on the Caltrain system will occur in stages. The first stage will be the electrification of Segment 4 of the PCEP, including a designated test track. For clarity, Segment 4 is the southerly most segment of the PCEP. Initial electrification will require completion of TPSS 2; completion of the interconnection between PG&E's FMC substation in San Jose and TPSS 2; completion of the OCS system in Segment 4; completion of the signals, communications, and SCADA systems in Segment 4; and testing and commissioning of the above components as well as safety certification of the relevant components. Traction power substation #2 (TPSS-2) was electrified on August 27, 2022, and testing of the traction power components is underway. The contractor has encountered repeated problems in successfully completing short-circuit testing of the TPS and OCS in Segment 4. The schedule for live-wire testing in Segment 4 was placed on-hold while the test failure which occurred on May 20-21, 2023, was reviewed. Because the test demonstrated that the protection function operated as planned, JPB and BBII decided to proceed with initial testing of the EMUs on the Santa Clara Drill Track (SCDT), followed by OCS testing on Segment 4 main tracks and at the CEMOF. Milestone 1, Segments 3 and 4 available for EMU testing occurred on September 13, 2023, and the burn-in of the EMU vehicles has begun. The first four (4) EMU trainsets have completed dynamic testing on the SCDT and Segment 4 main tracks. The JPB negotiated a change with BBII, its Electrification contractor, to redefine Milestone 1 to include all work in Segments 3 and 4. This change has created a 21 mile stretch of electrified track which is allowing more efficient burn-in of the EMUs.

The OCS in the southerly most portion of Segment 4 was temporarily disconnected to allow replacement of the Guadalupe River bridge. The rail alignment was returned to the JPB as of October 21, 2023, and BBII began re-installing the OCS on November 27, 2023. The OCS has been reinstalled and regulation was completed on January 20, 2024.

The severe storm that struck the region on February 3-4, 2024, caused damage to the OCS in two (2) areas which required immediate attention and repair. Repair of the damaged areas has been completed. The schedule for short-circuit testing was revised and a short-circuit test was conducted on the southerly portions of Segment 4 during the weekend of February 24-25, 2024. The test was partially successful, and live run testing of the remainder of Segment 4 was completed in March 2024. Four (4) of the remaining five (5) short-circuit re-tests were successfully completed in March 2024. The remaining short-circuit test was successfully completed on April 5, 2024.

The second stage of electrification includes the completion of the remaining Segments 1 and 2, and the individual elements of each, plus the integrated testing, commissioning, and safety certification of the entire project. Final Completion for purposes of the JPB's Core Capacity FFGA requires fourteen (14) seven-car trainsets in weekday revenue service. The revised FFGA Required Completion Date (RCD) accepted by the FTA is December 31, 2024. The JPB is currently proposing a soft opening of revenue service with a single vehicle in late July 2024, followed by the introduction of additional vehicles at weekly intervals. Full revenue service with fourteen (14) new EMUs is planned to start on September 23, 2024. The JPB has recently concluded that a fleet of sixteen (16) EMU trainsets should be available to reliably provide the fourteen (14) trainsets needed to satisfy the FFGA passenger capacity requirements. The JPB is having discussions with Stadler regarding the timing for delivery of the two (2) additional trainsets. The JPB, in a letter dated August 21, 2023, requested a waiver from the FTA related to the required level of service necessary to satisfy the core capacity requirements in its FFGA. The waiver was requested due to the dramatic drop in ridership

as a result of the COVID-19 pandemic. The FTA approved the waiver request on November 27, 2023.

The PCEP has an active Rail Activation Committee (RAC) to coordinate the various activities needed to successfully initiate electrified rail operations. The RAC is chaired by Mark Clendennen and includes representatives from JPB employees assigned to the PCEP, PCEP's technical consultants, the JPB's Rail Operations group, and more recently from BBII, the Electrification contractor. The RAC has refined its meetings which provide more detailed coordination between rail operations, systems integration, and testing and commissioning activities. *The RAC meets weekly on Thursday mornings; the most recent meeting was held on June 27, 2024*. The current focus remains on development of an Operation and Maintenance Plan for Revenue Service, conducting Vehicle Acceptance Tests (VAT) for the EMUs, completing the 1,000-mile burn-in for each trainset, assembling the required documentation for the completed PCEP, and completing training for all essential personnel.

The JPB continues to hold Testing and Commissioning Workshops prior to initiating any significant test or commissioning activity. The objective of the workshops is to assess the readiness of the project team to conduct the specified activity. The workshops are regarded as beneficial by the PCEP team.

The updated Rail Activation Plan (RAP) has an increased emphasis on the JPB's readiness to operate revenue service with electrified equipment.

The PCEP risk lead has completed incorporating the Rail Activation risks into a consolidated risk register for the PCEP. The PCEP risk lead conducted a Rail Activation Risk Workshop on December 5, 2023. This workshop differs from the earlier Rail Activation risk work because the focus of the risks is an impact on Caltrain's readiness to commence rail operations. A significant number of risks were identified through the distribution of a pre-workshop questionnaire, and additional risks were elicited from the participants during the workshop. The risks have been assigned to various owners, and those individuals are currently providing additional details such as scoring the risks and describing mitigation measures and related timing. *The final Rail Activation Risk Register has not been integrated with the PCEP risk register, but has been provided to the PCEP team so that inter-related risks can be identified for the benefit of both teams.*

The PCEP's leadership has determined that the effort necessary to integrate the RAC's Rail Activation Schedule with the schedules produced by BBII, Stadler, and ARINC is no longer justified, and that effort has been discontinued. Details of the most recent rail activation schedule (See Attachment H-2) continue to be refined by the RAC with the assistance of the PCEP scheduling team.

The RAC is now using a Live Run Testing Schedule to communicate when these important activities will occur. A copy of the latest Live Run Testing Schedule is shown in Figure H-1.

The JPB and BBII have reached an agreement on the precise wording of the Temporary Use Permits (TUP) and the Certificate of Operational Conformance (COC.) The COCs for Segments 3 and 4 as defined in Milestone 1 were accepted as Statement of No Objection (SONO) on January 19, 2024.

Figure H-1 Live Run Testing Schedule (June 27, 2024)

Figure H-2 Rail Activation Schedule

RAS0524A

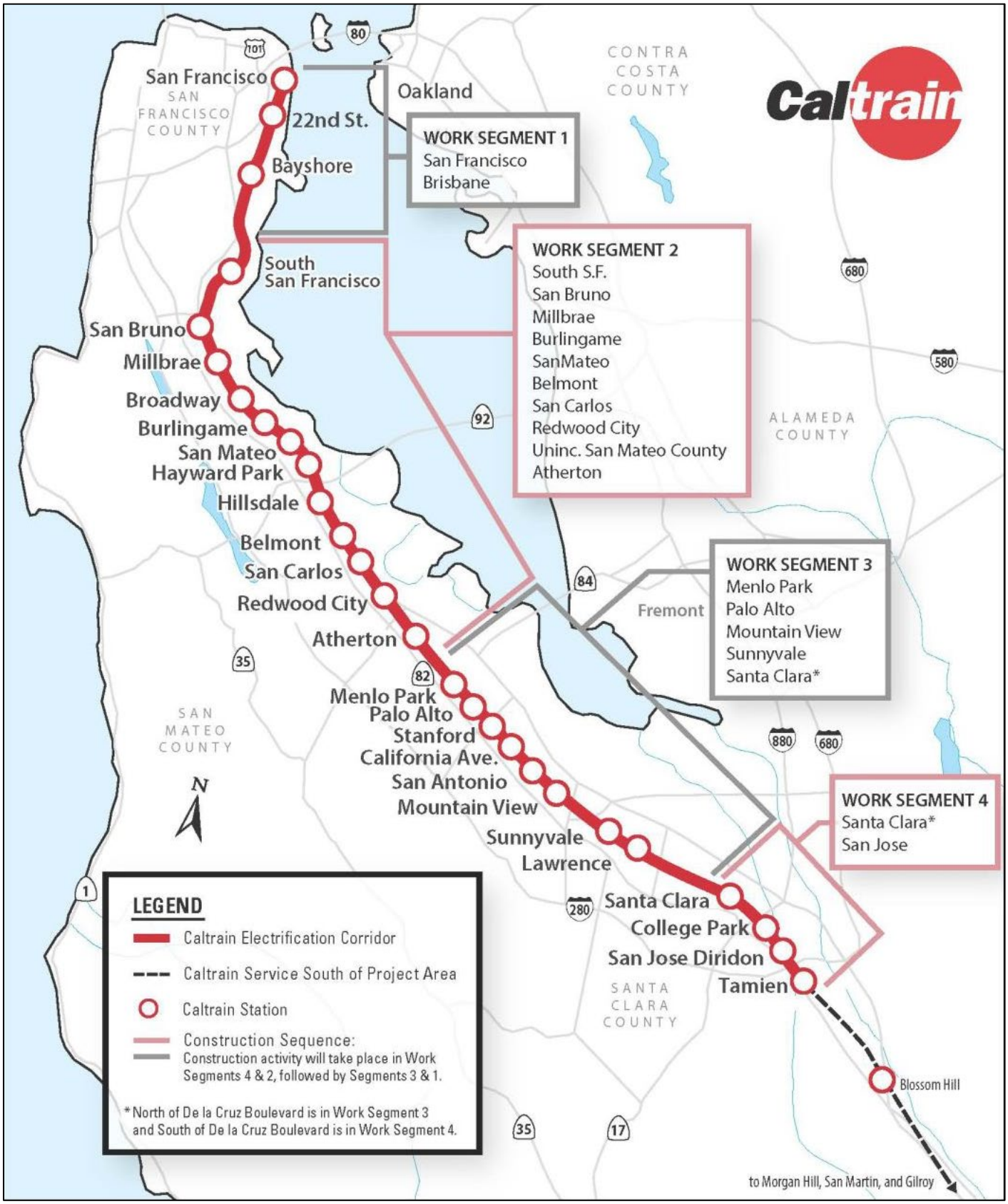
(Data Date: 6/1/2024)

Anticipated Rail Activation Schedule Tasks and Completion Periods

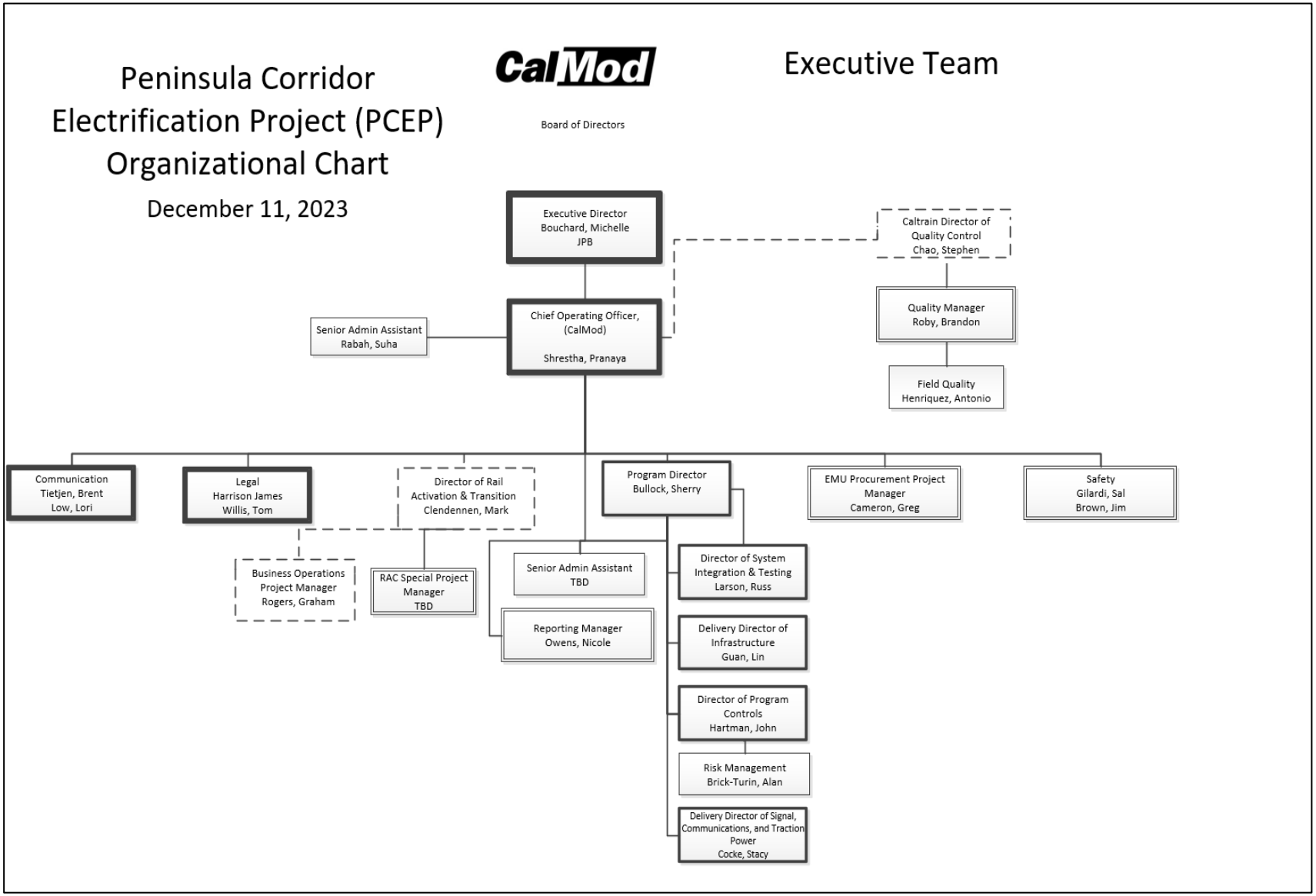
Activity Name	24-Mar	24-Apr	24-May	24-Jun	24-Jul	24-Aug	24-Sep	24-Oct	24-Nov	24-Dec	Descriptions
RAS System Integration Finish (1)				6/1							Testing leading up to Pre and Post Substantial Completion
RAS Operational Readiness Finish (2)					7/1						All activities that Operations must complete to operate trains
RAS Operational Drills Finish (3)					7/25						Training & Practicing for efficient Operations
RAS Soft Launch Finish (4)					8/10						Replacing Diesel Locomotives with EMU's (2 per week)
RAS Project Completion Celebration (5)							9/21				Project Outreach (VIP & Public Celebrations)
RAS Post Revenue Service Finish (6)										12/30	All activities leading up to Pre and Post FFGA

Expected dates shown in Red (Above)

Attachment I Project Map



Attachment J PCEP Executive Team Organization



Attachment K 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 thirty (30) 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 19 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 forty (40) 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.

Nancy Voltura (KKCS) assisted with the report. Ms. Voltura has over forty (40) years of Quality Assurance (QA) experience working as a QA Engineer, QA Auditor, and QA Manager on large design and construction projects. Ms. Voltura is a trained Apparent Cause Analyst evaluating heavy construction quality issues, is a trained professional QA Auditor and has been a certified Lead QA Auditor per ASME/NQA-1 and N45.2.23 standards.

Kevin Byers, P.S.P. (KKCS) assisted with the report. He is KKCS' Project Scheduling Manager, holds a B.S. degree in Construction Management, and has thirty-two (32) years of experience in scheduling and claims analysis for railroad and rail transit projects.

Dan Holzman, P.E., (KKCS) assisted with the report and is KKCS' Cost Estimation Manager. Mr. Holzman has a B.S. degree in Environmental Engineering and M.S. degree in Civil Engineering and holds a license as a Professional Engineer in Massachusetts. He has over forty-five (45) years of experience in construction and engineering and is a Certified Cost Professional.

The administrative Quality Control review of this report was done by **Chelsea Ellis, (KKCS)**. Ms. Ellis has a Bachelor of Science degree in Business Administration and more than ten (10) years of experience providing quality review checks on various technical documents.