



Modernization Program

Peninsula Corridor Electrification Project (PCEP)



October 2016 Monthly Progress Report

October 31, 2016

Funding Partners



FTA Core Capacity

FTA Section 5307/5337 (Environmental / Pre Development only)

FTA Section 5307/5337 (EMU only)



Prop 1B (Public Transportation Modernization & Improvement Account)

Caltrain Low Carbon Transit Operations Cap and Trade



Prop 1A

High Speed Rail Cap and Trade



Carl Moyer Fund



RM2

RM1

Bridge Tolls



SFCTA



San Mateo (SMCTA) Contribution

SMCTA Measure A



VTA Measure A

Santa Clara (VTA) Contribution



San Francisco Contribution

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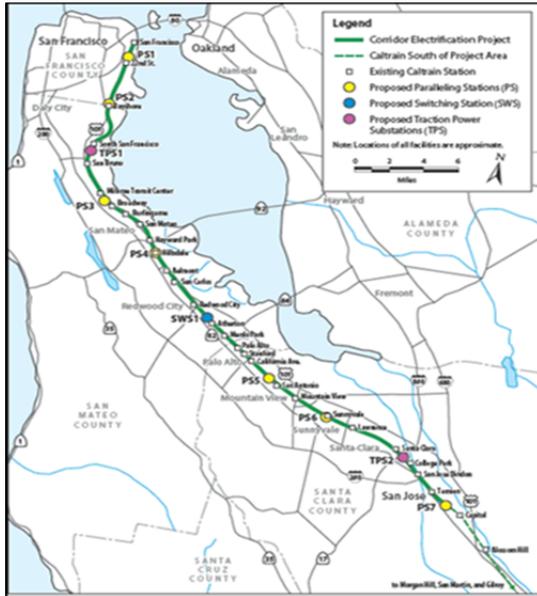
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1.0 BACKGROUND

Over the last decade, Caltrain has experienced a substantial increase in ridership and anticipates further increases in ridership demand as the San Francisco Bay Area's population grows. The Caltrain Modernization (CalMod) Program, scheduled to be implemented by 2020, will electrify and upgrade the performance, operating efficiency, capacity, safety, and reliability of Caltrain's commuter rail service.



The Peninsula Corridor Electrification Project (PCEP) is a key component of the CalMod Program and consists of converting Caltrain from diesel-hauled to Electric Multiple Unit (EMU) trains for service between San Francisco Station (at the intersection of Fourth and King Streets in San Francisco) and Tamien Station in San Jose. Caltrain will continue Gilroy service and support existing tenants.

An electrified Caltrain will better address Peninsula commuters' vision of an environmentally friendly, and fast and reliable service. Electrification will modernize Caltrain and make it possible to increase service while offering several advantages in comparison with existing diesel power use, including:

Improved Train Performance, Increased Ridership Capacity and Increased Service:

Electrified trains can accelerate and decelerate more quickly than diesel-powered trains, allowing Caltrain to run more efficiently. In addition, because of their performance advantages, electrified trains will enable more frequent and/or faster train service to more riders.

Increased Revenue and Reduced Fuel Cost: An electrified Caltrain will increase ridership and fare revenues while decreasing fuel costs.

Reduced Engine Noise Emanating from Trains: Noise from electrified train engines is measurably less than noise from diesel train engines. Train horns will continue to be required at grade crossings, adhering to current safety regulations.

Improved Regional Air Quality and Reduced Greenhouse Gas Emissions: Electrified trains will produce substantially less corridor air pollution compared with diesel trains even when the indirect emissions from electrical power generation are included. Increased ridership will reduce automobile usage, resulting in additional air quality benefits. In addition, the reduction of greenhouse gas emissions will improve our regional air quality, and will also help meet the State's emission reduction goals.

An electrified Caltrain system would set the stage for an enhanced, modern commuter rail service and for future blended California High-Speed Rail (CHSR) service. While this project will not include or study all infrastructure necessary to implement high-speed rail service on the corridor (such as CHSR maintenance facilities, station improvements, or passing tracks), the electrical infrastructure (such as overhead wire systems) will be compatible with later blended service.

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2.0 EXECUTIVE SUMMARY

The Monthly Progress Report is intended to provide an overview of the PCEP and provide funding partners, stakeholders, and the public an overall update on the progress of the project. This document provides information on the scope, cost, funding, schedule, and project implementation.

With the approval and issuance of the Limited Notice to Proceed (LNTP) to Stadler for the EMU contract and to Balfour Beatty Infrastructure, Inc (BBI) for the Electrification Design-Build (DB) contract last month, the PCEP team has been working with BBI and Stadler on the technical aspects of the project. Design and field investigations for Electrification took place in October, and the PCEP team has been actively reviewing and responding to requests for information (RFIs) from BBI. Utility relocation coordination was completed with the Union Pacific Railroad (UPRR), Pacific Gas & Electric (PG&E), and other utilities on the proposed relocation requirements for Electrification. The Electrification requirements were posted for comment by the California Utilities Commission (CPUC) with formal adoption expected at the November 10 meeting.

The EMU procurement process has progressed and Stadler has submitted several deliverables to the PCEP team for review. Stadler and the PCEP team have been participating in the Conceptual Design Review (CDR) process.

2.1 Schedule

The Revenue Service Date (RSD) in the Master Program Schedule (MPS) remains unchanged. Without adjustment for contingency, the RSD is forecast as August 2021. With the addition of approximately five months of contingency to account for potential risk to the project, the RSD is anticipated as December 2021. Table 2-1 provides a summary of the current schedule and milestones.

2.2 Budget

A summary of the overall budget and expenditure status for the PCEP is provided in Table 2-2 below.

2.3 Board Actions

There were no actions related to the PCEP at the October 6 JPB meeting.

2.4 Community Relations and Outreach

A number of community relations and outreach events took place during the month of October. PCEP staff gave a total of 3 presentations and participated and attended 5 third party/stakeholder actions and meetings.

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Table 2-1 Schedule Milestones

Milestones ^{1,2}	Program Plan	August	September
Full Notice to Proceed to Electrification Contractor	N/A	03/01/2017	03/01/2017
Full Notice to Proceed to EMU Manufacturer	N/A	03/01/2017	03/01/2017
Start of Electrification Major Construction	03/20/2017	07/24/2017	07/24/2017
First 8 Miles of Electrification Complete to Begin Testing	04/08/2019	10/08/2019	10/08/2019
Delivery of 1 st Vehicle	06/25/2019	07/30/2019	07/30/2019
Start Pre-Revenue Operations	09/08/2020	09/22/2020	09/22/2020
Potential Limited Service	12/31/2020	12/31/2020	12/31/2020
RSD (w/ Risk Contingency)	12/30/2021	12/30/2021	12/30/2021

Notes:

¹ Milestones reported on this table may differ from the current schedule. As the schedule continues to be refined over the coming months to incorporate approved baseline schedules from the Electrification and EMU contractors, changes to milestones will be thoroughly vetted prior to reflecting those changes in the Monthly Report.

² Program Plan only considered an NTP. It did not account for an LNTP and FNTP.

Table 2-2 Budget and Expenditure Status

Description of Work	Budget (A)	Cost this Month (B)	Cost To Date (C)	Estimate To Complete (D)	Estimate At Completion (E) = (C) + (D)
Electrification Subtotal	\$ 1,316,125,208	\$ 13,296,931	\$ 98,560,127	\$ 1,217,565,081	\$ 1,316,125,208
EMU Subtotal	\$ 664,127,325	\$ 491,793	\$ 16,580,821	\$ 647,546,504	\$ 664,127,325
PCEP TOTAL	\$ 1,980,252,533	\$ 13,788,903	\$ 115,140,948	\$ 1,865,111,585	\$ 1,980,252,533

3.0 ELECTRIFICATION – INFRASTRUCTURE

This section reports on the progress of the Electrification, Supervisory Control and Data Acquisition (SCADA), and Tunnel Modification components. A brief description on each of the components is provided below.

3.1 Electrification

The Electrification component of the PCEP includes the installation of 138 miles of single-track and overhead contact system (OCS) for the distribution of electrical power to the EMUs. The OCS will be powered from a 25-kilovolt (kV), 60-Hertz (Hz), single phase, alternating current supply system consisting of two traction power substations (TPS), one switching station (SS), and seven paralleling stations (PS). Electrification will be performed using a DB delivery method.

Activity This Month

- The PCEP team worked to support BBI on the initial design and field investigations. Field investigations include utility surveys, pothole location layouts, and geotechnical boring location layouts.
- The PCEP team also reviewed requests for information (RFIs) submitted by BBI. This effort is expected to continue during the upcoming months.
- Load profiles and the Power Quality Study, which are required by the California Independent System Operator (CAISO) were submitted to PG&E for review.
- The PCEP team completed coordination with the CPUC regarding the Electrification requirements. The Electrification requirements were formally posted for comment on October 10 with a comment period of 21 days. The comment period ended on October 31.

Activity Next Month

- The PCEP team will continue to work with BBI on design and field investigation activities and will respond to RFIs submitted by the contractor.
- Coordination efforts will continue with PG&E on scoping and preliminary design documents.
- CPUC is scheduled to meet on November 10 to approve and adopt the Electrification requirements.

3.2 Supervisory Control and Data Acquisition (SCADA)

SCADA is a system that monitors and controls field devices for electrification, including substations, paralleling stations and sectionalization. SCADA will be integrated with the base operating system for Caltrain Operations and Control, which is the Rail Operations Center System (ROCS).

Activity This Month

- Activity was limited to providing technical support on an as needed basis to the Caltrain Contract and Procurement Department for the procurement of the SCADA system.

Activity Next Month

- PCEP staff will continue to support Caltrain Contracts and Procurement Department on providing technical support during the procurement process.

3.3 Tunnel Modification

Tunnel modifications will be required on the four tunnels located in San Francisco. This effort is needed to accommodate the required clearance for the OCS to support electrification of the corridor. Outside of the PCEP scope, Caltrain Engineering and Construction has requested the PCEP team to manage completion of design and construction management for the Tunnel 1 and Tunnel 4 Drainage Rehab Project. The Drainage Rehab Project is funded separately from PCEP and will be a Design-Bid-Build (DBB) construction package. Construction will occur concurrently with the Electrification contractor's efforts in Segment 1.

Activity This Month

- PCEP team continued coordination efforts with the design team on drawings and specifications as well as field survey investigations on Tunnel 1 and Tunnel 4 Drainage Rehab projects. The PCEP team finalized the track profiles which will enable the finalization of the depth of Tunnel Notching.

Activity Next Month

- Coordination will continue on the Tunnel Modification design efforts.
- PCEP staff will continue to move forward with final design, which is schedule for completion at the end of 2016.

4.0 ELECTRIC MULTIPLE UNITS

The EMU procurement component of the PCEP consists of the purchase of 96 Stadler EMUs. The EMUs will consist of both cab and non-cab units configured as 16 six-car units. Power will be obtained from the OCS via roof-mounted pantographs which will power the axle-mounted traction motors. The EMUs will replace a portion of the existing diesel locomotives and passenger cars currently in use by Caltrain.

Activity This Month

- Stadler and the PCEP team participated in the interior, vehicle layout, and mock-up Conceptual Design Review (CDR) the week of October 17.
- Stadler submitted a number of deliverables for the PCEP team to review. These deliverables included documentation for safety/security, schedules, quality assurance documents, and information regarding EMU materials.

Activity Next Month

- It is anticipated that Stadler will continue submitting several documents for the PCEP team to review and provide comments.
- Stadler representatives will meet in San Mateo with the PCEP team on November 8 to discuss technical operations, positive train control, public outreach, and documentation control.

4.1 Centralized Equipment Maintenance and Operations Facility (CEMOF) Modifications

The Centralized Equipment Maintenance and Operations Facility (CEMOF) Modifications project will provide safe work areas for performing maintenance on the new EMUs.

Activity This Month

- On October 10, the PCEP team and HNTB participated in a CEMOF Facility Design Restart Kick-off Meeting.

Activity Next Month

- A follow up meeting is scheduled next month to continue to refine and advance the design.

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5.0 SAFETY

Safety and Security requirements and plans are necessary to comply with applicable laws and regulations related to safety, security, and emergency response activities. Safety staff coordinates with contractors in reviewing and planning the implementation of contract program safety requirements. Safety project coordination meetings continue to be conducted on a monthly basis to promote a clear understanding of project safety requirements as defined in contract provisions and program safety documents.

Activity This Month

- Safety staff continues to work closely with the Project Management Oversight Contractor (PMOC) in providing requested updates to the Safety and Security Management Plan (SSMP).
- During the October monthly contractor safety meeting, safety staff provided a presentation to BBI staff to clarify on-site safety requirements and project communication and coordination processes.
- Coordination discussions continued with BBI on the Site Specific Work Plan (SSWP) planning process as the SSWP procedural update is being finalized.
- The initial EMU Vehicle Safety Program Plan (VSSP) was submitted to the PCEP team with comments provided and discussed with Stadler. A follow-up meeting will be held in San Mateo to review the VSSP updated revisions to the document and discuss implementation needs.
- The Quarterly Management Safety Committee meeting was conducted in October that included a review of the PCEP safety program development and implementation.

Activity Next Month

- Safety staff will continue to review contractor safety and security contract documentation deliverables to ensure they meet project requirements. Meetings will continue with BBI and Stadler to progress project safety and security program implementation.
- Safety staff will continue to work closely with Caltrain Rail Operations to implement the SSWP procedure and coordinate its project application with BBI through its monthly coordination meetings.

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6.0 QUALITY ASSURANCE

The Quality Assurance (QA) staff performs technical review for planning, implementing, evaluating, and maintaining an effective program to verify that all equipment, structures, components, systems, and facilities are designed, procured, constructed, installed, and maintained in accordance with established criteria and applicable codes and standards throughout the design, construction, startup and commissioning of the PCEP.

Activity This Month

- The re-audit for LKG-CMC Document Control will occur 60-90 days from finalization of the LKG-CMC Scope of Work for Document Control.
- QA review of Volumes I, II, and IV of BBI's Quality Management Plan (QMP) was conducted. The QA team provided 96 comments and 85 were addressed and closed by BBI. There are currently 9 comments that remain open.
- QA creation of fifteen Project Management Plan (PMP) sectional checklists for management use.

Table 6-1 below provides details on the status of audits performed through the reporting period.

Table 6-1 Quality Assurance Audit Summary

Quality Assurance Activity	This Reporting Period	Total to Date
Internal Audits Conducted	0	14
Audit Findings Issued	0	0
Audit Findings Open	0	0
Audit Findings Closed	0	0
Non-Conformances Open	0	2
Non-Conformances Issued	0	4
Non-Conformances Closed	1	3

Activity Next Month

- QA staff will continue to provide support of FTA document submittals and also provide reviews for FFGA items.
- Review of the PCEP Quality Management Plan (QMP) has been scheduled for November 9, which is an annually required FTA activity.
- QA staff will review Stadler's QMP for EMU procurement.

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7.0 SCHEDULE

The schedule provided in this Monthly Progress Report is the approved schedule from September due to the timeframe necessary to update and approve the schedule. As indicated in Table 7-1, the Revenue Service Date (RSD), which is the date in which the project is deemed completed, remains unchanged in the Master Program Schedule (MPS). Without adjustment for contingency, the RSD is forecast as August 2021. With the addition of approximately five months contingency to account for potential risk to the project, the RSD is anticipated as December 2021. A summary of the overall schedule status for the PCEP is provided in Table 7-1, which provides comparisons between the baseline schedule (Program Plan), the previous update (August) and the current update (September) to capture any potential changes in the schedule. A complete schedule can be found in Appendix B.

Items listed in Table 7-2 show the critical path activities/milestones for the PCEP. Table 7-3 lists near-critical activities on the horizon.

Notable Variances

There were no notable variances this month.

Table 7-1 Schedule Status

Milestones ^{1,2}	Program Plan	August	September
Full Notice to Proceed to Electrification Contractor	N/A	03/01/2017	03/01/2017
Full Notice to Proceed to EMU Manufacturer	N/A	03/01/2017	03/01/2017
Start of Electrification Major Construction	03/20/2017	07/24/2017	07/24/2017
First 8 Miles of Electrification Complete to Begin Testing	04/08/2019	10/08/2019	10/08/2019
Delivery of 1 st Vehicle	06/25/2019	07/30/2019	07/30/2019
Start Pre-Revenue Operations	09/08/2020	09/22/2020	09/22/2020
Potential Limited Service	12/31/2020	12/31/2020	12/31/2020
RSD (w/ Risk Contingency)	12/30/2021	12/30/2021	12/30/2021

Notes:

- ¹. Milestones reported on this table may differ from the current schedule. As the schedule continues to be refined over the coming months to incorporate approved baseline schedules from the Electrification and EMU contractors, changes to milestones will be thoroughly vetted prior to reflecting those changes in the Monthly Report.
- ². Program Plan only considered an NTP. It did not account for an LNTP and FNTP.

Table 7-2 Critical Path Summary

Activity	Start	Finish
Electrification Design to Begin Major Construction	09/06/2016	07/21/2017
EMU Design to Delivery of First Carbody	09/06/2016	10/13/2017
Electrification OCS Construction	07/24/2017	02/26/2020
Electrification Acceptance & Integrated Testing	02/26/2020	04/25/2020
PG&E Complete Infrastructure Upgrades to Provide Permanent Power*	08/31/2020	08/31/2020
Vehicle Manufacturing & Assembly to Provide First 5 Trainsets	11/13/2017	09/09/2020
Pre-Revenue Operations	09/22/2020	12/22/2020
Potential Limited Service*	12/31/2020	12/31/2020
RSD w/out Risk Contingency*	08/16/2021	08/16/2021
RSD w/ Risk Contingency*	12/30/2021	12/30/2021

*Milestone activity

Table 7-3 Near-Term, Near-Critical with Less Than Three Months of Float

WBS	Activity	Responsibility
FTA	Path to Full Funding Grant Agreement (FFGA)	Project Delivery
Utilities	PG&E Scoping & Preliminary Design	Project Delivery

8.0 BUDGET AND EXPENDITURES

The summary of overall budget and expenditure status for the PCEP is shown in the following tables. Table 8-1 reflects the Electrification budget, Table 8-2 reflects the EMU budget, and Table 8-3 reflects the overall project budget.

Table 8-1 Electrification Budget & Expenditure Status

Description of Work	Budget (A)	Cost This Month (B) ¹	Cost To Date (C) ²	Estimate To Complete (D)	Estimate At Completion (E) = (C) + (D)
ELECTRIFICATION					
Electrification ³	\$ 696,610,558	\$ 11,908,250	\$ 29,384,250	\$ 667,226,308	\$ 696,610,558
Tunnel Notching	\$ 11,029,649	\$ -	\$ -	\$ 11,029,649	\$ 11,029,649
Real Estate	\$ 28,503,369	\$ 24,896	\$ 5,002,386	\$ 23,500,983	\$ 28,503,369
Private Utilities	\$ 63,515,298	\$ 137,981	\$ 2,815,070.41	\$ 60,700,228	\$ 63,515,298
Management Oversight ⁴	\$ 141,506,257	\$ 1,225,803	\$ 59,918,107	\$ 81,588,150	\$ 141,506,257
Executive Management	\$ 7,452,866	\$ 110,400	\$ 2,477,979	\$ 4,974,887	\$ 7,452,866
Planning	\$ 7,281,997	\$ 20,964	\$ 4,080,229	\$ 3,201,768	\$ 7,281,997
Community Relations	\$ 2,789,663	\$ 13,279	\$ 818,609	\$ 1,971,054	\$ 2,789,663
Safety & Security	\$ 2,421,783	\$ 24,252	\$ 460,777	\$ 1,961,006	\$ 2,421,783
Project Management Services	\$ 19,807,994	\$ 175,444	\$ 6,700,802	\$ 13,107,192	\$ 19,807,994
Engineering & Construction	\$ 11,805,793	\$ 52,000	\$ 1,822,003	\$ 9,983,790	\$ 11,805,793
Electrification Engineering & Management	\$ 50,461,707	\$ 741,735	\$ 14,423,140	\$ 36,038,567	\$ 50,461,707
IT Support	\$ 312,080	\$ 7,264	\$ 323,905	\$ (11,824)	\$ 312,080
Operations Support	\$ 1,445,867	\$ 5,000	\$ 340,518	\$ 1,105,349	\$ 1,445,867
General Support	\$ 4,166,577	\$ 22,000	\$ 1,126,506	\$ 3,040,071	\$ 4,166,577
Budget / Grants / Finance	\$ 1,229,345	\$ -	\$ 125,490	\$ 1,103,854	\$ 1,229,345
Legal	\$ 2,445,646	\$ -	\$ 1,446,882	\$ 998,764	\$ 2,445,646
Other Direct Costs	\$ 5,177,060	\$ 53,466	\$ 1,437,909	\$ 3,739,151	\$ 5,177,060
Prior Costs 2002 - 2013	\$ 24,707,878	\$ -	\$ 24,333,358	\$ 374,520	\$ 24,707,878
TASI Support	\$ 55,275,084	\$ -	\$ 267,516	\$ 55,007,567	\$ 55,275,084
RRP Insurance	\$ 3,500,000	\$ -	\$ 805,769	\$ 2,694,231	\$ 3,500,000
Environmental Mitigations	\$ 17,686,958	\$ -	\$ -	\$ 17,686,958	\$ 17,686,958
Required Projects	\$ 17,337,378	\$ -	\$ 367,028	\$ 16,970,350	\$ 17,337,378
Maintenance Training	\$ 1,021,808	\$ -	\$ -	\$ 1,021,808	\$ 1,021,808
Finance Charges	\$ 3,168,200	\$ -	\$ -	\$ 3,168,200	\$ 3,168,200
Contingency	\$ 276,970,649	\$ -	\$ -	\$ 276,970,649	\$ 276,970,649
Owner's Reserve	\$ -	\$ -	\$ -	\$ -	\$ -
ELECTRIFICATION SUBTOTAL⁵	\$ 1,316,125,208	\$ 13,296,931	\$ 98,560,127	\$ 1,217,565,081	\$ 1,316,125,208

Notes regarding tables above:

1. Column B "Cost This Month" represents the cost of work performed this month.
2. Column C "Cost To Date" includes actuals (amount paid) and accruals (amount of work performed) to date.
3. Accruals for "Electrification" include 5% Retention of the Contractor's retention until authorization of retention release.
4. The agency labor is currently accrued since mid-September 2016 due to the upgrade of the accounting system. Expenditures for agency labor will be updated once the financial data is available
5. The current budget vs. expenditure table represents the reconciled information based on the improved reporting from the district accounting system and implementation of new cost management system.

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Table 8-2 EMU Budget & Expenditure Status

Description of Work	Budget (A)	Cost This Month (B) ¹	Cost To Date (C) ²	Estimate To Complete (D)	Estimate At Completion (E) = (C) + (D)
EMU	\$ 550,899,459	\$ -	\$ 1,242,300	\$ 549,657,159	\$ 550,899,459
CEMOF Modifications	\$ 1,344,000	\$ -	\$ -	\$ 1,344,000	\$ 1,344,000
Management Oversight ³	\$ 64,139,103	\$ 491,973	\$ 15,338,521	\$ 48,800,582	\$ 64,139,103
Executive Management	\$ 5,022,302	\$ 39,447	\$ 1,414,231	\$ 3,608,071	\$ 5,022,302
Community Relations	\$ 1,685,614	\$ 10,000	\$ 226,382	\$ 1,459,232	\$ 1,685,614
Safety & Security	\$ 556,067	\$ 20,019	\$ 133,813	\$ 422,254	\$ 556,067
Project Management Services	\$ 13,275,280	\$ 72,106	\$ 4,488,373	\$ 8,786,908	\$ 13,275,280
Engineering & Construction	\$ 89,113	\$ -	\$ 23,817	\$ 65,296	\$ 89,113
EMU Engineering & Management	\$ 32,082,556	\$ 288,138	\$ 6,710,158	\$ 25,372,398	\$ 32,082,556
IT Support	\$ 1,027,272	\$ 4,000	\$ 188,761	\$ 838,511	\$ 1,027,272
Operations Support	\$ 1,878,589	\$ -	\$ 268,400	\$ 1,610,188	\$ 1,878,589
General Support	\$ 2,599,547	\$ 15,000	\$ 547,916	\$ 2,051,631	\$ 2,599,547
Budget / Grants / Finance	\$ 712,123	\$ 8,000	\$ 55,835	\$ 656,288	\$ 712,123
Legal	\$ 1,207,500	\$ -	\$ 395,455	\$ 812,045	\$ 1,207,500
Other Direct Costs	\$ 4,003,139	\$ 35,262	\$ 885,379	\$ 3,117,760	\$ 4,003,139
TASI Support	\$ 2,740,000	\$ -	\$ -	\$ 2,740,000	\$ 2,740,000
Required Projects	\$ 4,500,000	\$ -	\$ -	\$ 4,500,000	\$ 4,500,000
Finance Charges	\$ 1,941,800	\$ -	\$ -	\$ 1,941,800	\$ 1,941,800
Contingency	\$ 38,562,962	\$ -	\$ -	\$ 38,562,962	\$ 38,562,962
Owner's Reserve	\$ -	\$ -	\$ -	\$ -	\$ -
EMU SUBTOTAL⁴	\$ 664,127,325	\$ 491,973	\$ 16,580,821	\$ 647,546,504	\$ 664,127,325

Notes regarding tables above:

- Column B "Cost This Month" represents the cost of work performed this month.
- Column C "Cost To Date" includes actuals (amount paid) and accruals (amount of work performed) to date.
- The current budget vs. expenditure table represents the reconciled information based on the improved reporting from the district accounting system and implementation of new cost management system.
- The agency labor is currently accrued since mid-September 2016 due to the upgrade of the accounting system. Expenditures for agency labor will be updated once the financial data is available

Table 8-3 PCEP Budget & Expenditure Status

Description of Work	Budget (A)	Cost This Month (B) ¹	Cost To Date (C) ²	Estimate To Complete (D)	Estimate At Completion (E) = (C) + (D)
Electrification Subtotal	\$ 1,316,125,208	\$ 13,296,931	\$ 98,560,127	\$ 1,217,565,081	\$ 1,316,125,208
EMU Subtotal	\$ 664,127,325	\$ 491,973	\$ 16,580,821	\$ 647,546,504	\$ 664,127,325
PCEP TOTAL^{3,4}	\$ 1,980,252,533	\$ 13,788,903	\$ 115,140,948	\$ 1,865,111,585	\$ 1,980,252,533

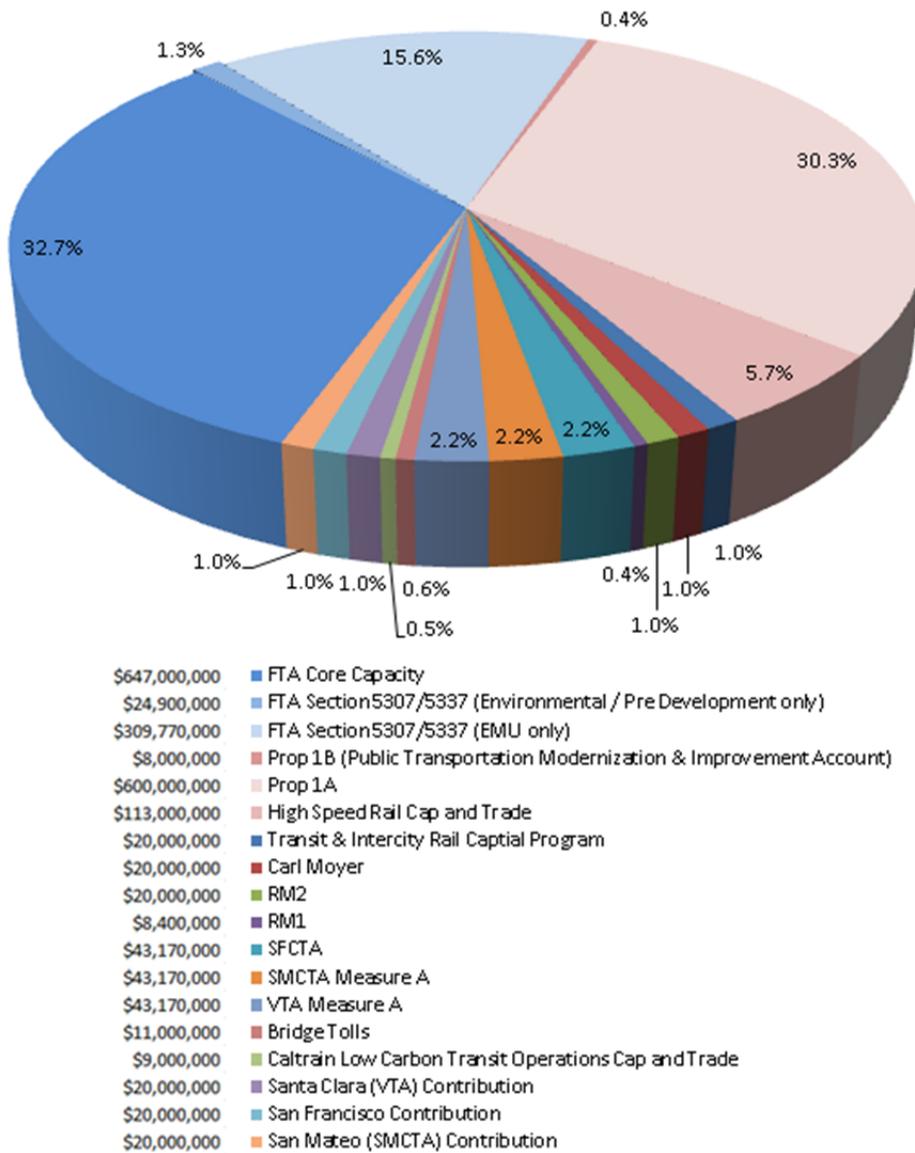
Notes regarding tables above:

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- Column C "Cost To Date" includes actuals (amount paid) and accruals (amount of work performed) to date.
- The current budget vs. expenditure table represents the reconciled information based on the improved reporting from the district accounting system and implementation of new cost management system.
- The agency labor is currently accrued since mid-September 2016 due to the upgrade of the accounting system. Expenditures for agency labor will be updated once the financial data is available.

9.0 FUNDING

Figure 9-1 depicts a summary of the funding plan for the PCEP. It provides a breakdown of the funding partners as well as the allocated funds. As previously reported, all non-core capacity funds have been committed to the PCEP project. There were no notable updates in October regarding funding.

Figure 9-1 Funding Plan



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10.0 RISK MANAGEMENT

The risk management process is conducted in an iterative fashion throughout the life of the project. During this process, new risks are identified, other risks are resolved or managed, and potential impacts and severity modified based on the current situation. The Risk Management team progress report includes a summary on the effectiveness of the Risk Management Plan, any unanticipated effects, and any correction needed to handle the risk appropriately.

The Risk Management team has identified the following items as Top Risks for the project:

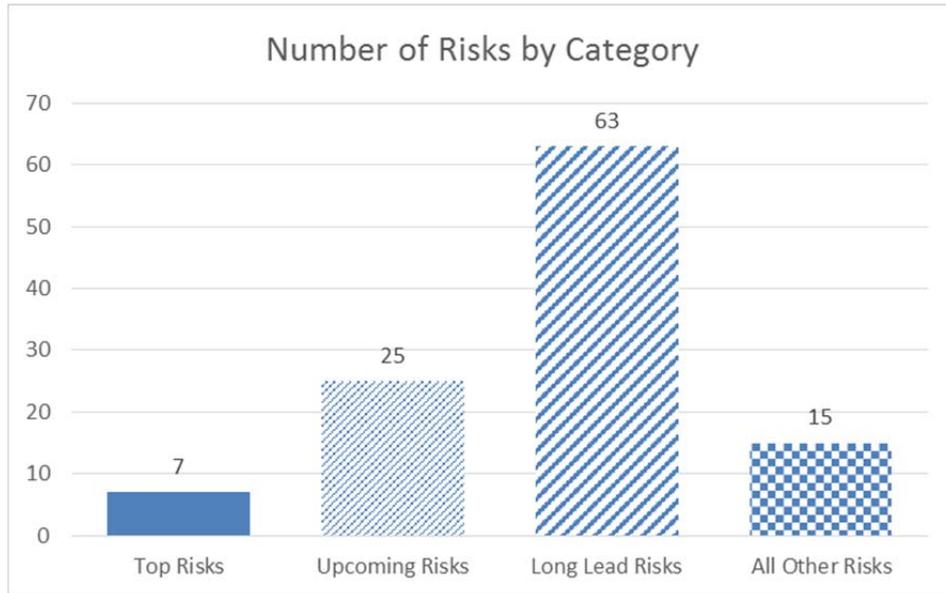
- If overhead utilities are not relocated in time, BBI may incur delays.
- A delay in the execution of the FFGA by the FTA, could potentially result in delays to the project.
- Upgrades to the electrical service needed for the Electrification project are dependent upon final agreement with PG&E for which technical and contractual issues must first be resolved.
- The final configuration of the electrification system requires the installation of a duct bank under Union Pacific Railroad (UPRR) tracks. This will require further coordination with UPRR.
- Transit America Systems Inc. (TASI) may not be able to deliver sufficient staff resources to support the construction and testing of the electrification system.
- Recruitment of Key Staff is necessary to support the project.
- As built Communications Based Overlay Signal System (CBOSS) drawings needed by BBI may be incomplete, and will need to be revised.

Activity This Month

- Updates were made to risk descriptions, effects, and mitigations based upon weekly input from risk owners. Monthly cycle of risk updating was completed based on schedules established in the Risk Identification and Mitigation Plan.
- Risk retirement dates were updated based upon revisions to the project schedule and input from risk owners.
- Continued weekly monitoring of risk mitigation actions and publishing of the risk register.
- PCEP Risk Management Team attended Electrification, Project Delivery, and Systems Integration meetings to monitor developments associated with risks and to identify new risks.

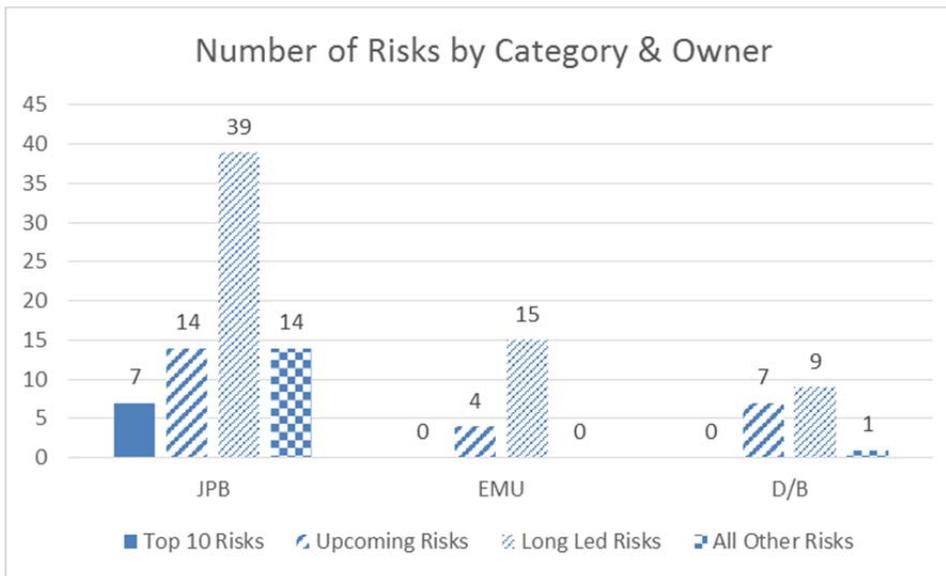
Tables 10-1 and 10-2 show the risks identified for the program. Risks are categorized as: top risk, upcoming risk, long lead, and all other risks. The categories are based on a rating scale comprised of schedule and cost factors. Simply put, top risks are considered to have a significantly higher than average risk grade. Upcoming risks are risks for which mitigating action must be taken within 60 days. Long lead risks are risks for which mitigating action must be taken as much as a year or more into the future. All other risks are risks not falling into these categories.

Table 10-1 Monthly Status of Risks



Total Number of Active Risks = 110

Table 10-2 Risk Classification



Total Number of Active Risks = 110

Activity Next Month

- Update risk descriptions, effects, mitigations, retirement dates.
- Conduct weekly monitoring of risk mitigation actions and continue publishing risk register.

11.0 ENVIRONMENTAL

11.1 Permits

The PCEP requires environmental permits from the following agencies/federal regulations: Section 106 of the National Historic Preservation Act of 1966 (NHPA), Section 7 of the Endangered Species Act (ESA), United States Army Corps of Engineers (USACE), San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), the California Department of Fish and Wildlife (CDFW), and the San Francisco Bay Conservation Development Commission (BCDC).

Section 106 of the NHPA process as well as Section 7 of the ESA process have concluded.

Activity This Month

- All environmental permits have been obtained.

Activity Next Month

- There are no planned permit activities in the next month.

11.2 Mitigation Monitoring and Reporting Program

The California Environmental Quality Act (CEQA) requires that a Lead Agency establish a program to monitor and report on mitigation measures that it has adopted as part of the environmental review process. The JPB has prepared a Mitigation Monitoring and Reporting Program (MMRP) to ensure that mitigation measures identified in the PCEP EIR are fully implemented during project implementation. The JPB will implement the mitigation measures through its own actions, those of the design-build contractor and actions taken in cooperation with other agencies and entities. The MMRP is available on the Caltrain website:

<http://www.caltrain.com/Assets/Caltrain+Modernization+Program/Electrification+Documents/MMRP.pdf>

Activity This Month

- There are no current mitigation activities this month.

Activity Next Month

- There are no planned mitigation activities next month.

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12.0 UTILITY RELOCATION

Implementation of the PCEP requires relocation or rerouting of both public and private utility lines and/or facilities. Utility relocation will require coordination with many entities, including regulatory agencies; public safety agencies; Federal, State, and local government agencies; private and public utilities; and other transportation agencies and companies. The section describes the progress specific to the utility relocation process.

Activity This Month

- PCEP team continued monthly coordination meetings with telecommunication and power utilities. These meetings focused on overall project and relocation schedules, designation of responsibilities, applicable design standards, and reconciliation of agreements and records.
- Work continued with all utilities on review of overhead utility line relocations based on the current preliminary design. This effort is expected to continue for the next several months to support identification and confirmation, agreements, and design of all relocations.
- PCEP team completed coordination with UPRR, PG&E and other utilities on proposed relocation requirements for Electrification, which were submitted to the California Utilities Commission (CPUC). The Electrification requirements were formally submitted to CPUC on October 10 with a comment period of 21 days. The comment period ended on October 31.

Activity Next Month

- Monthly meetings will continue with telecom and power carriers.
- PCEP team will continue to work with all utilities on review of overhead utility line relocations based on the current 35% design and continue coordination and reconciliation of existing agreements with utilities.
- Relocation requirements are defined with the adoption by the CPUC, which is anticipated on November 10.

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13.0 REAL ESTATE

The PCEP requires the acquisition of a limited amount of real estate including fee simple purchases, and permanent easements for various purposes. The PCEP Real Estate Program Management Team (RE Team) manages the acquisition of all property rights, including acquisition of fee simple title, and permanent easements. In general, Caltrain uses existing ROW for the PCEP, but will need to acquire additional real estate to expand the right-of-way (ROW) to accommodate installation of OCS supports, and wayside equipment (i.e., traction power stations, switching stations, and paralleling stations. Caltrain does not need to acquire real estate to complete the EMU procurement portion of the PCEP.

Activity This Month

During October, offer packages for parcels in both Segment 2 and 4 were prepared and 15 offers were made. The RE Team continues to work through Phase II testing for two parcels. The RE Team continues negotiations on offers pending, including working through relocation of one commercial business. Six appraisals were identified and will need to be updated due to changing market conditions and other related changes.

Table 13-1 below provides a brief summary of the Real Estate acquisition overview for the project.

The RE Team updated the Real Estate Management Plan (RAMP) and provided other supplemental information for review by the FTA and PMOC. Pending receipt of further comments by the FTA/PMOC, the RAMP will be completed after receipt of comments.

- **Segment 4 Status:**

- Negotiations are on-going on parcels JPB-SCL4-0098, JPB-SCL4-0105, JPB-SCL4-0106, and JPB-SCL4-0112 (one of the two full acquisitions on the project).
- The RE Team identified 4 parcels for which updated appraisals are required.
- The RE Team continued coordination efforts with property owners, which included Phase II Hazmat assessment work for two commercial properties in Segment 4.
- Phase I Hazmat assessments for Segment 4 is complete.

- **Segment 2 Status:**

- RE Team and Legal staff reviewed 20 offer packages and 15 offers have been made.
- Phase 1 Hazmat assessments for Segment 2 have been completed.

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- **Other:**
 - The RE Team continued development of the draft Electrification Parcel Acquisition Tracking System (E-PATS) for each Project segment. It will track the status of each parcel identified as required for the Project.
 - The RE Team also developed a baseline schedule for Segments 2 and 4 and Segments 1 and 3.
 - JPB continues to negotiate the Cooperative Agreement for eminent domain authority with the City & County of San Francisco. The target for completion is for early 2017.

Activity Next Month

- In early November, the RE Team will submit a draft Relocation Plan for the one non-residential relocation on Project.
- Negotiations for all outstanding offers will continue.
- Parcels identified in Segments 2 and 4 will be updated.
- The RE Team anticipates completion of Phase II Hazmat assessment work for two commercial properties in Segment 4.
- The RE Team will begin the process to initiate appraisals for Segments 1 and 3.
- The RE Team will work with PCEP team to develop a parcel by parcel delivery schedule which will be consistent with BBI's schedule.

Table 13-1 Real Estate Acquisition Overview

Segment	No. of Parcels Needed*	No. of Appraisals Completed	No. Of Offers Presented	Acquisition Status		
				Escrow Closed	Value Litigation	Parcel Possession
Segment 4	13	13	4	0	0	0
Segment 2	26	24	15	0	0	0
Segment 1	8	0	0	0	0	0
Segment 3	12	0	0	0	0	0
Total	59	37	19	0	0	0

Note:
 During design development, the real estate requirements may adjust to accommodate design refinements. Parcel requirements will adjust accordingly. The table in this report reflects the current property needs for the Project.

14.0 THIRD PARTY AGREEMENTS

Third-party coordination is necessary for work impacting public infrastructure, utilities, ROW acquisitions, and others. The table below outlines the status of necessary agreements for the PCEP.

Table 14-1 Third-Party Agreement Status

Type	Agreement	Third-Party	Status
Governmental Jurisdictions	Construction & Maintenance ¹	City and County of San Francisco	In Process
		City of Brisbane	Executed
		City of South San Francisco	Executed
		City of San Bruno	In Process
		City of Millbrae	Executed
		City of Burlingame	Executed
		City of San Mateo	Executed
		City of Belmont	In Process ²
		City of San Carlos	Executed
		City of Redwood City	Executed
		City of Atherton	In Process
		County of San Mateo	Executed
		City of Menlo Park	Executed
		City of Palo Alto	In Process
		City of Mountain View	Executed
		City of Sunnyvale	Executed
		City of Santa Clara	In Process
	County of Santa Clara	Executed	
	City of San Jose	Executed	
	Condemnation Authority	San Francisco	In Process
San Mateo		In Process	
Santa Clara		Executed	
Utilities	Infrastructure	Pacific Gas & Electric (PG&E)	Executed ³
	Operating Rules	California Public Utilities Commission (CPUC)	In Process
Transportation & Railroad	Construction & Maintenance	Bay Area Rapid Transit (BART)	Executed ⁴
	Construction & Maintenance	California Dept. of Transportation (Caltrans)	In Process
	Trackage Rights	Union Pacific Railroad (UPRR)	Executed ⁴

Notes regarding table above:

1. Agreements memorialize the parties' consultation and cooperation, designate respective rights and obligations and ensure cooperation between the JPB and the cities and counties in connection with the design and construction of the PCEP. A comprehensive agreement is planned for each of the 17 cities and three counties along the Caltrain ROW and within the PCEP limits.
2. Approved by City Council, or Board of Supervisors, and awaiting signature for execution.
3. Master agreement and two supplemental agreements.
4. Utilizing existing agreements

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15.0 COMMUNITY RELATIONS AND OUTREACH

The Community Relations and Outreach team coordinates all issues with all jurisdictions, partner agencies, government organizations, businesses, labor organizations, local agencies, residents, community members, other interested parties, and the media. In addition, the team oversees the design-build contractor's effectiveness in implementing its Public Involvement Program. The following PCEP related external affairs meetings took place in October:

- **Presentations**

- San Bruno City Council
- American Society of Civil Engineers San Jose Branch
- Menlo Park Chamber Transportation Committee

- **Third Party/Stakeholder Actions**

- Unanimous support Santa Clara Valley Transit Authority (VTA) Board regarding PCEP Interim Financing
- Unanimous support from San Francisco Board of Supervisors Budget and Finance Committee regarding PCEP Interim Financing

- **Stakeholder Meetings**

- Meeting with Supervisor Mark Farrell's Staff
- Diridon Station Working Group
- City/County Staff Coordinating Group
- Local Policy Maker Group

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16.0 DBE PARTICIPATION AND LABOR STATISTICS

Disadvantaged Business Enterprise (DBE) and labor statistics will be reported after construction has commenced.

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17.0 PROCUREMENT

Contract Activity

- The JPB authorized the award of both the EMU and DB contracts at the July 7, 2016 board meeting. The LNTPs were issued on September 6, 2016 for the EMU and Electrification Contracts with a full NTP expected in March 2017 for both contracts.

IFB/RFQ/RFP Advertised this Month:

- RFQ - Ares Prism for Contract Management software.

IFB/RFQ/RFP Received this Month:

- Quote - Received from Ares for Contract Management Software \$70,740.00.

Contract Awards this Month:

- No Contract Awards were made for October.

Work Directive (WD)/Purchase Order (PO) Awards & Amendments this Month:

- Multiple WD & PO's were issued to support the program needs for October.

Upcoming Invitation for Bid (IFB)/Request for Qualifications (RFQ)/ Request for Proposals (RFP):

- RFP - SCADA system to support CalMod.
- RFP - On- Call Ambassador Support Services.

Upcoming Contract Awards:

- Contract authority increase for the CalMod Program Management Support Services contract for URS (AECOM).

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18.0 TIMELINE OF MAJOR PROJECT ACCOMPLISHMENTS

Below is a timeline showing major project accomplishments from 2002 to 2016:

Date	Milestone
2002	Conceptual Design Completed
2004	Draft NEPA Environmental Assessment (EA)/Environmental Impact Report (EIR) (2004)
2008	35% design complete
2009	Final NEPA EA/EIR and Finding of No Significant Impact (FONSI)
2014	Request for Qualifications (RFQ) for Electrification Request for Information for EMU
2015	JPB Approves Final CEQA Environmental Impact Report (EIR) JPB Approves Issuance of RFP for Electrification JPB Approves Issuance of RFP for EMU Receipt of Electrification of Proposal for Electrification FTA approval of Core Capacity Project Development
2016	JPB Approves EIR Addendum #1: PS-7 FTA Re-Evaluation of 2009 FONSI Receipt of Electrification BAFOs Receipt of EMU Proposal Application for Entry to Engineering to FTA Completed the EMU Buy America Pre-Award Audit and Certification Negotiations completed with Stadler for EMU Vehicles Negotiations completed with BBI., the apparent best value Electrification firm JPB Approves Contract Award (LNTP) BBI JPB Approves Contract Award (LNTP) Stadler FTA approval of Entry into Engineering for the Core Capacity Program

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APPENDICES

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Appendix A – Acronyms

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**Peninsula Corridor Electrification Project
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AIM	Advanced Information Management	EIR	Environmental Impact Report
ARINC	Aeronautical Radio, Inc.	EMU	Electric Multiple Unit
BAAQMD	Bay Area Air Quality Management District	ESA	Endangered Species Act
BBI	Balfour Beatty Infrastructure, Inc.	ESA	Environmental Site Assessments
CAISO	California Independent System Operator	FEIR	Final Environmental Impact Report
CalMod	Caltrain Modernization Program	FFGA	Full Funding Grant Agreement
Caltrans	California Department of Transportation	FONSI	Finding of No Significant Impact
CDFW	California Department of Fish and Wildlife	FRA	Federal Railway Administration
CEMOF	Centralized Equipment Maintenance and Operations Facility	FTA	Federal Transit Administration
CEQA	California Environmental Quality Act (State)	GO	General Order
CHSRA	California High-Speed Rail Authority	HSR	High Speed Rail
CIP	Capital Improvement Plan	ICD	Interface Control Document
CPUC	California Public Utilities Commission	ITS	Intelligent Transportation System
DB	Design-Build	JPB	Peninsula Corridor Joint Powers Board
DBB	Design-Bid-Build	LNTF	Limited Notice to Proceed
DBE	Disadvantaged Business Enterprise	MMRP	Mitigation, Monitoring, and Reporting Program
DEMP	Design, Engineering, and Management Planning	MOU	Memorandum of Understanding
EA	Environmental Assessment	MPS	Master Program Schedule
EAC	Estimate at Completion	NCR	Non Conformance Report
		NEPA	National Environmental Policy Act (Federal)

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NHPA	National Historic Preservation Act	RSD	Revenue Service Date
NMFS	National Marine Fisheries Service	RWP	Railroad Worker Protection
NTP	Notice to Proceed	SamTrans	San Mateo County Transit District
OCS	Overhead Contact System	SCADA	Supervisory Control and Data Acquisition
PCEP	Peninsula Corridor Electrification Project	SCC	Standard Cost Code
PCJPB	Peninsula Corridor Joint Powers Board	SPUR	San Francisco Bay Area Planning and Urban Research Association
PG&E	Pacific Gas and Electric	SFBCDC	San Francisco Bay Conservation Development Commission
PHA	Preliminary Hazard Analysis	SFCTA	San Francisco County Transportation Authority
PMOC	Project Management Oversight Contractor	SFMTA	San Francisco Municipal Transportation Authority
PS	Paralleling Station	SFRWQCB	San Francisco Regional Water Quality Control Board
QA	Quality Assurance	SOGR	State of Good Repair
QC	Quality Control	SS	Switching Station
QMP	Quality Management Plan	SSCP	Safety and Security Certification Plan
QMS	Quality Management System	SSMP	Safety and Security Management Plan
RAMP	Real Estate Acquisition Management Plan	SSWP	Site Specific Work Plan
RE	Real Estate	TASI	Transit America Services Inc.
RFI	Request for Information	TBD	To Be Determined
RFP	Request for Proposals	TPS	Traction Power Substation
RFQ	Request for Qualifications	TVA	Threat and Vulnerability Assessment
ROCS	Rail Operations Center System	UPRR	Union Pacific Railroad
ROW	Right-of-Way		
RRP	Railroad Protective Liability		

USACE **United States Army Corp of
Engineers**

USFWS **U.S. Fish and Wildlife
Service**

VTA **Santa Clara Valley
Transportation Authority**

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Appendix B – Schedule

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