Modernization Program
Peninsula Corridor Electrification Project (PCEP)

February 2017
Monthly Progress Report

February 28, 2017

Funding Partners

FTA Core Capacity

FTA Section 5307 (Environmental / Pre Development only)

FTA Section 5307 (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

Bridge Tolls Funds (RM1/RM2)

SFCTA/SFMTA

San Mateo (SMCTA) Contribution

SMCTA Measure A

VTA Measure A

Santa Clara (VTA) Contribution

San Francisco Contribution

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Contents

List of Tables

Page

List of Figures

Page

List of Appendices

Page

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 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 the San Francisco Station (at the intersection of Fourth and King Streets in San Francisco) and the Tamien Station in San Jose. Caltrain will continue Gilroy service and support existing tenants.

An electrified Caltrain will better address Peninsula commuters' vision of environmentally friendly, 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.

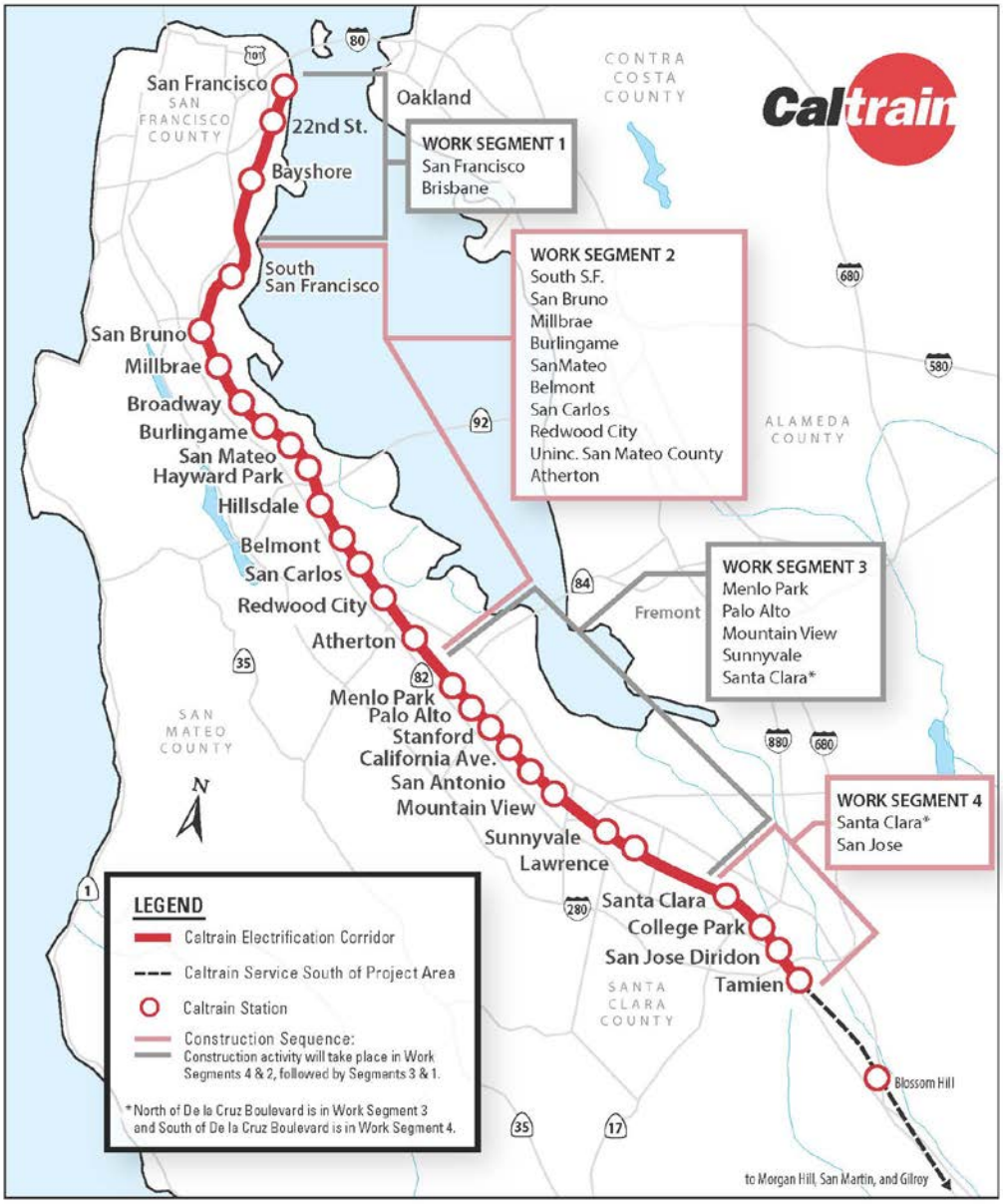
- **Improved Regional Air Quality and Reduced Greenhouse Gas Emissions:** Electrified trains will produce substantially less corridor air pollution compared with diesel trains even when the indirect emissions from electrical power generation are included. Increased ridership will reduce automobile usage, 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.

THIS PAGE INTENTIONALLY LEFT BLANK

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. Work along the Caltrain Electrification Corridor has been divided into four work segments as shown in Figure 2-1. PCEP activities are described and summarized by work segments.

Figure 2-1 PCEP Work Segments



The Federal Transit Administration (FTA) and Peninsula Corridor Joint Powers Board (JPB) completed all administrative and statutory requirements for the Full Funding Grant Agreement (FFGA) of $647 million in Core Capacity. On February 17, JPB was informed by the FTA that a decision was made to defer execution of the pending $647 million FFGA for the PCEP until the Administration developed the President's Fiscal Year (FY) 2018 Budget. In light of this news, PCEP staff issued letters to Balfour Beatty Infrastructure, Inc. (BBI) for the Electrification Project and Stadler for the EMU Vehicles to extend the existing Limited Notice to Proceed (LNTP) to June 30, 2017. Once negotiations are completed regarding the LNTP extensions, each firm will be issued a contract amendment.

The PCEP team continues work with Balfour Beatty Infrastructure, Inc. (BBI) on 65% design and field investigations. The PCEP team completed review of the 65% OCS foundation and poles design and received 65% layout design for Segment 2 Work Area 5. The PCEP team continues coordination efforts related to signal systems and also conducting utility survey, pothole location layouts, and geotechnical boring layouts.

The PCEP team continues to work with Stadler on the technical aspects of the project. The PCEP team participated in Stadler design review meetings on structural elements and crash energy aspects of the carbody, truck and coupler. The PCEP team continues to address system-wide interface issues involving the emerging EMU design and the existing wayside infrastructure, the Electrification Project, the Communications Based Overlay Signal System (CBOSS) Project, and the Centralized Equipment Maintenance and Operations Facility (CEMOF) Design Upgrade.

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. The overall schedule will be updated upon the execution of FFGA

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

At the February 2, 2017 Board meeting, there were several items related to the PCEP:

- Informational item on the Peninsula Corridor Electrification Project Quarterly Update #9.
- Informational item on the Weekday Service Changes.

The agenda and meeting minutes for the February meeting can be found at the link below:

http://www.caltrain.com/Assets/__Agendas+and+Minutes/JPB/Board+of+Directors/Agendas/2017/2017-02-02+JPB+Agenda.pdf

(Note: For viewers accessing the link above electronically, please cut and paste the link into a browser if it does not direct you immediately to the document.)

Table 2-1 Schedule Status

Milestones[1,2]	Program Plan	December	January
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 Eight Miles of Electrification Complete to Begin Testing	04/08/2019	10/08/2019	10/08/2019
Delivery of 1st 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)[1]	Cost To Date (C)[2]	Estimate To Complete (D)	Estimate At Completion (E) = (C) + (D)
Electrification Subtotal	$ 1,316,125,208	$ 8,179,189	$ 147,484,773	$ 1,168,640,435	$ 1,316,125,208
EMU Subtotal	$ 664,127,325	$ 806,185	$ 19,400,512	$ 644,726,813	$ 664,127,325
PCEP TOTAL	**$ 1,980,252,533**	**$ 8,985,374**	**$ 166,885,285**	**$ 1,813,367,248**	**$ 1,980,252,533**

2.4 Government and Community Affairs

A number of community relations and outreach events took place during the month of February. PCEP team gave a total of seven presentations to stakeholders.

THIS PAGE INTENTIONALLY LEFT BLANK

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 design-build (DB) delivery method.

Activity This Month

- The PCEP team continued working with BBI on the 65% design and field investigations. The PCEP team completed review of the 65% OCS foundation and poles design and received 65% OCS Layout Design for Segment 2, Work Area 5 and 4. The reviews for those design packages are ongoing.

- The PCEP and BBI teams hold regular workshop meetings to discuss design related to the signal system, including the conversion from direct current (DC) to alternating current (AC) and the Constant Warning Time solution. The PCEP team is working with Caltrain Engineering and Construction to provide updated signal drawings to BBI for advancement of 65% design.

- BBI continued conducting utility surveys, pothole location layouts, and geotechnical boring layouts. Physical geotechnical boring and cone penetrometer tests (CPT) on the Caltrain right-of-way (ROW) continued in Segments 1 and 3, with additional borings completed as a result from previous borings.

- Potholing of utilities at proposed OCS locations continued in Segment 2. Results from potholing are used for design purposes in the 65% design submittals.

- Coordination efforts with Pacific Gas and Electric (PG&E) continued for infrastructure improvements and traction power substation interconnects. PCEP team completed review of scoping documents prepared by PG&E.

Activity Next Month

- The PCEP team will continue to work with BBI on design and field investigation activities. The designs will include the continued progression of the OCS and Signal systems along with advancement of design for Traction Power and other civil infrastructures.

- Geotechnical investigations corridor wide and potholing activities will continue in Segments 2.

- In Segment 4, potholing activities will begin to support design of the signal system.

- Coordination efforts will continue with PG&E on interconnection design and final design for PG&E infrastructure. The PCEP team will complete the final Power Quality Study for PG&E. The PCEP and BBI teams are in the process of designing the 115 kV interconnection between PG&E and Caltrain's future substations.

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 continues to be limited to providing technical support on an as needed basis to the Caltrain Contract and Procurement (C&P) Department for the procurement of the SCADA system.

- Final procurement documents submitted to C&P.

Activity Next Month

- PCEP staff will continue to support Caltrain C&P 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

- The PCEP team continued coordination efforts with the design team on drawings and specifications on Tunnel 1 and Tunnel 4 Drainage Rehab Project.

- PCEP team continued coordination efforts with Union Pacific Railroad (UPRR) and other stakeholders.

- The PCEP team continues to progress 95% design drawings and specifications for tunnel modification.

Activity Next Month

- PCEP project team will complete the 95% design submittal for review.
- UPRR will be provided 95% drawings for review and comment.
- PCEP staff will review and resolve comments on 95% design drawings and specifications.

THIS PAGE IS INTENTIONALLY LEFT BLANK

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

- The PCEP team participated in Stadler design review meetings on structural elements and crash energy aspects of the carbody, truck and coupler.
- Stadler continued to progress numerous management submittals, including a Master Program Schedule, an updated Contract Deliverables Requirement List (CDRL), and updated System Safety and Quality Assurance Plans. The PCEP team is currently reviewing these submittals and working with Stadler to finalize these deliverables.
- Weekly conference calls were held with Stadler, Caltrain Operations, Maintenance, Quality Assurance members, and Safety and Security group representatives. The PCEP team also conducted a more in-depth Monthly Progress Review Meeting on February 23rd.
- The PCEP team continues to address system-wide interface issues involving the emerging EMU design and the existing wayside infrastructure, the Electrification Project, the CBOSS Project, and the CEMOF design upgrade.
- The PCEP team and Stadler participated in numerous coordination meetings regarding the EMU design to support Caltrain's Operation and Maintenance objectives plus upcoming public outreach initiatives. Sample passenger seats, as well as interior, exterior, bicycle, toilet and wheel chair lift renderings and videos have been received and are being reviewed.

Activity Next Month

- PCEP team will review for approval several documents including the Quality Plan, the Master Project Schedule, the System Safety Plan and CDRL. PCEP team's approval of the Master Program Schedule and Quality Plan are prerequisites for upcoming milestone payments to Stadler.
- Conceptual Design Reviews (CDRs) are to be conducted with Stadler for Train Control Networks, Monitoring and Diagnostics, Passenger Information System, Lighting, Positive Train Control (PTC)/CBOSS, and Train Interior appointments.
- An Interior Mockup for engineering review purposes is to be delivered to Caltrain in March.

4.1 Centralized Equipment Maintenance and Operations Facility (CEMOF) Modifications

The CEMOF Modifications project will provide safe work areas for performing maintenance on the new EMUs.

Activity This Month

- The PCEP team advanced the conceptual design to consider alternatives for the modification of CEMOF. The alternatives continue to be reviewed with Caltrain Operations.

Activity Next Month

- Caltrain to decide on which alternative shall be pursued for 35% design development purposes.

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 to review and plan 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.

- Safety staff continued to review BBI and Stadler's safety and security contract documentation deliverables to ensure they meet PCEP requirements. Safety staff has been facilitating meetings with BBI and Stadler to advance project safety and security program implementation.

- Field visits were conducted to work sites to ensure that the Site Specific Work Plan (SSWP) was being followed by BBI and their subcontractors.

- A Fire/Life Safety Committee meeting was held on February 9, 2017 for the PCEP project. Monthly meetings will be held as the project continues.

- BBI low-rail and hi-rail equipment were inspected in conjunction with representatives from Transit America Services, Inc. (TASI) Maintenance of Equipment. As specified in Federal Railroad Administration (FRA) regulations, all new equipment is to be inspected prior to being placed in service.

- The PCEP team met with the San Francisco Municipal Transportation Agency (SFMTA) to discuss the 16th street crossing in compliance with environmental mitigation measures, which call for technical coordination with the PCEP and SFMTA regarding re-routing of the 22 electric trolley bus. Internal meetings were held to finalize the projects comments on the analysis.

Activity Next Month

- Monthly meeting for the Safety and Security Certification Review Committee (SSCRC) will be held.

- Monthly meeting for the Fire/Life Safety & Security Committee (FLSSC) will be held.

- A final meeting with SFMTA will be held to discuss 16th Street Preliminary Hazard Analysis (PHA).

- All staff safety meetings will be held with PCEP, BBI employees and subcontractors to reinforce the importance of safety in the field.

- Site visits to BBI subcontractor work areas for potholing operations are planned.

THIS PAGE IS INTENTIONALLY LEFT BLANK

6.0 QUALITY ASSURANCE

The Quality Assurance (QA) staff performs technical reviews 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 audit of BBI's design quality control and the OCS 65% design package remains open until the Design Quality Plan has been revised to include changes prompted by the audit findings.
- An audit of Parikh Geotechnical Labs has been closed.
- QA review of Stadler's BBI's Quality Management Plan (QMP), which includes a Design Quality Plan, was conducted with comments outstanding.
- Staff meetings with BBI QA/Quality Control (QC) management representatives continues bi-weekly.
- QA staff submitted to PCEP Management a QA Resource Plan for 2017 and beyond.
- A Pre-award audit was conducted at Signet Testing Laboratories and the lab had one finding.

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	16
External Audits Conducted	1	3
Audit Findings Issued	1	15
Audit Findings Open	3	3
Audit Findings Closed	5	12
Non-Conformances Open	1	0
Non-Conformances Issued	0	4
Non-Conformances Closed	0	4

Activity Next Month

- Three audits are planned and scheduled: BBI Document Control, Construction Testing Services, and PGH Wong Design Package for Traction Power System at 65%.
- QA review of Stadler's QMP revision for EMU procurement.
- Regularly scheduled design reviews and surveillances will begin on project design packages and will continue through the late summer.

7.0 SCHEDULE

The schedule provided in this Monthly Progress Report is the approved schedule from January 2017 due to the timeframe necessary to update and approve the schedule. As indicated in Table 7-1, the RSD, which is the date in which the project is deemed completed, remains unchanged in the 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 (December 2016) and the current update (January 2017) to capture any potential changes in the schedule. A complete summary 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	December	January
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 Eight Miles of Electrification Complete to Begin Testing	04/08/2019	10/08/2019	10/08/2019
Delivery of First 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[1]	08/31/2020	08/31/2020
Vehicle Manufacturing & Assembly to Provide First Five Trainsets	11/13/2017	09/09/2020
Pre-Revenue Operations	09/22/2020	12/10/2020
Potential Limited Service[1]	12/31/2020	12/31/2020
RSD w/out Risk Contingency[1]	08/16/2021	08/16/2021
RSD w/ Risk Contingency[1]	12/30/2021	12/30/2021

Note:
[1]Milestone activity

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

WBS	Activity	Responsibility
FTA	Path to FFGA	Project Delivery
Utilities	PG&E Supplemental Agreement #3 for Final Design Approval	Project Delivery
Utilities	PG&E Final Design	Project Delivery
Utilities	Overhead Utility Relocation	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	Cost This Month	Cost To Date	Estimate To Complete	Estimate At Completion
	(A)	(B)1	(C)2	(D)	(E) = (C) + (D)
ELECTRIFICATION					
Electrification[3]	$ 696,610,558	$ 6,112,850	$ 69,603,350	$ 627,007,208	$ 696,610,558
Tunnel Notching	$ 11,029,649	$ -	$ -	$ 11,029,649	$ 11,029,649
Real Estate	$ 28,503,369	$ 139,550	$ 5,811,305	$ 22,692,064	$ 28,503,369
Private Utilities	$ 63,515,298	$ 600,820	$ 4,252,572	$ 59,262,726	$ 63,515,298
Management Oversight[4]	$ 141,526,164	$ 913,225	$ 64,206,105	$ 77,320,058	$ 141,526,164
Executive Management	$ 7,452,866	$ 96,720	$ 2,916,394	$ 4,536,472	$ 7,452,866
Planning	$ 7,281,997	$ 70,737	$ 4,326,508	$ 2,955,489	$ 7,281,997
Community Relations	$ 2,789,663	$ 17,520	$ 919,797	$ 1,869,866	$ 2,789,663
Safety & Security	$ 2,421,783	$ 31,206	$ 529,617	$ 1,892,166	$ 2,421,783
Project Management Services	$ 19,807,994	$ 159,451	$ 7,273,286	$ 12,534,708	$ 19,807,994
Engineering & Construction	$ 11,805,793	$ 39,970	$ 1,921,558	$ 9,884,236	$ 11,805,793
Electrification Engineering & Management	$ 50,461,707	$ 330,553	$ 15,895,123	$ 34,566,585	$ 50,461,707
IT Support	$ 331,987	$ -	$ 331,987	$ 0	$ 331,987
Operations Support	$ 1,445,867	$ 10,973	$ 393,816	$ 1,052,051	$ 1,445,867
General Support	$ 4,166,577	$ 50,411	$ 1,350,670	$ 2,815,908	$ 4,166,577
Budget / Grants / Finance	$ 1,229,345	$ 24,229	$ 255,486	$ 973,858	$ 1,229,345
Legal	$ 2,445,646	$ 25,763	$ 2,068,553	$ 377,094	$ 2,445,646
Other Direct Costs	$ 5,177,060	$ 55,692	$ 1,689,953	$ 3,487,106	$ 5,177,060
Prior Costs 2002 - 2013	$ 24,707,878	$ -	$ 24,333,358	$ 374,520	$ 24,707,878
TASI Support	$ 55,275,084	$ 346,721	$ 1,453,391	$ 53,821,693	$ 55,275,084
Insurance	$ 4,305,769	$ -	$ 1,155,769	$ 3,150,000	$ 4,305,769
Environmental Mitigations	$ 14,972,645	$ -	$ 472,000	$ 14,500,645	$ 14,972,645
Required Projects	$ 17,337,378	$ -	$ 367,028.00	$ 16,970,350	$ 17,337,378
Maintenance Training	$ 1,021,808	$ -	$ -	$ 1,021,808	$ 1,021,808
Finance Charges	$ 5,056,838	$ 66,022	$ 163,253	$ 4,893,585	$ 5,056,838
Contingency	$ 276,970,649	$ -	$ -	$ 276,970,649	$ 276,970,649
Owner's Reserve	$ -	$ -	$ -	$ -	$ -
ELECTRIFICATION SUBTOTAL	**$ 1,316,125,208**	**$ 8,179,189**	**$ 147,484,773**	**$ 1,168,640,435**	**$ 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. Cost To Date for “Electrification” include 5% for Contractor’s retention until authorization of retention release.
4. The agency labor is actual through December 2016 and accrued from January 2017 to current reporting period.

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	$ 765,720	$ 18,087,425	$ 46,051,679	$ 64,139,103
Executive Management	$ 5,022,302	$ 63,236	$ 1,634,584	$ 3,387,718	$ 5,022,302
Community Relations	$ 1,685,614	$ 16,042	$ 308,251	$ 1,377,363	$ 1,685,614
Safety & Security	$ 556,067	$ 7,078	$ 162,947	$ 393,121	$ 556,067
Project Management Services	$ 13,275,280	$ 95,813	$ 4,887,362	$ 8,387,919	$ 13,275,280
Engineering & Construction	$ 89,113	$ -	$ 23,817	$ 65,296	$ 89,113
EMU Engineering & Management	$ 32,082,556	$ 483,426	$ 8,000,291	$ 24,082,265	$ 32,082,556
IT Support	$ 1,027,272	$ 15,383	$ 240,664	$ 786,608	$ 1,027,272
Operations Support	$ 1,878,589	$ 2,285	$ 298,097	$ 1,580,491	$ 1,878,589
General Support	$ 2,599,547	$ 21,513	$ 648,817	$ 1,950,730	$ 2,599,547
Budget / Grants / Finance	$ 712,123	$ 11,072	$ 136,480	$ 575,644	$ 712,123
Legal	$ 1,207,500	$ 16,199	$ 705,595	$ 501,905	$ 1,207,500
Other Direct Costs	$ 4,003,139	$ 33,673	$ 1,040,521	$ 2,962,618	$ 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	$ 40,465	$ 70,787	$ 1,871,013	$ 1,941,800
Contingency	$ 38,562,962	$ -	$ -	$ 38,562,962	$ 38,562,962
Owner's Reserve	$ -	$ -	$ -	$ -	$ -
EMU SUBTOTAL[3]	**$ 664,127,325**	**$ 806,185**	**$ 19,400,512**	**$ 644,726,813**	**$ 664,127,325**

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. The agency labor is actual through December 2016 and accrued for January 2017 to current reporting period.

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	$ 8,179,189	$ 147,484,773	$ 1,168,640,435	$ 1,316,125,208
EMU Subtotal	$ 664,127,325	$ 806,185	$ 19,400,512	$ 644,726,813	$ 664,127,325
PCEP TOTAL	**$ 1,980,252,533**	**$ 8,985,374**	**$ 166,885,285**	**$ 1,813,367,248**	**$ 1,980,252,533**

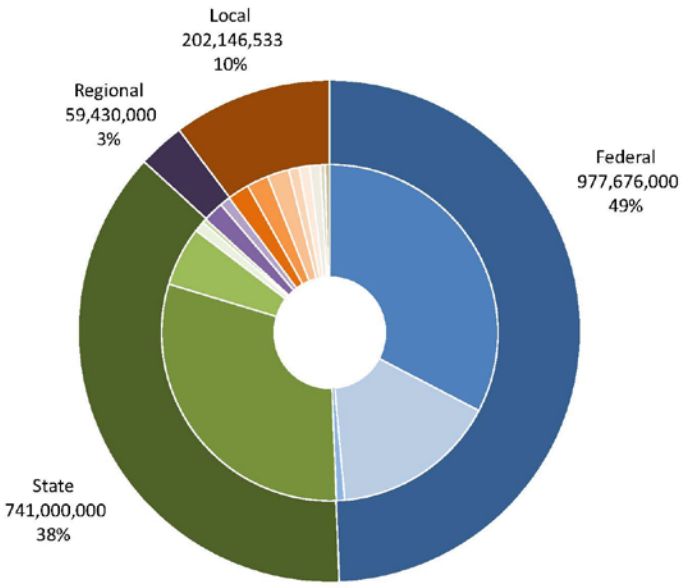
Notes regarding tables above:

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.

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. In February, the FTA informed the JPB it would be deferring execution of the FFGA until the Administration developed the President's FY2018 Budget.

Figure 9-1 Funding Plan



Fund Source	Amount	%
FTA Core Capacity	$647,000,000	32.67%
FTA Section 5307 (EMU only)*	$315,000,000	15.91%
FTA Section 5307 (Environmental / Pre Development only)	$15,676,000	0.79%
Prop 1A	$600,000,000	30.30%
High Speed Rail Cap and Trade	$113,000,000	5.71%
Transit & Intercity Rail Capital Program	$20,000,000	1.01%
Prop 1B (Public Transportation Modernization & Improvement Account)	$8,000,000	0.40%
Bridge Toll Funds (RM1/RM2)	$39,430,000	1.99%
Carl Moyer	$20,000,000	1.01%
SFCTA/SFMTA**	$41,382,178	2.09%
SMCTA Measure A	$41,382,178	2.09%
VTA Measure A	$41,382,177	2.09%
Santa Clara (VTA) 7-Party MOU Contribution	$20,000,000	1.01%
San Francisco 7-Party MOU Contribution	$20,000,000	1.01%
San Mateo (SMCTA) 7-Party MOU Contribution	$20,000,000	1.01%
Caltrain Low Carbon Transit Operations Cap and Trade	$9,000,000	0.45%
Prior Local Contribution	$9,000,000	0.45%
Total	**$1,980,252,533**	

Notes:
*Includes necessary fund transfer with SMCTA
**Includes $4M CMAQ Transfer considered part of SF local contribution

THIS PAGE INTENTIONALLY LEFT BLANK

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's 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.

Risks are evaluated periodically and updated when needed. The Risk Management team has identified the following items as top risks for the project:

- Delay in execution of FFGA would cause a delay in issuing full NTP.
- Relocation of overhead utilities must precede installation of catenary wire and connections to TPSs. Relocation work will be performed by others and may not be completed to meet the DB contractor's construction schedule.
- Upgrades to the PG&E power stations for permanent power may not be designed and constructed in time for initiation of limited revenue service.
- As-built drawings furnished to DB contractor could be incomplete thus affecting final design.
- Proposal to run a new duct bank from Caltrain ROW to the proposed TPS1 site that runs under UPRR rails would require additional coordination with UPRR, which may cause delays to the installation.
- TASI ability to deliver sufficient resources to support construction and testing for the electrification contract may cause delays to construction schedule.
- Delays to the CBOSS Project could affect testing activities.
- Relocation of underground utilities must precede construction of catenary pole foundations and may not be completed on time to meet the DB Contractor's construction schedule.

Activity This Month

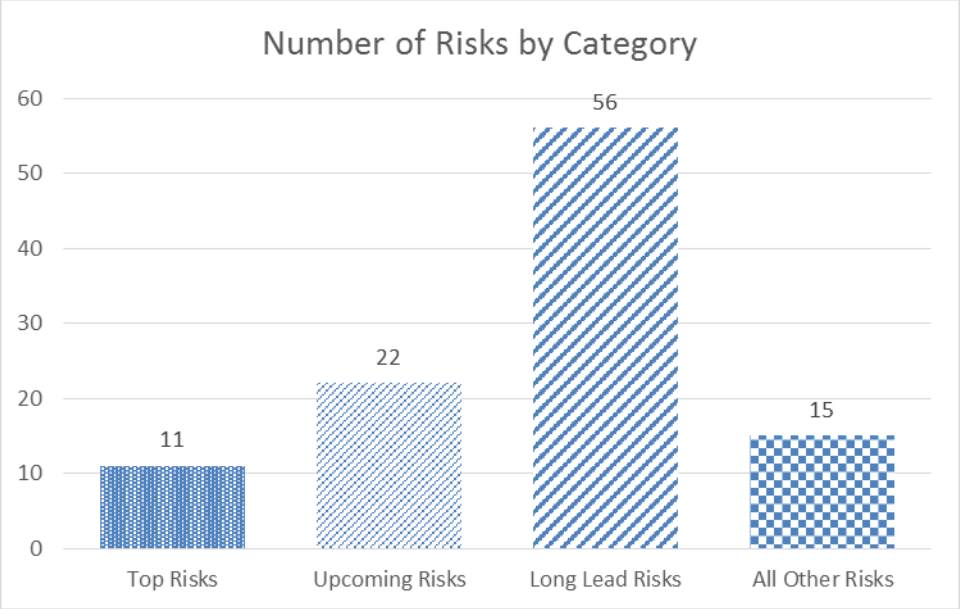
- Updates were made to risk descriptions, effects, and mitigations based upon weekly input from risk owners. Monthly cycle of risk updating was completed based on schedules established in the Risk Identification and Mitigation Plan.
- Risk retirement dates were updated based upon revisions to the project schedule and input from risk owners.
- Continued weekly monitoring of risk mitigation actions and publishing of the risk register.

- The PCEP Risk Management Team attended Electrification, Project Delivery, and Systems Integration meetings to monitor developments associated with risks and to identify new risks.

- The Risk Assessment Committee convened to review risks proposed for retirement and major changes to grading of risks. Grading and descriptions of two risks were revised. Two potential new risks were referred for further development, mitigation, and grading. Continued discussion of reputational risk as a potential adjunct to current risk management efforts.

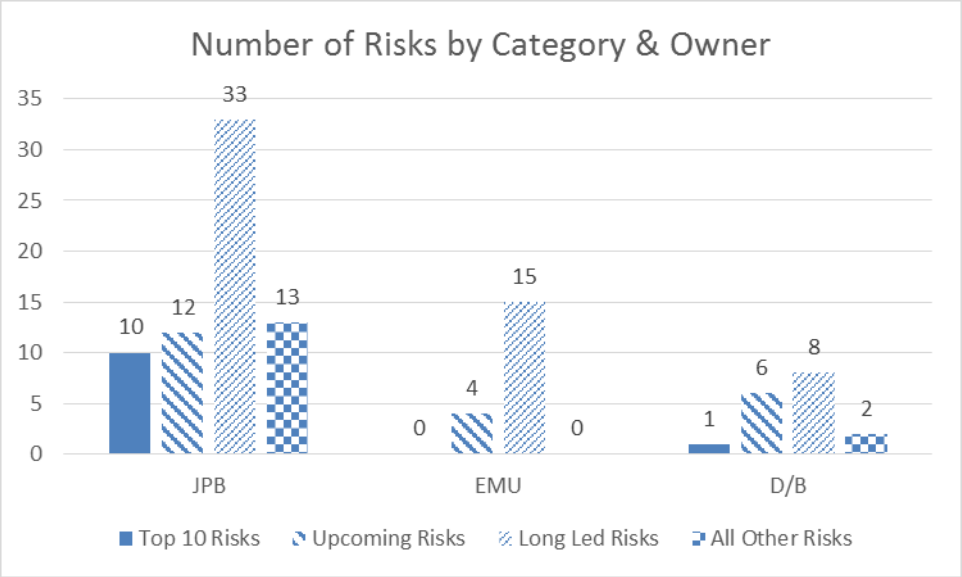
Tables 10-1 and 10-2 show the risks identified for the program. Risks are categorized as: top risk, upcoming risk, long lead, and all other risks. The categories are based on a rating scale composed of schedule and cost factors. Simply put, top risks are considered to have a significantly higher than 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 other categories.

Table 10-1 Monthly Status of Risks



Total Number of Active Risks = 104

Table 10-2 Risk Classification



Total Number of Active Risks = 104

Activity Next Month

- Update risk descriptions, effects, mitigations and retirement dates.
- Conduct weekly monitoring of risk mitigation actions and continue publishing risk register.
- Further develop reputational risk analysis and submit recommendation.

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 (SFBCDC).

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 (MMRP)

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 PCEP team has prepared a MMRP to ensure that mitigation measures identified in the PCEP Environmental Impact Report (EIR) are fully implemented during project implementation. PCEP will implement the mitigation measures through its own actions, those of the DB 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

(Note: For viewers accessing the link above electronically, please cut and paste the link into a browser if it does not direct you immediately to the document.)

Activity This Month

- Biological, archaeological, and Native American monitors continued to be present during design phase investigation activities (geotechnical and potholing activities) occurring in areas that require environmental compliance monitoring. The monitoring was conducted in accordance with measures in the MMRP in an effort to minimize potential impact on sensitive environmental resources.

- Protocol-level surveys for a sensitive avian species continue at previously identified potential habitat locations and inspections of over-passes and bridges

initiated in order to determine the potential for nesting swallows were completed, and surveys for nesting birds ahead of design phase activities were initiated (nesting bird season is February 1st through August 31st).

- An architectural historian continued to take photos and document site conditions at a number of historic railroad stations in support of historic documentation required as part of the MMRP.

Activity Next Month

- Biological, archaeological, and Native American monitors will continue to monitor design phase investigation activities (geotechnical and potholing activities) occurring in areas that require environmental compliance monitoring. Biological surveyors will continue surveys for nesting birds ahead of design phase investigation activities occurring during the nesting bird season (February 1st through August 31st) and will continue to conduct protocol level surveys for sensitive avian species.

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. This 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 sent relocation notices and requested design information to PG&E as a part of the relocation process.
- PCEP team continued to work with Verizon on the relocation of fiber optics cable within the Caltrain ROW.

Activity Next Month

- Monthly meetings will continue with telecom and power carriers.
- PCEP team will continue to send relocation notices to utility owners and will also continue to provide design information for relocation designs.
- PCEP team will continue to work with utility owners to update the relocation schedule.

THIS PAGE INTENTIONALLY LEFT BLANK

13.0 REAL ESTATE

The PCEP requires the acquisition of a limited amount of real estate. In general, Caltrain uses existing rights-of-way (ROW) for the PCEP, but in certain locations, will need to acquire small portions of additional real estate to expand the ROW to accommodate installation of OCS supports (fee acquisitions or railroad easements) and associated Electrical Safely Zones (easements). There are two larger full acquisition areas required for wayside facilitates (i.e., traction power stations, switching stations and paralleling stations). The PCEP real estate team (RE team) manages the acquisition of all property rights. Caltrain does not need to acquire real estate to complete the EMU procurement portion of the PCEP.

Activity This Month

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

- The RE team continues negotiations on offers pending, including working through relocation of two commercial businesses.
- The agency continues to negotiate the cooperative agreement for eminent domain authority with the City & County of San Francisco. The target for completion is May 2017.
- Three appraisals were updated and offers will be made in April.

Activity Next Month

- Negotiations for all outstanding offers will continue.
- The PCEP team issued work directives to appraise and acquire parcels in Segments 1 and 3 and appraisals commenced.
- It is anticipated that properties will close escrow for grantors who have accepted the offers.

Table 13-1 Real Estate Acquisition Overview

Segment	No. of Parcels Needed*	No. of Appraisals Completed	Offers Presented	Offers Accepted	Acquisition Status		
					Escrow Closed	Value Litigation	Parcel Possession
Segment 1	8	0	0	0	0	0	0
Segment 2	27	24	21	5	1	0	0
Segment 3	11	0	0	0	0	0	0
Segment 4	10	10	9	0	0	0	0
Total	**56**	**34**	**30**	**5**	**1**	**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 & County of San Francisco	In Process
		City of Brisbane	Executed
		City of South San Francisco	Executed
		City of San Bruno	Executed
		City of Millbrae	Executed
		City of Burlingame	Executed
		City of San Mateo	Executed
		City of Belmont	Executed
		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	Executed
		County of Santa Clara	Executed
		City of San Jose	Executed
	Condemnation Authority	San Francisco	In Process
		San Mateo	Executed
		Santa Clara	Executed
Utilities	Infrastructure	Pacific Gas & Electric (PG&E)	Executed[3]
	Operating Rules	California Public Utilities Commission (CPUC)	Executed[2]
Transportation & Railroad	Construction & Maintenance	Bay Area Rapid Transit (BART)	Executed[4]
	Construction & Maintenance	California Dept. of Transportation (Caltrans)	Not needed[5]
	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. The Master agreement and supplemental agreements 1, 2 and 5 have been executed. Supplemental agreements 3 and 4 are to be negotiated and executed.
4. Utilizing existing agreements.
5. Caltrans Peer Process utilized. Formal agreement not needed.

THIS PAGE IS INTENTIONALLY LEFT BLANK

15.0 GOVERNMENT AND COMMUNITY AFFAIRS

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 DB contractor's effectiveness in implementing its Public Involvement Program. The following PCEP related external affairs meetings took place in February:

- **Presentations/Meetings**
  - Caltrain Accessibility Advisory Committee
  - City/County Staff Coordinating Group
  - JPB Citizen Advisory Committee
  - JPB Bicycle Advisory Committee
  - SFCTA Citizen Advisory Committee
  - Local Policy Maker Group
  - SMCTA Citizen Advisory Committee
- **Third Party/Stakeholder Actions**

  No actions to report this month.

THIS PAGE IS INTENTIONALLY LEFT BLANK

16.0 DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION AND LABOR STATISTICS

DBE and labor statistics will be reported after construction has commenced.

THIS PAGE INTENTIONALLY LEFT BLANK

17.0 PROCUREMENT

Contract Activity

- Issued letters to BBI for the DB Electrification Project and Stadler US for the Bi-Level EMU Vehicles to extend the LNTP to June 30, 2017. Once negotiations are completed regarding the LNTP extensions, each firm will be issued a contract amendment.

Invitation for Bid (IFB)/Request for Qualifications (RFQ)/ Request for Proposals (RFP) Advertised this Month:

- RFQ issued for On-Call Ambassador Support Services for six-month term.

IFB/RFQ/RFP Received this Month:

- No IFB/RFQ/RFPs were received for February.

Contract Awards this Month:

- No contract awards were made for February.

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

- Multiple WDs & POs were issued to support the program needs for February.

Upcoming IFB/RFQ/RFP:

- RFP - SCADA system to support CalMod. (Issue in early April)
- RFP - On-Call Ambassador Support Services. (Issue in Mid-April)
- RFP - On-Call Quality Assurance Independent Testing Laboratory (Late April)

Upcoming Contract Awards:

- No upcoming contract awards.

THIS PAGE IS INTENTIONALLY LEFT BLANK

18.0 TIMELINE OF MAJOR PROJECT ACCOMPLISHMENTS

Below is a timeline showing major project accomplishments from 2002 to 2017:

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
2017	FTA finalized the FFGA for $647 million in Core Capacity funding

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDICES

THIS PAGE IS INTENTIONALLY LEFT BLANK

Appendix A – Acronyms

THIS PAGE IS INTENTIONALLY LEFT BLANK

AIM	Advanced Information Management
ARINC	Aeronautical Radio, Inc.
BAAQMD	Bay Area Air Quality Management District
BBI	Balfour Beatty Infrastructure, Inc.
CAISO	California Independent System Operator
CalMod	Caltrain Modernization Program
Caltrans	California Department of Transportation
CBOSS	Communication Based Overlay Signal System
CDFW	California Department of Fish and Wildlife
CDR	Conceptual Design Review
CDRL	Contract Deliverables Request List
CEMOF	Centralized Equipment Maintenance and Operations Facility
CEQA	California Environmental Quality Act (State)
CHSRA	California High-Speed Rail Authority
CIP	Capital Improvement Plan
CPT	Cone Penetrometer Test
CPUC	California Public Utilities Commission
DB	Design-Build
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise
DEMP	Design, Engineering, and Management Planning
EA	Environmental Assessment
EAC	Estimate at Completion
EIR	Environmental Impact Report
EMU	Electric Multiple Unit
ESA	Endangered Species Act
ESA	Environmental Site Assessments
FEIR	Final Environmental Impact Report
FFGA	Full Funding Grant Agreement
FLSSC	Fire/Life Safety & Security Committee
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GO	General Order
HSR	High Speed Rail
ICD	Interface Control Document
IFB	Invitation for Bid
ITS	Intelligent Transportation System
JPB	Peninsula Corridor Joint Powers Board

LNTP	**Limited Notice to Proceed**
MMRP	**Mitigation, Monitoring, and Reporting Program**
MOU	**Memorandum of Understanding**
MPS	**Master Program Schedule**
NCR	**Non Conformance Report**
NEPA	**National Environmental Policy Act (Federal)**
NHPA	**National Historic Preservation Act**
NMFS	**National Marine Fisheries Service**
NTP	**Notice to Proceed**
OCS	**Overhead Contact System**
PCEP	**Peninsula Corridor Electrification Project**
PCJPB	**Peninsula Corridor Joint Powers Board**
PG&E	**Pacific Gas and Electric**
PHA	**Preliminary Hazard Analysis**
PMOC	**Project Management Oversight Contractor**
PO	**Purchase Order**
PS	**Paralleling Station**
PTC	**Positive Train Control**
QA	**Quality Assurance**
QC	**Quality Control**
QMP	**Quality Management Plan**
QMS	**Quality Management System**
RAMP	**Real Estate Acquisition Management Plan**
RE	**Real Estate**
RFI	**Request for Information**
RFP	**Request for Proposals**
RFQ	**Request for Qualifications**
ROCS	**Rail Operations Center System**
ROW	**Right-of-Way**
RRP	**Railroad Protective Liability**
RSD	**Revenue Service Date**
RWP	**Roadway Worker Protection**
SAMCEDA	**San Mateo County Economic Development Association**
SamTrans	**San Mateo County Transit District**
SCADA	**Supervisory Control and Data Acquisition**
SCC	**Standard Cost Code**
SPUR	**San Francisco Bay Area Planning and Urban Research Association**
SFBCDC	**San Francisco Bay Conservation Development Commission**
SFCTA	**San Francisco County Transportation Authority**
SFMTA	**San Francisco Municipal Transportation Agency**
SFRWQCB	**San Francisco Regional Water Quality Control Board**

SOGR	**State of Good Repair**
SS	**Switching Station**
SSCP	**Safety and Security Certification Plan**
SSCRC	**Safety & Security Certification Review Committee**
SSMP	**Safety and Security Management Plan**
SSWP	**Site Specific Work Plan**
TASI	**Transit America Services Inc.**
TBD	**To Be Determined**
TPS	**Traction Power Substation**
TVA	**Threat and Vulnerability Assessment**
UPRR	**Union Pacific Railroad**
USACE	**United States Army Corp of Engineers**
USFWS	**U.S. Fish and Wildlife Service**
VTA	**Santa Clara Valley Transportation Authority**
WD	**Work Directive**

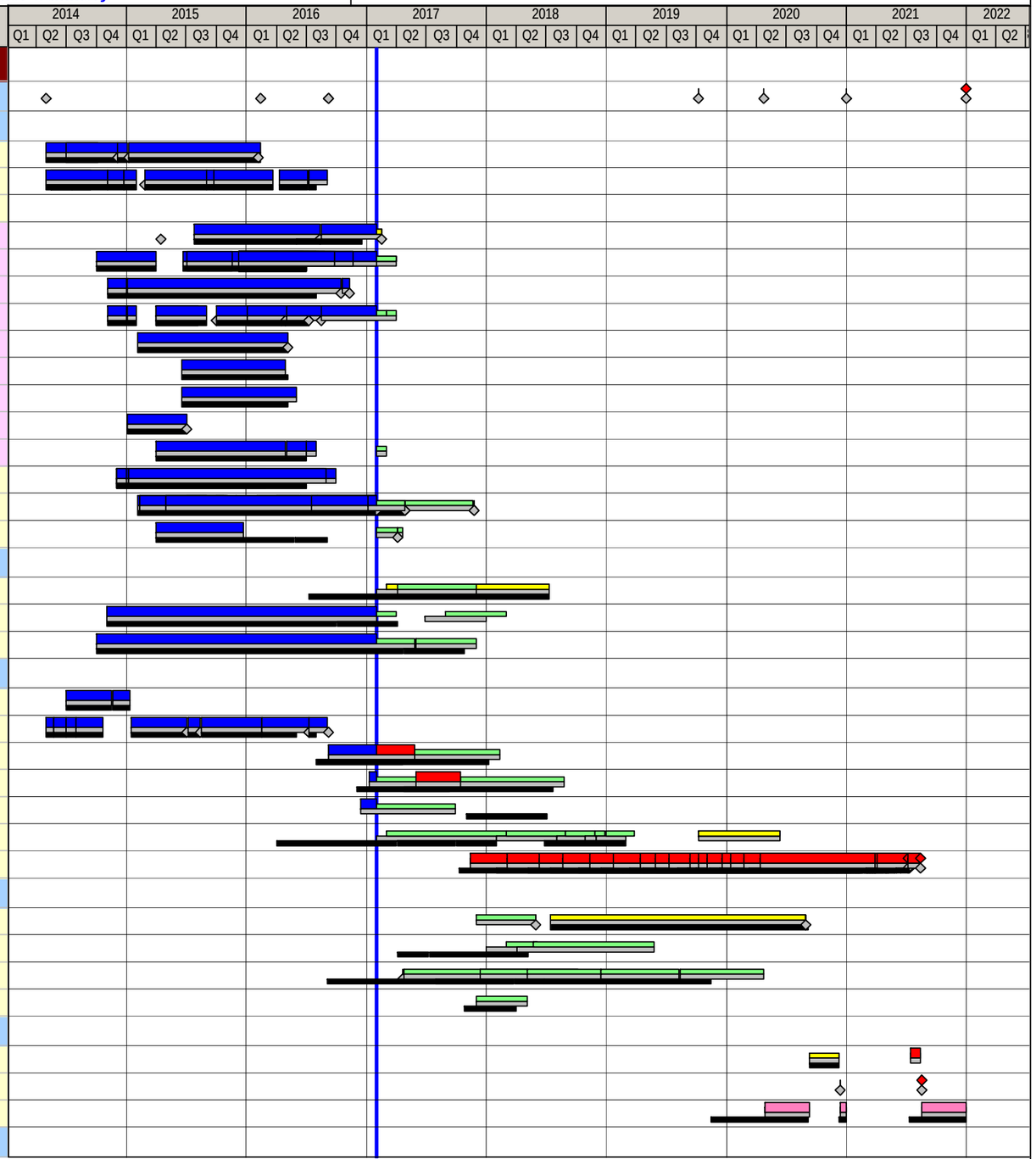
THIS PAGE IS INTENTIONALLY LEFT BLANK

Appendix B – Schedule

THIS PAGE IS INTENTIONALLY LEFT BLANK

MASTER CPM SCHEDULE C15.07... | Data Date: 02/01/17 | **_PCEP C15.07 Summary** | FOR INTERNAL USE ONLY 02/28/17 12:55

#	Activity Name	Duration	Start	Finish
1	**MASTER CPM SCHEDULE C15.07**	2001d	05/01/14 A	12/30/21
2	**MILESTONES**	2001d	05/01/14 A	12/30/21
3	**PLANNING / APPROVALS PHASE**	929d	05/01/14 A	11/22/17
4	**ENVIRONMENTAL**	466d	05/01/14 A	02/11/16 A
5	**DESIGN/BUILDER PROCUREMENT**	596d	05/01/14 A	09/02/16 A
6	**AGENCY COORDINATION / APPROVALS**	635d	10/01/14 A	03/31/17
7	***FEDERAL TRANSIT ADMINISTRATION***	466d	04/16/15 A	02/15/17
8	***JURISDICTIONAL AGREEMENTS***	635d	10/01/14 A	03/31/17
9	***CALIFORNIA PUBLIC UTILITIES COMMISSION***	515d	11/03/14 A	11/10/16 A
10	***PACIFIC GAS & ELECTRIC***	612d	11/03/14 A	03/31/17
11	***CALIFORNIA DEPARTMENT OF TRANSPORTATION***	322d	02/02/15 A	05/05/16 A
12	***BAY AREA RAPID TRANSIT DISTRICT***	221d	06/18/15 A	04/29/16 A
13	***SANTA CLARA VALLEY TRANSPORTATION AUTHORITY***	242d	06/18/15 A	05/31/16 A
14	***LABOR AGREEMENT***	128d	01/02/15 A	07/02/15 A
15	***UTILITIES***	486d	04/01/15 A	02/28/17
16	**PERMITS**	468d	12/01/14 A	09/30/16 A
17	**RIGHT-OF-WAY**	732d	02/02/15 A	11/22/17
18	**SCADA**	526d	03/30/15 A	04/21/17
19	**DESIGN / ENGINEERING PHASE**	960d	10/01/14 A	07/12/18
20	**PG&E INFRASTRUCTURE**	346d	03/03/17	07/12/18
21	**TUNNEL MODIFICATION**	845d	10/31/14 A	03/01/18
22	**CEMOF**	804d	10/01/14 A	11/30/17
23	**VEHICLES PHASE**	1902d	05/01/14 A	08/13/21
24	**SPECIFICATION**	134d	07/01/14 A	01/12/15 A
25	**PROCUREMENT**	613d	05/01/14 A	09/06/16 A
26	**DETAILED DESIGN (STADLER)**	364d	09/06/16 A	02/12/18
27	**PROCUREMENT (MATERIAL & EQUIPMENT) (STADLER)**	416d	01/09/17 A	08/24/18
28	**MOCK-UPS (STADLER)**	202d	12/15/16 A	09/29/17
29	**ELECTRIC LOCO**	834d	03/01/17	06/10/20
30	**MANUFACTURING, TESTING, & TAKE OVER (STADLER)**	953d	11/13/17	08/13/21
31	**CONSTRUCTION / INSTALLATION PHASE**	853d	04/21/17	08/31/20
32	**PG&E INFRASTRUCTURE**	699d	12/01/17	08/31/20
33	**TUNNEL MODIFICATION**	313d	03/02/18	05/24/19
34	**SCADA**	764d	04/21/17	04/24/20
35	**CEMOF**	109d	12/01/17	05/04/18
36	**TESTING / STARTUP PHASE**	426d	04/27/20	12/30/21
37	**PRE-REVENUE OPERATIONS**	236d	09/10/20	08/13/21
38	**REVENUE OPERATIONS**	172d	12/11/20	08/16/21
39	**RISK CONTINGENCY**	426d	04/27/20	12/30/21
40	**OPERATIONAL READINESS PHASE**	791d	06/28/17	08/07/20

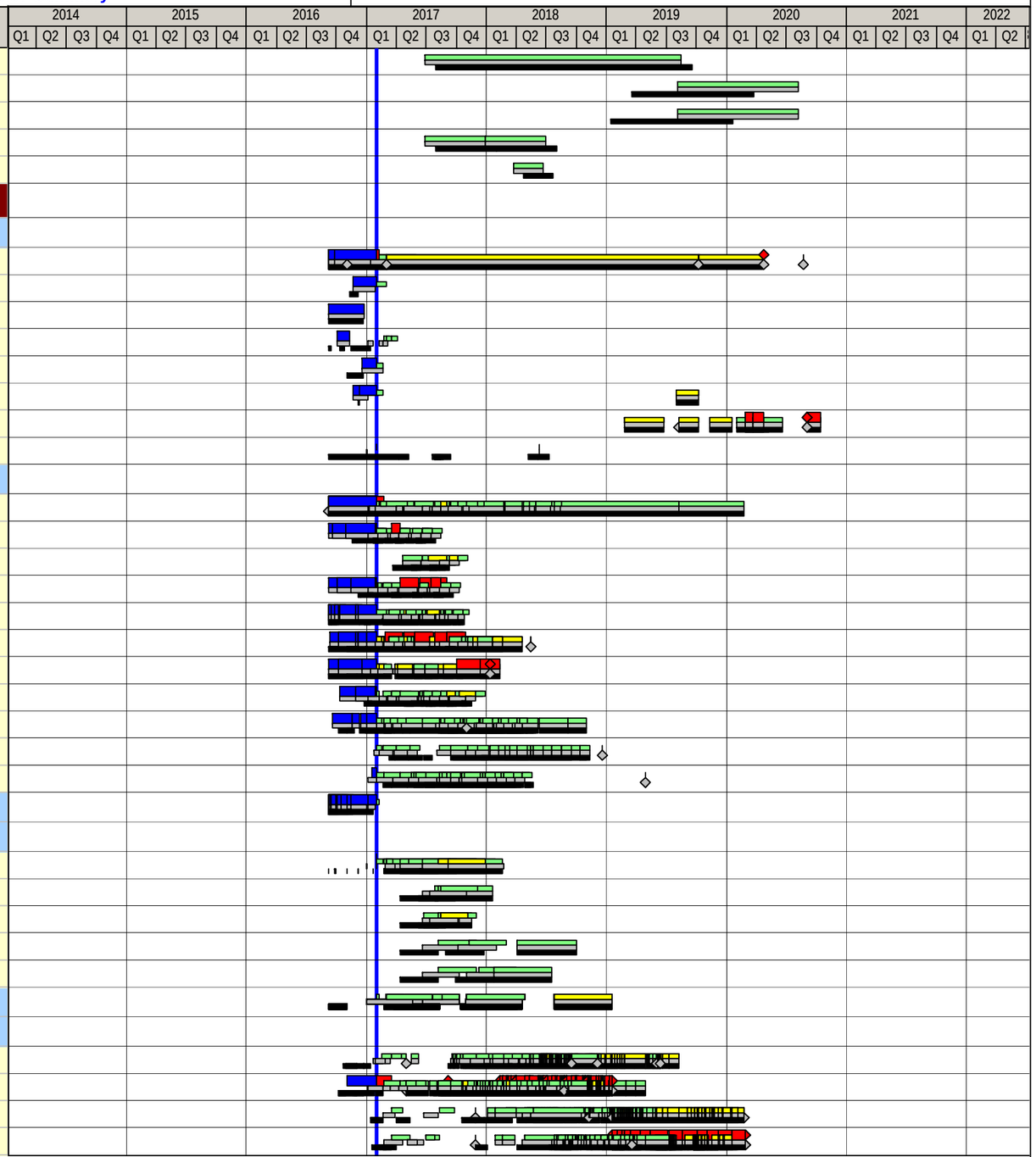


Prog Plan (C14.02) | Remaining | Start Milestone | Last Months Update
Last Months Update | Near Critical | Finish Milestone | Critical Milestone
Progress | Critical | Prog Plan (C14.02) | Risk Contingency

Filename: _C15.07 022217...

Date	Revision	Checked	Approved
02/22/2017	Updates & Revisions Completed By A. Christofas & S. Iyer		
02/23/2017	Checked By S. Iyer & A. Christofas	x	
02/27/2017	Approved By R. Viswanathan		x

#	Activity Name	Duration	Start	Finish
41	OPERATIONS & MAINTENANCE STAFFING	543d	06/28/17	08/16/19
42	NON-REVENUE EQUIPMENT	258d	08/05/19	08/07/20
43	SPARES	258d	08/05/19	08/07/20
44	OPERATIONS & MAINTENANCE TRAINING	255d	06/28/17	06/28/18
45	LOCAL AGENCY TRAINING	64d	03/22/18	06/20/18
46	ELECTRIFICATION SCHEDULE (BB) 020117	1606d	09/06/16 A	10/13/20
47	General	1606d	09/06/16 A	10/13/20
48	General	1551d	09/06/16 A	08/23/20
49	Communication	69d	11/22/16 A	02/28/17
50	Sitework	91d	09/07/16 A	12/23/16 A
51	Civil	129d	10/03/16 A	04/03/17
52	Traction Power	45d	12/19/16 A	02/17/17
53	Rail Signal & Comm System	1126d	11/22/16 A	10/08/19
54	Testing & Start-up	639d	02/25/19	10/13/20
55	Deleted Activities	530d	02/01/17	06/11/18
56	Design	1359d	09/06/16 A	02/25/20
57	All Work Areas	1359d	09/06/16 A	02/25/20
58	Segments 2 WA 5	370d	09/07/16 A	08/17/17
59	Segment 2 WA 4 & 5	213d	04/21/17	11/05/17
60	Segment 2 WA 4	430d	09/07/16 A	10/12/17
61	Segment 2 & 4	460d	09/07/16 A	11/10/17
62	Segment 4	654d	09/12/16 A	05/14/18
63	Segment 2	559d	09/07/16 A	02/10/18
64	Segment 2 Wa's 1, 2, & 3-	475d	10/12/16 A	12/28/17
65	Segment 1 & 3	828d	09/19/16 A	10/30/18
66	Segment 1	737d	02/01/17	12/20/18
67	Segment 3	893d	01/17/17 A	04/29/19
68	Submittals	166d	09/06/16 A	02/07/17
69	Procurement	654d	01/30/17 A	10/01/18
70	All Work Areas	268d	01/30/17 A	02/16/18
71	Segment 4	192d	07/25/17	01/20/18
72	Segment 2	174d	06/21/17	11/29/17
73	Segment 1	451d	08/07/17	10/01/18
74	Segment 3	372d	08/07/17	07/19/18
75	Permits	498d	02/01/17	01/18/19
76	Construction / Installation	1298d	11/02/16 A	02/26/20
77	Segment 4	971d	02/13/17	08/09/19
78	Segment 2	974d	11/02/16 A	04/29/19
79	Segment 1	1150d	03/16/17	02/24/20
80	Segment 3	1153d	03/17/17	02/26/20



Prog Plan (C14.02) | Remaining | Start Milestone | Last Months Update
Last Months Update | Near Critical | Finish Milestone | Critical Milestone
Progress | Critical | Prog Plan (C14.02) | Risk Contingency

Filename: _C15.07 022217...

Date	Revision	Checked	Approved
02/22/2017	Updates & Revisions Completed By A. Christofas & S. Iyer		
02/23/2017	Checked By S. Iyer & A. Christofas	x	
02/27/2017	Approved By R. Viswanathan		x