



PENINSULA CORRIDOR ELECTRIFICATION PROJECT (PCEP)

Q4 Quarterly Update #19
April 1 – June 30, 2019

JPB Board Meeting
August 1, 2019
Agenda Item # 8a



PCEP Work Segment Map



CalMod ELECTRIFICATION CONTRACT UPDATE

Design Progress

Required number of OCS submittals has increased due to breaking up of segments and updated contractual requirements

Design Discipline	OCS					Signal					Traction Power				
	Required	Completed Previously	Completed this Period	Actual/Forecast	Baseline	Required	Completed Previously	Completed this Period	Actual/Forecast	Baseline	Required	Completed Previously	Completed this Period	Actual/Forecast	Baseline
Segment 1	12	2	0	4/30/20	11/2/18	3	0	0	10/27/20	9/17/19	3	1	0	7/18/19	1/27/19
Segment 2	15	12	0	7/1/19	4/7/18	66	0	0	4/6/21	3/28/19	3	2	0	7/30/19	10/24/17
Segment 3	6	2	2	11/7/19	8/26/18	10	0	0	6/17/20	4/8/19	2	1	0	7/30/19	1/27/19
Segment 4	10	11	0	7/1/19	4/23/18	24	0	0	4/29/20	7/17/18	4	4	0	2/27/18	10/24/17
Systemwide	12	10	0	12/5/17	11/27/17	14	3	0	7/10/19	1/22/18	7	7	0	9/18/19	5/12/18
Totals	55	37	2			117	3	0			19	15	0		

Note: Data as of June 30, 2019



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CalMod ELECTRIFICATION CONTRACT UPDATE

OCS Progress

Segment	Work Area	Foundations				Poles			
		Required ^a	Completed as of 3/31	Completed this Period (4/1-6/30)	Total Completed	Required	Completed as of 3/31	Completed this Period (4/1-6/30)	Total Completed
1	Tunnels	34	34	0	34	31	0	0	0
	A	309	0	May 2020 ^b	0	259	0	0	0
	B	237	0	Apr 2020 ^b	0	177	0	0	0
2	5	243 ^c	184	0	184	208	160	0	160
	4	317	238	5	243	258	170	16	186
	3	174 ^d	60	0	60	140	0	30	30
	2	248	74	0	74	205	0	10	10
	1	206	78	0	78	154	0	0	0
3	2	530	0	Sep 2019 ^b	0	460	0	0	0
	1	397	0	171	171	313	0	0	0
4	A	244	23	49	72	180	0	0	0
	B	140	55	15	70	124	0	0	0
	CEMOF	112	0	Jan 2020 ^b	0	102	0	0	0
Total:		3,191	746	240	986	2,611	330	56	386

Note: ^a Foundations Required do not match Poles Required as guy foundations are needed in some locations for extra support.

^b Planned Start Date

^c 55 foundations will be installed by SSF.

^d 64 foundations will be installed by 25th Avenue.



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CalMod ELECTRIFICATION CONTRACT UPDATE

Traction Power Facilities Progress

Facility	Sitework			Substation Building			Low / High Voltage Equipment			Transformer			Gantry		
	Last Period	This Period	To Date	Last Period	This Period	To Date	Last Period	This Period	To Date	Last Period	This Period	To Date	Last Period	This Period	To Date
TPSS-1	28%	0%	28%	0%	0%	0%	7%	0%	16%	100%	0%	100%	0%	8%	8%
TPSS-2	70%	5%	75%	20%	0%	20%	30%	5%	47%	100%	0%	100%	25%	26%	51%
SWS-1	10%	0%	10%	0%	0%	0%	7%	0%	7%	0%	100%	100%	0%	6%	6%
PS-1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PS-2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PS-3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PS-4	11%	0%	11%	0%	0%	0%	5%	0%	5%	0%	100%	100%	0%	0%	0%
PS-5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PS-6	0%	15%	15%	0%	0%	0%	0%	15%	9%	0%	100%	100%	0%	0%	0%
PS-7	10%	5%	15%	0%	0%	0%	5%	5%	25%	0%	100%	100%	0%	18%	18%

Wayside Power Cubicles	Required	Installed
	28	6

Last period: Data as of March 31, 2019
 This Period: April 1, 2019 – June 30, 2019



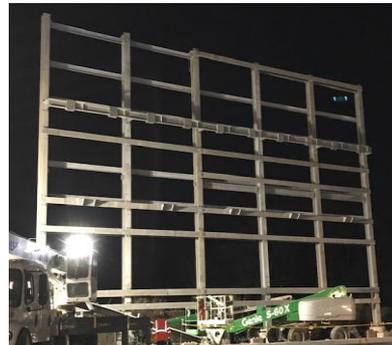
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CalMod ELECTRIFICATION CONTRACT UPDATE

Gantry



TPS2 Isolation Gantry



TPS2



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CalMod ELECTRIFICATION CONTRACT UPDATE

Gantry



TPS2



TPS2A



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CalMod ELECTRIFICATION CONTRACT UPDATE

Signal System

- Continued installation of signal ductbank, conduits, signal house and WPC foundations in Segments 2 and 4
- Installed signal house at Auzerais Avenue crossing & CP Mack
- Continued fabrication and testing of signal houses
- Progressed design for Auzerais, Virginia, Scott, Linden, 16th and Mission Bay grade crossings
- Technical meetings weekly to discuss progress of grade crossing design submittals
- Continued following-up meetings with FRA (Regional and Headquarters) and CPUC on a regular basis
- Began preparation of signal cutover/test plan for the next FRA meeting scheduled on 8/8

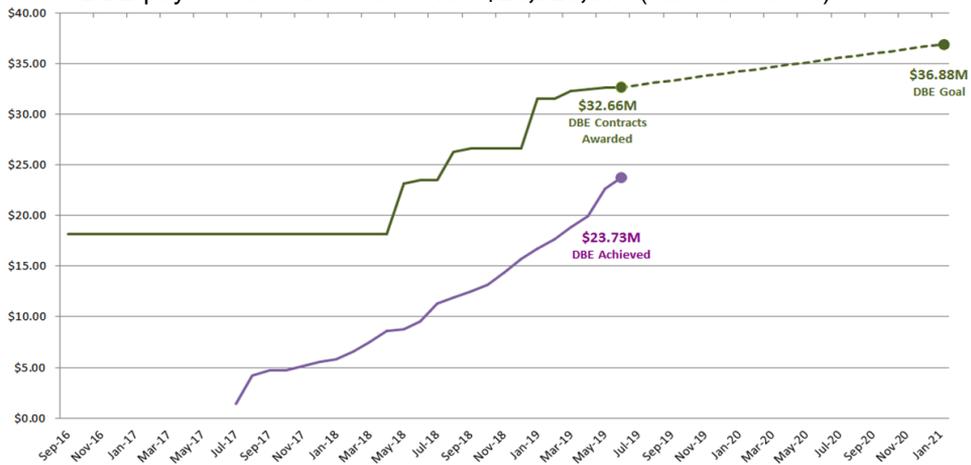


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CalMod DBE UPDATE

Disadvantaged Business Enterprises

- 5.2% (\$36,884,154) of the total DB contract value (\$709,310,651) subcontracted to DBEs
- DBE payments to date: 6/30/19: **\$23,728,113** (3.3% achieved)



CalMod DBE UPDATE

Summary Breakdown of Awarded DBE Agreements

Scope Area	DBE Award Amounts
Traffic Control	\$2,865,900
QA QC	\$7,393,276
Design	\$5,479,715
Signal/Communication	\$6,448,927
OCS Wire	\$3,265,500
Noise Monitoring	\$1,324,095
Safety and Security	\$2,384,000
Survey	\$1,200,000
Other	\$2,272,247
TOTAL	\$32,633,660

- \$4,250,494 remaining to be awarded to reach the \$36,884,154 goal

CalMod ELECTRIFICATION

Other Electrification Contracts

- Supervisory Control and Data Acquisition (SCADA)
 - Numerous functional tests completed, including power planning, field power directors, clearance and switching.
 - Prepared for demonstration of San Jose substation portion of the SCADA system.

- Centralized Equipment Maintenance and Operations Facility
 - Limited Notice to Proceed issued to ProVen in April.
 - Began processing RFIs and submittals.
 - Roadway Worker Protection training provided to ProVen management, consultants, and subcontractors
 - Preparations underway for full Notice to Proceed.



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CalMod TUNNEL CONTRACT UPDATE

ProVen Management, Inc.

- Construction Update:
 - Tunnel 1: All base scope complete except for fencing and OCS termination structure installation
 - Tunnel 2: All base scope complete except for OCS termination structure installation
 - Tunnel 3: All base scope complete except for fencing and OCS termination structure installation
 - Tunnel 4: Final scans showed some areas of over-notching, requiring additional rock bolt installation. Fencing and OCS termination structure installation remain
 - OCS Termination Structures: 34 of 34 foundations installed; OCS termination structure fabrication, procurement, and installation at all portals are dependent on PMI shop drawing submittals and subsequent review/approval. To-date, Tunnel 4 South Portal shop drawings are approved
 - Tunnel 4 Historic South Portal Reconstruction: Masonry subcontractor created test casts of archstones that were accepted by all relevant parties; preconstruction meeting occurred to discuss installation steps and requirements
 - OCS Option: Installation of drop tubes and conductor rail to occur in fall 2019; procurement for long-lead items ongoing

Update through June 30, 2019



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CalMod TUNNEL CONTRACT UPDATE

Tunnel 4 Historic South Portal Reconstruction



Test Blocks for Tunnel 4 South Portal Archstones



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CalMod TUNNEL CONTRACT UPDATE

OCS Termination Structure Foundations



Standard Foundations



Micropiles and Cap Foundation



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CalMod EMU VEHICLES

EMUs – Design & Manufacturing

- 14 Final Design Reviews of the 17 major systems completed. Remaining 3 are conditionally approved. Scheduled for completion in late 2019.
- 64 First Article Inspections total, 46 conducted, 11 closed.
- Alternate Vehicle Technology compliance (crashworthiness) validation analysis scheduled to be submitted to FRA in August.
- Scheduled FRA 'Compliance Review' of EMU design in September, and 'Sample Car Inspection' for December 2019/January 2020 timeframe.
- Change order to perform Trainset Level Design Conformance Testing at Pueblo, Colorado test facility executed.
- Stadler Salt Lake City received ISO Quality Certification.
- First trainset assembly undergoing system installation fit-up engineering. Numerous interfaces fine tuned and implemented into production.

Stadler EMU Manufacturing Progress: 133 Carshells (19 Trainsets of 7 Carshells)				
	Shells Shipped	In SLC	Out SLC	Cars at Caltrain
Trainset 1	7	7	0	0
Trainset 2	7	7	0	0
Trainset 3	7	2	0	0
Trainset 4	0	0	0	0
Trainset 5	0	0	0	0
Trainset 19	0	0	0	0
Total	21/133	16/133	0/133	0/133



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CalMod

Salt Lake City Facility Production Hall



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CalMod RISK MANAGEMENT

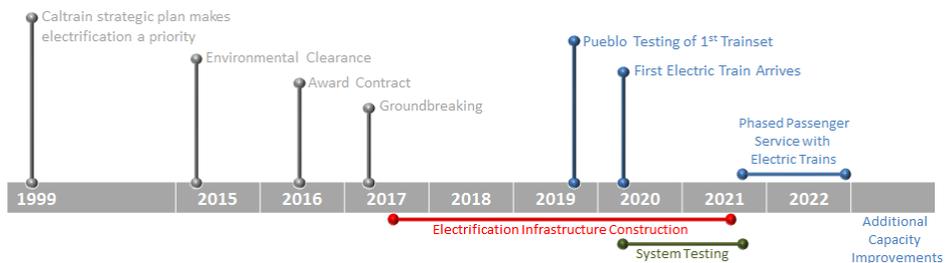
- Complete updated risk analysis and provide input for contingency planning
- Top 2 Risks:
 - BBII may be unable to develop grade crossing modifications that meets stakeholder and regulatory requirements within the program schedule
 - Advancing speed check solution
 - Coordinating with CPUC and FRA
 - Contractor sequencing of early utility location, preliminary design, and foundation construction may result in inefficiencies in construction, redesign, and reduced production rates
 - Project team is breaking down current track access delays (TAD) data to categorize different areas of delays in attempt to mitigate each specific area of delay
 - Specific actions have been planned to further mitigate track access issues, such as changes to planning process
 - Project continues to meet and work with Operations on potential mitigations for TAD moving forward



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CalMod SCHEDULE

MILESTONES



*Please keep in mind that testing and construction will overlap as each Segment will be tested individually, prior to final system testing.

Note: **Schedule Subject to Change**



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CalMod BUDGET & EXPENDITURES (in millions)

	Budget	Current Budget	FY19 Q4 Costs	Costs to Date	Estimate at Completion
Electrification	\$696.61	\$720.50	\$20.74	\$318.73	\$720.50
SCADA	\$0.00	\$3.45	\$0.00	\$1.93	\$3.45
EMU	\$550.90	\$553.90	\$2.28	\$114.97	\$553.90
PG&E	\$57.22	\$88.49	\$15.75	\$52.20	\$88.49
Tunnel Modifications	\$11.03	\$42.20	\$0.58	\$22.73	\$42.20
CEMOF Modifications	\$1.34	\$6.55	\$0.00	\$0.00	\$6.55
Separate Contract & Support Costs	\$347.62	\$331.55	\$15.67	\$210.72	\$331.55
Contingency ¹	\$315.53	\$233.61	\$0.00	\$0.00	\$228.04
Anticipated Changes	\$0.00	\$0.00	\$0.00	\$0.00	\$5.58
PCEP Total	\$1,980.25	\$1,980.25	\$55.01	\$721.28	\$1,980.25

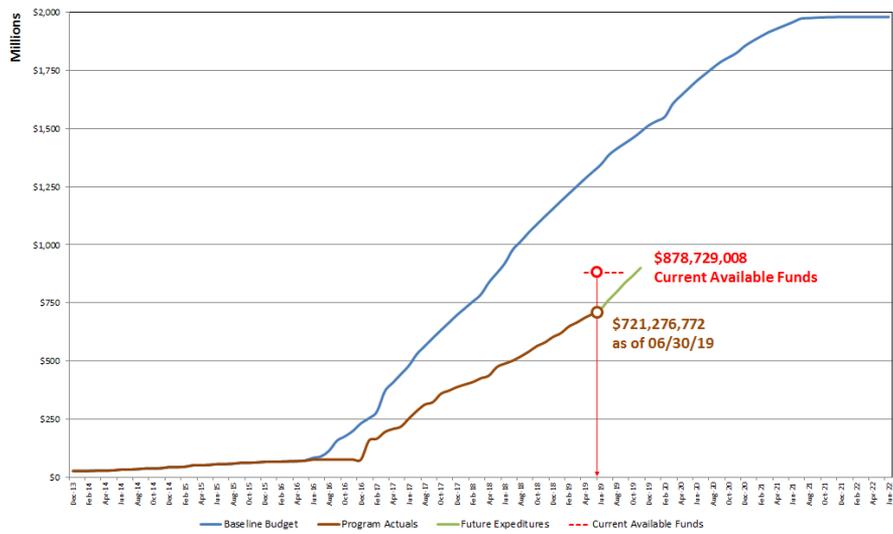
Note 1: Contingency is not for out of scope changes.

Budget / Expenditures as of June 30, 2019



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CalMod ACTUAL VS PLANNED



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CalMod CONTINGENCY¹ DRAWDOWN

Contracts	Amount	Contingency
Beginning Contingency		\$315,533,611
Drawdown		
Executed Change Orders	\$16,195,275	
SCADA Contract	\$3,446,917	
PG&E Supplemental #4	\$31,263,082	
Tunnel Modifications	\$31,386,286	
CEMOF Modifications	\$5,206,777	
Total	\$87,498,337	
Remaining Contingency		\$228,035,274

Note 1: Contingency is not for out of scope changes.

As of June 30, 2019



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CalMod ANTICIPATED CONTINGENCY¹ DRAWDOWN

Contracts	Amount	Contingency
Remaining Contingency		\$228,035,274
Pending Contingency Drawdown		
Field Orders (053 & 059) for Signal Cable Relocation	\$184,576	
PS-5 Site Relocation (Design Only)	\$348,000	
Increase Quantity for Utilities Potholing (Bid Item #9)	\$1,867,700	
Slot Drains Reroute in CEMOF Yard	\$69,000	
Testing at TTCl (Pueblo Facility)	\$3,106,428	
Total	\$5,575,704	
Anticipated Remaining Contingency		\$222,459,570

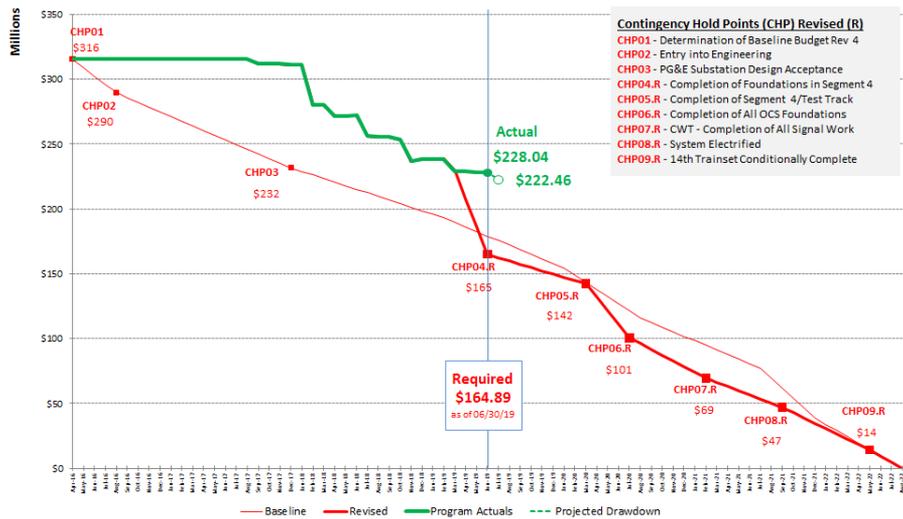
Note 1: Contingency is not for out of scope changes.

As of June 30, 2019



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CalMod CONTINGENCY DRAWDOWN CURVE



Note 1: Contingency is not for out of scope changes.



CalMod OUTREACH

- 17 Outreach events
- 23,000 Direct mailers/door hangers
- 3,161 Subscribers to the monthly e-newsletter
 - Average Open Rate – 37% (vs. 18% National Average)
- 1,950 Subscribers to the weekly e-update
- Website: CalMod.org

CALMOD E-NEWSLETTER

ELECTRIC TRAINS UPDATE

In June, electric train production continued with three battery-units. In the photo, you can see the end of the train, affectionately nicknamed Big Bertha. This unit is Caltrain's most electric train unit of the new 14th unit CHS Series. First vehicle inspection and testing continues as the train sets ship.

View more electric train pictures at www.CalMod.org/CalMod

CONSTRUCTION UPDATE

Construction to make Caltrain a modern, electric commuter rail system continues! This month, crews completed installation of foundations, as well as poles along the corridor from South San Francisco to San Jose. Work was also performed on six traction power facilities in San Jose, Redwood City, Sunnyvale, South San Francisco, and San Mateo.

To sign up for weekly construction updates or for more construction information, visit CalMod.org/Construction

CALMOD CELEBRATES EARTH MONTH

NEW ELECTRIC TRAINS WILL REDUCE POLLUTION BY 97%

April is Earth Month, so we thought we'd share some facts about how the Caltrain Modernization program is contributing to a healthier planet and a happier local community. The electrification of our fleet will result in a 97% reduction in emissions and will remove 176,000 metric tons of greenhouse gases annually, which is the same contributor to climate change. Switching from diesel to electric-powered trains also means reductions in noise pollution along the corridor. Together these environmental benefits mean a healthier habitat for people, plants, and animals alike. Over 65,000 people ride Caltrain everyday. That's a LOT of cars off the road, and electrification will allow even more people to choose a form of transportation that's only getting greener. Happy Earth Month, Caltrain riders!

Visit CalMod.org/projects/benefits to learn more.

Examples of the Monthly CalMod E-Newsletter





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QUESTIONS