



PENINSULA CORRIDOR ELECTRIFICATION PROJECT (PCEP)

TA CAC

February 5, 2019

Agenda Item #11b

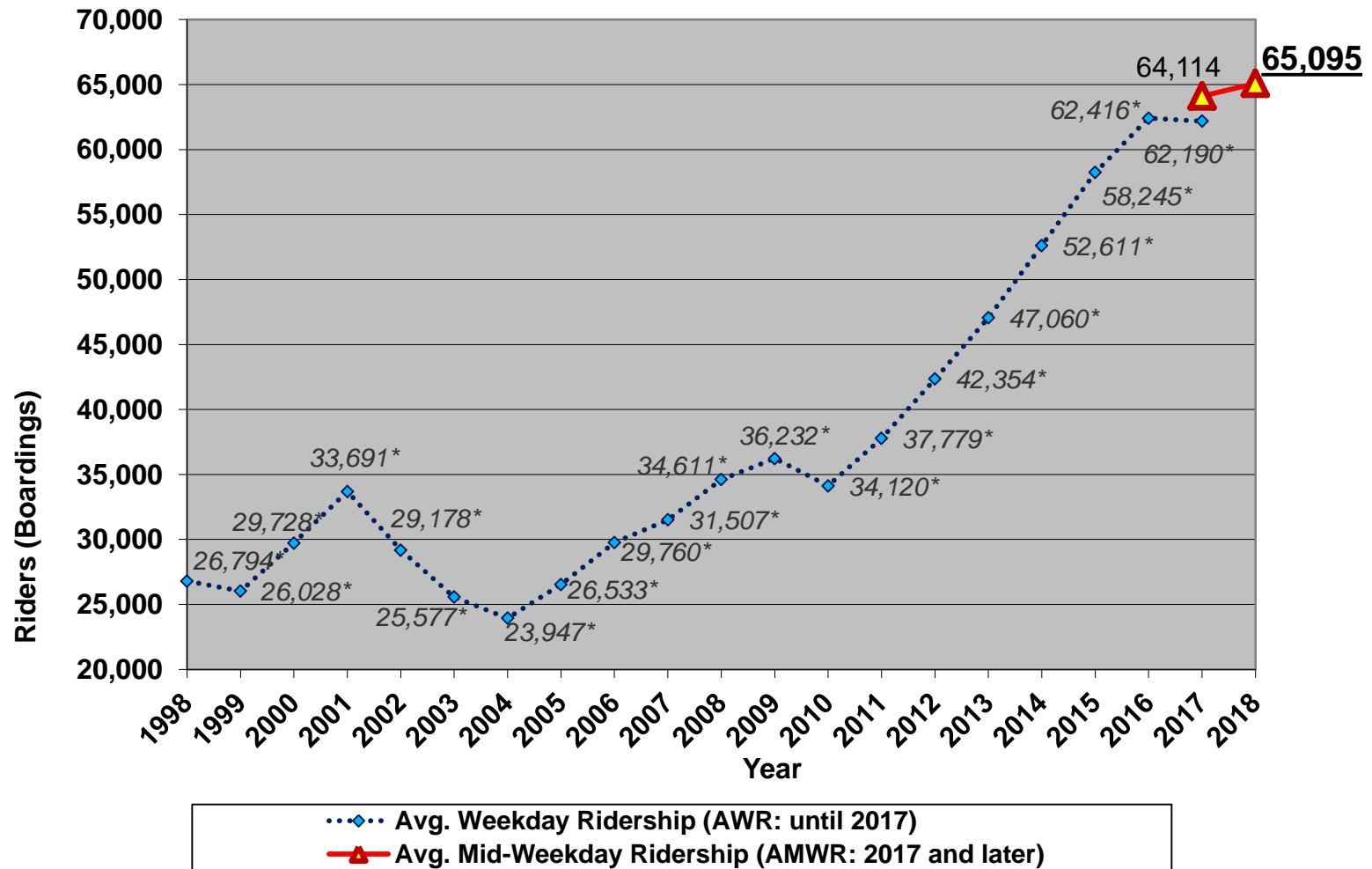


Caltrain owns
(SF to SJ)



- 77 Miles, 32 Stations
- 92 Weekday Trains
- Tenants (Altamont Corridor Express, Capitol Corridor, Amtrak, Freight)

Union Pacific owns
(SJ to Gilroy)





Bi-directional commute with riders standing on trains going southbound and northbound

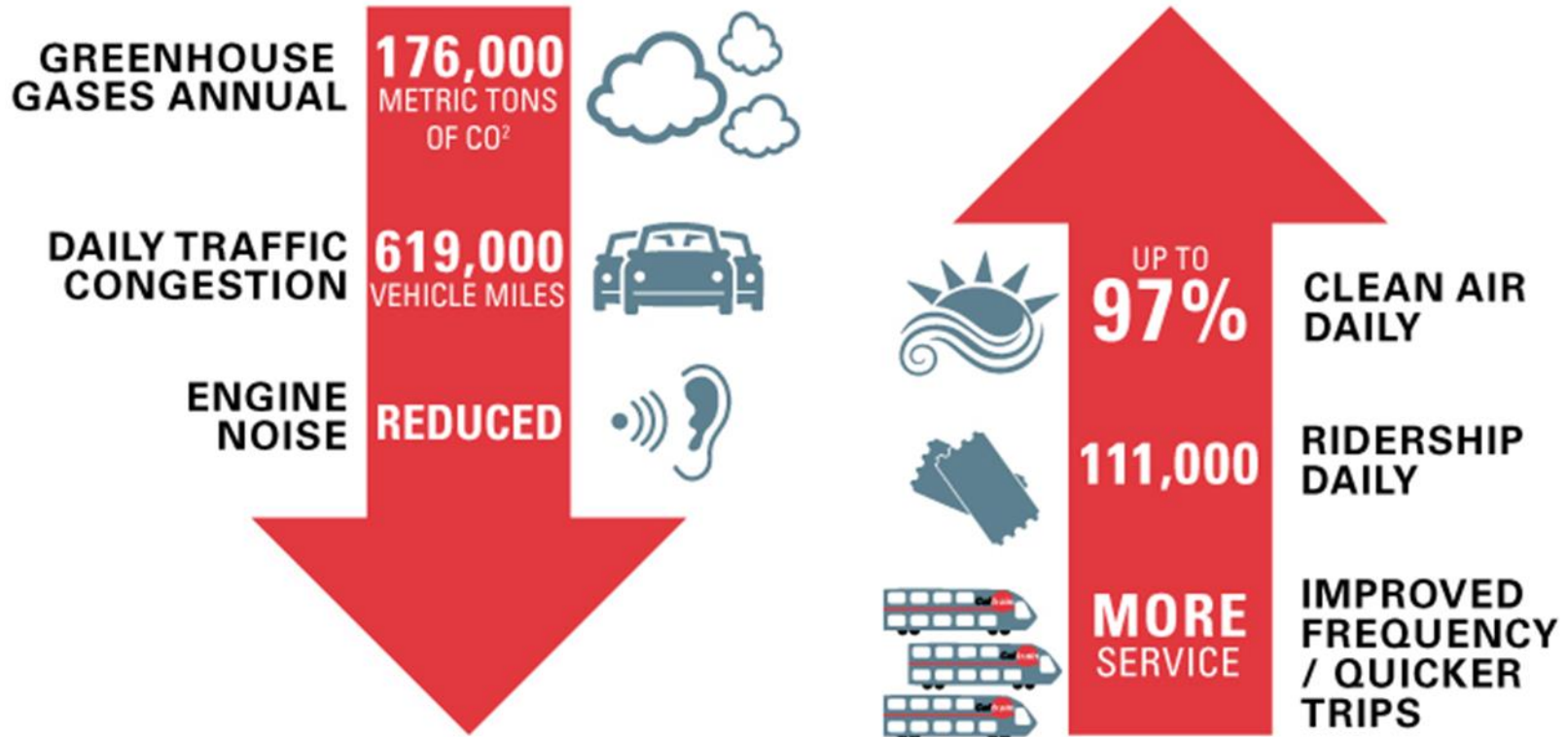
Table 1.2: Caltrain Fleet Inventory

SERIES	QUANTITY	NUMBER OF SEATS	YEAR OF MANUFACTURE	MAKE	RETIRE DATE
Locomotives					
F40 PH-2	5	na	1985	GM - EMD	2015
F40PH-2-CAT	15	na	1985-1987	GM - EMD	2015-2017
F40 PH-2C	3	na	1998	Boise Locomotive	2028
MP36PH-3C	6	na	2003	Motive Power	2033
Passenger Cars					
Gallery Trailer	26	142	1985-1987	Nippon Sharyo	2015-2017
Gallery Trailer	16	148	1985-1987	Nippon Sharyo	2015-2017
Gallery Trailer	14	120	1999-2000	Nippon Sharyo	2030
Gallery Cab (Bike)	10	108	1985-1987	Nippon Sharyo	2015-2017
Gallery Cab (Bike)	6	78	1999-2000	Nippon Sharyo	2030
Gallery Cab (Bike)	21	97	1985	Nippon Sharyo	2015
Bi-Level Trailer*	16	149	1997	Bombardier	2027
Bi-Level Trailer	9	144	2002	Bombardier	2032
Bi-level Trailer (Bike)	2	114	2002	Bombardier	2032
Bi-level Trailer (Bike)	5	114	2001-2002	Bombardier	2031-2032
Bi-level Trailer (Bike)	2	114	2008	Bombardier	2038
Bi-level Trailer (Bike)	1	127	2002	Bombardier	2032
Bi-Level Trailer	6	140	2008	Bombardier	2038

*Trailers recently acquired from Metrolink with refurbishment ongoing.

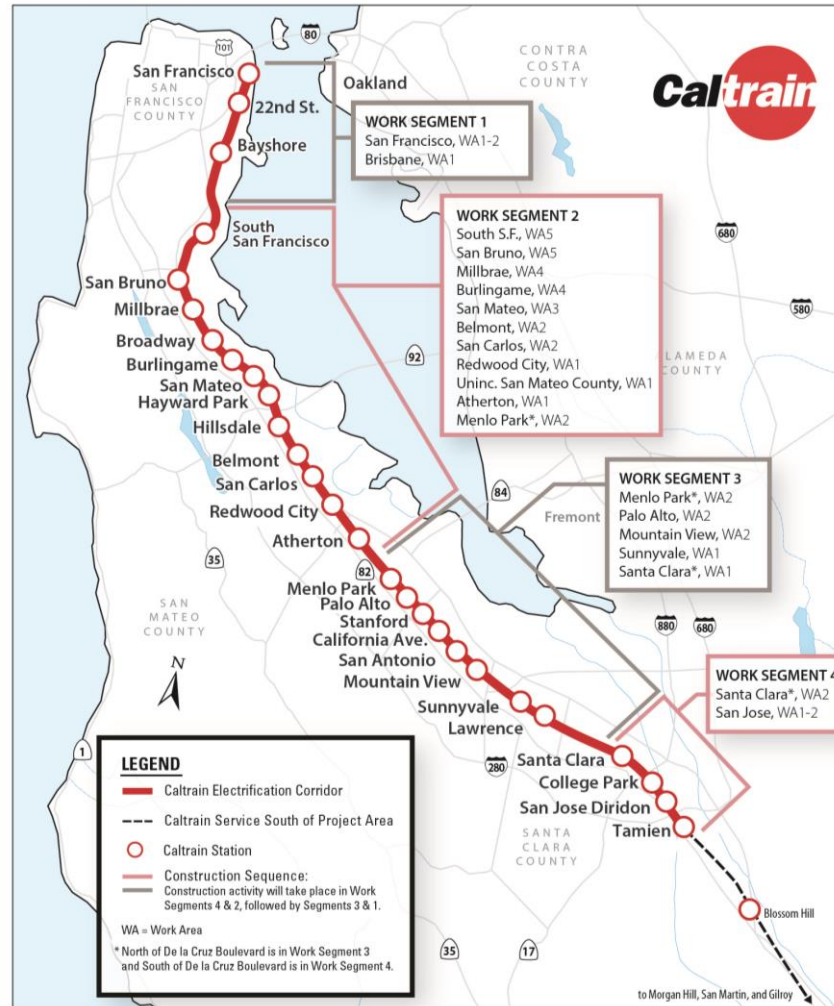
At Retirement Age: 20/29 loco; 73/134 cars

Area	Project	Service
51 miles San Francisco to San Jose (Tamien Station)	Electrification: <ul style="list-style-type: none">• Overhead Wiring• Traction Power Facilities Electric Trains (EMUs) <ul style="list-style-type: none">• 19 seven-car trainsets (133 cars)	Up to 79 mph Service Increase <ul style="list-style-type: none">• 6 trains / hour / direction• More station stops / reduced travel time• Restore weekday Atherton & Broadway service Mixed-fleet service (interim period) Continue tenant service <ul style="list-style-type: none">• Altamont Corridor Express, Capitol Corridor, Amtrak, Freight

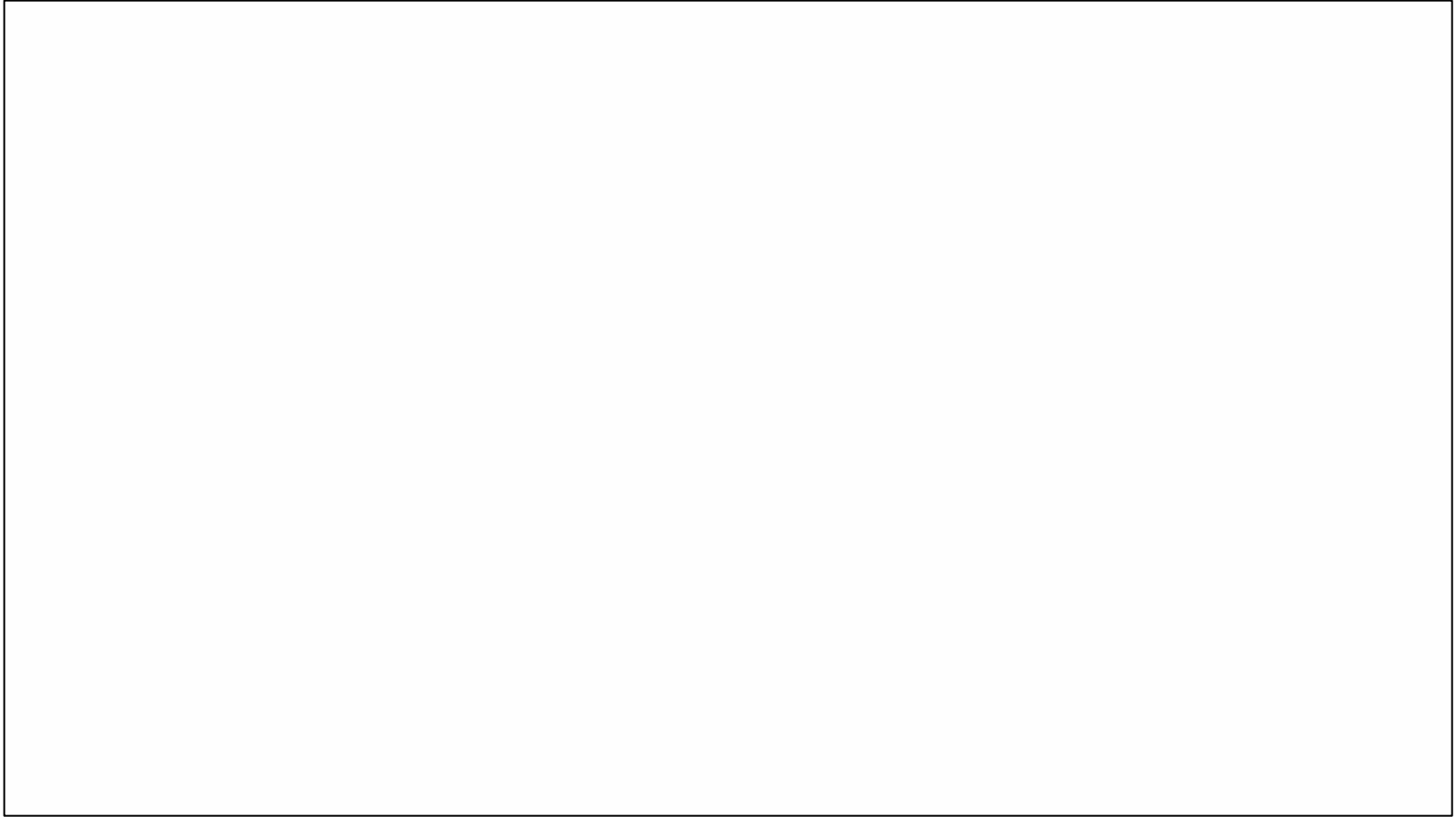


Note: 2013 BAC Report, generates \$2.5B economic activity and 9,600 jobs

- 51 Miles Corridor
- 4 Work Segments
- 3,000 Poles
- 10 Traction Power Facilities

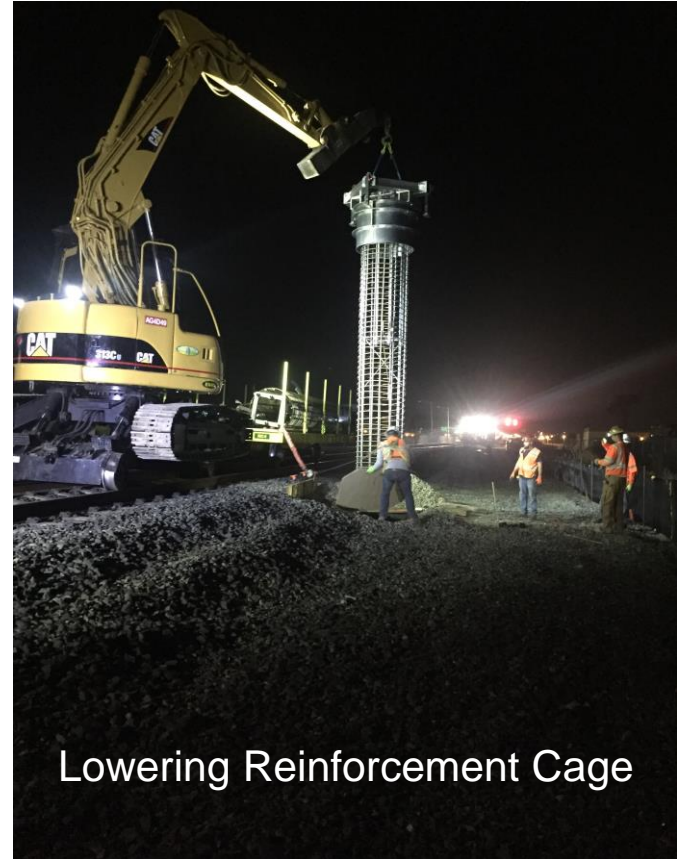


2018 Review Video





Drilling of Foundations



Lowering Reinforcement Cage





OCS pole on flatbed truck



OCS pole lifted off flatbed truck



Crew placing OCS pole on foundation

OCS Progress

Segment	Work Area	Foundations			Poles		
		Required	Completed this Period (10/01-12/31)	Total Completed	Required	Completed this Period (10/01-12/31)	Total Completed
1	Tunnels	32	12	12	32	0	0
2	5	242	12	184	186	10	160
	4	315	21	220	259	162	163
	3	182	20	57	147	0	0
	2	248	55	59	218	0	0
	1	206	67	67	155	0	0
Total:		1,225	187	599	997	172	323

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

Note: Data as of December 31, 2018

Other Progress

- Began impedance bond installation in Segments 4 and 1
- Signal house installed at Auzerais Avenue in San Jose
- Two wayside power cubicles, part of the traction power system, installed at Control Point (CP) Center in Millbrae and CP Scott in San Bruno
- Foundations and main transformers installed at Traction Power Substations TPS-1 and TPS-2
- Preparations underway for installation of Paralleling Station 7
- PG&E completed construction work required for the supply of temporary power. Construction of the interconnections between the PG&E substations and the Traction Power Substations and completion of the Traction Power Substations are required before temporary power is available

TPS-2 Transformer Installation



ProVen Management, Inc.

- Contract Scope:
 - Increase tunnel clearances
 - Install OCS
 - Drainage improvements and track rehabilitation (CNPA)
- 13 weekend tunnel closures (with bus bridges) occurred through December 31, 2018 with successful Monday return to Caltrain revenue service
- Construction Update:
 - Tunnel 1: Grouting and notching complete; shotcrete complete, OCS anchor bolts cored and installed, drainage work began
 - Tunnel 2: Hand-notching (saw-cutting/chipping) complete; rebar installation and shotcrete complete, 12 of 15 OCS anchorages installed
 - Tunnel 3: Grouting complete; notching nearly complete, anchor coring nearly complete
 - Tunnel 4: Grouting complete; rock bolt installation ongoing; notching nearly complete; significant progress made on installation of dry-fix pins, welded-wire mesh, and shotcrete
 - All Tunnels: 12 of 32 OCS termination structure foundation installations complete

Update through December 31, 2018



Dry Fix Pin Installation



Grouting Operation



On-Track Drill
(for Rock Bolts and Grout Holes)



Rock Bolt Installation (foreground)
Grout Hole Drilling (background)

Tunnel 1 Template Truck

Helps
determine
envelope
for tunnel
notching



Tunnel 4: Grouting Train



Tunnel 4



South Portal MT1 Potholing
for OCS Termination Structure Piles



Grouting

Tunnel 4 Grouting



Notching



Fan used to maintain airflow during notching



Exposed Brick in Notch

Roadheader Notching Operation



EMUs – Design & Manufacturing

- Final design complete except software intensive equipment such as passenger information signs and train monitoring and diagnostics system, scheduled to be complete Q4 2019

Stadler Electric Multiple Unit Manufacturing Progress: 133 Carshells (19 Trainsets of 7 Carshells)

	Switzerland Construction Facility in Various Stages of Completion	En Route from Switzerland to Salt Lake City	Salt Lake City Assembly Facility	Total Manufactured Cars per Trainset
Trainset 1		1	6	7
Trainset 2	3	4		7
Trainset 3	4			4
Total	7	5	6	18

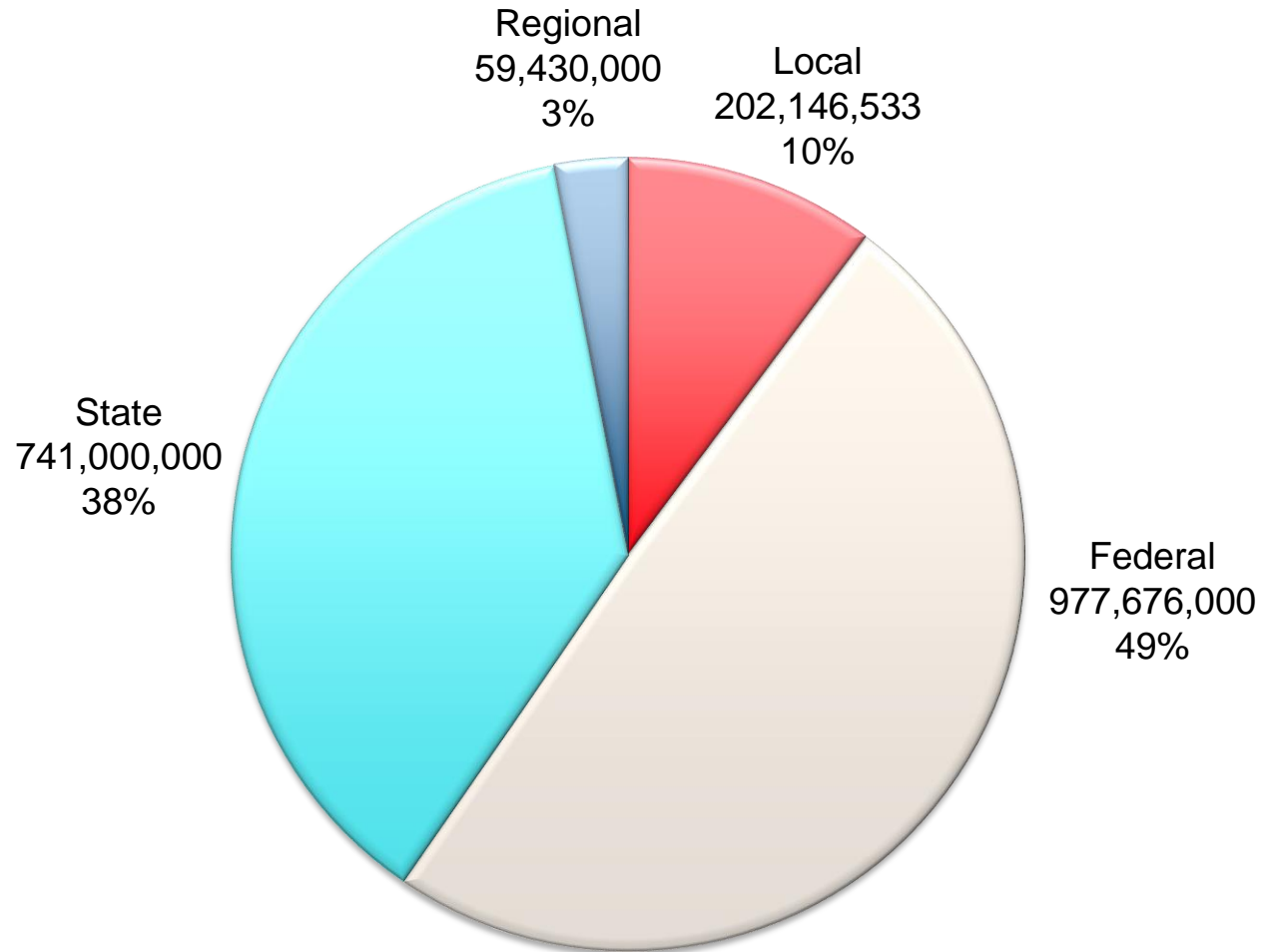
- Truck frame first article inspection complete and production manufacturing underway. Frames for static and fatigue testing fabricated and prepared for shipment to independent testing facility. Fatigue testing of the truck to be complete in May 2019
- Second of 3 floor/ceiling fire tests completed successfully
- Stadler new Salt Lake City manufacturing facility construction on schedule, with incremental completion in advance of car manufacturing needs

First Painted Shell – A-Cab Car



Stadler's Utah Manufacturing Facility



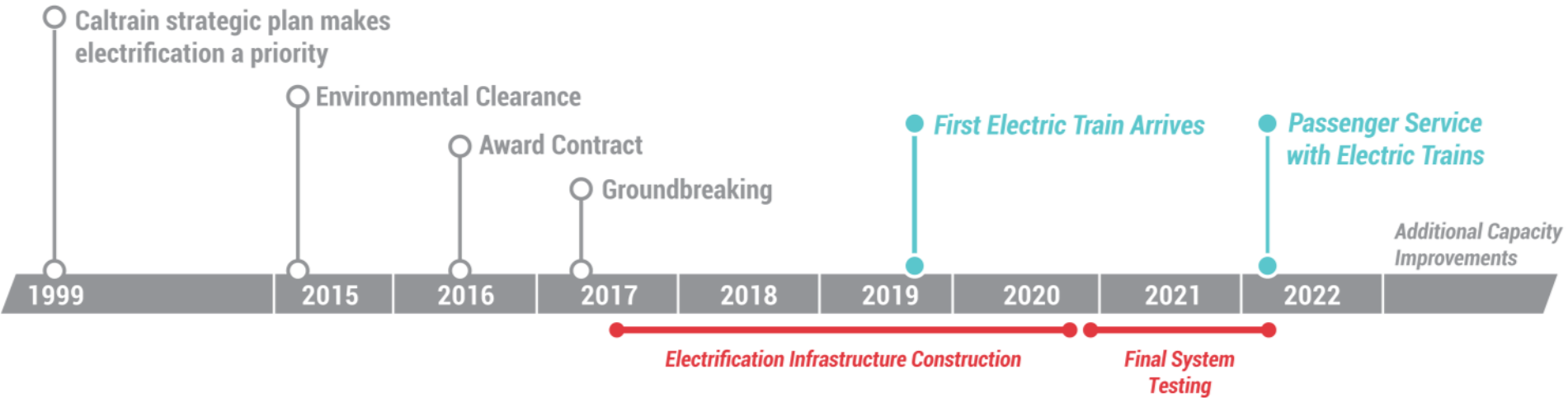


	Budget	Current Budget	FY19 Q2 Costs	Costs to Date	Estimate at Completion
Electrification	\$696.61	\$712.29	\$24.74	\$276.05	\$712.29
SCADA	\$0.00	\$3.45	\$0.04	\$1.93	\$3.45
EMU	\$550.90	\$550.79	\$4.98	\$97.38	\$550.79
PG&E	\$57.22	\$88.49	\$5.84	\$33.80	\$88.49
Tunnel Notching	\$11.03	\$42.42	\$13.10	\$16.00	\$42.42
Separate Contract & Support Costs	\$348.96	\$341.17	\$14.04	\$178.91	\$341.17
Contingency ¹	\$315.53	\$241.65	\$0.00	\$0.00	\$238.68
Anticipated Changes	\$0.00	\$0.00	\$0.00	\$0.00	\$2.97
PCEP Total	\$1,980.25	\$1,980.25	\$62.74	\$604.08	\$1,980.25

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

Budget / Expenditures as of **December 31, 2018**

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**

- 52 Outreach Events (2018)
- 170,000 Direct mailers / door hangers (2018)
- 1,813 Subscribers to the monthly e-updates (up 130% from Jan '18)
- 1,204 Subscribers to the weekly e-update (up 117% from Jan '18)
- Launched New Website: CalMod.org
- Year in Review Video: CalMod.org/gallery

CALMOD E-NEWSLETTER

In this issue: A heartfelt thank you to Caltrain Riders, what's the latest with construction, and a shout out to Salt Lake City!

THANK YOU, CALTRAIN RIDERS!



Thank You to YOU, our riders, for your continued support while we work to make the future of Caltrain better and brighter. Weekend construction closures can be frustrating, but it means that change is coming, and we hope you'll agree that the future is worth it. We look forward to bringing our riders more trains more often, with better on-time performance and onboard comfort. No matter which improvements you're looking forward to, we thank you for supporting the CalMod program.

Check out what Caltrain riders have to say about the CalMod program at CalMod.org/Riders-Benefits.

CONSTRUCTION UPDATE



Crews continue notching and grouting work in the San Francisco Tunnels for Caltrain Electrification, and from South San Francisco to Burlingame foundations and poles are being installed. Pre-construction activities are now underway along the entire corridor.

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

ELECTRIC TRAINS UPDATE



Thank you to the Stadler US manufacturing team in Salt Lake City, Utah for making Caltrain's high-performance electric trains. Their hard work will bring riders a more efficient and sustainable ride! View the first car shell getting ready for interior equipment and furnishing installation.

View more pictures at CalMod.org/Gallery.

UPCOMING EVENTS

Redwood City and North Fair Oaks Community Meeting
November 28, 2018, 6:30 p.m. to 7:30 p.m.
Downtown Redwood City Library, Community Room
1044 Middlefield Road, Redwood City, CA 94063

Caltrain **CalMod**



QUESTIONS