



CALTRAIN ELECTRIFICATION UPDATE

JPB Meeting
December 2, 2021

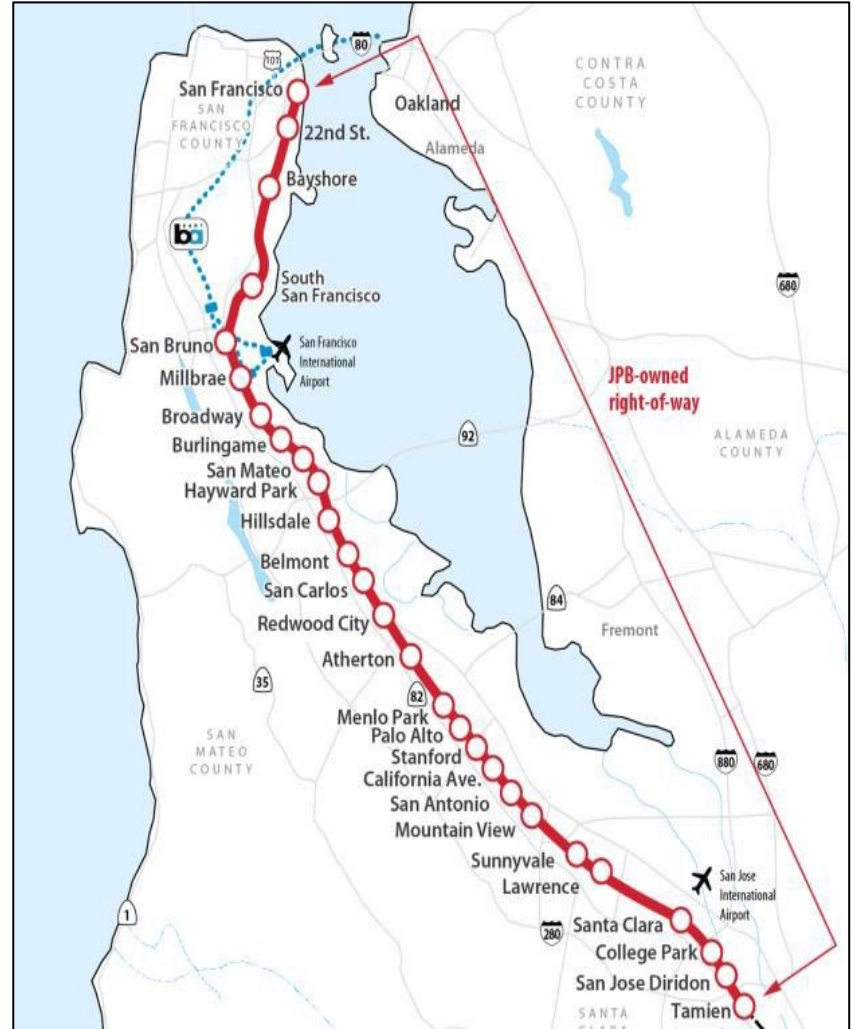


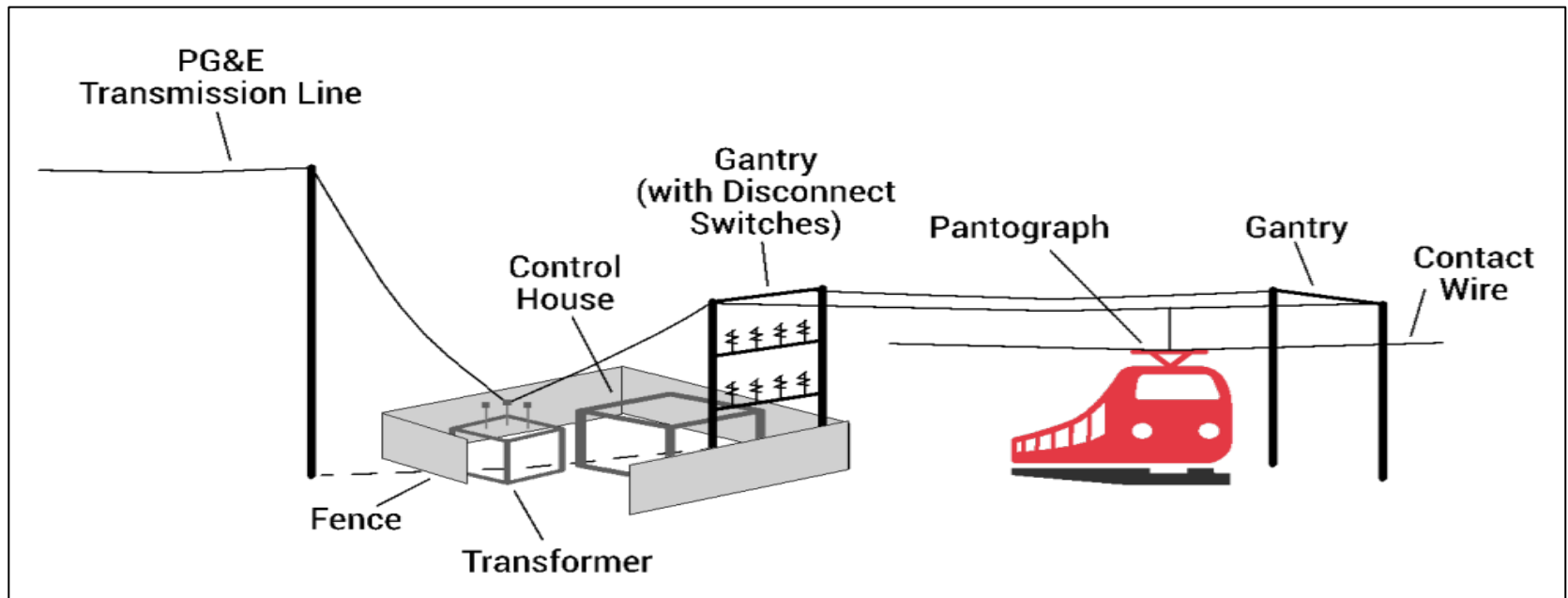
- Change Management Board Information
- Construction Update
- General Project Update

PROJECT OVERVIEW



- Caltrain Electrification
- San Francisco to San Jose (Tamien Station)
- 51 miles
- Project Cost: \$2.31B (based on FTA risk refresh)
- Revenue Service: Sept. 2024





Electrification

- Overhead Contact System (OCS)
- Traction Power Facilities
- Signal System

Electric Trains

- 19 7-car train sets (133 cars)
- (Note: 96 cars funded by project; 37 cars funded by State TIRCP)*



**Improved Train
Performance,
Increased Service
and Greater Capacity**



**Improved Regional
Air Quality and
Reduced Greenhouse
Gas Emissions**

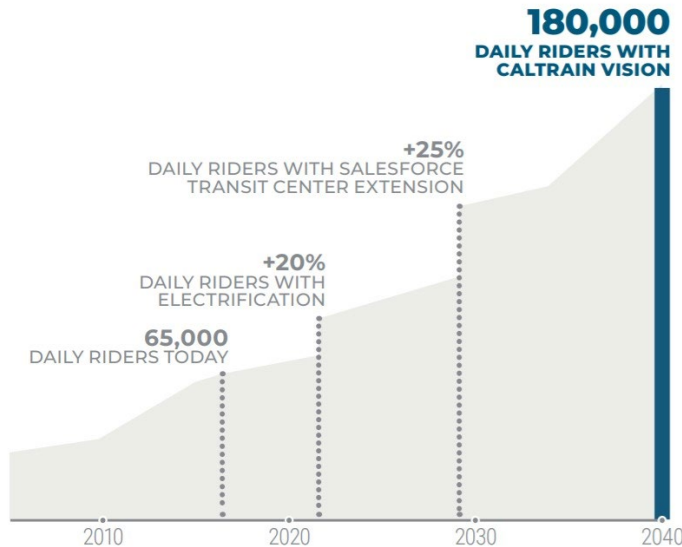
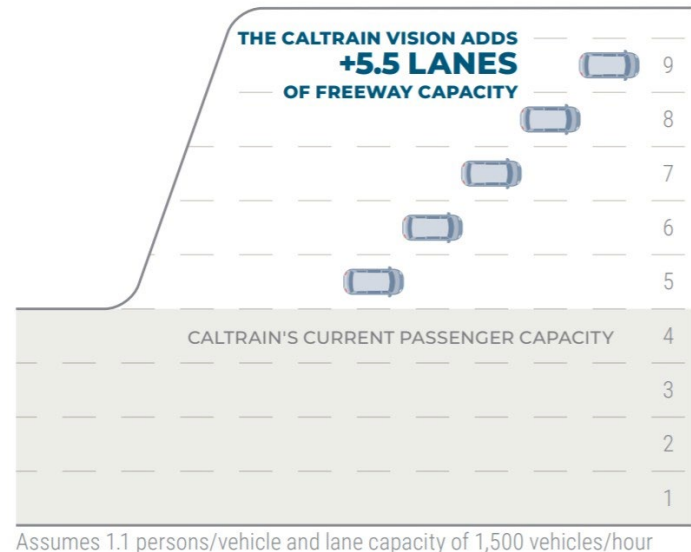


**Positive Economic
Benefits for the
Region**



**Reduced Engine
Noise Emanating
from Trains**

- Electrification sets foundation for future growth of system
- Meet projected regional growth in jobs and housing in the Bay Area
- Triple ridership, increase peak and off-peak service
- Carry equivalent of 5.5 lanes of US 101 highway traffic

**CARRYING MORE PEOPLE****TRAINS VS LANES**

CHANGE MANAGEMENT BOARD

(Luis Zurinaga, CMB Chair)



- Established in 2016 per Seven-Party Funding Partners MOU
- Staff membership:
 - Metropolitan Transportation Commission
 - Santa Clara Valley Transportation Authority
 - San Mateo County Transportation Authority
 - City and County of San Francisco / San Francisco County Transportation Authority
 - California High Speed Rail Authority
 - PCEP

- Meets monthly to review:
 - Project status
 - Contingency drawdown status
 - Change order logs
 - Information items
- Action on changes over \$200,000
 - Change orders
 - Increase in contract authority
 - Increase in work directive authority

- **Scope change examples**
 - Additional reinforcement of foundation due to unexpected soil condition
 - Relocation of Paralleling Stations due to city considerations
 - Regulatory changes resulting in wiring changes
- **Quantity change examples**
 - Utility potholing
 - Tree pruning & removal
 - Contaminated soil off-haul
- **Contract authority / Work directive change examples**
 - Need for more inspection staff
 - Additional program management service to support project schedule updates
 - Increased use of TASI for track protection

- CMB receives justification information
 - Cost impact
 - Schedule impact
 - Configuration management concurrence
 - Environmental compliance
 - Independent cost estimate
 - Contractor cost estimate
- If approved by majority of CMB
 - Project team executes changes within JPB approved Contract Authority
 - If insufficient contract authority, change presented to JPB for approval
 - CMB practice is approval by consensus

- Appreciate partner commitment and expertise
- CMB role critical
 - Project review
 - Project advancement
 - Accountability
- Civil to systems integration assessment
 - Process and procedures
 - Resources
 - Change management process evaluation

CONSTRUCTION UPDATE

(New format start Jan. 2022)

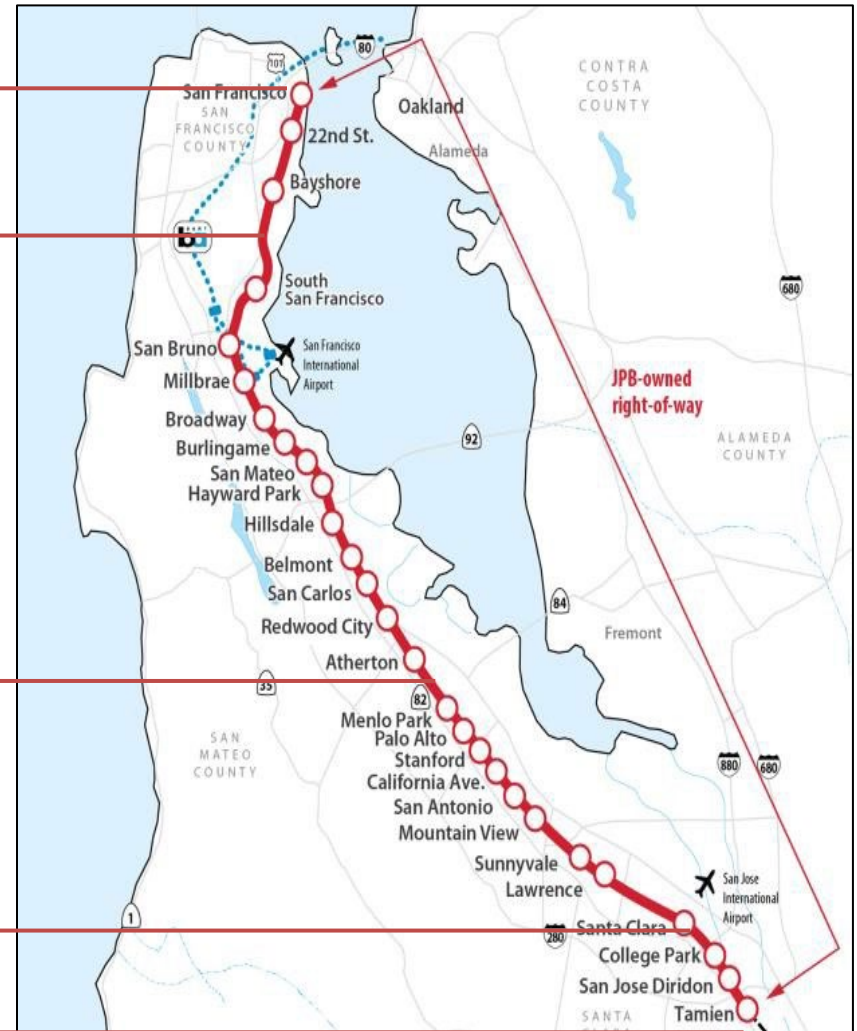


Segment 1
San Francisco to Brisbane

Segment 2
South San Francisco to Atherton

Segment 3
Menlo Park to Santa Clara

Segment 4
Santa Clara to Tamien



- Current progress supports 2024 revenue service date
- Overhead Contact System (OCS)
 - Foundations 95% complete (92% last month)
 - Poles 71% complete (67% last month)
 - Segment 4 Wire 90% complete (78% last month)
- Traction Power Facilities
 - Transformer installed at 10 of 10 facilities
 - Traction Power Substation 1 98% complete
 - Traction Power Substation 2 100% complete (96% last month)
 - Paralleling Station 7 99% complete (96% last month)
- Electric Trains (133 cars total)
 - 88 shipped
 - 73 in Salt Lake City manufacturing facility
 - Trainset 1 in Pueblo for on-track testing

- 2 Speed Check
 - Segment 4 data collection in progress
 - March 2022 :17 grade crossing cutovers from Burlingame to Hillsdale
 - Cutovers require reduced revenue service for 3 weeks
 - Cutovers critical to meeting revenue service date
- Signal Optimization (Wireless)
 - Proof of concept test anticipated January 2022
 - Included in PTC contract
 - Wireless prime, 2SC back up

TESTING & SAFETY

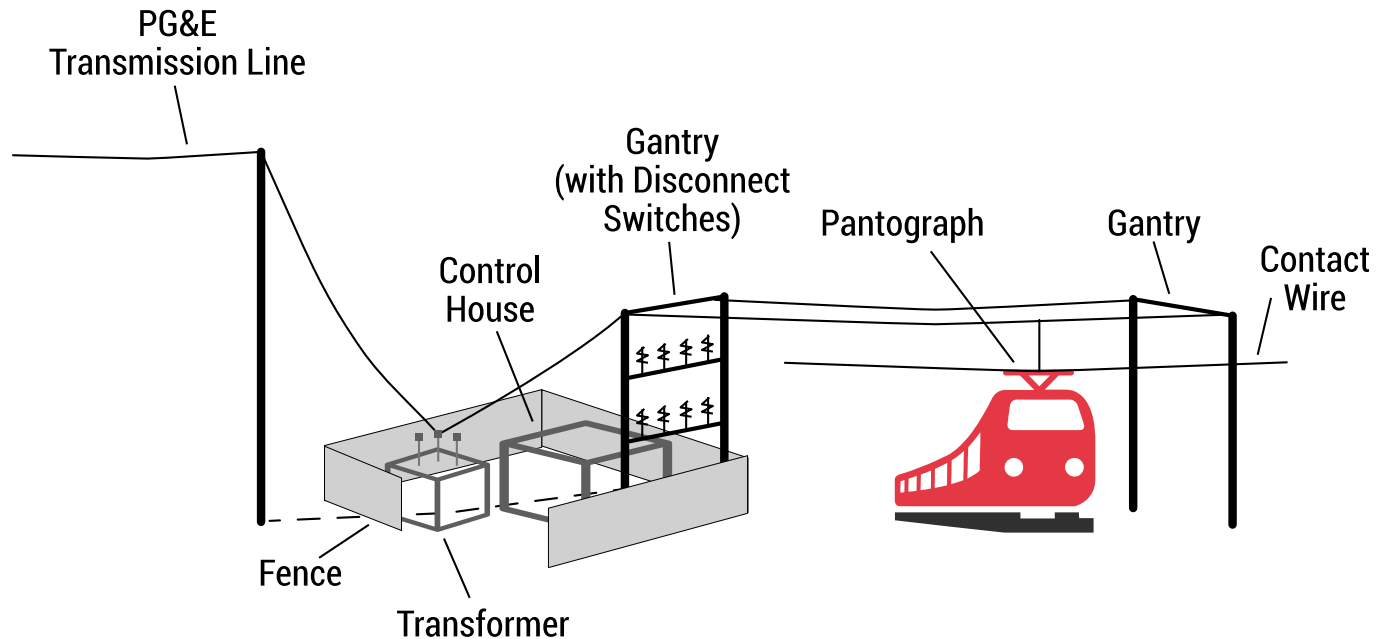
Segment 4 (Q4 2021 / Q1 2022)



- Procured 2 Amtrak electric locomotives for testing
- Ensure infrastructure is ready for new electric trains



- First, traction power facilities in San Jose tested then powered on
- Then overhead electric lines tested then powered on
- Overhead wires tested in sections



- Each trainset tested for ~3 months
- Last trainset (14th) scheduled to arrive spring 2024
- Testing on remaining segments when electrified



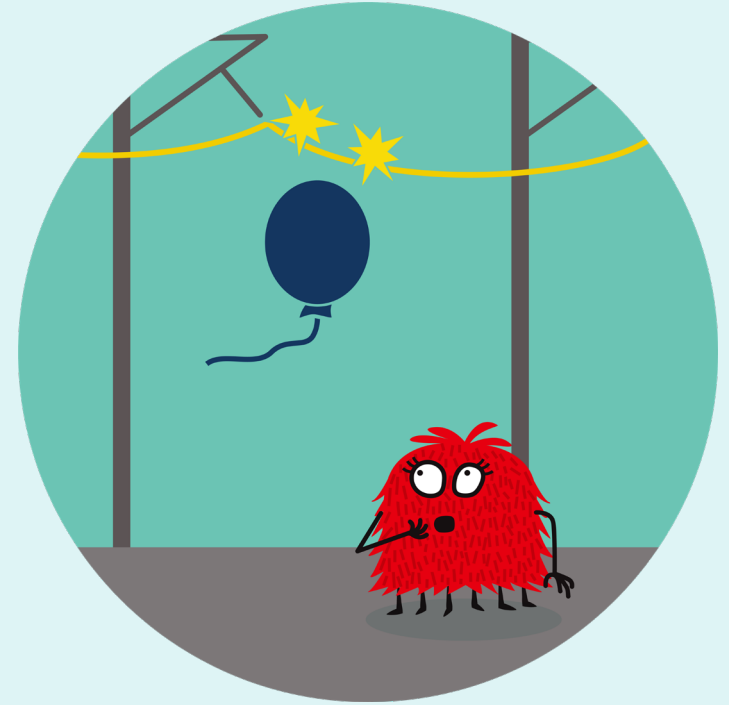
BE AWARE OF OVERHEAD WIRES

Caltrain's electric overhead wires carry 25,000 volts of electricity and can be dangerous. Treat all overhead wires as live.



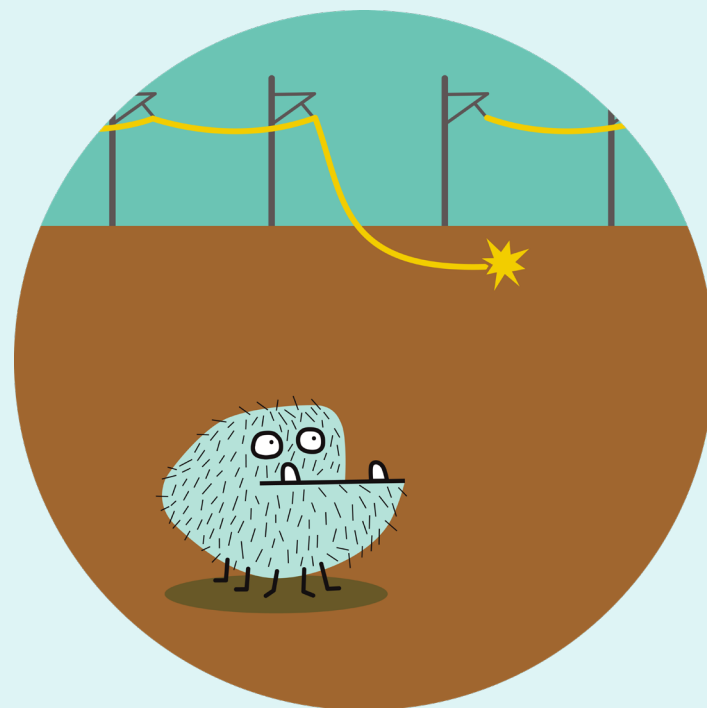
KEEP YOURSELF AND OBJECTS AWAY

Never approach overhead wires with things like ladders, antennas, balloons, and most importantly, yourself!



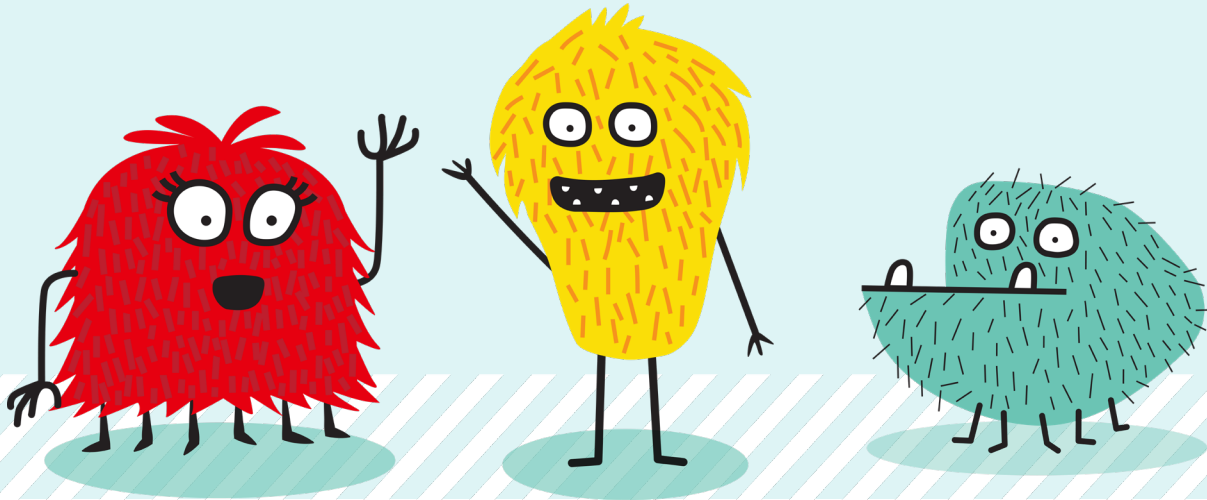
STAY AWAY FROM DAMAGED WIRES

If you see a downed or otherwise damaged overhead wire, stay at least 25 feet away. For emergencies or suspicious activity on Caltrain, call the Transit Police at 1.877.SAF-RAIL (1.877.723.7245).



LEARN MORE

Visit CalMod.org/safety for more information about how to stay safe around the new electric overhead wires.

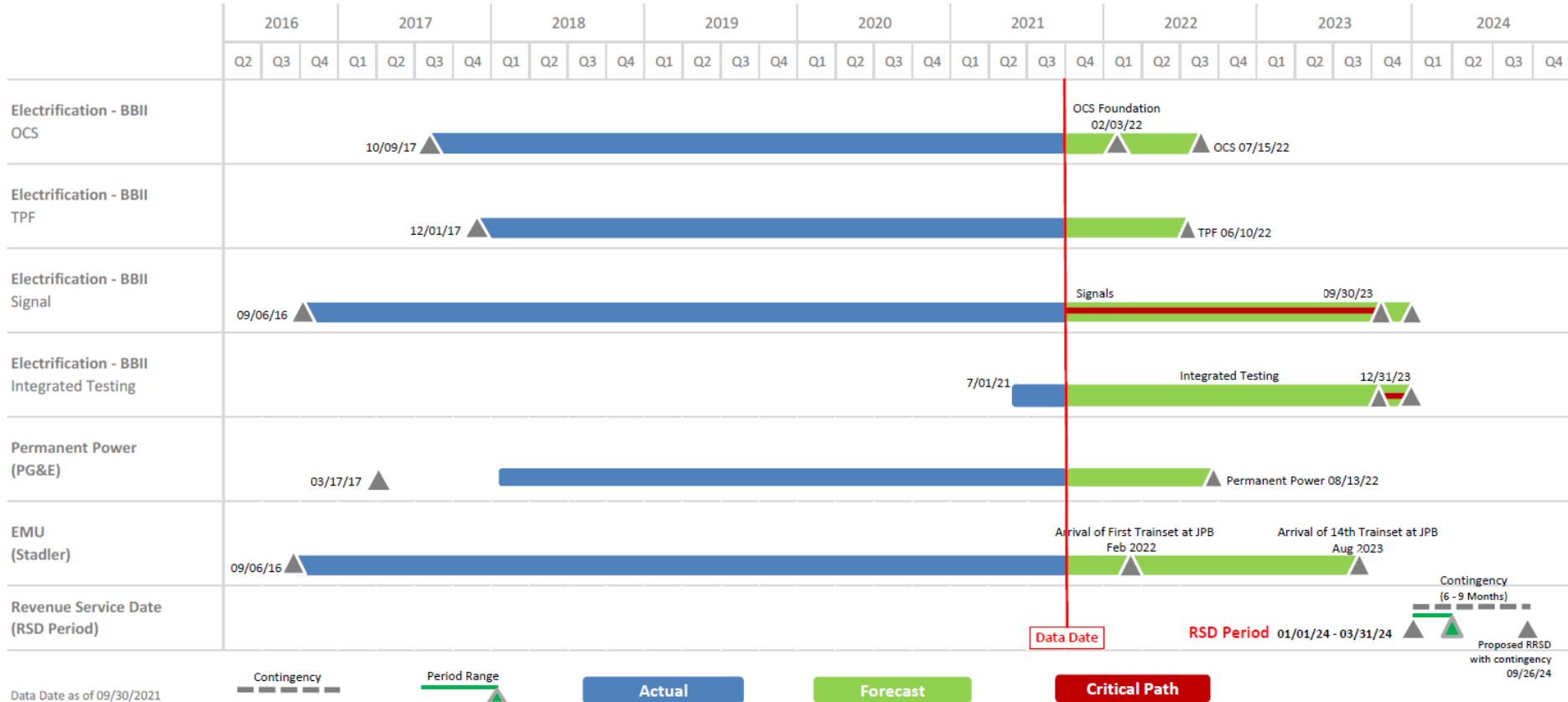


PROJECT UPDATE



Revenue Service September 2024

Contract Baselines vs. Forecast



- As of August 31, 2021
- Costs derived from FTA risk refresh
- Reserve needed for BBII settlement and budget update
- Recommended project cost to be presented at JPB Dec. 6th special meeting

Total Project Cost	\$2.31B <i>(\$1.98B Previous Project Cost)</i>
Committed	\$1.85B
Carryover Contingency (Previous Budget)	\$129.8M
Additional Known (Allocated)*	\$161.0M
Additional Reserve*	\$172.0M

*Note: Total \$333M additional cost recommended by FTA

- Resolve BBII contract commercial issues
- BBII requests for change orders / claims
- Delays in parts supply chain affecting vehicle production schedule
- Continue to mitigate underground site conditions and assist BBII with redesign efforts
- PG&E Single Phase Study impact on segment 4 testing

- Priority funding opportunities
 - State Budget (Bay Area coordination)
 - Federal FY22 appropriations
 - Federal Infrastructure Bill
- Other sources
 - Federal Consolidated Rail Infrastructure and Safety Improvement (CRISI)

- December
 - Resolve BBII contract commercial issues
 - Reset project resources
 - Reset cost and schedule milestones
- JPB Special Meeting December 6, 2021
 - BBII settlement and project rebaseline
 - Funding strategy
 - Budget amendment / Change order approvals

QUESTIONS

