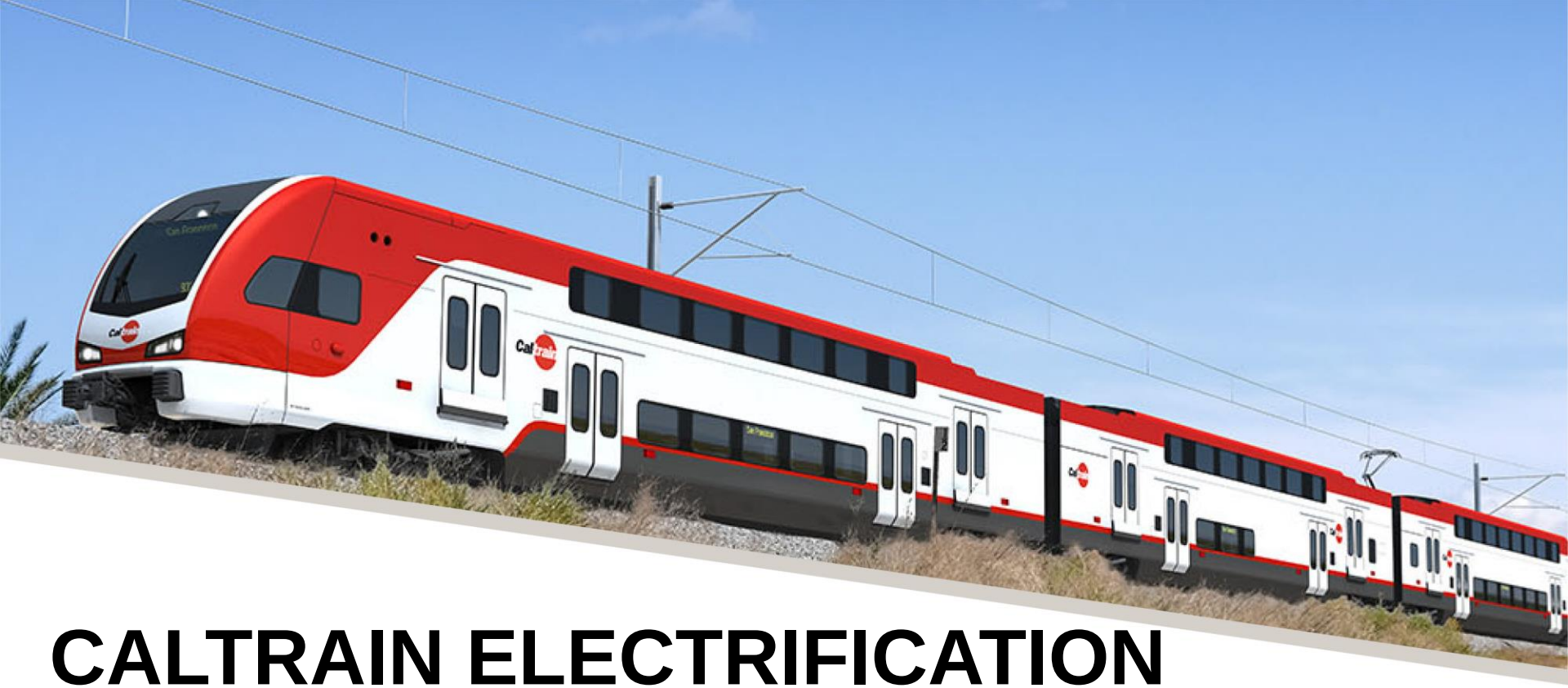


# CALTRAIN ELECTRIFICATION UPDATE

**JPB Meeting**

**June 3, 2021**

Caltrain CalMod

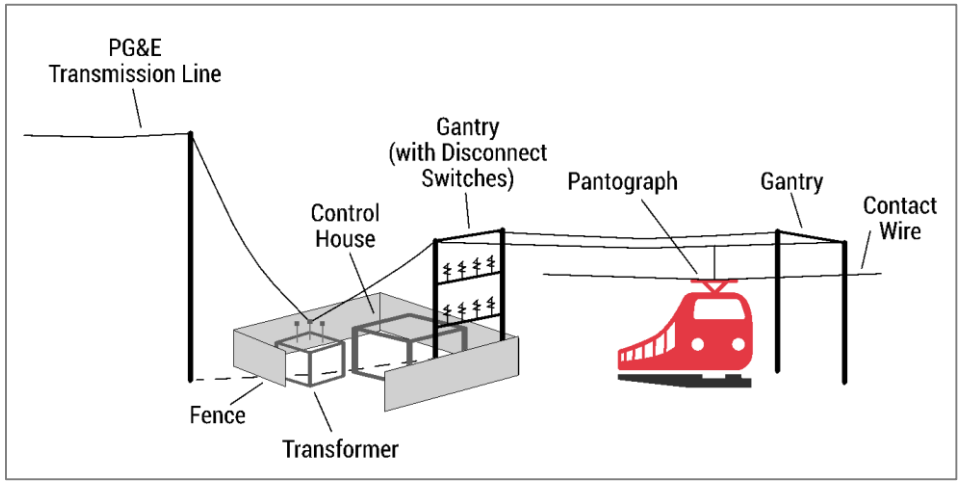
# PROJECT INFO

# PROJECT OVERVIEW

## Project Area


- 51 miles
- San Francisco to San Jose (Tamien Station)

## Project Elements




### Electrification

- Overhead Contact System (OCS)
- Traction Power Facilities

### Electric Trains*

- 19 7-car train sets
- 133 electric cars

*Includes 2018 State TIRCP Funding

# PROJECT BENEFITS

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

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

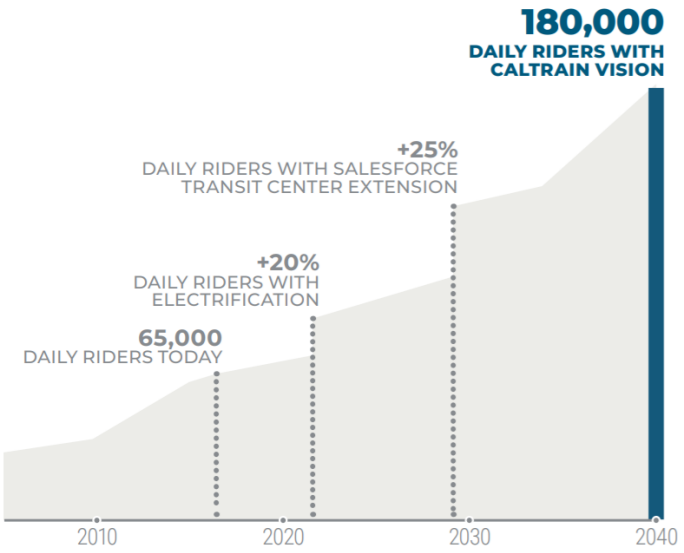
**Positive Economic Benefits for the Region**

**Reduced Engine Noise Emanating from Trains**

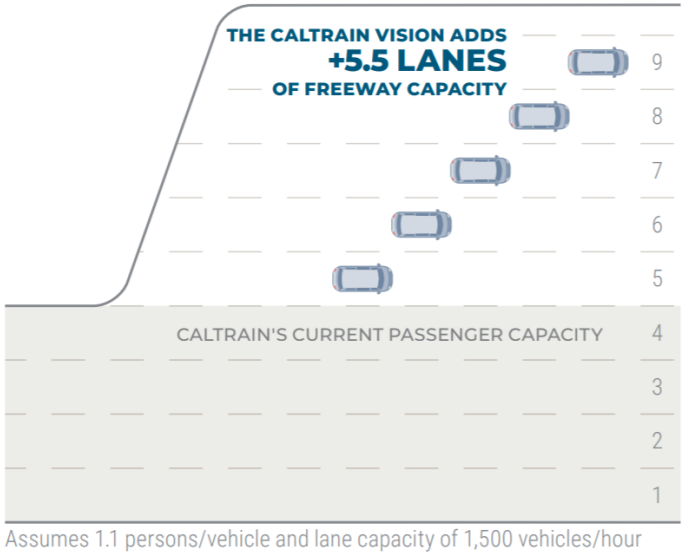
# LONG-TERM SERVICE VISION

- Electrification sets the foundation for the future growth of the system
- Caltrain Service Vision Adopted in 2019, meets the projection regional growth in jobs and housing in the Bay Area
- Projects a tripling of ridership, increased peak and off-peak service, carrying the equivalent of 5.5 lanes of highway traffic of US 101

## CARRYING MORE PEOPLE




## TRAINS VS LANES




Assumes 1.1 persons/vehicle and lane capacity of 1,500 vehicles/hour

# CONSTRUCTION PROGRESS

# PROJECT MILESTONES TO DATE

- Overhead Contact System Installation
  - Foundations complete south of Menlo Park Station (Segments 3 & 4)
  - Pole installation complete between Menlo Park to Santa Clara stations (Segment 3)

- Traction Power Facilities
  - Design work is complete for all 10 facilities
  - Transformers have been installed in 9 of 10 Traction Power facilities

- Electric Trains
  - 70 car shells have been shipped from Stadler Switzerland, 55 are in Stadler Salt Lake City, 15 are in transit
  - Train 1 tested at high-speeds in Pueblo, CO

# OCS FOUNDATION

| Foundation Locations | Number of Foundations Required | Number of Foundations Remaining | Installation Percent Complete | Anticipated Completion Date |
|---|---|---|---|---|
| Segment 1 | 535 | 434 | 19% | 11/30/2021 |
| Segment 2 | 1,090 | 210 | 81% | 06/30/2021 |
| **Segment 3** | **901** | **Complete** | **100%** | **Complete** |
| **Segment 4** | **370** | **Complete** | **100%** | **Complete** |
| **CEMOF** | **85** | **Complete** | **100%** | **Complete** |

Data as of May 22, 2021

# OCS POLES AND WIRE

## OCS Poles

| OCS Pole Locations | Number of OCS Poles Required | Number of OCS Poles Remaining | Installation Percent Complete | Anticipated Completion Date |
|---|---|---|---|---|
| Segment 1 | 440 | 440 | 0% | 12/15/2021 |
| Segment 2 | 956 | 479 | 50% | 07/30/2021 |
| **Segment 3** | **750** | **Complete** | **100%** | **Complete** |
| Segment 4 | 300 | 20 | 93% | 05/31/2021 |
| CEMOF | 86 | 86 | 0% | 06/14/2021 |

## OCS Wire

| OCS Wire Locations | Installation Percent Complete | Anticipated Installation Completion | Testing Percent Complete | Anticipated Testing Completion |
|---|---|---|---|---|
| Segment 1 | 0 % | 01/15/2022 | 0 % | 01/31/2022 |
| Segment 2 | 20 % | 09/25/2021 | 8 % | 10/10/2021 |
| Segment 3 | 96 % | 05/03/2021 | 47 % | 05/15/2021 |
| Segment 4 | 31 % | 06/30/2021 | 0.0 % | 07/15/2021 |

# OVERHEAD CONTACT SYSTEM

# SIGNAL SYSTEM

| Signal Locations | 95% Design Percent Complete | Anticipated Design Completion of 95% | Installation Percent Complete | Anticipated Installation Completion | Testing Percent Complete | Anticipated Testing Completion |
|---|---|---|---|---|---|---|
| Segment 1 | 64% | 11/02/2022 | 21% | 04/01/2023 | 0% | 04/30/2023 |
| Segment 2 | 94% | 04/01/2022 | 23% | 08/01/2022 | 0% | 12/31/2022 |
| Segment 3 | 20% | 10/01/2022 | 21% | 04/30/2023 | 0% | 09/30/2023 |
| **Segment 4** | **100%** | **Complete** | 72% | 05/31/2021 | 57% | 06/30/2021 |

Data as of April 1, 2021

# SIGNAL SYSTEM CUTOVERS

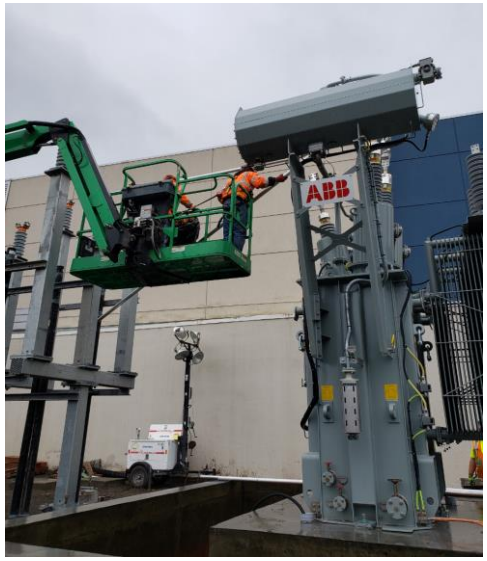
- FRA is actively participating in the cutover inspection
- Four Segment 4 signal cutovers completed
- Upcoming Segment 4 Cutovers
    - Cutover #5 (CP Shark and CP Alameda) anticipated for weekend of 6/11/21
    - Cutover #6 (CP Coast and CP De La Cruz, Reed Street) anticipated for weekend of 6/25/21

# TRACTION POWER SUBSTATIONS (TPS)

- **PG&E**
  - PG&E Substations at FMC (San Jose) & East Grand (SSF)
    - East Grand Substation: 83% complete
    - FMC Substation: 67% complete
  - TPSS -1 & TPSS -2 Interconnections
    - Construction at TPSS-2 Interconnection complete. Forecast connection to Temporary Power by August 2021.
    - Construction at TPSS-1 began March 2021. Forecast connection to TPS-1 in January 2022.

- **Traction Power System**
  - Design is complete for all traction power facilities
  - Traction Power Substations 1 & 2 (TPSS-1 & TPSS-2) and Switching Station 1 (SWS-1): 90% complete
  - Switchgear installation expected to start in June 2021

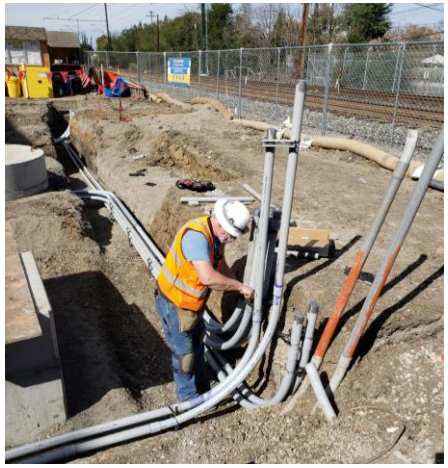
# TRACTION POWER FACILITIES (TPS)




BBII electricians running bus conduits at the transformer and bending the conduits to size for installation at PS-5.


Excavating for site fence foundations at TPS-2.

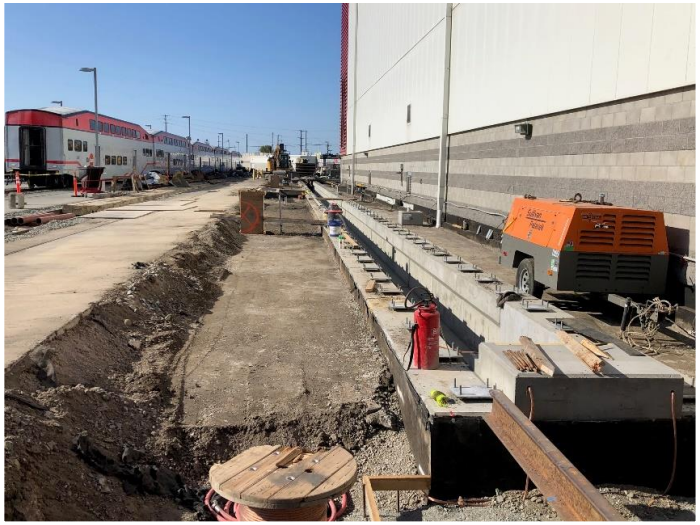
BBII electrician installing PVC conduit for anchoring for concrete pour at PS-5.



# CENTRALIZED EQUIPMENT MAINTENANCE AND OPERATIONS FACILITY (CEMOF)

- Parts Storage Warehouse installation complete; interior work ongoing
- Construction of north and south pit extension nearing completion
- Equipment testing room reconstruction will be finalized next month
- Work scheduled to be complete by June 2021, pending Change Order

Parts Storage Warehouse



Pit Extensions

# ELECTRIC MULTIPLE UNITS

- **Production**
  - COVID-19-related Global safety measures have slowed production
  - Switzerland production and Salt Lake City assembly delayed

- **Testing**
  - Dynamic type testing started at TTCI in Pueblo, CO on Train 1
  - HVAC type testing started on Train 2
  - Routine testing is in process on Train 3

- **Schedule**
  - First trainset to Caltrain now scheduled for February 2022 primarily due to Seisenbacher US bankruptcy and Seisenbacher Austria financial troubles
  - Acceptance of 14th trainset now scheduled for August 2023

# ELECTRIC MULTIPLE UNITS


# COST & SCHEDULE RISK UPDATE

# FTA DRAFT RISK REFRESH REVIEW

| Description | Current | DRAFT FTA Risk Refresh |
|---|---|---|
| Revenue Service | Quarter 3 2022 | **Quarter 4 2024** |
| Cost | $1.98B* | **$2.313B*** |

* Adjusted to match Caltrain accounting. Includes $50M pre-FFGA spending and $9M financing costs.

- Project cost has increased and schedule extended
- FTA estimate additional cost to complete: $333M
- FTA estimate schedule extension: Q4 2024 (CY)
  - Includes 6 month contingency

# ADDITIONAL COSTS - KNOWN AND RESERVE

| Additional Cost | Amount |
|---|---|
| **Known and Allocated Costs** | **$161.0M** |
| Reserve | $172.0M |
| **Total** | **$333.0M** |

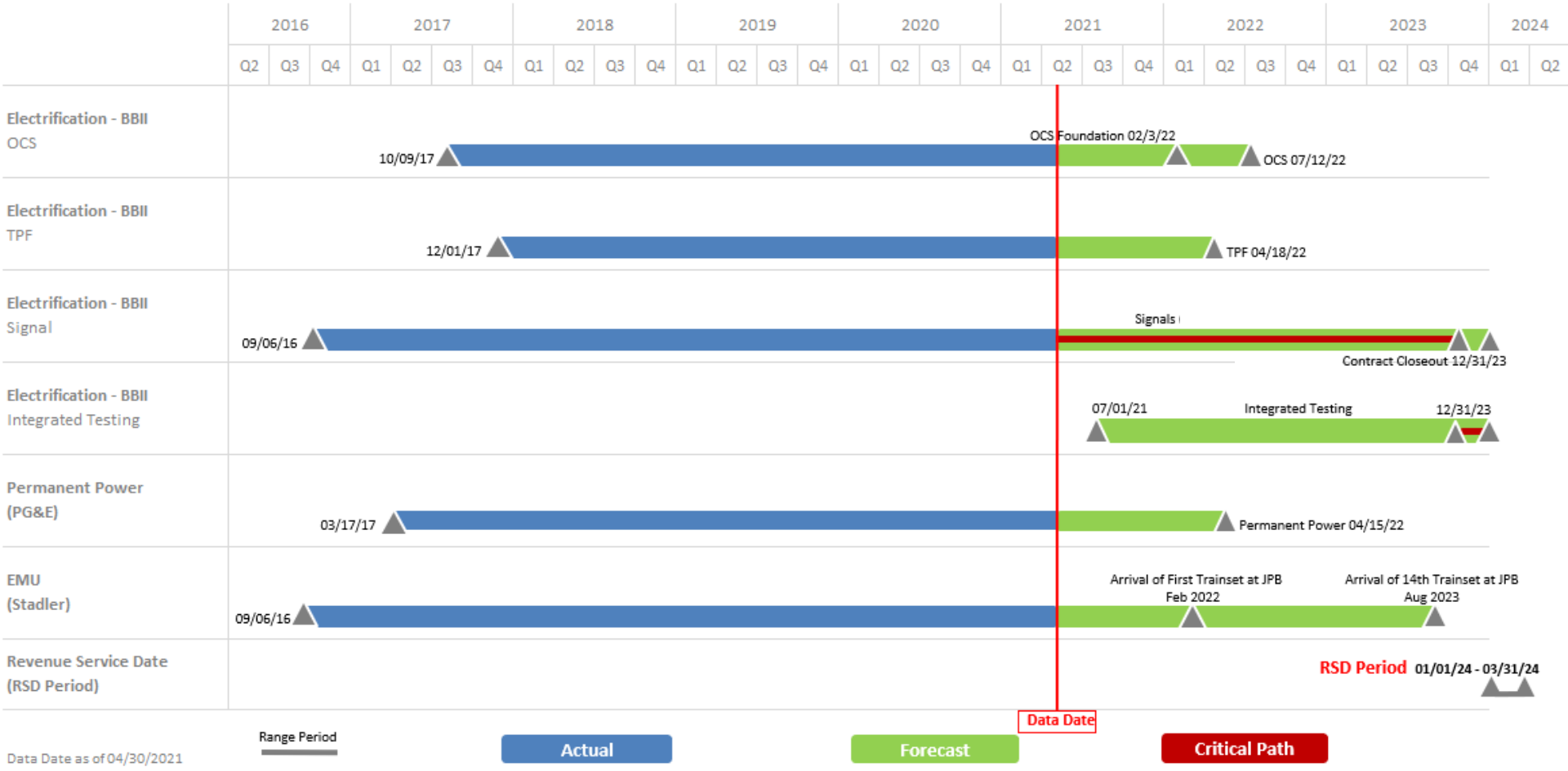
- $161M known costs
- $172M reserve to address unknown risks
- Construction Management Efforts
  - Timely Resolution of Contract Disputes
  - Aggressively Manage Risks
  - Cost Trend Analysis

# COST/SCHEDULE DRIVERS

- Direct Costs
  - Signal System/Communications
  - Unknown Underground Site Conditions
  - PG&E
- Indirect Costs
  - Construction Support
- COVID Related Delays

# PROJECT SCHEDULE

*(Note: Does not include 6-month schedule contingency suggested in Draft FTA Risk Refresh Report)*



# NEGOTIATIONS UPDATE

- Discussions on-going

- Contracting options
  - Plan A: Global resolution with Balfour Beatty
  - Plan B: Descope all signal system work from Balfour Beatty; contract directly with third-party contractor

# FUNDING

# ADDITIONAL FUNDING

- Federal and State Funding Opportunities
  - $52.4 million from ARPA
  - Actively pursuing other grant sources
- Issuance of tax-exempt bonds
  - Bonds secured by Measure RR to provide lowest interest cost and greatest structuring flexibility
  - Bonds structured to be payable from sale of Low Carbon Fuel Standards (LCFS) credits upon electrified revenue service
- Member agency funding
  - As provided by members
- Four Party Agreement
  - $200M backstopped by agencies as part of FFGA approval (SFCTA, SMCTA, VTA, MTC)

# PROJECT BOND FINANCING

- Part of Comprehensive Financing Plan
- Bonds
  - Likely to be sold as fixed rate bonds
  - Structured for highly flexible amortization (depending on receipt of LCFS revenue)
  - Mitigate potential reliance on Measure RR funds as a source of payment (as opposed to serving as security)
- Other financing components
  - Replacement of two existing lines of credit
  - Including one used to support project cash flow (replacement reduce cost of financing)

# NEXT STEPS

# NEXT STEPS

- Complete Contractor Negotiations
- Update Project Completion Plan (FTA, CHSRA)
- Update Funding Plan and Agreements
- Contract award authorization / budget approvals

# QUESTIONS / COMMENTS