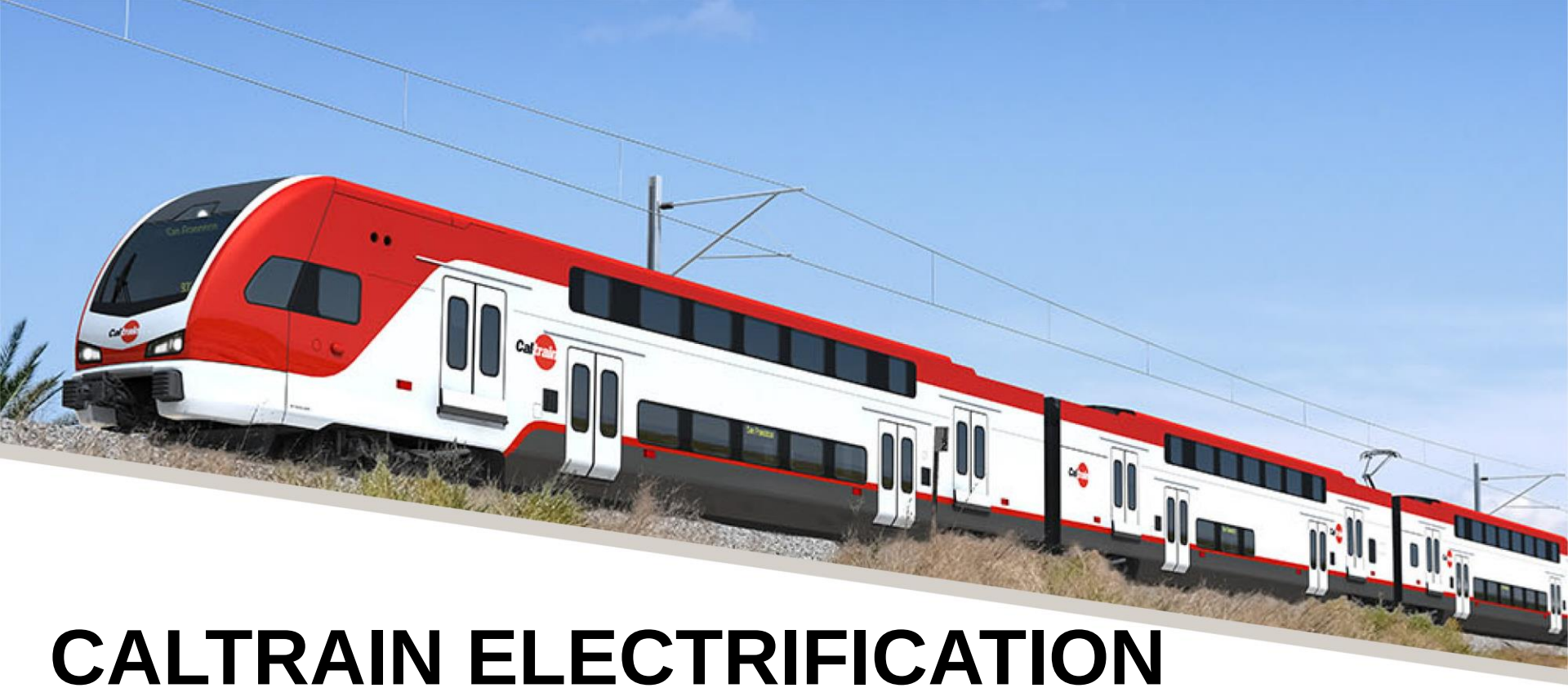


CALTRAIN ELECTRIFICATION UPDATE

Local Policy Maker Group

June 24, 2021

Caltrain CalMod

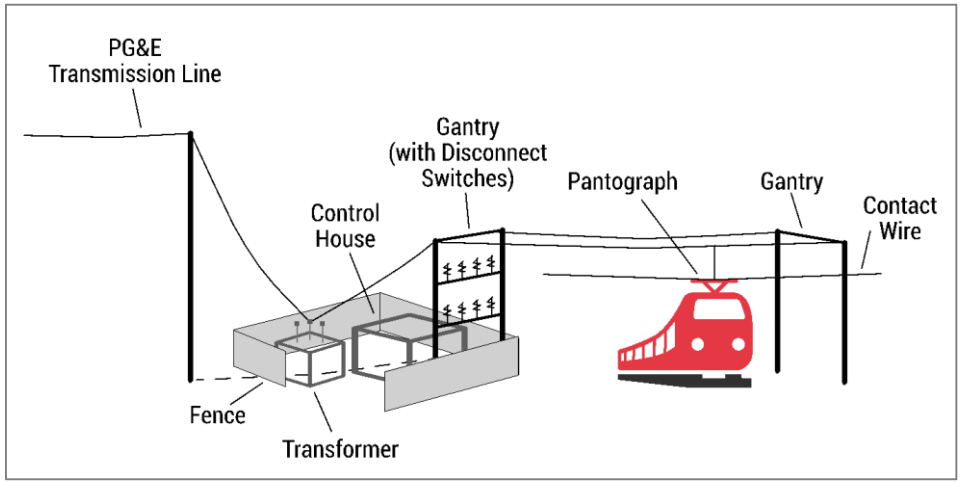
PROJECT INFO

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

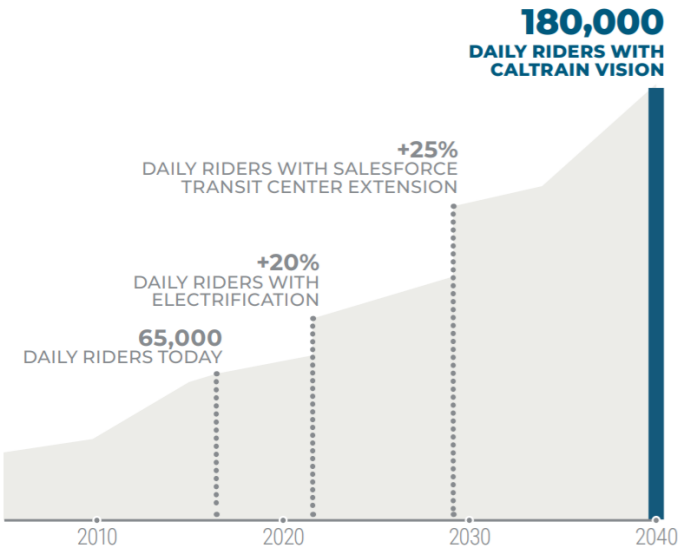
Positive Economic Benefits for the Region

Reduced Engine Noise Emanating from Trains

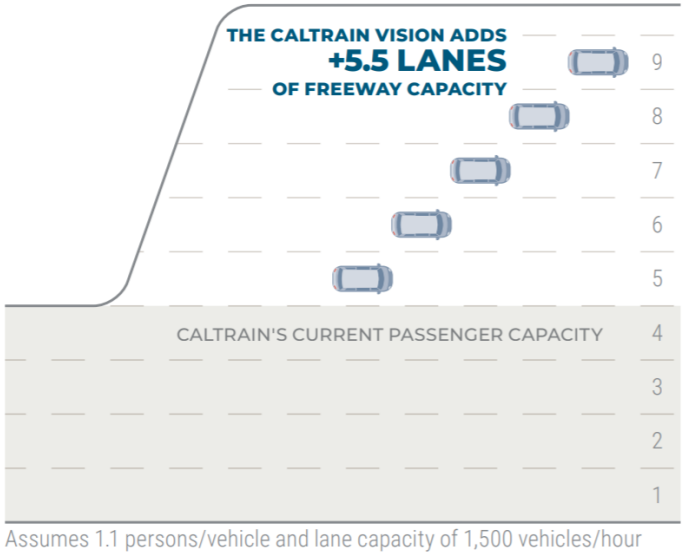
LONG-TERM SERVICE VISION

- 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

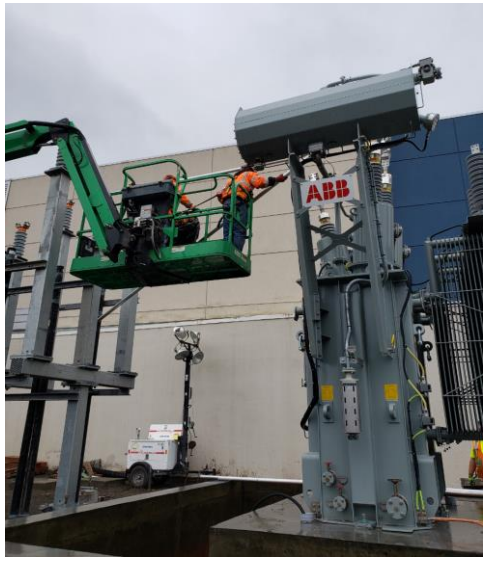
- FRA is actively participating in the cutover inspection
- Four Segment 4 signal cutovers completed
- Upcoming Segment 4 Cutovers
    - Cutover #5 (CP Shark and CP Alameda) anticipated for weekend of 6/11/21
    - Cutover #6 (CP Coast and CP De La Cruz, Reed Street) anticipated for weekend of 6/25/21

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

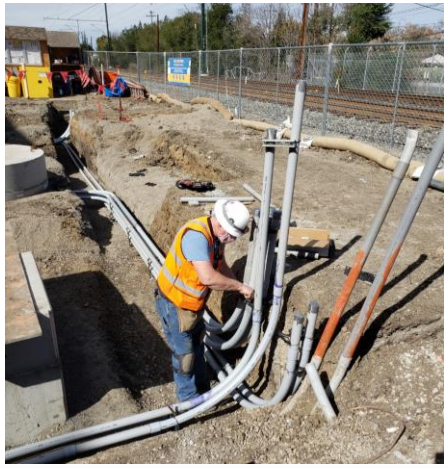
TRACTION POWER FACILITIES (TPS)



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.

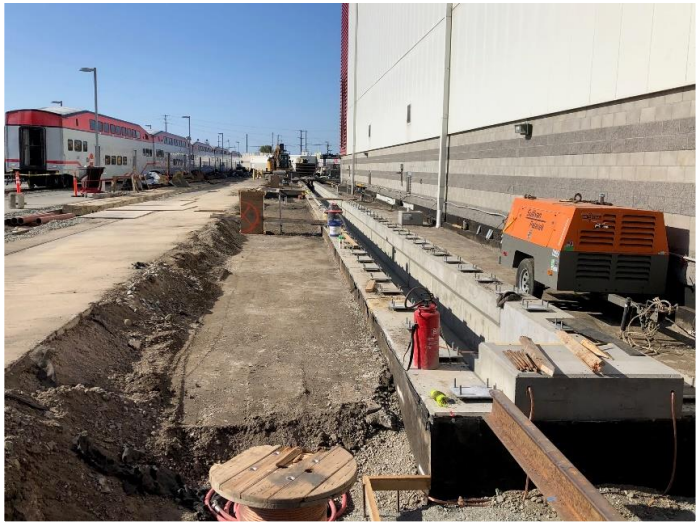
BBII electrician installing PVC conduit for anchoring for concrete pour at PS-5.



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**

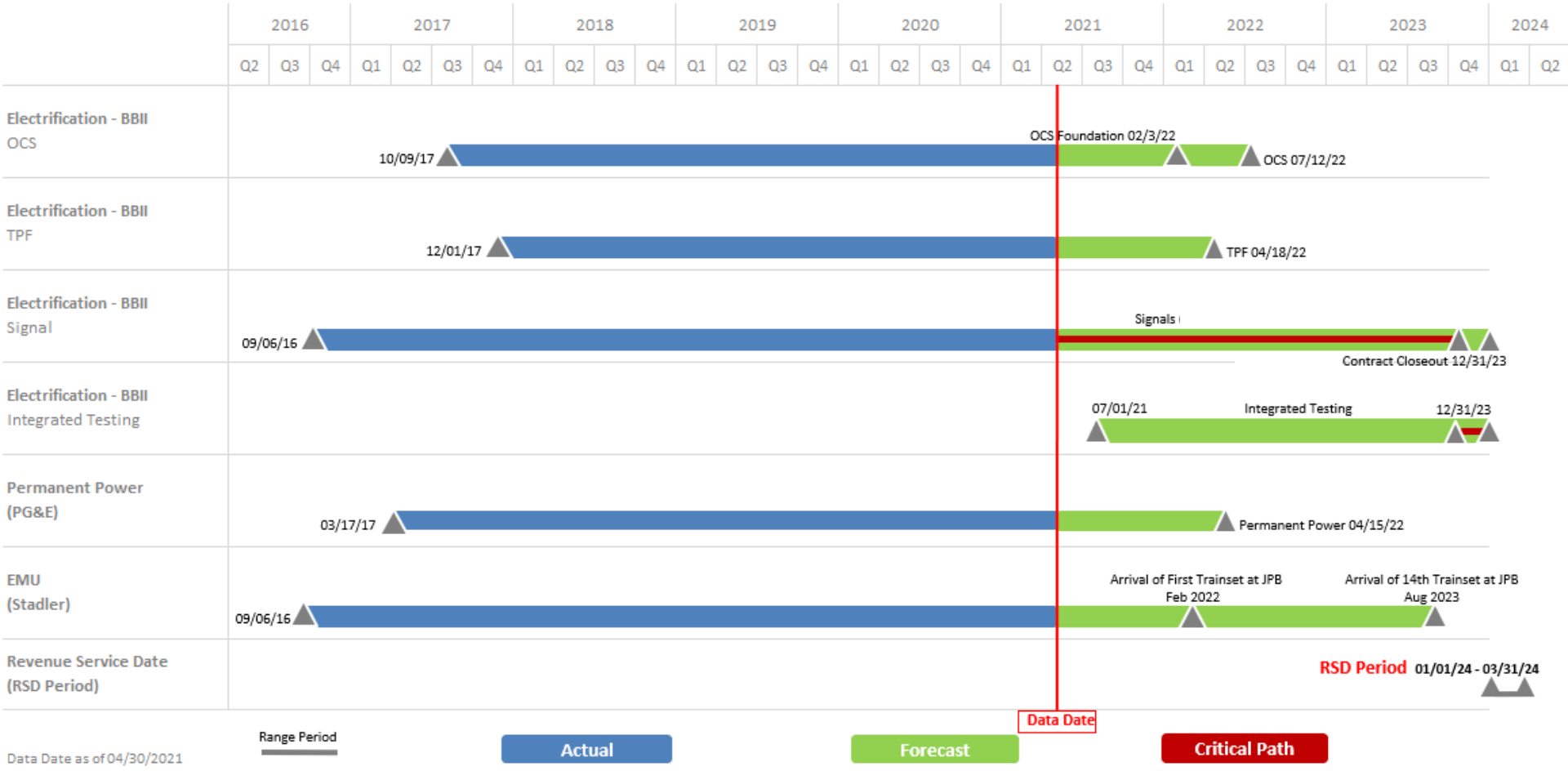
- $161M known costs
- $172M reserve to address unknown risks
- Construction Management Efforts
  - Timely Resolution of Contract Disputes
  - Aggressively Manage Risks
  - Cost Trend Analysis

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