

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
300 Lakeside Drive, P. O. Box 12688, Oakland, CA 94604-2688

NOTICE OF MEETING AND AGENDA
BOND OVERSIGHT COMMITTEE

Friday, December 20, 2019
9:30 a.m. – 11:00 a.m.

COMMITTEE MEMBERS: Marian Breitbart, Michael Day, Leah Edwards, Daren Gee, Michael McGill, Catherine Newman, John Post

A Meeting of the Bond Oversight Committee will be held on Friday, December 20, 2019, at 9:30 a.m. The Meeting will be held in Conference Room 2100, 300 Lakeside Drive, 21st Floor, Oakland, California.

AGENDA

1. Call to Order
 - A. Roll Call (5 minutes)
2. Introduction of Committee Members and BART Staff (5 minutes)
3. Meeting Minutes: September 20, 2019 (For Discussion/Action) (5 minutes)
4. Meetings Dates for the Remainder of 2020/2021 Term (For Discussion/Action) (5 minutes)
5. Review of Standardized Reporting (For Discussion) (5 minutes)
6. Review of the Outline of BART Safety, Reliability and Traffic Relief Program (Measure RR) Annual Report (For Discussion) (15 minutes)
7. BART Safety, Reliability and Traffic Relief Program (Measure RR) Update (For Discussion) (20 minutes)
8. Train Control Update (For Discussion) (10 minutes)
9. Committee Member Announcements (For Discussion) (10 minutes)
10. Requests for Future Agenda Items (For Discussion/Action) (5 minutes)
11. Public Comment (5 minutes)
12. Adjournment (5 minutes)

Please refrain from wearing scented products (perfume, cologne, after-shave, etc.) to this meeting, as there may be people in attendance susceptible to environmental illnesses.

BART provides service/accommodations upon request to persons with disabilities and individuals who are limited English proficient who wish to address Committee matters. A request must be made within one and five days in advance of Board/Committee meetings, depending on the service requested. Please contact the Office of the District Secretary at (510) 464-6083 for information.



**San Francisco Bay Area Rapid Transit District
Measure RR Program**

BART Bond Oversight Committee

*******DRAFT*******

Friday, September 20, 2019

9:30 AM – 11:00 AM

Kaiser Center Tower, 21st Floor

Conference Room 2100

300 Lakeside Drive Oakland, CA 94612

MEETING NUMBER	MEETING DATE	MEETING TIME
Term 2, Meeting 1	September 20, 2019	9:30am – 11:00 am
Attendees	Present Members Michael McGill, Chair John Post, Vice Chair Michael Day Marian Breitbart Daren Gee Leah Edwards Catherine Newman	Staff Robert Powers Rose Poblete Tamar Allen Rodd Lee Linton Johnson Gia Ilole Sylvia Lamb Sam Sowko Michaela Morales Chris Filippi Audrey Tam Jamal Thompson Joseph Towner Josh Reed Tracy Johnson

Agenda Item	Meeting Notes
1. Call to Order	M. McGill calls the meeting to order. L. Johnson takes roll call.
2. Introduction of Committee Members & BART Staff	Committee members introduce themselves. BART staff introduced themselves.
3. Meeting Minutes: June 21, 2019	J. Post asks that we remove the s from the end of his name on page 3.

	<p>Committee unanimously approves the minutes with the J. Post's change.</p>
<p>4. Review of BART Board Questions Following Annual Report Presentation- Video Replay- Chairman McGill</p>	<p>Committee hears the replay of Chairman McGill's presentation to the BART Board of Directors.</p> <p>Committee discusses how they should include answers to some of the BART Board's questions in the next Annual Report.</p> <p>J. Post suggests that Committee members create an outline of the Annual Report and start using the meetings to write the sections of the report so it's complete by June.</p> <p>B. Powers suggests, to save some time, that staff come to the next meeting with the outline and members can edit the outline at the next meeting.</p> <p>J. Post says that he believes members are now more willing to generate content this year rather than reviewing and approving content that staff writes.</p> <p>M. Day says he does not have an issue with staff generating the content because in other corporations and governmental agencies, staff prepares remarks, reports, etc., and the official responsible for signing off on what the staff created still has to make their edits, and accept ownership of the content once the official puts his/her name to it.</p>
<p>5. BART Safety, Reliability and Traffic Relief Program (Measure RR) Update</p>	<p>T. Johnson and S. Lamb introduce S. Sowko and J. Reed who give updates on the C35 interlocking replacement project (C35 is the track area just north of the Lafayette BART Station).</p> <p>S. Lamb and T. Johnson provide updates on the progress of other Measure RR projects.</p> <p>J. Post requests at the next meeting, staff provide an update on Train Control and says if the Committee had a "watch list" then he would put Train Control on it.</p> <p>M. Day says he would like to have a watch list to put projects that the Committee should focus on.</p> <p>T. Johnson and S. Lamb said they will have a presentation on Train Control.</p>

	<p>J. Towner gives update on small business participation.</p> <p>G. Ilole gave updated on hiring.</p>
6. Status of Bond Sale	R. Poblete gives update on bond sales.
7. C-35 Track Shutdown Tour	Committee was told they would get an update via email about dates/times of tour (this was done during Item #5).
8. Committee Member Announcements	None.
9. Request for Future Agenda Items	J. Post requests Train Control as an agenda item. L. Johnson says the table of contents for Annual Report will be on the agenda.
10. Public Comment	No member of the public was present.
11. Adjournment	Chair closed the meeting.

RR Annual Report 2020 Outline

1: Table of Contents

2: Committee Chair Welcome Letter

3: Executive Summary

A: Explain what committee is charged with presenting and its oversight role.

B: Provide number of projects in works and total spent.

4: About the Bond Oversight Committee

A: List organizations represented on committee.

B: Detail committee's tour of Lafayette track rebuild.

5: Story of Measure RR

A: How RR made the ballot/public outreach leading up to vote.

B: Explain the basics of the bond measure.

6: Meeting our Mandate

A: Assess status of overall Measure RR program.

B: Answer whether progress on RR work is where we expected it to be.

7: Rebuild BART's Backbone

A: List highlights of RR work.

8: Critical Trackway Replacement

A: Describe major track work and public outreach for those projects.

B: Explain steps taken to lessen public impacts from track and highway lane shutdowns.

C: Highlight major projects coming up that will impact public.

9: Putting People to Work

A: Highlight/profile the men and women who are making RR projects happen.

B: Describe how many jobs created through RR work.

10: Small Business Outreach

A: Update status of small business contracts

B: Profile small businesses doing RR work.

C: Detail small business outreach efforts.

11: Green Bonds

A: Explain what are green bonds and why the designation matters.

B: Where things stand after issuance of second tranche of bonds.

12: Exceeding Bond Requirements

A: Explain legal spending requirements.

B: Describe whether RR spending is meeting those regulations.

13: Investment Summary

A: Chart showing percentage of total bond expended on major project groups.

Major Project Sections

A: Include system maps to show all projects for each category to highlight on-going RR work.

B: Highlight major accomplishments as well as total amount spent for each section.

1: Renew Track

2: Renew Power Infrastructure

3: Repair Tunnels and Structures

4: Renew Mechanical

5: Renew Stations

6: Train Control Modernization

6: Relieve Crowding

7: Access Improvements

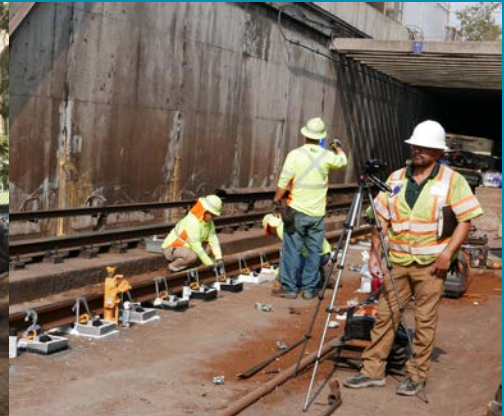
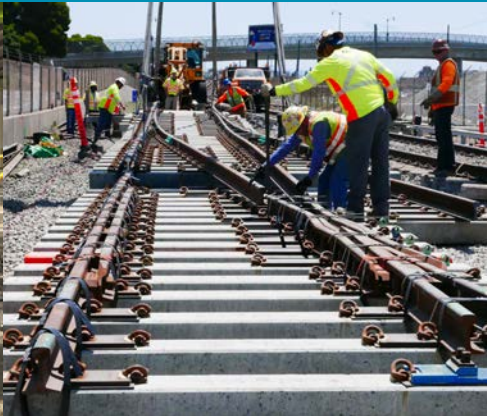
8: Committee Activities and Expenditures

A: Meeting recaps.

B: Expenditure total for committee.



BART Safety, Reliability, and Traffic Relief Program (Measure RR) Update



Bond Oversight Committee
December 20, 2019



Bond Oversight Committee Duties & Responsibilities

- Provide diligent, independent and public oversight over the expenditure of funds from the sale of District general obligation bonds
- Assess how bond proceeds are spent to ensure that all spending is authorized by the ballot measure
- Assess whether projects funded by bond proceeds are completed in a timely, cost-effective and quality manner consistent with the best interest of BART riders and District residents
- Publish an annual report that includes a detailed account of the Committee's activities including its expenditures



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Executive Summary

- Through October 2019, \$386M or 11% of the Measure RR funds have been spent.
- High Level Summary as of October 2019
 - Work Completed:
 - C55 Track Renewal (Construction)
 - Platform Edge Replacement at Lafayette Station (Construction)
 - ADA Lighting Improvements (Construction)

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
10	51 (+2)	32 (+8)	38 (+2)	8 (+2)	141

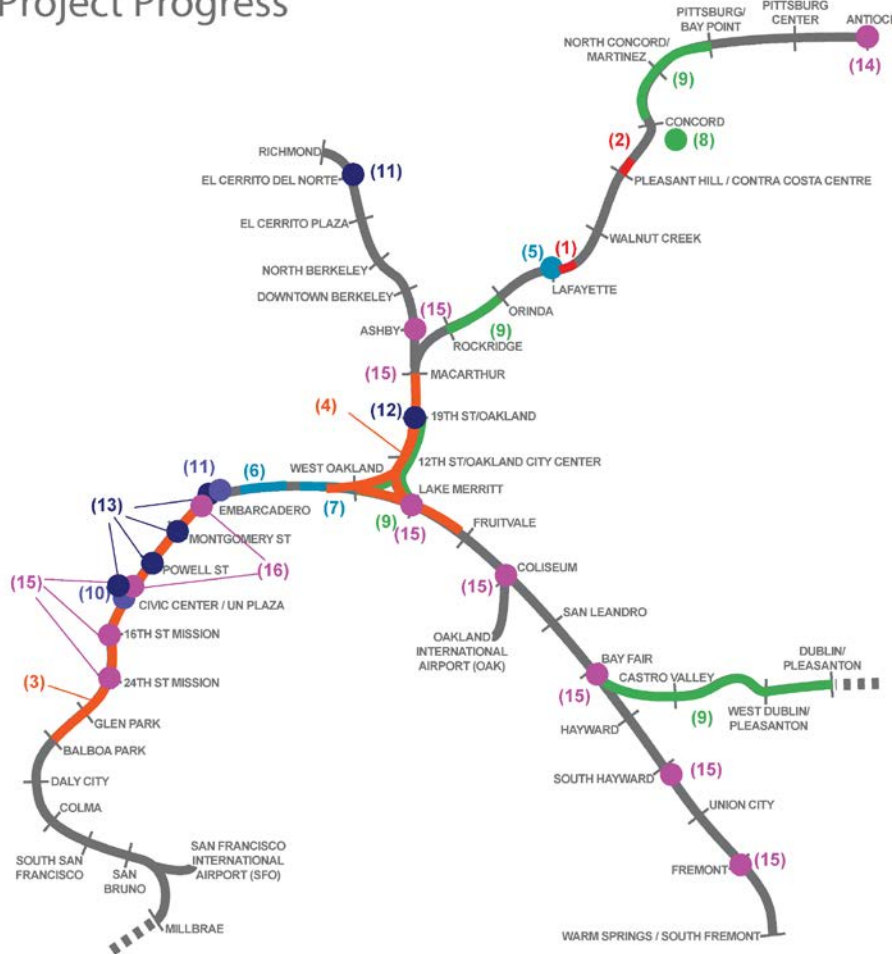


Work Progress Since Last Meeting



Examples of Active RR Projects in August – October 2019

Measure RR - Project Progress



Renew Track

- 1 C35 Track Interlocking Replacement – Substantial Completion
- 2 C55 Track Interlocking Replacement – Substantial Completion

Renew Power Infrastructure

- 3 M-Line 34.5kV Single Tracking for Conduit Installation
- 4 K-Line 34.5kv Cable Replacement – Ongoing In-house Construction*

Renew Tunnel & Structures

- 5 Platform Edge Repair at Lafayette Station – Substantial Completion*
- 6 TBT Cross Passage Doors – Ongoing Construction
- 7 Aerial Fall Protection M-Line – Ongoing Construction

Renew Mechanical

- 8 Concord Yard Wheel Truing Facility – Advertised*
- 9 Coverboard Enhancement – Ongoing Construction*

Design/Engineer to Relieve Crowding

- 10 Civic Center Station Scissor Stairs - Site Mobilization
- 11 Embarcadero New Platform Elevator – Advertised*

Renew Stations

- 12 19th Street Station Modernization – Issued NTP
- 13 Market Street Canopies – Advertised*

Expand Safe Access

- 14 eBART Antioch Parking Lot Contract – Awarded
- 15 ADA Lighting Improvements – Substantial Completion*
- 16 Embarcadero and Civic Center Bike Station Modernization – Start Construction*

Replace Train Control/Increase Capacity

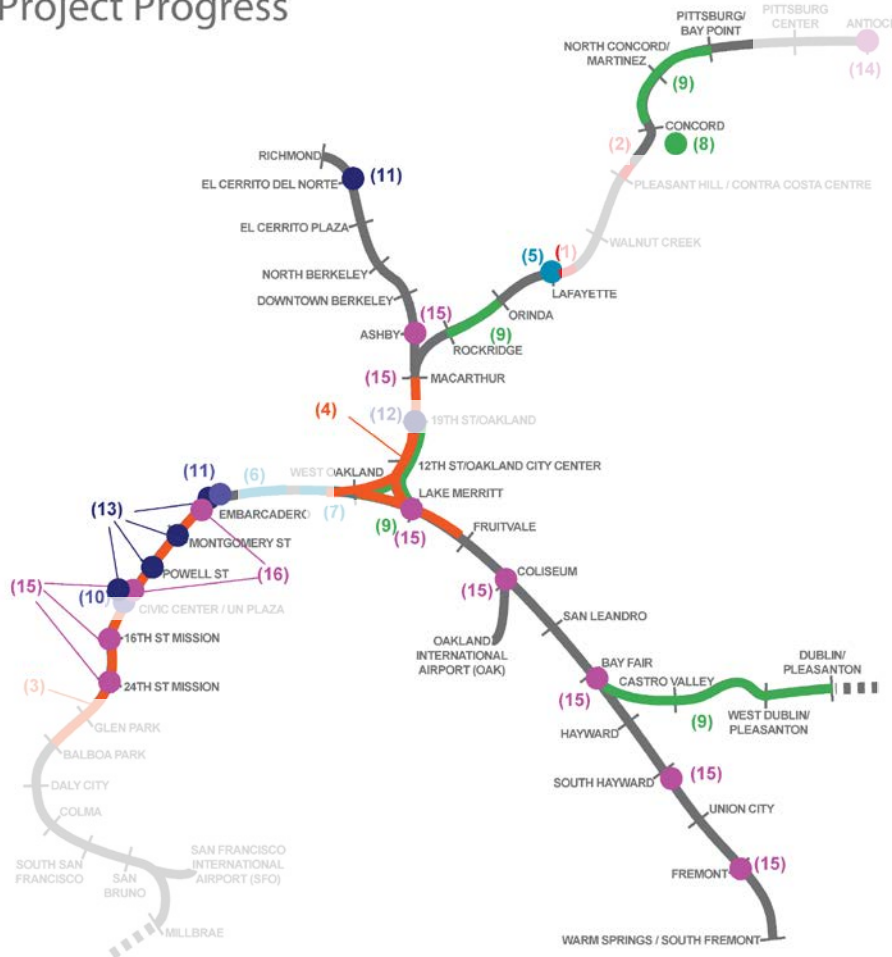
- 17 Design Support During Construction On-Call Contract (\$) for Train Control Modernization Project – Advertised (Not Mapped)*

* Updated projects



Updated Projects

Measure RR - Project Progress



Renew Track

- 1 C35 Track Interlocking Replacement – Substantial Completion
- 2 C55 Track Interlocking Replacement – Substantial Completion

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- 3 M-Line 34.5kV Single Tracking for Conduit Installation
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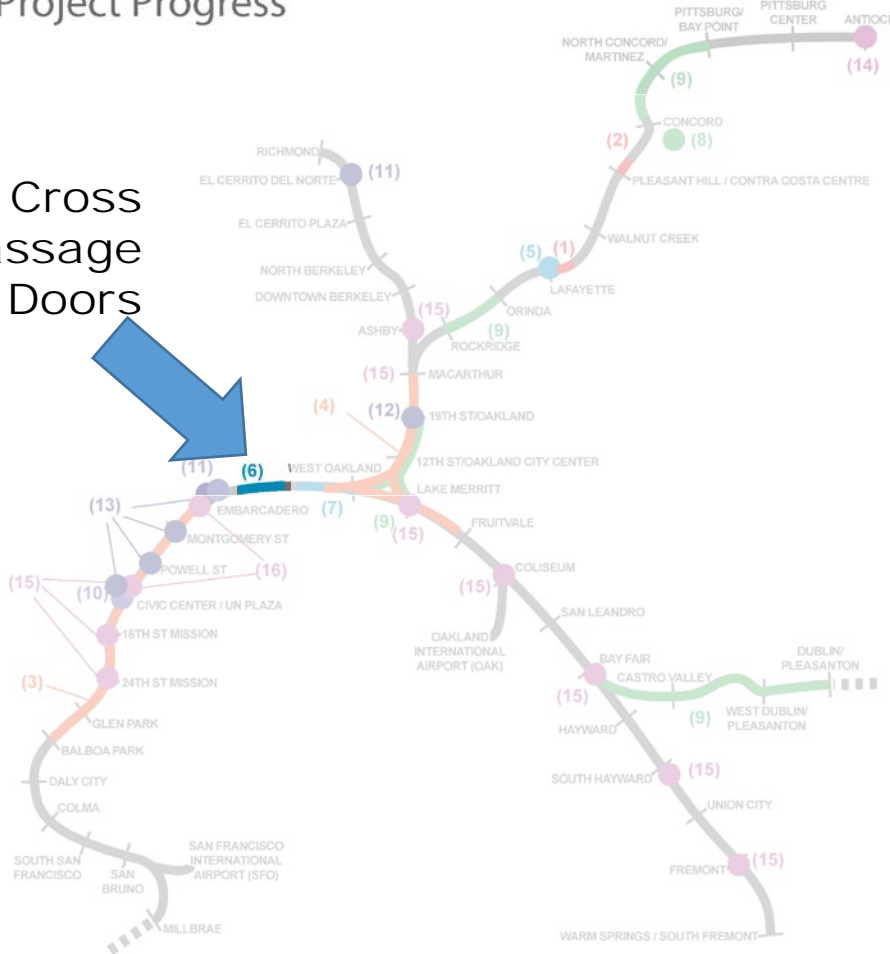
- 17 Design Support During Construction On-Call Contract (s) for Train Control Modernization Project – Advertised (Not Mapped)*



Transbay Tube Cross Passage Doors

Measure RR - Project Progress

TBT Cross Passage Doors



Renew Track

- 1 C35 Track Interlocking Replacement – Substantial Completion
- 2 C55 Track Interlocking Replacement – Substantial Completion

Renew Power Infrastructure

- 3 M-Line 34.5kV Single Tracking for Conduit Installation
- 4 K-Line 34.5kv Cable Replacement – Ongoing In-house Construction*

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Replace Train Control/Increase Capacity

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Cross Passage Doors Replacement Work Progress

- 60 Pairs of Doors Procured *(as of Nov 22, 2019)*
- 43 Pairs (out of 60) of Doors Installed *(as of Nov 22, 2019)*
- 16 Pairs of Doors to be Installed *(as of Nov 22, 2019)*
- Project Substantial Completion by January 2020 for a total of 59 Pairs of Doors (with 1 pair for BART M&E to install)



Cross Passage Doors Replacement Challenges and Resolution

Challenge #1:

Door opening dimensions vary from door to door, requiring doors be custom made for each opening

Resolution:

Measured all door openings prior to submittals and manufacturing. Required the manufacturer to label each door to match each opening.

Challenge #2:

Quantity of Cart Charging Stations insufficient for competing projects. Carts are used in the lower gallery to access worksite during revenue hours.

Resolution:

Expedited design, approval, and construction of additional Electrical Cart Charging Stations and upgraded electrical system to provide enough charging capacity for this project and 3 other projects



Cross Passage Doors Replacement Challenges and Resolution (cont.)

Challenge #3:

Projects competing for track access to do work.

Resolution:

In-house and field coordination meetings were set up between the projects. Re-sequenced Door Installation around competing project work zones. Worked overtime, day & night shifts, and weekends to stay on track.



Individual Program Milestones



Renew Track

STATUS & MILESTONES

EXPENDED Thru 10/2019: **\$134.3**

FORECAST Thru 6/2021: **\$183**

TOTAL PROGRAM VALUE: **\$625**

PERIOD CASHFLOW: **\$23.4**

STATUS – Renew Track

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
4	2	3	9	2	20

MILESTONES

Completed (Aug 2019 – Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (Apr 2020 – Jun 2020)
<ul style="list-style-type: none"> Weekend Shutdowns for C35 (Near Lafayette) Interlocking Replacement Complete construction on C55 Interlocking Replacement (near Concord Yard) Notice to Proceed (NTP) for Rail Re Profiling Services Start special track procurement for C25 (Near Orinda) Interlocking Replacement Advertise for A65/A75 (near Hayward Station and Hayward Yard) Interlocking 	<ul style="list-style-type: none"> Commission the C35 pocket track Bid opening for A65/A75 Interlocking Replacement Submit Oakland Yard Geometry Vehicle Storage Shed and A77 Interlocking (near Hayward Yard) Replacement to Procurements 	<ul style="list-style-type: none"> Contract award for A65/A75 Interlocking Replacement Advertise for bid for Oakland Yard Geometry Vehicle Storage Shed Advertise for A77 Interlocking Replacement Substantial completion of the restraining rail replacement construction 	<ul style="list-style-type: none"> Contract award for Oakland Yard Tracks project Contract award for A77 Interlocking Replacement project

Watchlist:

K-Line interlocking replacement access permit.

Italic: Modified milestones from previous report.



Renew Power STATUS & MILESTONES

EXPENDED Thru 10/2019: \$157.9

FORECAST Thru 6/2021: \$248

TOTAL PROGRAM VALUE: \$1,225

PERIOD CASHFLOW: \$29.1

STATUS – Renew Power Infrastructure

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
0	9	10	8	2	29

MILESTONES

Completed (Aug 2019 – Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (Apr 2020 – Jun 2020)
<ul style="list-style-type: none"> Start design of new East Bay substations Complete Design to Replace MXP Gap Breaker (at M85 (near Balboa Park) interlocking) Complete design for Civic Center and Montgomery substations Advertise Replace A line 34.5kV Cable Advertise TPSS Replacements (Ph 1) Advertise Station Emergency Lighting Upgrade (11 locations) 	<ul style="list-style-type: none"> Advertise Civic Center and Montgomery Substations Advertise Replace R line 34.5 kV Cable 	<ul style="list-style-type: none"> Complete design for Station Fire Alarm Replacement Phase 3 Complete design for 34.5kV Blocking Scheme Systemwide Award Replace CWS Bulk Supply Transformer Award Replace Station Emergency Lighting 	<ul style="list-style-type: none"> Submit Station Fire Alarm Replacement Phase 3 to Contracts Submit 34.5kV Blocking Scheme Systemwide to Contracts

Watchlist:

- Enhance single tracking Sunday's for M Line Cable project between Embarcadero and Powell St. stations
- Rebidding of Replace Station Emergency Lighting

Italic: Modified milestones from previous report.



Tunnels & Structures

STATUS & MILESTONES

EXPENDED Thru 10/2019: \$35.4

FORECAST Thru 6/2021: \$57

TOTAL PROGRAM VALUE: \$570

PERIOD CASHFLOW: \$7.6

STATUS – Repair Tunnels & Structures

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	13	2	8	2	26

MILESTONES

Completed (Aug 2019 – Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (Apr 2020 – Jun 2020)
<ul style="list-style-type: none"> Complete Platform Edge Rehabilitation at Lafayette station Start Materials Procurement for Wayside Regulatory Signage 	<ul style="list-style-type: none"> Completion of Aerial Fall Protection A Line North Design Issue NTP Aerial Fall Protection M-Line 	<ul style="list-style-type: none"> Completion of Market Street grating rehabilitation design Advertise and bid opening for Aerial Fall Protection A Line North Begin construction on Wayside Regulatory Signage Completion of Phase 1 substation walls rehab Completion of catwalk hangar rod replacement construction pilot program. Substantial completion of TBT cross passage doors construction 	<ul style="list-style-type: none"> Completion of Aerial Fall Protection A Line South construction pilot Project <i>Completion of renew catwalk A Line catwalk renewal design</i> Receive Notice of Award on Richmond Yard Fencing

Watchlist:

- Potential schedule impact for Wayside Regulatory Signage project
- Potential schedule impact for MW 12 slope stabilization

Italic: Modified milestones from previous report.



Renew Mechanical

STATUS & MILESTONES

EXPENDED Thru 10/2019: \$12.4

FORECAST Thru 6/2021: \$41

TOTAL PROGRAM VALUE: \$135

PERIOD CASHFLOW: \$2.9

STATUS – Renew Mechanical

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	8	11	4	0	24

MILESTONES

Completed (Aug 2019 – Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (Apr 2020 – Jun 2020)
<ul style="list-style-type: none"> • Complete design for Replace LMA Computer Room Emergency Cooling System • Complete design for Replace Concord Yard Turntable • Complete design for Richmond Car Lifts 	<ul style="list-style-type: none"> • Advertise Concord Yard Wheel Truing Facility • Submit Richmond Car Lifts to Contracts • Award for Replace Facilities HVAC Phase 1 (7 Sites at 6 Locations) • Issue NTP for Replace Rotoclones • Award for Replace Sewage Pumps – Reject All Bids • Board approval of Richmond Yard Fire Services 	<ul style="list-style-type: none"> • NTP for Facilities HVAC Equipment Replacement Systemwide • NTP for Richmond Yard Fire Services • Submit Hayward Yard Fire Services to OCR • Concord Yard Wheel Truing Facility – Bids Due • Advertise Richmond Car Lifts • Advertise Concord Yard Turntable 	<ul style="list-style-type: none"> • Award Concord Yard Wheel Truing Facility • Advertise Hayward Yard Fire Services • Advertise Vacuum System Replacement

Watchlist:

Low bidder turnout

Italic: Modified milestones from previous report.



Replace Train Control

STATUS & MILESTONES

EXPENDED Thru 10/2019: \$14.2

FORECAST Thru 6/2021: \$32

TOTAL PROGRAM VALUE: \$400

PERIOD CASHFLOW: \$3.1

STATUS – Replace Train Control / Increase Capacity

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
0	1	2	0	0	3

MILESTONES

Completed (Aug 2019 to Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (April 2020 – June 2020)
<ul style="list-style-type: none"> Issued Design Build Best and Final Offer Modification #1 & received Bid Documents Advertised Design Support During Construction On-Call Contract(s) – 10/9/2019 	<ul style="list-style-type: none"> Advertise owner controlled insurance program (OCIP) for CBTC Design Build Contract Issue 65% Design Review - Power Supply Cabinets & Switch Machine/Train Control Room Power Cable 49GH-130 Advertise Construction Management On-Call 6M8171 Select Best Value Contractor for DB Contract 49GH-110/TCPSS 49GH-120 (Extended Warranty) Issue 1st Change Order to Bombardier for D-Car Retrofit Talks 	<ul style="list-style-type: none"> <i>Issue 100% Contract for review – 49GH-130 Power Supply Cabinets & Switch Machine/Train Control Room Power Cable</i> Notice of Award to BART Board for 49GH-110 CBTC Design Build Contract & 49GH-120 TCPSS (Extended Warranty) Construction Management On-call Contract – Notice to Proceed 2nd Change Order to Bombardier for D-Car Retrofit Design Bids due for 6M8168 Design Support During Construction On-Call Contracts OCIP Coverage/Notice to Proceed for CBTC 49GH-110 	<ul style="list-style-type: none"> Notice to Proceed 6M8168 Design Support During Construction On-call Advertise/Review Bids 49GH-130 -Power Supply Cabinets & Switch Machine/Train Control NTP for CBTC Design Build Contract 49GH-110/Mobilize

Watchlist:

Design Build Contract Award contingent upon Full Funding Grant Agreement.

Italic: Modified milestones from previous report.



Renew Stations

STATUS & MILESTONES

EXPENDED Thru 10/2019: \$8.4

FORECAST Thru 6/2021: \$29

TOTAL PROGRAM VALUE: \$210

PERIOD CASHFLOW: \$2.4

STATUS – Renew Stations

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	1	2	4	0	8

MILESTONES

Completed (Aug 2019 to Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (April 2020 – June 2020)
<ul style="list-style-type: none"> Process escalator fabrication and administrative submittals 19th St Station (07EA-120) – Notice to Proceed Advertised Canopy Contract Union City Intermodal Station Phase 2A – Began Construction 	<ul style="list-style-type: none"> Finalize escalator submittal to allow fabrication of escalators to begin 19th St Station (07EA-120) – Work on Safe System of Work Plan (SSWP) Canopy Contract – Received Bids December 3, 2019 	<ul style="list-style-type: none"> Fabrication of escalators 19th St Station (07EA-120) – Site Mobilization <i>Canopy Contract – Tentative Award</i> 	<ul style="list-style-type: none"> Begin installation of escalators

Watchlist:

Canopy Contract Award delay

Italic: Modified milestones from previous report.



Station Access STATUS & MILESTONES

EXPENDED Thru 10/2019: \$12.5

FORECAST Thru 6/2021: \$37

TOTAL PROGRAM VALUE: \$135

PERIOD CASHFLOW: \$1.8

STATUS – Expand Safe Access to Stations

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
1	13	1	4	4	23

MILESTONES

Completed (Aug 2019 to Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (April 2020 – June 2020)
<ul style="list-style-type: none"> • Embarcadero and Civic Center Bike Station Modernization – Notice to Proceed and Began Construction • eBART – Antioch Parking Lot Contract – Advertised • ADA Lighting Improvements (Substantial Completion) • Warm Springs West Pedestrian Bridge – Cable Stay Bridge Pylon Erection 	<ul style="list-style-type: none"> • <i>eBART – Antioch Parking Lot Contract – Awarded</i> • Warm Springs West Pedestrian Bridge – Complete concrete deck on the bridge 	<ul style="list-style-type: none"> • eBART – Antioch Parking Lot Contract – Notice to Proceed • <i>Bicycle Stair Channels Contract – Submit to Procurement for Review</i> • Advance Safe Routes to BART Grant Program • MacArthur Transit Improvement – Complete Financial Closeout 	<ul style="list-style-type: none"> • eBART – Antioch Parking Lot Contract – Begin Site Mobilization • Embarcadero and Civic Center Bike Station Modernization – Substantial Completion

Watchlist:

None

Italic: Modified milestones from previous report.



Relieve Crowding STATUS & MILESTONES

EXPENDED Thru 10/2019: \$10.9

FORECAST Thru 6/2021: \$33

TOTAL PROGRAM VALUE: \$200

PERIOD CASHFLOW: \$2.2

STATUS – Design / Engineer to Relieve Crowding

# Projects in Planning	# Projects in Design	# Projects in Bid/Award	# Projects in Construction	# Projects Completed	TOTAL # Projects
2	4	1	1	0	8

MILESTONES

Completed (Aug 2019 to Oct 2019)	Q2 (Nov 2019 – Dec 2019)	Q3 (Jan 2020 – Mar 2020)	Q4 (April 2020 – June 2020)
<ul style="list-style-type: none"> Embarcadero New Platform Elevator – Advertised New Transbay Rail Crossing – Early Engagement Plan Development Hayward Maintenance Complex Phase 2: Trackwork Procurement – Complete Design Civic Center Scissor Stairs – Began Site Mobilization 	<ul style="list-style-type: none"> Embarcadero New Platform Elevator – Received Bids Nov 19, 2019 Platform Screen Doors Pilot Project – Complete PE Design Hayward Maintenance Complex Phase 2: Trackwork Procurement – Advertise New Transbay Rail Crossing – Prepare Informational Briefing to BART and Capital Corridor Boards Civic Center Station Scissor Stairs – Begin Construction 	<ul style="list-style-type: none"> Embarcadero New Platform Elevator – Award New Transbay Rail Crossing – Project briefing update to BART and CCJPA Boards Hayward Maintenance Complex Phase 2: Trackwork Procurement – Award 	<ul style="list-style-type: none"> Embarcadero New Platform Elevator – Notice to Proceed Hayward Maintenance Complex Phase 2: Trackwork Procurement – NTP Hayward Maintenance Complex Phase 2 – Complete Civil/Grading Design

Watchlist:

Embarcadero New Platform Elevator.

Italic: Modified milestones from previous report.



Budget and Schedule Status



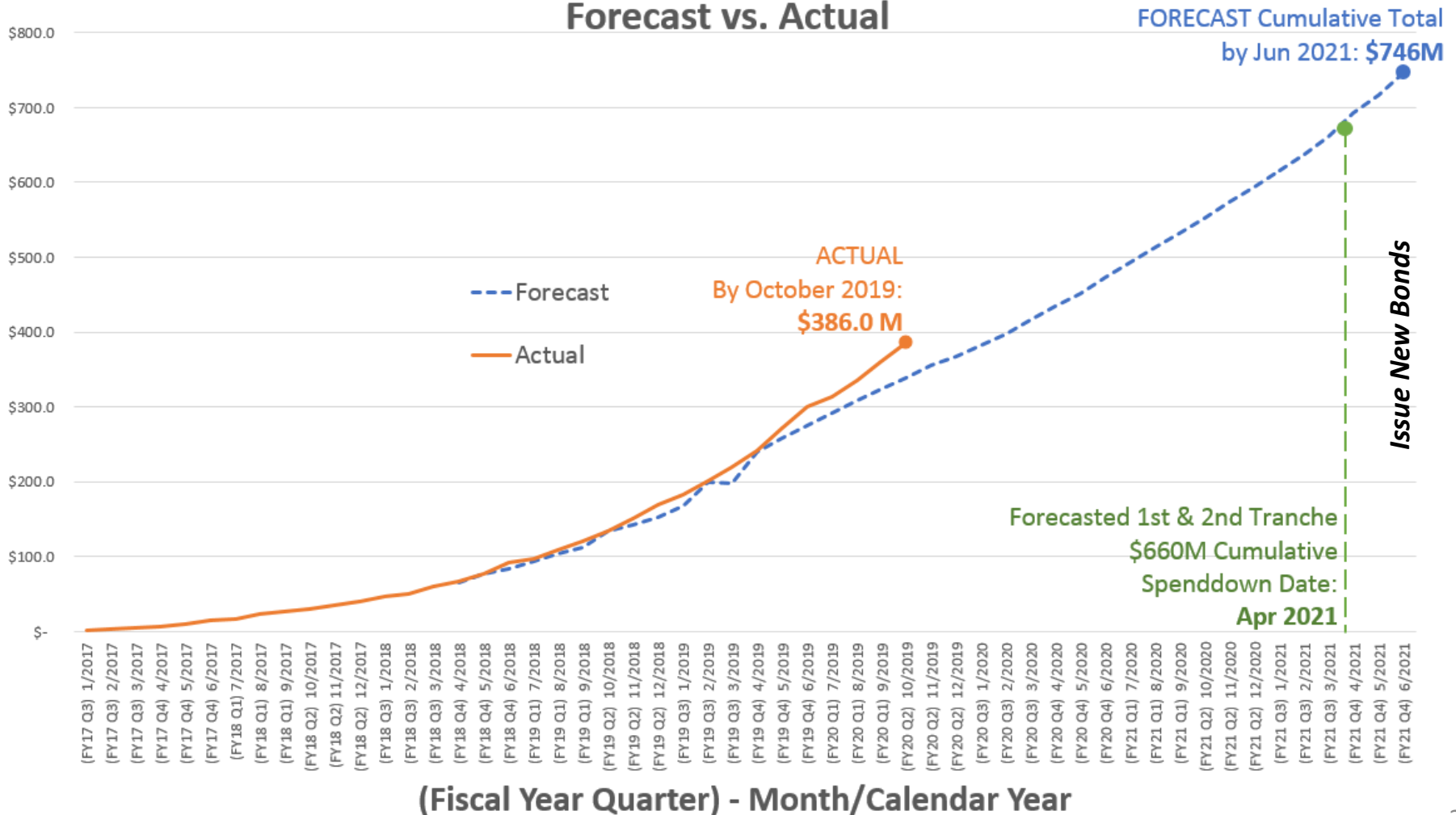
Measure RR Cashflow (\$ Millions) – Mid-Term & Long-Term Outlook

Program	Expended (thru July 2019)	Expended (thru October 2019)	% Expended out of Total Bond Investment	Period Cashflow (July 2019 - October 2019)	Forecast Expenditures		
					SHORT- TERM (thru June 2021)	MID-TERM (thru 2025)	LONG-TERM (thru End of Bond)
Renew Track	\$110.9	\$134.3	21%	\$23.40	\$183	\$400	\$625
Renew Power Infrastructure	\$128.8	\$157.9	13%	\$29.10	\$248	\$608	\$1,225
Repair Tunnels & Structures	\$27.8	\$35.4	6%	\$7.60	\$57	\$268	\$570
Renew Mechanical	\$9.5	\$12.4	9%	\$2.90	\$41	\$65	\$135
Replace Train Control/Increase Capacity	\$11.1	\$14.2	4%	\$3.10	\$32	\$286	\$400
Renew Stations	\$6.0	\$8.4	4%	\$2.40	\$29	\$148	\$210
Expand Safe Access to Stations	\$10.7	\$12.5	9%	\$1.80	\$37	\$86	\$135
Design/Engineer to Relieve Crowding	\$8.7	\$10.9	5%	\$2.20	\$33	\$69	\$200
Total	\$313.5	\$386.0	11%	\$72.5	\$660	\$1,930	\$3,500



RR Overall Program Budget Progress

BART Measure RR Program Spending Forecast vs. Actual



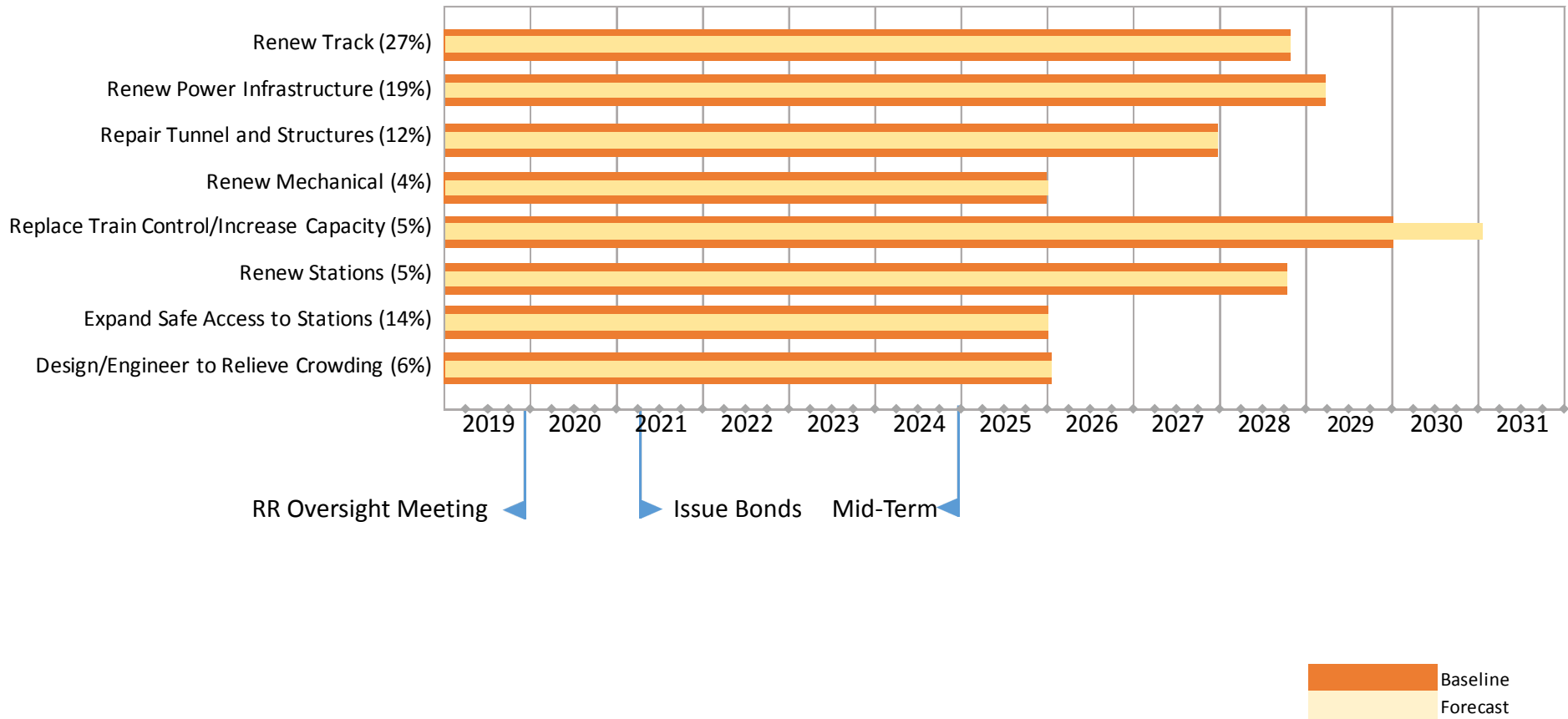


Earned Value Rollup by Program -

RR Program	Total RR Budget	Physical % Complete	Planned Value	Earned Value	RR Accrued to Date	CPI	SPI
Renew Track	\$625	26%	\$170.6	\$164.6	\$149	1.11	0.96
Renew Power	\$1,225	19%	\$247.5	\$223.8	\$171	1.31	0.90
Repair Tunnels and Structures	\$424	10%	\$42.2	\$40.3	\$39	1.04	0.96
Renew Mechanical	\$135	1%	\$3.7	\$3.0	\$2	1.21	0.81
Replace Train Control/ Increase Capacity	\$400	4%	\$18.9	\$12.1	\$16	0.74	0.63
Renew Stations	\$210	5%	\$15.0	\$13.6	\$12	1.11	0.90
Expand Safe Access to Stations	\$135	14%	\$20.5	\$18.6	\$18	1.02	0.91
Design/Engineer to Relieve Crowding	\$200	6%	\$15.1	\$13.6	\$13	1.04	0.90
Total	\$3,500	14%	\$533.5	\$489.7	\$426	1.15	0.92



Program Level Schedule Update



Future updates may include additional projects as programs mature.



Track Program Drill Down

Project	Count
Number of Projects (>25% Spent)	8
CPI <0.9 or >1.1	2
SPI <0.9 or >1.1	1
Number of Risk Register Updates Performed in Previous Period	4
Number of Projects Quality Reviews Performed in Previous Period	3

Project	Physical % Complete	CPI	SPI	Comments
Rails, Ties, Fasteners 2	100%	1.09	1.09	Includes M03 and A15 Interlocking Replacements
C55 Interlocking Replacement	90%	1.03	0.91	Construction complete
C35 Interlocking Replacement	79%	1.02	1.03	6 turnouts replaced; Pocket track to be commissioned
Replace Restraining Rail	50%	2.40	0.93	3 restraining rails replaced
Replace Direct Fixation Pads	24%	1.23	1.71	Pad replacement goal reached for fiscal year
Rail Relay	28%	0.92	1.04	25 miles of warn rail replaced
Frog Capital Maintenance	32%	0.97	1.07	



RR Program Hiring

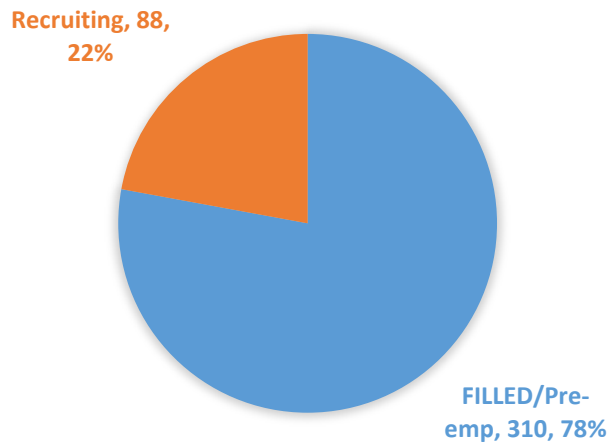


Recruitment- December 12, 2019

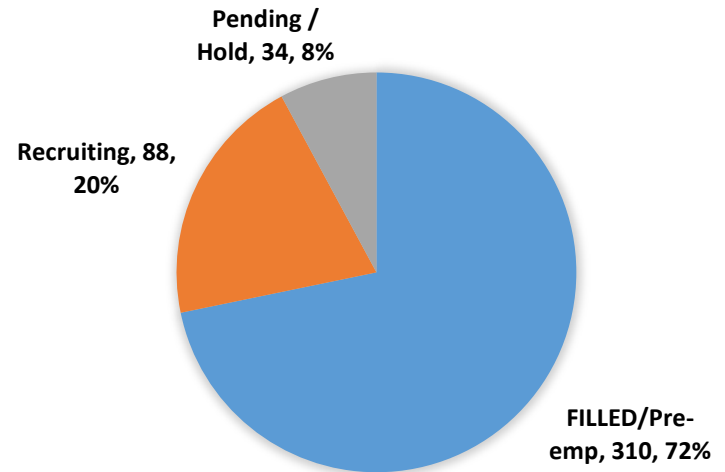
Bond Progress	# of Positions
FILLED/Pre-Emp	310
Recruiting	88
Pending Post / Hold	34
	432

- 43 of the FY20 headcount are budgeted for upcoming quarters
- 39 positions in FY20 are filled or in pre-employment.
- 48 % of the FY20 positions are in active recruitment

BOND PROGRESS



TOTAL BOND PROGRESS





RR Program Small Business & Outreach

12/20/2019



RR Program Update – Small Business

12/20/2019

Program	Total RR Commitment	Total RR SB Commitment	SB Commitment %	# of SB Contracts	Total RR Payments on RR Contracts	RR Payments to SBs	SB Payment %
Renew Track	\$90,488,065	\$20,579,358	23%	90	\$ 27,635,565	\$ 5,640,744	20%
Renew Power	\$163,663,114	\$81,176,995	50%	156	\$ 76,561,649	\$ 39,245,918	51%
Repair Tunnels & Structures	\$97,606,206	\$22,174,499	23%	92	\$ 37,823,604	\$ 3,547,358	9%
Renew Mechanical	\$28,595,357	\$10,274,380	36%	50	\$ 5,359,119	\$ 1,346,234	25%
Replace Train Control/Increase Capacity	\$8,078,462	\$1,095,291	14%	16	\$ 2,364,923	\$ 89,233	4%
Renew Stations	\$142,323,101	\$25,576,184	18%	73	\$ 7,452,207	\$ 3,076,129	41%
Expand Safe Access to Stations	\$14,330,419	\$3,685,312	26%	84	\$ 4,131,558	\$ 926,130	22%
Design/Engineer to Relieve Crowding	\$18,268,040	\$5,298,267	29%	30	\$ 4,617,443	\$ 1,256,022	27%
Total	\$563,352,765	\$169,860,286	30%	590	\$ 165,946,069	\$ 55,127,767	33%

Notes: All amounts are based on RR fund percent only. Amounts are updated to November 29, 2019. Includes formal contracts only; does not include informal purchases or work performed by BART's own forces. SB totals include DBEs, MSBEs, SBs, and LSBs. Sources: RR commitments are based on RR Requisitions report, Procurement Sealed Bids Report and PeopleSoft Work Plans application. RR% for each project is based on Financial Analysts' report, RR Funds / Total Project Budget. Payments based on PeopleSoft and B2GNow.



RR Program Update – Outreach

12/20/2019



- Recently Completed Events
 - Richmond Chamber of Commerce Annual Economic Summit (Richmond)
 - Association of General Contractors (Lafayette)
 - Tradeswomen, Inc. (Oakland)
 - Oakland African American Chamber of Commerce Business Awards Luncheon (Oakland)
 - Western Regional Minority Supplier Development Council - Construction Day (Oakland)
 - CPUC Business Expo (Citrus Heights)
 - Business Outreach Committee – Meet the Primes (Oakland)
- Upcoming Events
 - The Western Regional Minority Supplier Development Council Annual Meeting (TBD)



Next Steps

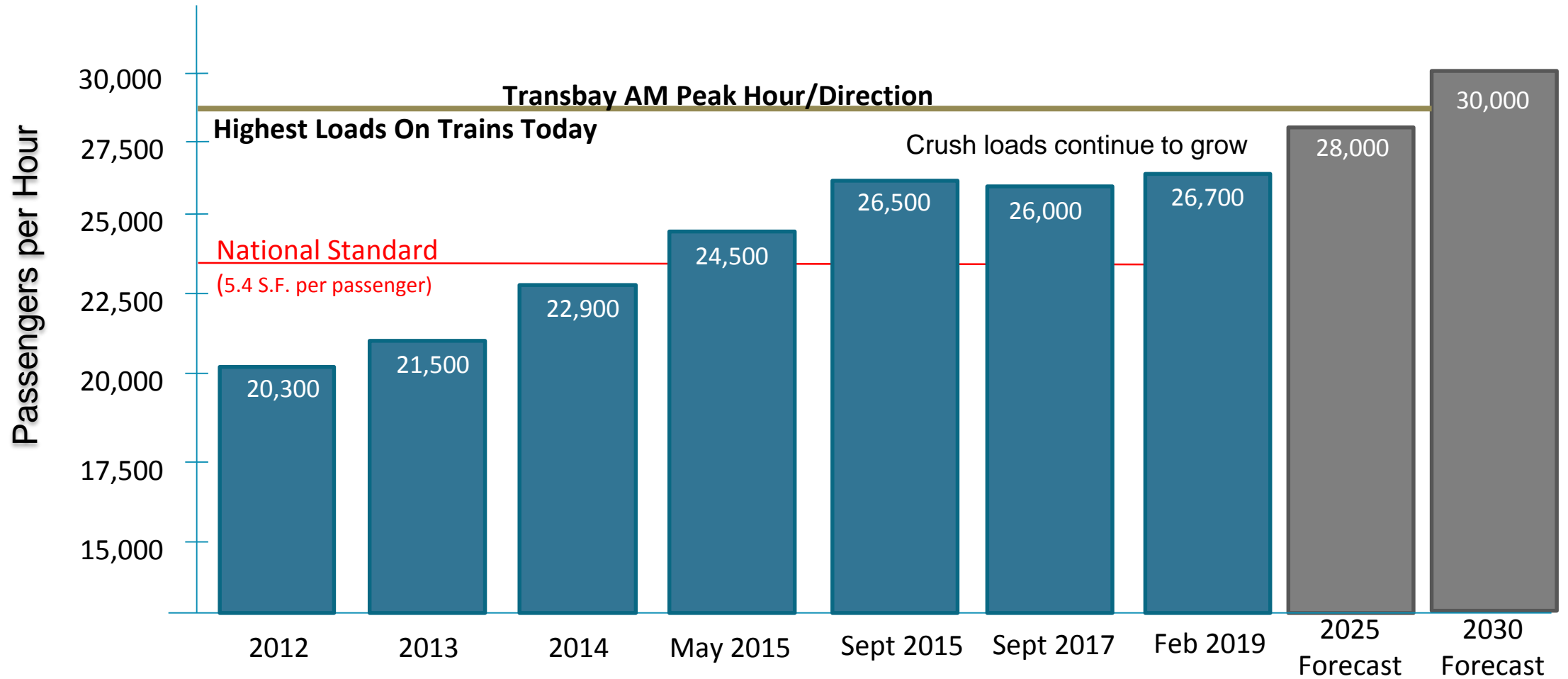
- Ongoing Development:
 - Continuous customization of RR Program Reporting
- Under Development
 - March 2020 Bond Oversight Meeting
 - Annual Report Preparation

Train Control Modernization Program RR Update - December 2019

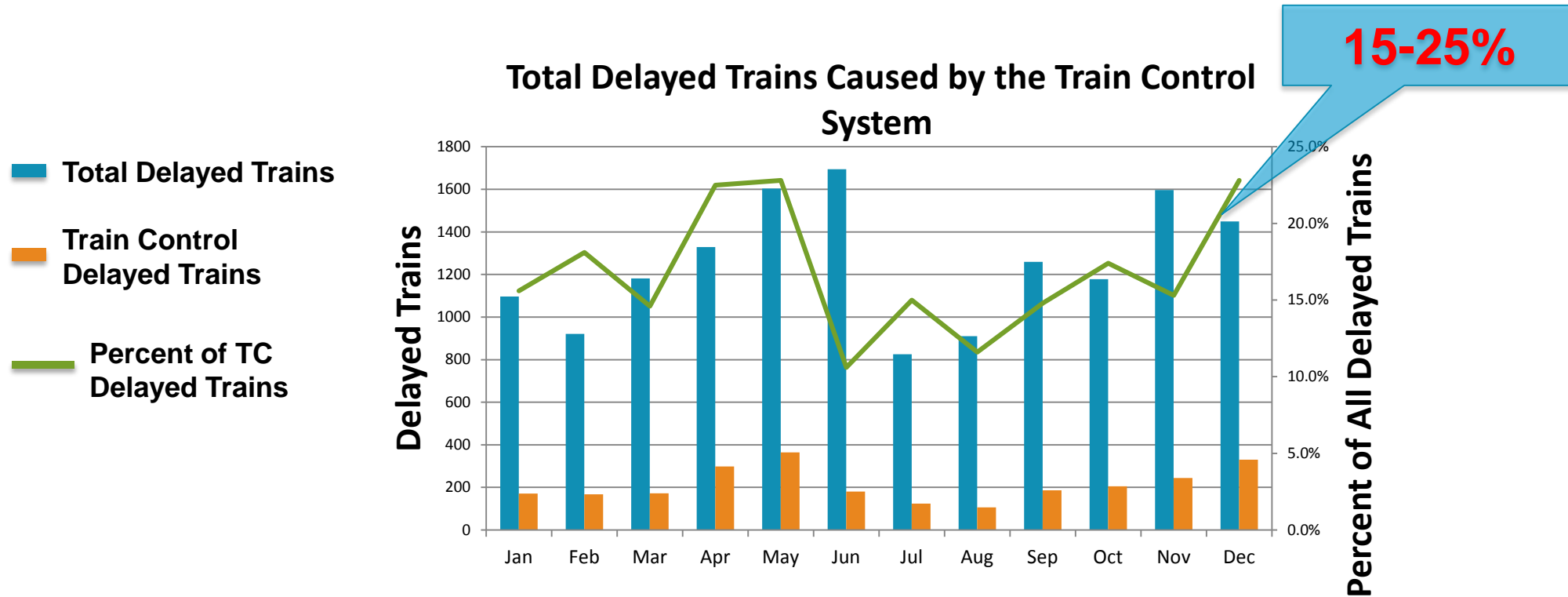




Project Justification – Transbay Corridor Peak Riders



Train Control System Delay Trend



Core Capacity Program Big 4 Capital Projects



30% MORE CAPACITY

Fleet of the Future
\$1.105B
425 more vehicles
(1,200 total)



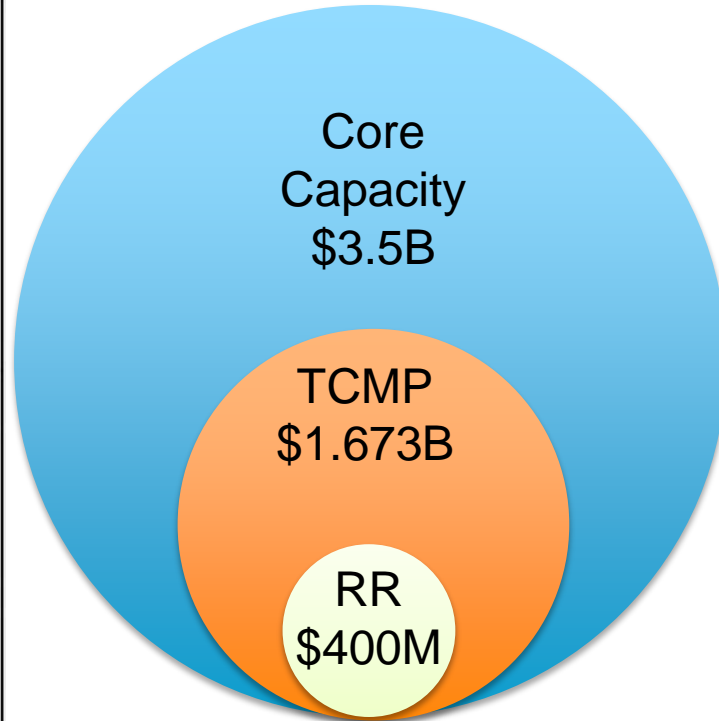
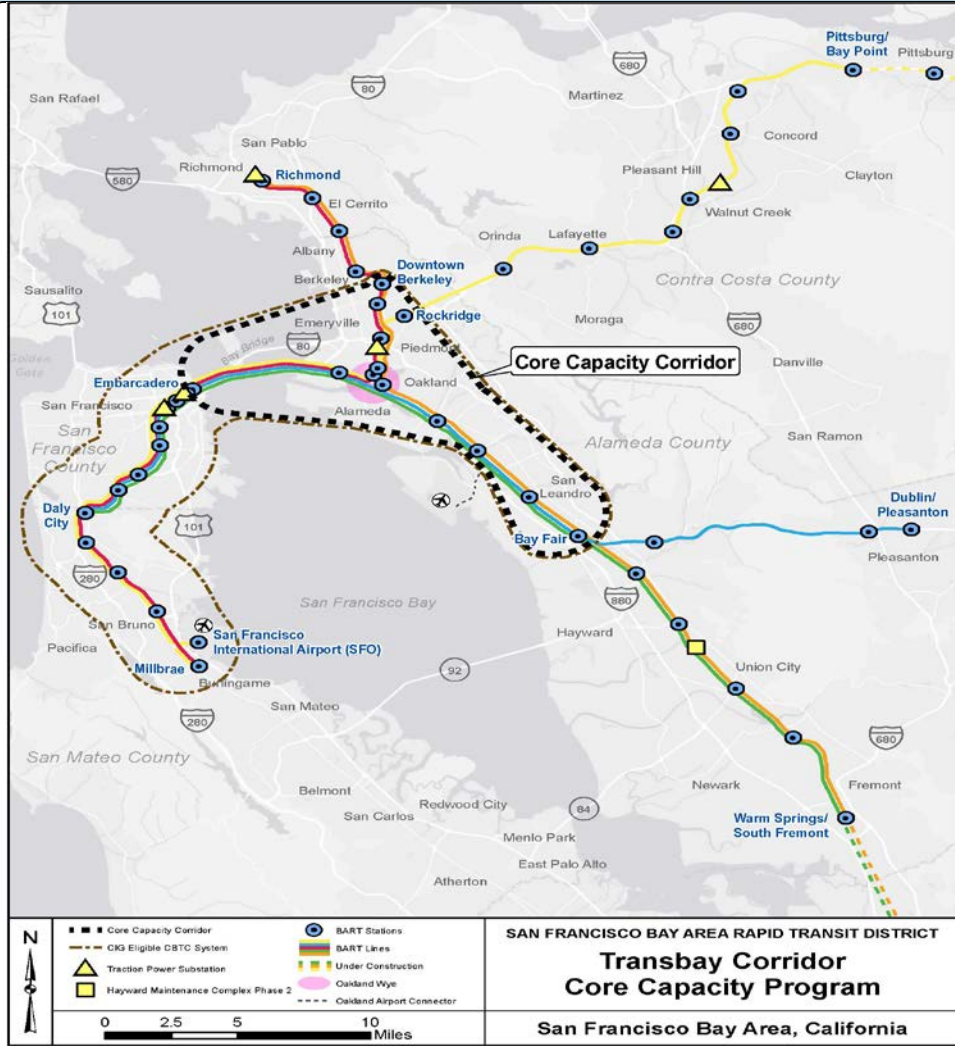
Hayward Maintenance Complex
\$345M

Train Control Modernization
\$1.673B



Traction Power Substations
\$1.37M

Core Capacity Program Scope



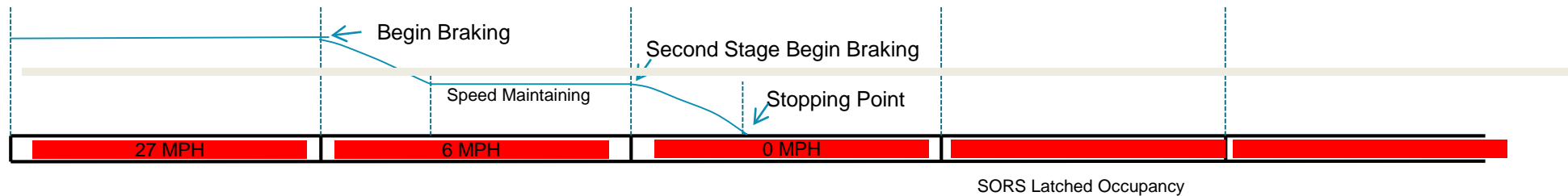
Project Scope

- New CBTC train control systemwide
- 425 railcars
- New railcar storage yard at Hayward Yard
- 6 new traction power substations

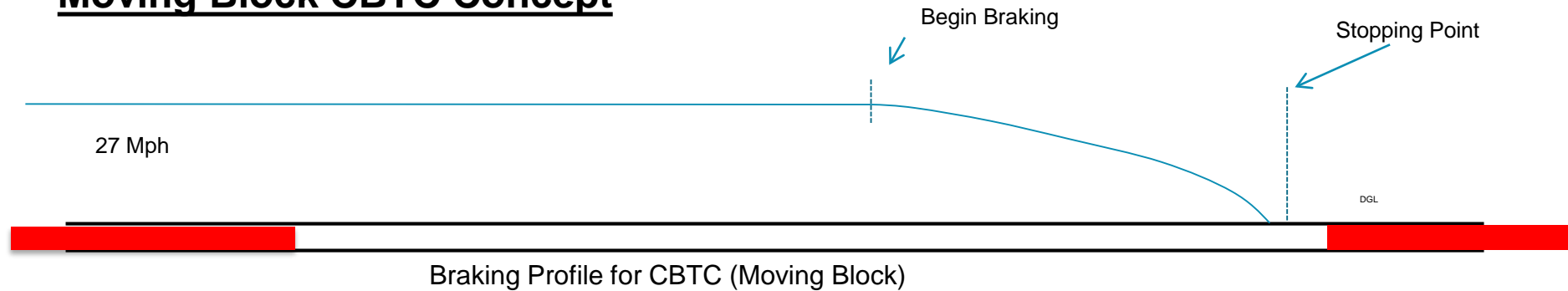
Note: Corridor limit shown is for FTA CIG Program eligibility purposes only.

Capacity Improvements with CBTC

Track Circuit



Moving Block CBTC Concept



Braking Profile for CBTC (Moving Block)

Previous Slide

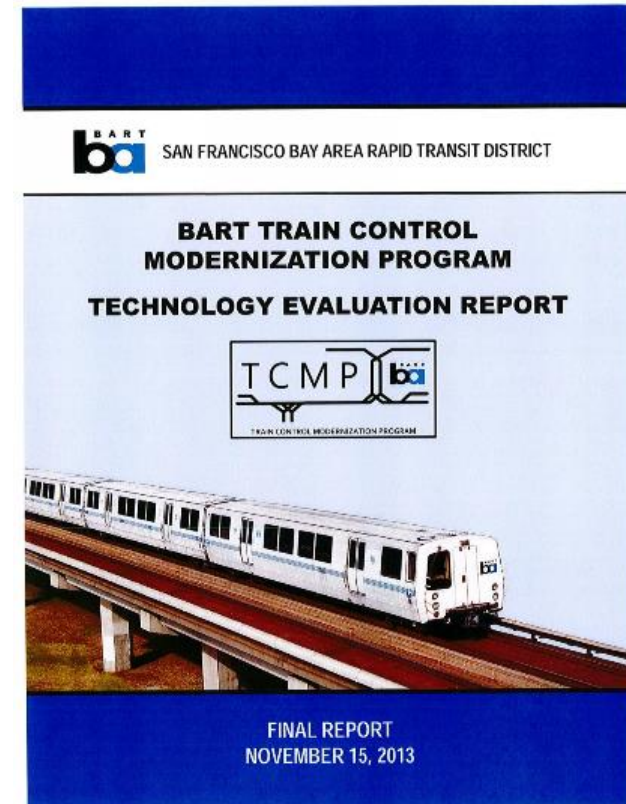


Core Capacity Improvements Evaluated CBTC vs Track Circuits

TCMP Objectives:

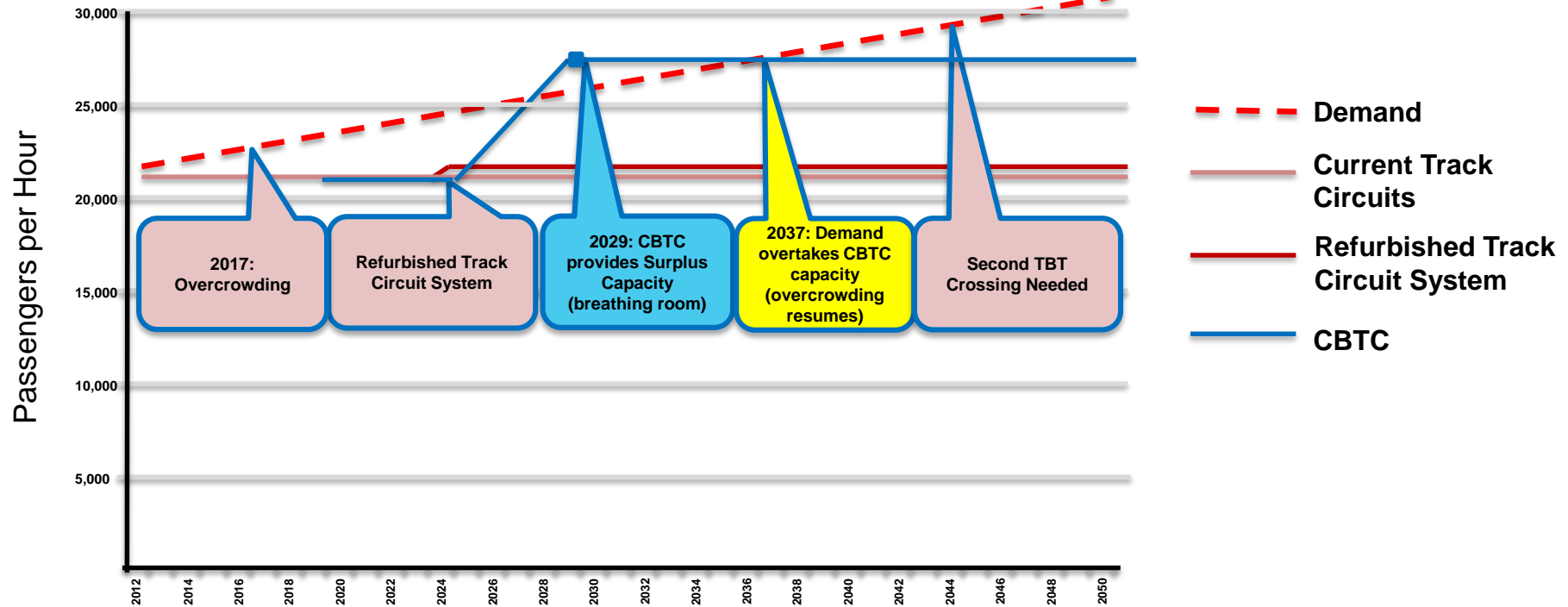
- Eliminate aged and obsolete equipment
- Improve reliability and availability
- Enhanced maintenance efficiency/state of good repair
- Increase in capacity/support future ridership numbers

CBTC addresses all!



The Case for CBTC

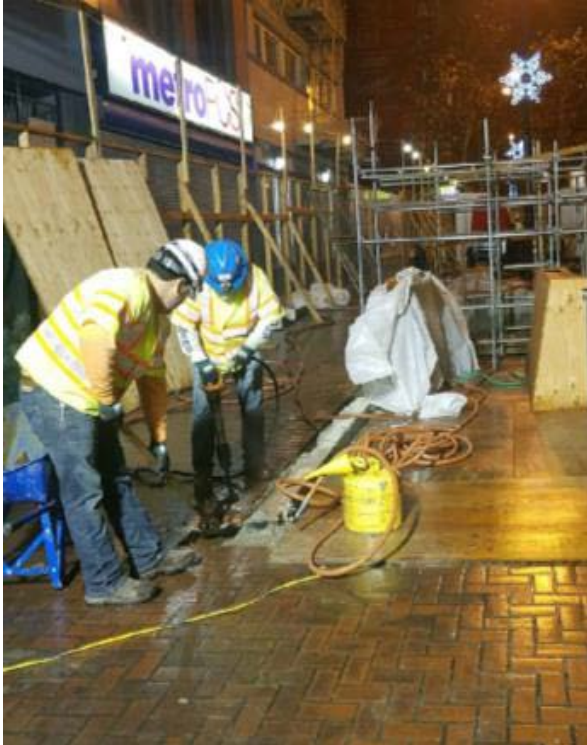
Capacity vs. Peak Demand – Transbay Tube



Train Control Modernization Scope



- Replacement of the existing Track Circuit Train Control System with CBTC which includes the following:
- 109 linear miles of brownfield revenue track controls, including 76 Train Control Room/Houses and 4 yards interfaces
- Retrofit of 310 Revenue Control D-Cars
- Replacement of the existing Central Control Automatic Train System (ATS) including interface to BART's ICS
- Retrofit of 1 Geometry Car
- Options for VTA - Phase 1 Brownfield to Berryessa Station (10 Track miles) & Phase 2 Greenfield to Santa Clara Station including one Yard interface (6 Track miles)
- Centralized Zone Controls & Interlocks either centralized or distributed on the wayside

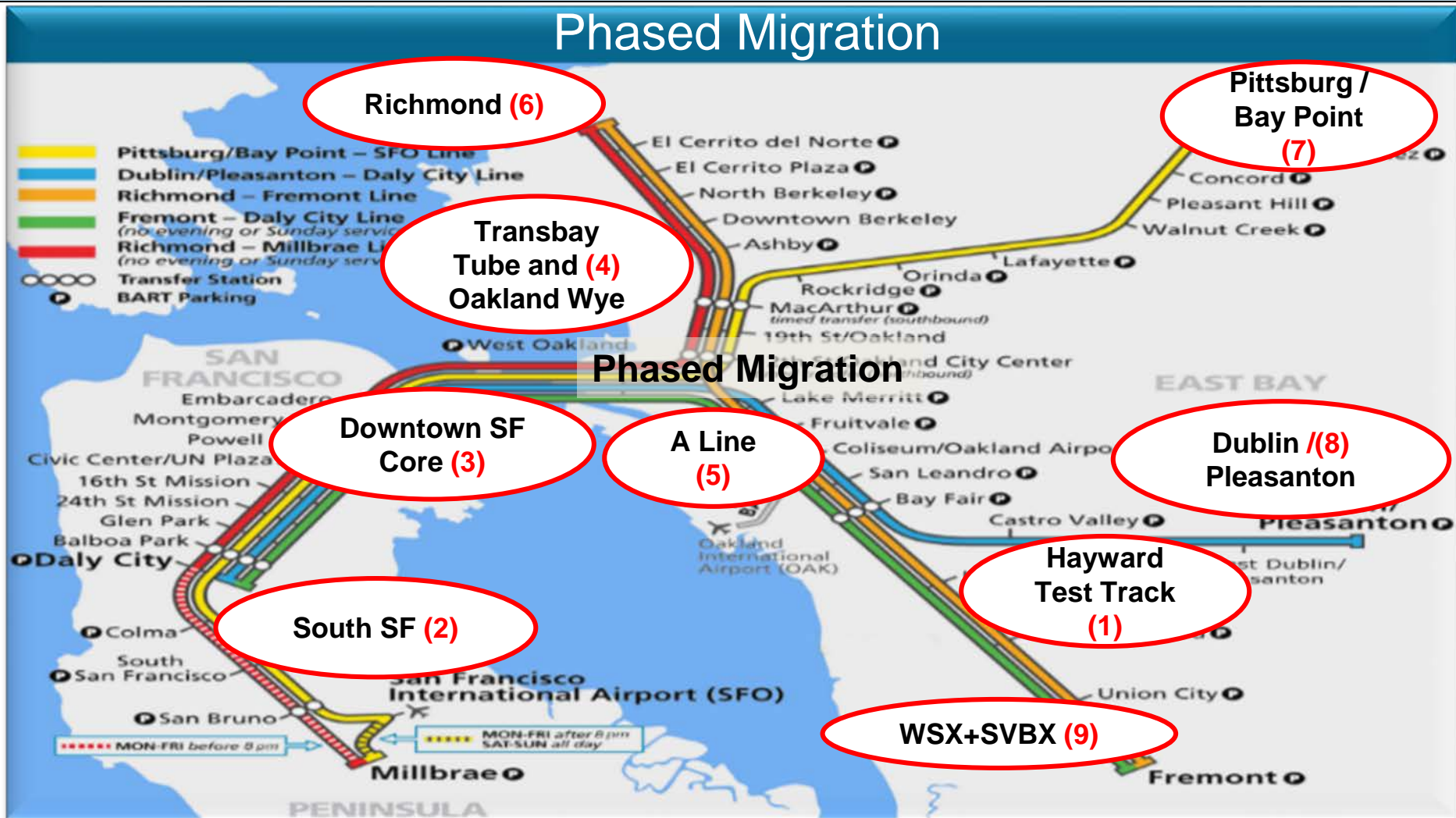


Escalator Roof on
Market Street

Design/Phasing

- Increase train Capacity from 23 Trains per hour to 30+ Trains per hour
- ATS Replacement First prior to wayside deployment
- 310 - D-Car Modified prior to wayside deployment
- Phased Deployment (District Preference 9 Phases)
- Proven on Test Track prior to Installation on Revenue Track

Phased Migration



Original Schedule

- RFQ Issued: Aug 2017
- Award: Dec 2018 (w/o BAFO) – **Contingent upon Full Funding Grant Agreement (FFGA)**

Current Schedule

- RFQ Issued: Aug 2017
- Award: Feb 2020 (w/ BAFO)– **Contingent upon FFGA**
- **Delay 13 months**
- **Notice to Proceed – mid-April 2020**

Current DB Proposers

- Prequalified Prime DB Proposers
 - Alstom Signaling Inc.
 - Hitachi Railway Systems
- Prequalified System Equipment Installers
 - Aldridge Electric, Inc.
 - Hitachi Railway Systems



Train Control Room

Enabling Contracts

- Switch Machine and Train Control - Power and Communication Cable Replacement
- HVAC Train Controls Room Upgrades
- Data Warehouse
- Asbestos Removal



SF Downtown Tunnel

Questions