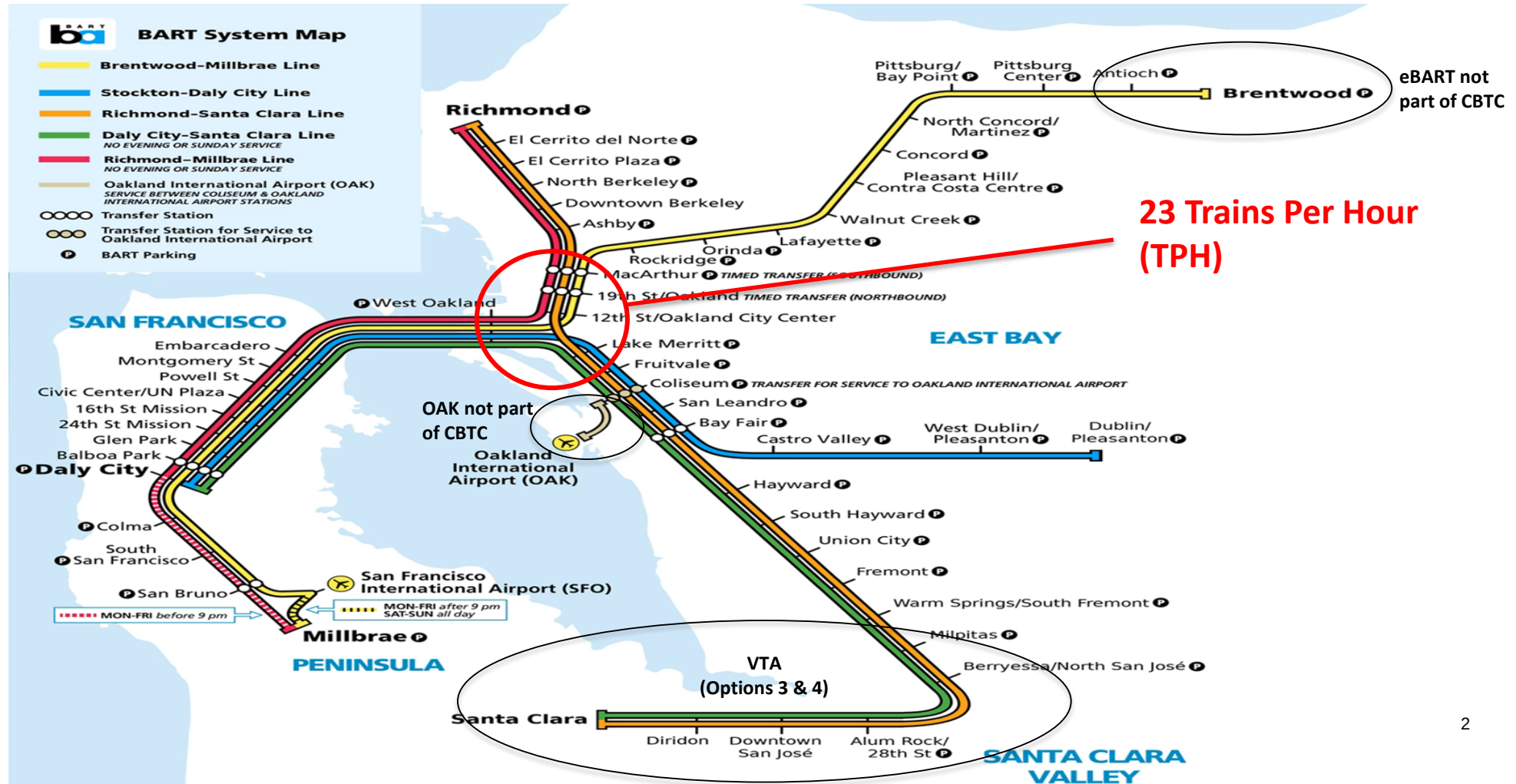


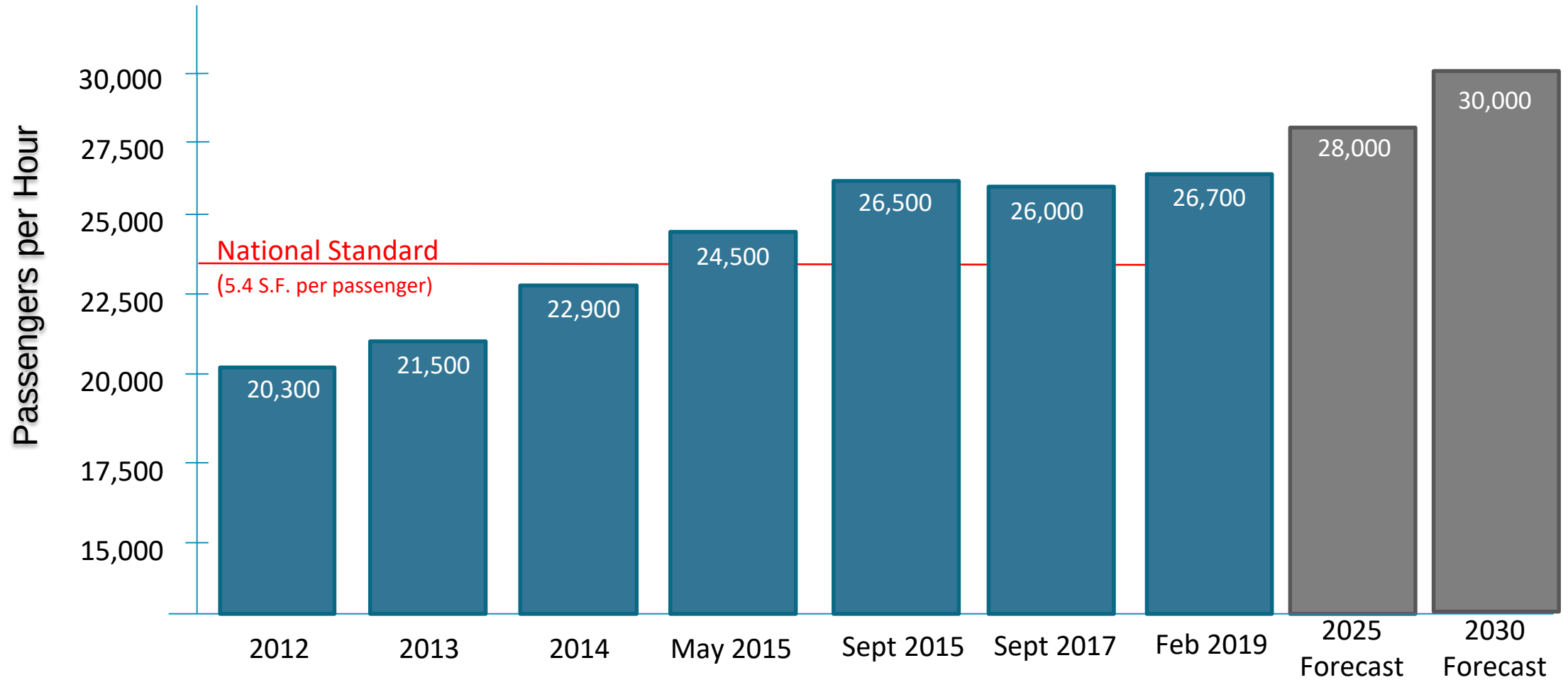
Communication Based Train Control (CBTC) Executive Decision Documents Board Presentation for Award – January 9, 2020



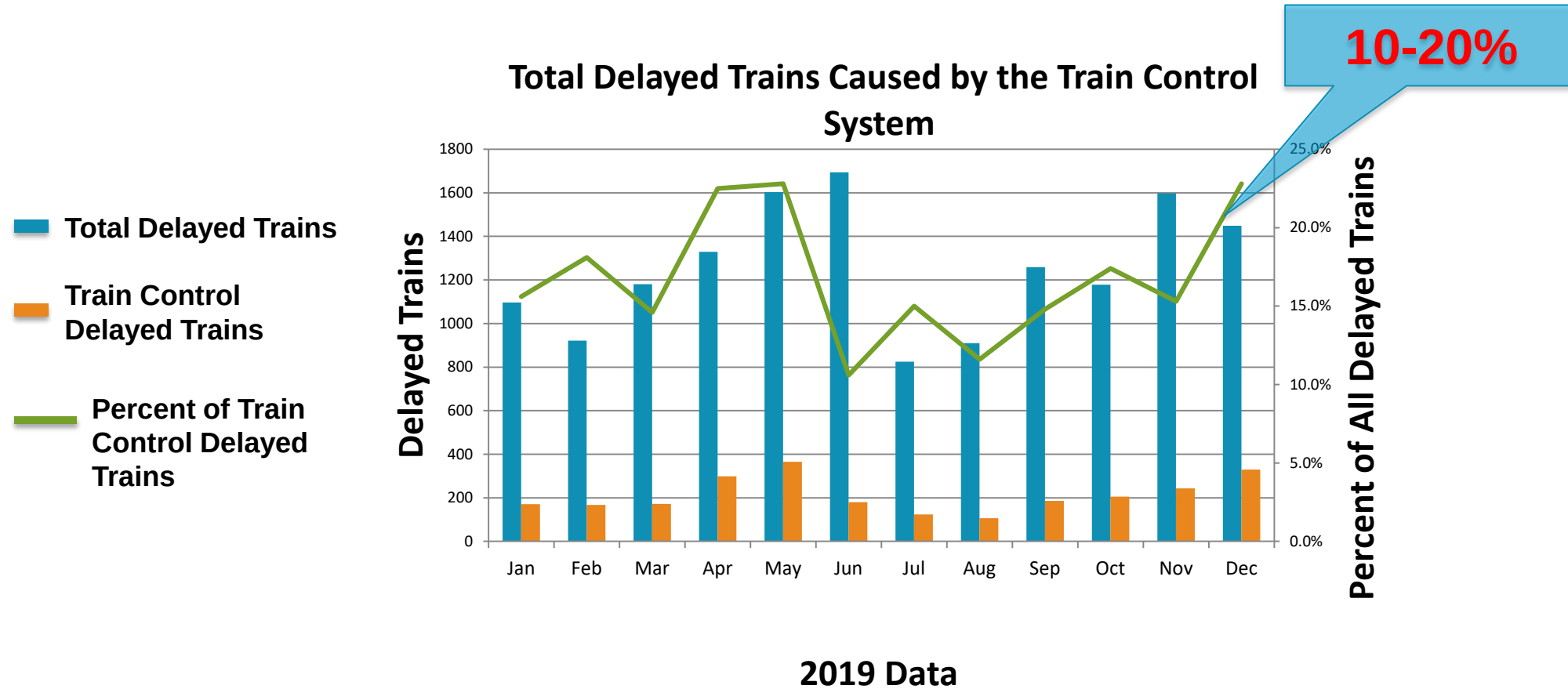
The Problem - Capacity through Transbay Tube & Wye



Train Overcrowding – Transbay Peak Riders



Train Control System Delay Trend



Core Capacity Improvements Evaluated Communication Based Train Control (CBTC) vs New Track Circuits

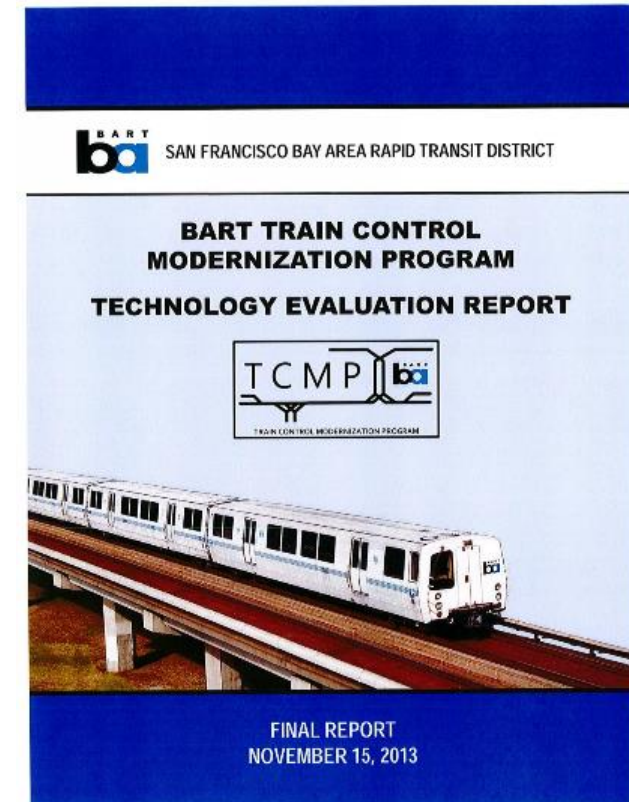


Board presentation, May 8, 2014

CBTC 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!



Core Capacity Program Big 4 Capital Projects



45% MORE CAPACITY

Fleet of the Future

\$1.105B
306 more vehicles



Hayward Maintenance Complex

\$345M

Communication Based Train Control

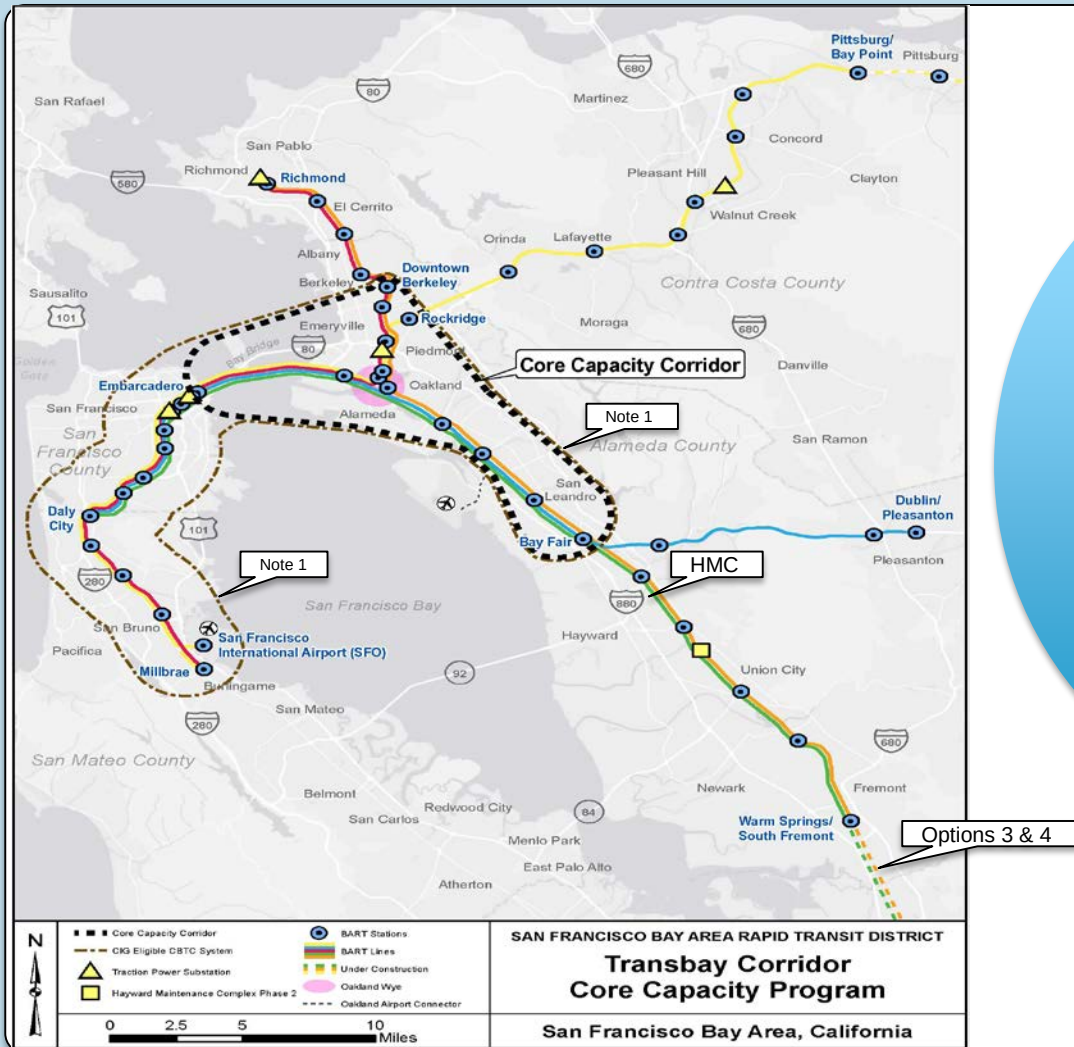
\$1.673B



Traction Power Substations

\$137M

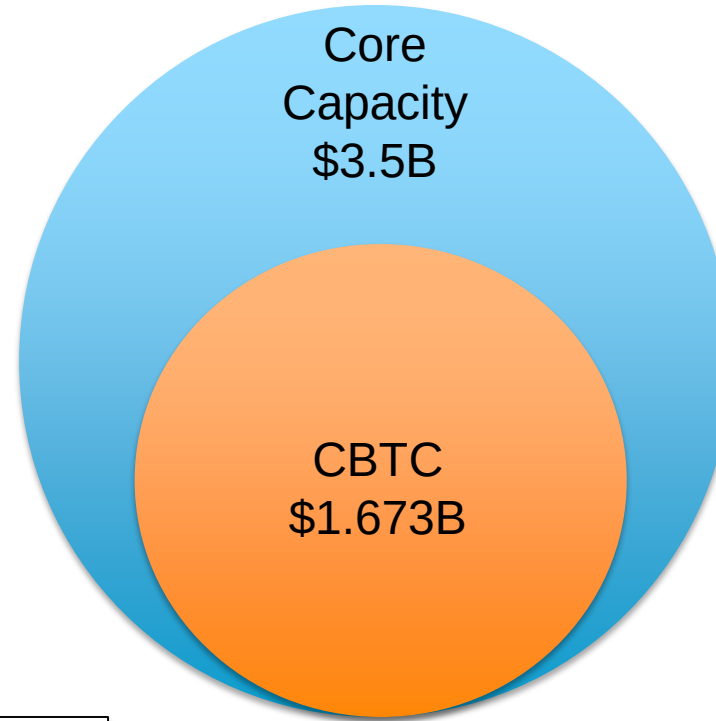
Core Capacity Program Scope



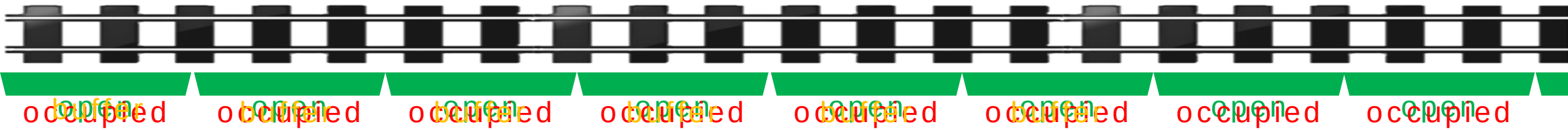
Project Scope

- New CBTC train control system-wide, + VTA Phases 1 & 2
- 306 railcars
- New railcar storage yard at Hayward Maintenance Complex (HMC)
- 6 new traction power substations

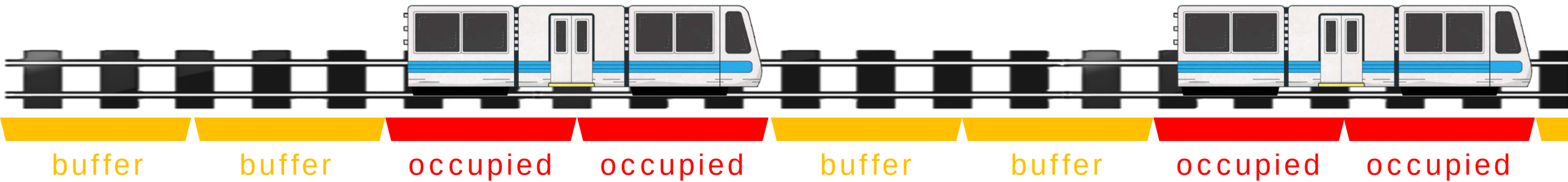
Note 1: Corridor limit shown for FTA Program eligibility only.



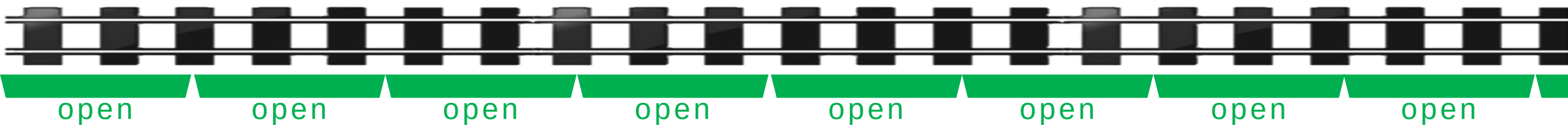
FIXED-BLOCK SIGNALING



CBTC MOVING BLOCK SIGNALING



FIXED-BLOCK SIGNALING



CBTC MOVING BLOCK SIGNALING

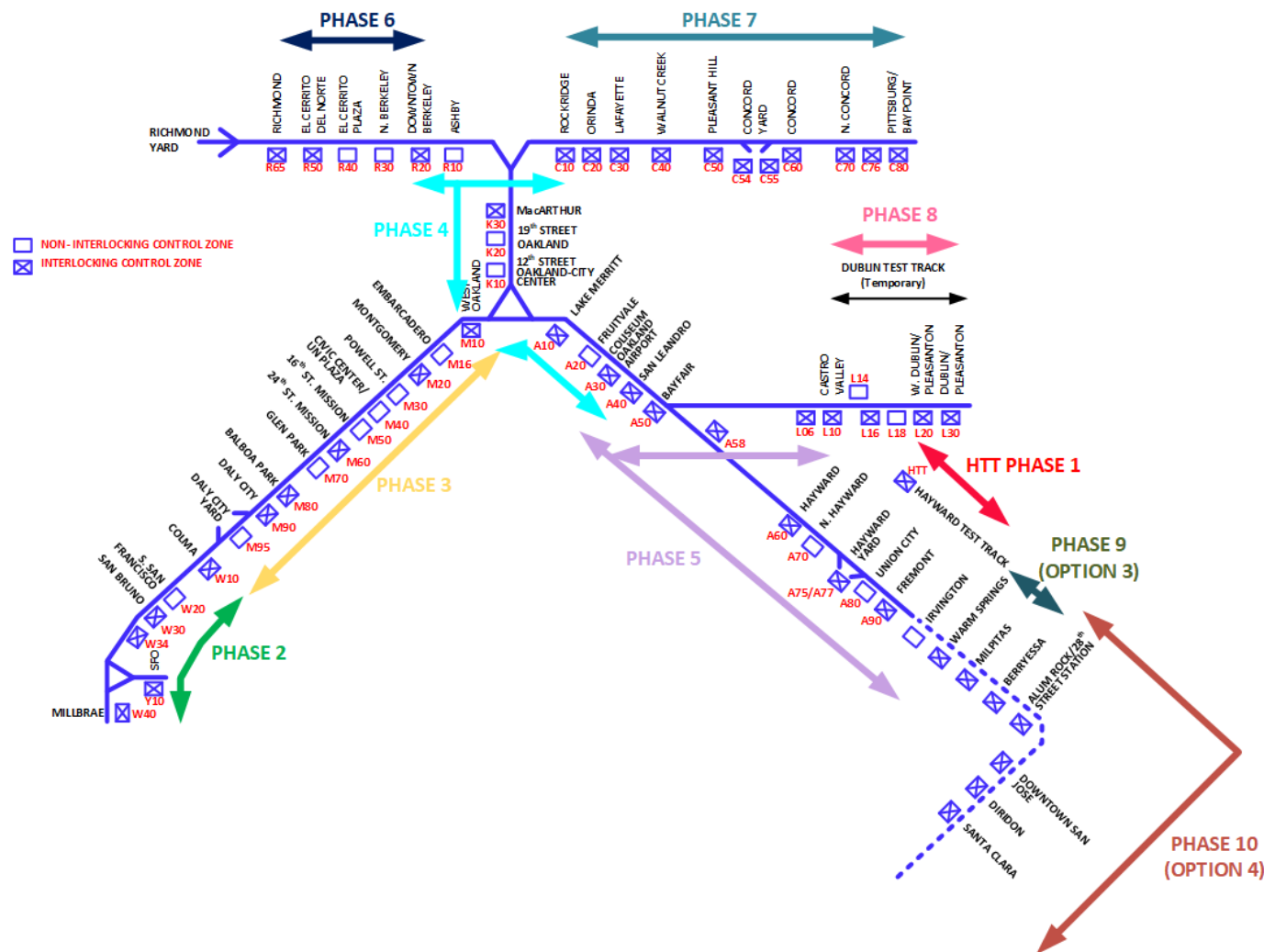
CBTC Migration Strategy



Radio Communications
Equipment

- Increase train Capacity from 23 Trains per hour (TPH) to 30+ TPH
- Operations Control Center - Implement New Central Control Software prior to CBTC wayside deployment
- 310 D-Cars Modified prior to CBTC wayside deployment
- Phased Deployment - 10 Phases, 125 miles of track
- VTA Options 3 & 4
- Prove on Test Track prior to Installation on Revenue Track

CBTC Migration Strategy



Outreach



- Board direction, undertake CBTC Technology – Design-Build Contract, December 3, 2015.
- Advance Notice to Proposers, Sent out March 13, 2017
- Three (3) Networking/Matchmaking Sessions hosted by Office of Civil Rights
- RFQ/P access required Security Sensitive Information (SSI) Clearances
- CBTC is California Environmental Quality Act (CEQA) Exempt
- Categorical Exclusion for National Environmental Protection Act (NEPA)

Procurement Process



- Request For Qualifications and Proposals (RFQ/P) Issued **August 2017**
- Pre-Qualification criteria:
 - o Service-proven CBTC System
 - o Deployed in a “brownfield” environment;
 - o Commit highly experienced team of CBTC professionals
 - o Financial stability
 - o Compliant with Federal Transit Administration (FTA) Buy America requirements; and
 - o Mature program and engineering management processes

Notice of Prequalified Proposers



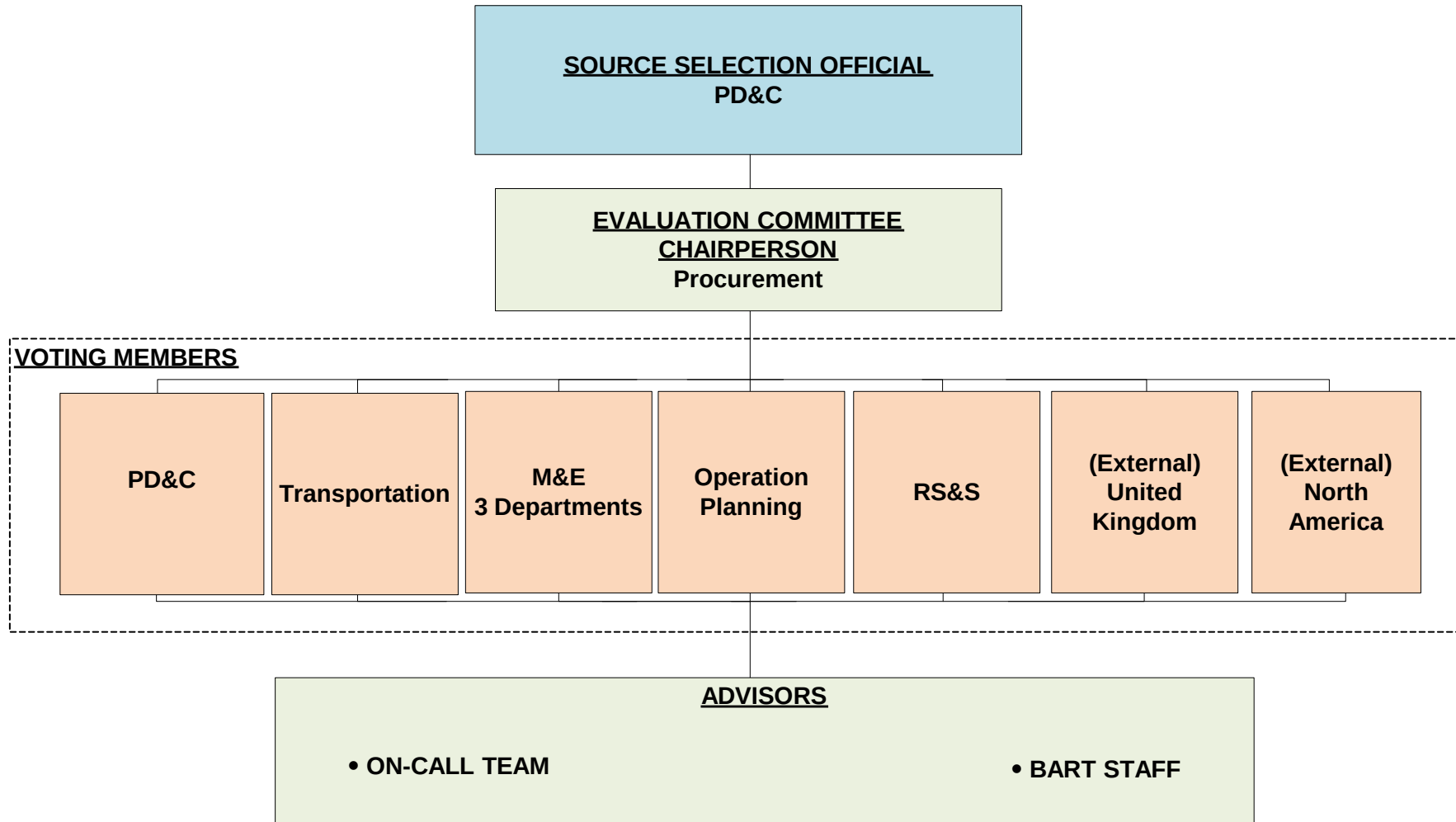
Received Qualification Statements from 7 Design-Build Proposers in **October 2017**; District prequalified 3

January 5, 2018, General Manager notified Board of Directors of Prequalified Proposers:

- Alstom Signaling, Inc.
 - System Equipment Installer: Aldridge Electric, Inc.
- Ansaldo STS USA, Inc. (Hitachi)
 - System Equipment Installer: L.K. Comstock National Transit, Inc.
- Thales Transport & Security, Inc.
 - System Equipment Installer: Mass. Electric Construction Co.

3 Protests were Received, Final Notice of Approved Prequalified Proposers sent on May 1, 2018

Evaluation Committee



Best Value Methodology to evaluate price in combination with following criteria (descending order of importance):

- o Migration Plan
- o Systems Performance Analysis
- o System Design / Specifications Compliance
- o Management Approach
- o Train Control Performance Support Services Approach
- o Reliability, Availability and Maintainability (RAM) Analysis

RFP Scoring Method for Technical Proposals



The Technical Proposals were rated in accordance with the following:

- 1) Exceptional
- 2) Good
- 3) Acceptable
- 4) Potential to Become Acceptable
- 5) Unacceptable

Proposal excluded if rated Potential to Become Acceptable or Unacceptable

CBTC Proposal Review



- Thales Proposer withdrew from the Procurement, December, 2018
- **March 19, 2019**, Technical and Price Proposals received from Alstom and Hitachi
- Alstom and Hitachi's Technical Proposals determined to be Responsive
- **June and July of 2019**, clarification and negotiation meetings, with Alstom and Hitachi

CBTC Evaluation of Best and Final Offers (BAFOs)



- Request for BAFOs issued on **September 5, 2019**
- BAFOs received on **October 22, 2019** from Alstom and Hitachi
- Alstom and Hitachi's BAFO Technical Proposals determined to be Responsive
- Alstom BAFO Technical Proposals were rated Unacceptable for three criteria:
 - o Management
 - o Migration
 - o Train Control Performance Support Services
- Since Alstom's Technical Proposal were rated unacceptable, Alstom's BAFO Price Proposals were not opened for review

CBTC Evaluation of BAFOs

- Hitachi's BAFO Technical Proposals were rated Good Minus
- Hitachi provided better than acceptable Proposals meeting all technical evaluation criteria & instilling confidence of successful Contract performance.
- Hitachi's BAFO Price Proposals opened for review. Prices are as follows:

	Hitachi Price Proposal	Engineer's Estimate	Difference
CBTC BAFO Base Proposal Plus Allowances	\$798,551,928	\$851,698,430	\$53,146,502
CBTC BAFO Option 1 – Roadway Worker Protection Device	\$357,117		
CBTC BAFO Option 2 – DELETED			
CBTC BAFO Option 3 – VTA Phase I	\$56,168,590		
CBTC BAFO Option 4 – VTA Phase II	\$25,736,514		
CBTC BAFO Base Proposal Plus Allowances and Options 1, 3, and 4	\$880,814,150	\$967,448,430	\$86,634,280

CBTC Buy America Compliance



- Contract subject to Buy America requirements
- Hitachi submitted Buy America certificates indicating compliance as follows:
 - o Buy America Certification Requirement for Procurement of Rolling Stock and Associated Equipment, at 70% minimum domestic content
 - o Buy America Certification Requirement for Procurement of Steel, Iron, or Manufactured Products, at 100% domestic content

CBTC Disadvantaged Business Enterprise



- Design-Build RFQ/P per District's Disadvantaged Business Enterprise (DBE) Program requirements
- DBE participation goal of 5%
- Hitachi, committed subcontracting 5.1% to DBEs
- Office of Civil Rights determined Hitachi met DBE goal commitment set forth in the Contract

RFP Stipend Agreement



- Stipend Agreement of \$1,000,000 paid under specified conditions, if Proposer not selected for award
- If Alstom does not protest award, entitled to request \$1,000,000 stipend

CBTC Evaluation of BAFOs



- Hitachi's CBTC BAFO Technical & Price Proposals and approach
 - Met RFQ/P requirements
 - Hitachi was found to be a Responsible Proposer
 - Hitachi's Price Proposal was determined to be fair and reasonable.
- December 12, 2019, Evaluation Committee unanimously agreed that Hitachi is the Preferred Proposer and recommend award of the CBTC Contract No. 49GH-110 to Hitachi
- Concurrently, Evaluation Committee recommends award of TCPSS Contract No. 49GH-120 to Hitachi (accompanying CBTC Contract No. 49GH-110 EDD).

CBTC Fiscal Impact



Table 2 - Current Funding

Federal Funds	\$19,883,421
Local	\$1,035,542
Measure RR	\$26,000,000
BART Funds	\$11,093,406
TOTAL	\$58,012,369

Table 3 - Programmed Funding

Federal Funds	\$49,100,000
TIRCP	\$318,600,000
Measure RR	\$374,000,000
BART Funds	\$41,832,374
TOTAL	\$783,532,374

Table 4 - Pending Funding

FTA CIG Funds	\$397,240,488
TOTAL	\$397,240,488

CBTC Future Funding



- Table 2 Current Funding will commit \$ 2,849,157 leaving a balance of \$0 in this fund source. Table 3 & 4 will provide the remaining \$ 795,702,771 from the Programmed and Pending Funds for the Total Base Contract Award of \$ 798,551,928.
- District continues to pursue funding of approximately \$288M from State and local sources, excluding the VTA components
- Current Project funding is sufficient to cover Design Services During Construction (DSDC), Construction Management (CM), and BART soft costs for seven years.
- Additional future funding will be needed to fully fund DSDC, CM, and BART soft costs through completion.
- Award CBTC Contract commits BART to fully implement CBTC, excluding Option 3 and Option 4
- These actions are not anticipated to have any Fiscal Impact on unprogrammed District reserves

CBTC Funding to Exercise VTA Option 3 and Option 4



- Option 3 - Silicon Valley Berryessa Extension
- Option 4 - Silicon Valley Santa Clara Extension
- VTA Funding Agreement required
- Exercise of Options contingent on Controller-Treasurer certifying full funding of Options is secured from the Santa Clara Valley Transportation Authority (VTA)

Not proceeding with award of CBTC Contract at this time and re-advertise the RFQ/P will:

- Result in loss of up to \$318.6 million Transit and Intercity Rail Capital Program (TIRCP) funds already awarded and likely loss of pending \$1.169 billion FTA CIG grant
- Impact procurement of Core Capacity Program:
 - o Rail Vehicles
 - o Construction of rail vehicle storage and other improvements at Hayward Maintenance Complex
 - o Construction of new Traction Power Substations
- Force the District to continue running existing aging Automatic Train Control System

1. The General Manager is authorized to award Contract No. 49GH-110 for the Design-Build of a Communications Based Train Control System to Hitachi Rail STS USA, Inc. for the price of **\$798,551,928**, (including all taxes) upon certification by the Controller-Treasurer that funding is available, pursuant to notification to be issued by the General Manager and subject to the District's protest procedures and FTA's requirements related to protests.

The General Manager is further authorized to exercise Option 3, Silicon Valley Berryessa Extension, and Option 4, Silicon Valley Santa Clara Extension, to Contract No. 49GH-110, for **\$56,168,590** and **\$25,736,514**, respectively, subject to escalation and upon certification by the Controller-Treasurer that funding is available.

2. The General Manager is authorized to execute a Stipend Agreement with Alstom Signaling, Inc. in the amount of **\$1,000,000** subject to compliance with the conditions specified in the Request for Qualifications and Proposals, and upon certification by the Controller-Treasurer that funding is available.

Contract No. 49GH-120
Train Control Performance Support Services
TCPSS

Train Control Performance Support Services (TCPSS)



- 10 year term, with two 5-year Option extensions
- Provides support services to BART post-installation
- Enables the District to efficiently and effectively operate and maintain the CBTC System
- Provides secure supply of replacement parts
- CBTC System support for (hardware/software) modifications
- Telephone support, 24/7
- Plan technology transfer for 3rd level board repairs

TCPSS BAFOs

- Hitachi's BAFO Technical Proposals rated Good Minus
- Hitachi provided better than acceptable Proposals meeting all technical evaluation criteria & instilling confidence of successful Contract performance
- Hitachi's TCPSS BAFO Price Proposals opened for review. Prices are as follows:

	Hitachi's Price Proposal	Engineer's Estimate	Difference
TCPSS BAFO Base Proposal Plus Allowances (for 10-Year Term)	\$8,630,000	\$6,278,918	\$2,351,082
TCPSS BAFO Option A (for 5-Year Term)	\$3,150,000		
TCPSS BAFO Option B (for 5 Year Term)	\$3,150,000		
TCPSS BAFO Base Proposal Plus Allowances and Option A and Option B	\$14,930,000	\$10,499,204	\$4,430,796

TCPSS Non-Discrimination Program



- Non-Discrimination Program for Subcontracting, Availability Percentages for TCPSS Contract are:
 - o 2.2% for Minority Business Enterprises (MBEs)
 - o 1.1% for Women Business Enterprises (WBEs)
- Hitachi, will not subcontract TCPSS Work therefore, Non-Discrimination Program does not apply

TCPSS Small Business Program



- Office of Civil Rights set 5% Small Business (SB) Subcontractor Participation Goal
- Hitachi will not subcontract any portion of the TCPSS Work
- Hitachi is not eligible for Small Business Preference

- Hitachi's TCPSS BAFO Technical Proposals and approach
 - Met RFQ/P requirements
 - Hitachi was found to be a resonsible Proposer
 - Hitachi's Price Proposal was determined to be fair and reasonable
- Evaluation Committee recommend award of TCPSS Contract No. 49GH-120 to Hitachi
- Separately, staff recommends award of CBTC Contract No. 49GH-110 to Hitachi be made concurrent with the award of TCPSS Contract No. 49GH-120

TCPSS Funding



- Funding for TCPSS Contract Agreement from FY27 to FY46 will be included in BART's proposed annual Operating Budget, subject to Board Approval
- This action is not anticipated to have any Fiscal Impact on unprogrammed District reserves in current Fiscal Year

TCPSS Funding

Base Contract Proposed Funding	
FY27	\$863,000
FY28	\$863,000
FY29	\$863,000
FY30	\$863,000
FY31	\$863,000
FY32	\$863,000
FY33	\$863,000
FY34	\$863,000
FY35	\$863,000
FY36	\$863,000
TOTAL	\$8,630,000

Option A Proposed Funding	
FY37	\$630,000
FY38	\$630,000
FY39	\$630,000
FY40	\$630,000
FY41	\$630,000
TOTAL	\$3,150,000

Option B Proposed Funding	
FY42	\$630,000
FY43	\$630,000
FY44	\$630,000
FY45	\$630,000
FY46	\$630,000
TOTAL	\$3,150,000

TCPSS Alternatives



Not proceeding with award of TCPSS Contract at this time and re-advertise the RFQ/P will:

- Result in District assuming responsibility for support of new CBTC System without the participation of the CBTC System Supplier
- Result in loss of Supplier in providing replacement parts for the CBTC System which likely will increase District's costs for replacement parts
- Lack of support for technical issues, no 24 hour hot line
- 3rd Level Board Repair technology transfer plan will not be implemented

TCPSS Motions



- The General Manager is authorized to award Contract No. 49GH-120 for Train Control Performance Support Services to Hitachi Rail STS USA, Inc. for the price of **\$8,630,000**, (including all taxes) subject to escalation, and subject to the District's protest procedures. The General Manager is further authorized to exercise Option A and Option B to Contract No. 49GH-120, for two 5-year extensions for **\$3,150,000** each, subject to escalation, and upon certification by the Controller-Treasurer that funding is available.

Questions

Questions