September 2017

Financial Plan

Transbay Corridor Core Capacity Program

Transbay Corridor Core Capacity Program

Financial Plan

September 2017 – Revision 3

Prepared by:
Transit Modernization Partnership

For:
Bay Area Rapid Transit (BART) District

BART Agreement No. 6M6068

Summary of Changes from Previous Financial Plan Submittal

In May 2017, Bay Area Rapid Transit (BART) submitted the first version of the Financial Plan for the Transbay Corridor Core Capacity Program. Since May 2017, several changes have been made to the Financial Plan in order to increase the amount of local funds committed to the CIG-eligible part of the program. In general, these changes involved moving committed funds from the CIG-ineligible part of the program to the CIG-eligible part, and increasing the amount of Measure RR funding dedicated to the program. In addition, BART is securing additional documentation from the Metropolitan Transportation Commission, in the form of a Board resolution, demonstrating the commitment of TCP funds to the program. No changes were made to the project cost estimate, cash flow schedule, or revenue sources to be used.

More specifically, the following changes were made:

- Increased the amount of Measure RR funds overall to $448.4 million, and moved $29.4 million of the committed Measure RR funds from the non-CIG portion to the CIG portion of the plan;
- Moved $5.4 million of BART Capital Allocation funds from Budgeted/Planned to committed in CBTC to reflect actuals;
- Added $30.1 million in planned Transit and Intercity Rail Capital Program (TIRCP) Cap and Trade/funds and rebalanced between CBTC and Vehicles (planned funds);
- Removed $152.0 million of committed Transit Capital Priorities (TCP) fund from the CBTC and increased the planned funds by $49.1 million;
- Increased Regional Measure 3 by $50 million to reflect the current state of the expenditure plan in the state legislature;
- Removed $12.0 million in Budgeted/Planned BART Capital Allocation funds; and
- Minor modifications in the cash flow of Measure RR funds for system wide expenditures.

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Acronyms

AATC	Advanced Automatic Train Control Gran
BART	Bay Area Rapid Transit District
CBTC	Communications-Based Train Control
CE	Categorical Exclusion
CEQA	California Environmental Quality Act
CIG	Capital Investment Grant
CMA	Congestion Management Agency
CMAQ	Congestion Management and Air Quality Program
CPC	Capital Project Control
DBB	Design-Bid-Build
EDD	Executive Decision Document
FAST Act	Fixing America's Surface Transportation Act

FFGA	Full Funding Grant Agreement
FFR	Federal Financial Reports
FTA	Federal Transit Administration
HMC	Hayward Maintenance Complex
IT	Information Technology
kV AC	Thousand volts
MAP-21	Moving Ahead for Progress in the 21st Century Act
MTC	Metropolitan Transportation Commission
NCR	Non-Conformance Report
NEPA	National Environmental Policy Act
O&M	Operations and Maintenance
PM	Project Manager
PMCC	Program Management Coordination Committee
PMOC	Project Management Oversight Contractor
PMP	Program Management Plan or Project Management Plan
RM3	Regional Measure 3 – Bridge Tolls
RFI	Request For Information
RFP	Request For Proposal
ROW	Right-of -Way
SGR	State of Good Repair
SSWP	Site Specific Work Plan
STP	Surface Transportation Program
TCP	Transit Capital Priorities
TBT	Transbay Tube
TICRP	Cap and Trade/Transit and Intercity Rail Program
TPSS	Traction Power Substation
VTA	Santa Clara Valley Transportation Authority
YOE	Year of Expenditure

1.0 INTRODUCTION

1.1 Purpose of Financial Plan

This financial plan documents the financial capacity of the San Francisco Bay Area Rapid Transit District (BART) to implement the Transbay Corridor Core Capacity Program and to subsequently continue to operate the system as proposed. It also describes the agency's capital and operating programs.

The financial plan covers the entire Transbay Corridor Core Capacity Program, some of which is eligible for funding through the Federal Transit Administration (FTA) Capital Investment Grant (CIG) program as a Core Capacity project and some of which is not eligible for CIG funding. Where relevant, the particulars for the CIG-eligible parts of the program are presented separately from the full program.

This financial plan supports the BART's submittal to the FTA requesting a funding recommendation in the President's FY 2019 budget. As such, this financial plan updates the previous version, submitted as part of BART's request for Entry into Engineering, and demonstrates that 44.0 percent of the non-CIG funding is now committed. The project intends to be over 50 percent committed by July 1, 2018 when the California State Transportation Agency (CalSTA) Transit and Intercity Rail Capital Program (TIRCP) Cap and Trade 5-Year Program is adopted, which will be before the start of FY2019. BART will seek a commitment of $454 million from this program.

This plan has been developed in consideration of FTA's *Guidance for Transit Financial Plans* issued in June 2000 and subsequent guidance at New Starts workshops, as well as the *Guidelines and Standards for Assessing Local Financial Commitment*, issued by FTA in June, 2007, and *Final Interim Policy Guidance Capital Investment Grant Program,* issued by FTA in June 2016. Included in the plan is a review of BART's recent financial history and current financial condition, documentation of the projected capital and operating costs and proposed revenue sources for the Transbay Corridor Core Capacity Program and the background transit system, and review of the key assumptions underlying the cost and revenue projections.

The financial plan presented in this report contains the following:

- A summary of the program and program stakeholders
- Description of the financial forecasting methodology
- Assumptions and analyses of operating and capital sources and uses of funds
- An agency-wide 20-year forecast of operating and capital cash flows
- A discussion of risk factors that may affect the financial plan as well as sensitivity scenarios that analyze sample risks and the mitigation strategies to address them

- The Core Capacity Local Financial Commitment Checklist, Finance Template, and supporting documentation

All dollar figures in this financial plan are presented in year-of-expenditure (YOE) dollars, unless stated otherwise. Further, unless stated otherwise all figures are presented on the basis of the BART's fiscal year (FY), which runs from July 1st through June 30th.

1.2 Description of the Transbay Corridor Core Capacity Program

The BART system currently consists of 112 route miles of heavy rail transit serving 46 stations in San Francisco, in the East Bay, and on the Peninsula. An additional 10 route miles and 2 stations south of the Warm Springs station and an additional 10 miles and 2 stations east of Pittsburg /Bay Point are under construction. The existing system operates as five lines designated by different colors – Yellow, Green, Red, Orange and Blue. Four of these lines – all but the Orange Line – merge into a single double-track alignment connecting San Francisco and Oakland through the Transbay Tube.

The Transbay Corridor Core Capacity Program is a comprehensive and coordinated package of investments that will increase capacity between San Francisco and Oakland by more than 30 percent. The program will allow BART to operate 30 ten-car trains per hour on the main trunk of the existing system, between Daly City and the Oakland Wye, maximizing throughput in the most heavily used part of its system.

Substantial parts of the program are being advanced for funding under the Federal Transit Administration's Section 5309 Capital Investment Grant (CIG) program. These parts are further defined in Section 1.4.

The Metropolitan Transportation Commission (MTC) adopted an update to its Regional Transportation Plan, *Plan Bay Area 2040*, on July 26, 2017. The update includes the capital projects and service assumptions that make up the Transbay Corridor Core Capacity Program.

Figure 1-1 BART System Map

Program Elements

- Expansion of the rail car fleet by 306 new cars, sufficient to operate 30 regularly scheduled ten-car trains in each direction during the peak
- Expansion of the Hayward Maintenance Complex (HMC) to provide additional storage capacity for the vehicles to be acquired for the Transbay Corridor Core Capacity Program
- Train Control Modernization Project (TCMP) to convert to a communication-based train control (CBTC) system with the capacity to handle 30 trains per hour in each direction
- Added traction power facilities with the ability to support 30 ten-car trains per hour in each direction

1.3 Program Goals

BART currently operates a maximum of 23 trains per hour in the peak direction on the main trunk of the system, from the Oakland Wye to Daly City, with train lengths averaging 8.9 cars per train. Peak period peak direction trains are crowded, and the program goal is to reduce the level of crowding and allow for continued ridership growth. By increasing service between San Francisco and Oakland to 30 regularly scheduled ten-car trains per hour, seven more than currently operated, the program will increase peak hour capacity by more than 30 percent.
Table 1-1 lists the current and proposed train frequencies by line after the Transbay Corridor Core Capacity Program is implemented.

Table 1-1 Headways by Line

	Current Peak Period Frequency (minutes)	Peak Period Frequency after Transbay Corridor Core Capacity Program (minutes)
Yellow	7.5	6
Green	15	12
Red	15	12
Orange	15	12
Blue	15	12
Combined Transbay	2.5	2.0

1.4 Capital Investment Grant Eligible Portion of the Program

This financial plan presents a capital plan for the entire program and for that portion of the program that is considered to be eligible for Section 5309 Capital Investment Grant (CIG) funding. The limits of the CIG-eligible portion were initially proposed in a May 26, 2016 memorandum from BART's Duncan Watry to FTA's Joel Washington and Jeff Roux. FTA concurred in this assessment on August 1, 2016. BART subsequently amended its proposal in a March 16, 2017

email and memorandum from Duncan Watry to Joel Washington and Jeff Roux, and FTA concurred in these revised limits on March 20. The CIG-eligible scope portion is:

- 252 of the 306 additional vehicles
- HMC Phase 2
- Train control modernization from Millbrae/SFO to Downtown Berkeley, Rockridge and Bay Fair
- Five new traction power substations

The following sections provide further detail on the four program elements. Figure 1-2 displays the program.

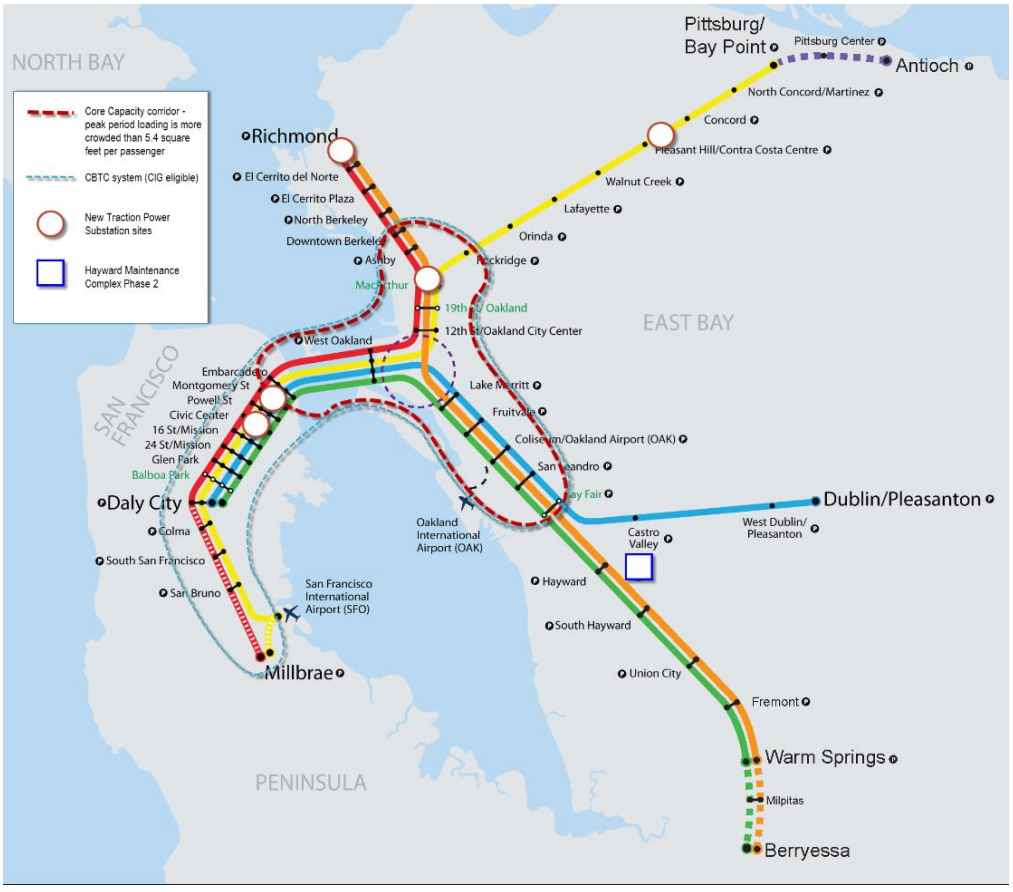


Figure 1-2. CIG Eligible Parts of the Program

1.4.1 306 Additional Vehicles

In order to achieve 30 regularly scheduled ten-car trains per hour service, BART will require a total fleet of 1,081 vehicles. BART currently has 775 new rail vehicles on order, which will allow for the complete replacement of its aged fleet of 669 vehicles and an expansion of the fleet by 106

vehicles. When this order is completed, BART will need 306 more vehicles to achieve the total requirement of 1,081. These 306 will need to be fully compatible with the 775 now on order. Of the 306 additional cars required, 252 are needed for BART to increase frequencies and operate ten-car trains on the four lines (Red, Blue, Green and Yellow) that operate through the Transbay Tube. These 252 cars are considered to be CIG-eligible. The remaining 54 are to increase capacity on the Orange Line, which does not operate through the Transbay Tube, and which are not considered to be CIG-eligible.

1.4.2 Hayward Maintenance Complex Phase 2

The current storage capacity across all BART's yards and tail tracks is 893 vehicles. To accommodate the additional 306 new vehicles, and to maintain functional yards with room to properly marshal trains, BART will construct HMC Phase 2 to provide storage for 25 ten-car trains, or 250 additional rail vehicles. The yard will be constructed with access to the existing yard and electrified such that it may serve as a fully operational vehicle storage facility. The HMC offers the only practical site to expand storage on the BART system to accommodate the additional cars that are part of the Transbay Corridor Core Capacity Program. HMC Phase 2 provides for additional storage capacity only. The entire HMC Phase 2 is considered to be CIG-eligible. Added maintenance capacity will be provided by the HMC Phase 1 project, which is separately funded and outside the scope of the Transbay Corridor Core Capacity Program.

1.4.3 Train Control Modernization Project (TCMP)

BART's Train Control Modernization Project (TCMP) will replace the existing train control systems with a new communication-based train control (CBTC) system, allowing BART to achieve the shorter headways needed to operate 30 regularly scheduled trains per hour on the trunk line between Daly City and the Oakland Wye. The new CBTC system will be based on a moving-block signaling approach throughout the existing 112-mile system plus the Berryessa extension south of Warm Spring now under construction. The new CBTC system will be installed within or adjacent to the existing BART trackway and wayside facilities. Existing signaling equipment will be overlaid with the most current electronics, software, computer systems, and cabling. New zone controllers, interlocking controllers and wayside radios transponder tags will be installed throughout the trackside alignment, train control rooms and central control facilities. Cars and maintenance vehicles will be outfitted with processor based controllers, transponders, communication equipment and location sensors.

Installation activities will include trenching for new cabling, concrete pads for electronic equipment along the trackway, as well as new racks, servers, computers, communication equipment and cable trays within the wayside train control rooms and central control facilities. These activities will take place within existing BART right-of-way.

BART has developed a nine-phase implementation program that will begin by testing CBTC equipment on a test track. Once the CBTC equipment has been sufficiently proven on the test track, CBTC will be implemented along the mainline tracks in phases. From an analysis of peer

systems, BART has determined that installation of CBTC should begin on a segment that does not carry the most frequent service on the system, in order to resolve any possible technical issues before proceeding with installation on busier parts of the system, such as the Transbay Tube. The final phasing for implementation of CBTC will be determined by the design-build contractor BART retains to deliver the CBTC system. BART can increase the scheduled frequencies through the Transbay Tube once CBTC is implemented between Daly City and the Oakland Wye. As shown in **Error! Reference source not found.**, the CIG-eligible part of the CBTC system extends from Millbrae and SFO on the Peninsula to Downtown Berkeley, Rockridge, and Bay Fair in the East Bay.

1.4.4 New Traction Power Substations

Traction power substations (TPSS) provide the electricity to run BART trains on the main lines, storage tracks, and yard and shop tracks. These substations transform 34.5 kV AC to 1,000 V DC for distribution through BART's electrified third rail. More frequent trains, newer and heavier vehicles, and the train performance profiles made possible by CBTC will put added loads on BART's existing traction power system.

BART has conducted simulations to assess the electrical power requirements associated with increasing service on the trunk line between Daly City and the Oakland Wye, with continuing service at increased frequencies on each of the branches. The simulation assumed 30 trains per hour on the trunk line, the electrical draw profile of BART's new vehicles, as well as the performance profile of the new CBTC system necessary to operate trains this frequently. The simulation revealed five locations where the traction power requirement for the higher-frequency service exceeds the capacity available from BART's existing traction power system, and where the installation of new traction power substations will be required:

1. Richmond – RYE Gap Breaker Conversion
2. Pleasant Hill – David Avenue and Minert Road
3. Oakland – Vicinity of MacArthur Station
4. Downtown San Francisco – Civic Center Station
5. Downtown San Francisco – Montgomery Station

All five (plus a sixth TPSS to be installed as part of HMC Phase 2) are considered to be CIG-eligible.

Typical TPSS facilities contain electrical equipment housed in pre-fabricated metal enclosures of rectangular shape approximately 12 feet in height, 40 feet wide, and 60 feet long. Construction will include site preparation, trenching and excavation, concrete foundation, installing new feeder cables to existing contact rail, installing new vaults and resurfacing. The enclosures will be gated and secured, and public access will be restricted.

BART is also undertaking a major replacement and upgrading of the existing traction power system, aimed at returning the traction power system to a state of good repair. While distinct from the Transbay Corridor Core Capacity Program in terms of purpose and funding, the replacement and upgrade will occur concurrently with the Transbay Corridor Core Capacity Program, requiring close coordination.

1.5 Program Funding Partners

The implementation of BART's Transbay Corridor Core Capacity Program will involve funding from a number of federal, state and local partners, who are introduced in this section.

1.5.1 Bay Area Rapid Transit District

The Bay Area Rapid Transit District (BART) owns and operates a heavy-rail rapid transit system serving the San Francisco Bay Area. The system connects San Francisco with cities in the East Bay, suburbs in northern San Mateo County, Oakland and SFO. BART was created in 1957 by the California State Legislature in response to Bay Area growth and transportation needs. It began service in 1972.

BART operates five fixed-route rail lines in Alameda, Contra Costa, San Francisco, and San Mateo counties, as shown in Figure 1-1, and carries more than 430,000 riders on a typical weekday. The route structure and the current and planned service levels were described in Section 1.1.

To comply with Americans with Disabilities Act (ADA) requirement, BART has financial and administrative agreements with other transit operators to provide paratransit service comparable and complementary to the BART system.

Several Bay Area bus operators provide connecting (or "feeder") service to BART. Most of the funding is paid with BART's share of State Transit Assistance (STA) funds allocated by MTC, and the rest comes from BART's operating budget.

1.5.2 State of California

The State of California provides funds to BART. The state's Traffic Congestion Relief Program (administered by the California Transportation Commission) and Proposition 1B (administered by Caltrans) direct capital funds to BART in addition to the state's other funding programs, including State Transit Assistance (STA); Proposition 42's dedication of state taxes to transportation, Transit and Intercity Rail Capital Program/Cap and Trade; and AB434 Transportation Fund for Clean Air.

1.5.3 Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, financing and coordinating agency for the nine-county San Francisco Bay Area. The Commission's work is guided by a 21-member policy board. MTC is responsible for updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle and pedestrian facilities. The plan is updated every four years. MTC's current RTP, known as *Plan Bay Area 2040*, was adopted July 26, 2017 and includes all of the Transbay Corridor Core Capacity Program within the fiscally constrained plan. As the designated recipient of federal transit formula funds in the Bay Area, MTC administers funding from several federal programs to the region's transit agencies. In

addition, the Commission is a programming agent for several state transit grant programs including State Transit Assistance.

1.5.4 Federal Transit Administration

The Federal Transit Administration (FTA) provides formula and discretionary grants to state and local governments to support capital investments in public transportation. One of the discretionary programs is the Section 5309 Capital Investment Grant (CIG) program which funds New Starts, Small Starts, and Core Capacity projects. Core Capacity projects are substantial corridor-based capital investments in existing fixed guideway systems that increase capacity by not less than 10 percent in corridors that are at capacity today or will be within five years.

The CIG program was authorized in the Fixing America's Surface Transportation (FAST) Act of 2015 at $2.3 billion per year through federal FY2020. Federal funding commitments are made on a discretionary basis via multi-year Full Funding Grant Agreements (FFGA), and are subject to annual appropriations by Congress. Projects must meet statutory requirements for project justification and local financial commitment, and must be deemed to be ready for a funding commitment.

BART is requesting a total of $1,250 million in capital funding from FTA's CIG program, representing 46.1 percent of the total CIG-eligible project cost.

1.5.5 San Francisco County Transportation Authority

The San Francisco Country Transportation Authority (Transportation Authority) was created in 1989 and is responsible for long-range transportation planning for the city. The Transportation Authority funds improvements for San Francisco's roadway and public transportation systems.

As the Congestion Management Agency (CMA) for San Francisco, the San Francisco County Transportation Authority is responsible for developing and adopting a Congestion Management Program (CMP) for San Francisco on a biennial basis. The CMP is the principal policy and technical document that guides the Transportation Authority's CMA activities and demonstrates conformity with congestion management law.

The Transportation Authority sales tax, Proposition K, is expected to be presented to voters again in San Francisco County in 2018 for reauthorization. The Measure would authorize $100 million for rail vehicles that are part of BART's Core Capacity Program.

1.5.6 Alameda County Transportation Commission

The mission of the Alameda County Transportation Commission (Alameda CTC) is to plan, fund and deliver transportation programs and projects that expand access and improve mobility to foster a vibrant and livable Alameda County.

As the congestion management agency for Alameda County, Alameda CTC develops and updates the legislatively required CMP, a plan that describes the strategies to assess,

monitor and improve the performance of the county's multimodal transportation system; address congestion; and ultimately protect the environment with strategies to help reduce greenhouse gas emissions.

The Alameda County sales tax, Measure BB, was passed by voters in Alameda County in 2014. Alameda CTC will consider amending the current expenditure plan to reallocate $100 million from other projects to rail vehicles that are part of BART's Core Capacity Program.

1.5.7 Contra Costa Transportation Authority

The Contra Costa Transportation Authority (CCTA) is a public agency formed by Contra Costa County voters in 1988 to manage the county's transportation sales tax program and to do countywide transportation planning.

CCTA is responsible for maintaining and improving the county's transportation system by planning, funding, and delivering critical transportation infrastructure projects and programs that connect our communities, foster a strong economy, increase sustainability, and safely and efficiently get people where they need to go. CCTA is also the county's designated CMA, responsible for putting programs in place to keep traffic levels manageable.

A Contra Costa sales tax is expected to be presented to voters in Contra Costa County in 2018 or 2020. The Measure would authorize $100 million for rail vehicles that are part of BART's Core Capacity Program.

1.5.8 Santa Clara Valley Transportation Authority

Santa Clara Valley Transportation Authority (VTA) is an independent special district that provides bus, light rail, and paratransit services within Santa Clara County. It also participates as a funding partner in regional rail service including Caltrain, Capital Corridor, and the Altamont Corridor Express. As the county's CMA, VTA is responsible for countywide transportation planning, including congestion management, design and construction of specific highway, pedestrian, and bicycle improvement projects, as well as promotion of transit oriented development.

VTA has committed to funding that portion of the Train Control Modernization Project that will lie within Santa Clara County. Some $111.8 million in VTA funds are anticipated for this purpose over the next 10 years. VTA will also pay for the added operating and maintenance costs that result from shortening BART headways within Santa Clara County.

2.0 CAPITAL PLAN

This chapter presents the capital plan for the Transbay Corridor Core Capacity Program. The capital plan reflects the program's estimated cost and schedule at the conclusion of Project Development and includes anticipated funding sources, amounts anticipated from each source, and the level of commitment of non-federal sources. All revenue and cost assumptions presented are as delineated in the BART Operating and Capital Plan for FY2017 to FY2036 prepared for this Financial Plan. (Additional details are provided in Appendix D, List of Supporting Documents, Section P-2.) The Operating and Capital Plan is a derivative of the 2017 Short Range Transit Plan (SRTP). Approved July 24, 2017, and Capital Improvement Program (CIP) and reflects changes to be implemented through this Financial Plan. (Additional details are provided in Appendix D, List of Supporting Documents, Section J-1.)

For the purpose of this capital plan, the BART system consists of the existing 112-mile system plus the extensions now under construction, as described in Section 1.2. Possible future extensions, such as VTA's proposed extension to downtown San Jose and Santa Clara, are not included.

2.1 Proposed Project Capital Plan

2.1.1 Capital Cost and Schedule

The capital costs assumed in this financial plan are based on the estimates documented in the Capital Cost Methodology and Estimate Report (April 2017). The cost estimate includes approximately 30 percent in allocated and unallocated contingencies (measured as a percentage of 2017 base year dollar costs without contingency). The total Transbay Corridor Core Capacity Program's total capital cost excluding financing costs is estimated to be $3,407.2 million (YOE dollars). The CIG-eligible capital cost excluding financing costs is estimated to be $2,606.1 million (YOE dollars). Table 2-1 presents the CIG-eligible and the CIG-ineligible part of the cost for each project element within the Transbay Corridor Core Capacity Program. Roughly 77 percent of the program is CIG-eligible. Details about the financing assumptions are provided in Section 2.1.4.

Table 2-1. Core Capacity Program Costs (CIG-eligible vs CIG-ineligible) (YOE$ Millions)

	Total Program Cost	CIG-eligible Cost	CIG-ineligible Costs
Vehicles	1,618.4	1,333.8	284.7
Communication Based Train Control	1,150.5	707.4	443.1
Hayward Maintenance Center Phase II	228.0	228.0	-
Traction Power	94.0	94.0	-
Program Management	6.6	6.3	0.3
Program Contingency	309.7	236.6	73.1
Total (without financing)	**3,407.2**	**2,606.1**	**801.1**
Financing Costs	103.5	103.5	-
Total	**3,510.7**	**2,709.5**	**801.1**

The full program and the CIG-eligible portion of the capital cost, expenditures by year, and schedule are presented in Table 2-2, Table 2-3, and Table 2-4. For that portion of the program that is considered to be CIG eligible, expenditures by year and schedule are presented in Table 2-7 and Table 2-8. The tables are presented in FTA's Standard Cost Categories Workbook format.

Table 2-2 Program and CIG-eligible Capital Cost

MAIN WORKSHEET-BUILD ALTERNATIVE (Rev.19, June 2017)

BAY AREA RAPID TRANSIT DISTRICT — Today's Date: **5/10/17**

TRANSBAY CORRIDOR CORE CAPACITY PROGRAM — Yr of Base Year $: 2017

PROJECT DEVELOPMENT — Yr of Revenue Ops: 2026

	Quantity	Base Year Dollars w/o Contingency (CC+SGR) (X000)	Base Year Dollars Allocated Contingency (CC+SGR) (X000)	Total Base Year Dollars (CC+SGR) (X000)	Core Capacity % (excluding SGR) Base Year	Core Capacity % (excluding SGR) YOE	Base Year Dollars w/o Allocated Contingency (CC Only)	Base Year Dollars Allocated Contingency (CC Only)	Total Base Year Dollars (CC Only)	Total Base Year Dollars Percentage of Construction Cost	Total Base Year Dollars Percentage of Total Project Cost	Base Year Dollars (Core Capacity Only) Percentage of Total Project Cost	YOE Dollars (CC+SGR) (X000)	YOE Dollars (Core Capacity Only)
10 GUIDEWAY & TRACK ELEMENTS (route miles)	**1.25**	31,024	9,312	40,336	100%	100%	31,024	9,312	40,336	**4%**	**1%**	**1%**	**45,290**	**45,290**
10.01 Guideway: At-grade exclusive right-of-way	1.00	743	186	929	100%		743	186	929				1,043	**1,043**
10.02 Guideway: At-grade semi-exclusive (allows cross-traffic)				0			0	0	0				0	**0**
10.03 Guideway: At-grade in mixed traffic				0			0	0	0				0	**0**
10.04 Guideway: Aerial structure	0.25	10,319	3,612	13,931	100%		10,319	3,612	13,931				15,642	**15,642**
10.05 Guideway: Built-up fill				0			0	0	0				0	**0**
10.06 Guideway: Underground cut & cover				0			0	0	0				0	**0**
10.07 Guideway: Underground tunnel				0			0	0	0				0	**0**
10.08 Guideway: Retained cut or fill				0			0	0	0				0	**0**
10.09 Track: Direct fixation		498	174	673	100%		498	174	673				755	**755**
10.10 Track: Embedded				0			0	0	0				0	**0**
10.11 Track: Ballasted		11,965	3,207	15,172	100%		11,965	3,207	15,172				17,035	**17,035**
10.12 Track: Special (switches, turnouts)		7,499	2,134	9,633	100%		7,499	2,134	9,633				10,816	**10,816**
10.13 Track: Vibration and noise dampening				0			0	0	0				0	**0**
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	**0**	0	0	0		0%	0	0	0	**0%**	**0%**	**0%**	**0**	**0**
20.01 At-grade station, stop, shelter, mall, terminal, platform				0			0	0	0				0	**0**
20.02 Aerial station, stop, shelter, mall, terminal, platform				0			0	0	0				0	**0**
20.03 Underground station, stop, shelter, mall, terminal, platform				0			0	0	0				0	**0**
20.04 Other stations, landings, terminals: Intermodal, ferry, trolley, etc.				0			0	0	0				0	**0**
20.05 Joint development				0			0	0	0				0	**0**
20.06 Automobile parking multi-story structure				0			0	0	0				0	**0**
20.07 Elevators, escalators				0			0	0	0				0	**0**
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	1.25	5,767	1,442	7,209	100%	100%	5,767	1,442	7,209	**1%**	**0%**	**0%**	**8,094**	**8,094**
30.01 Administration Building: Office, sales, storage, revenue counting				0			0	0	0				0	**0**
30.02 Light Maintenance Facility				0			0	0	0				0	**0**
30.03 Heavy Maintenance Facility				0			0	0	0				0	**0**
30.04 Storage or Maintenance of Way Building	1	1,431	358	1,788	100%		1,431	358	1,788				2,008	**2,008**
30.05 Yard and Yard Track	1	4,336	1,084	5,420	100%		4,336	1,084	5,420				6,086	**6,086**
40 SITEWORK & SPECIAL CONDITIONS	1.25	25,481	6,523	32,004	100%	100%	25,481	6,523	32,004	**3%**	**1%**	**1%**	**36,135**	**36,135**
40.01 Demolition, Clearing, Earthwork		4,292	1,081	5,373	100%		4,292	1,081	5,373				6,067	**6,067**
40.02 Site Utilities, Utility Relocation		5,464	1,366	6,829	100%		5,464	1,366	6,829				7,711	**7,711**
40.03 Haz. mat'l, contam'd soil removal/mitigation, ground water treatments				0			0	0	0				0	**0**
40.04 Environmental mitigation, e.g. wetlands, historic/archeologic, parks				0			0	0	0				0	**0**
40.05 Site structures including retaining walls, sound walls		10,419	2,605	13,024	100%		10,419	2,605	13,024				14,705	**14,705**
40.06 Pedestrian / bike access and accommodation, landscaping				0			0	0	0				0	**0**
40.07 Automobile, bus, van accessways including roads, parking lots				0			0	0	0				0	**0**
40.08 Temporary Facilities and other indirect costs during construction		5,306	1,471	6,778	100%		5,306	1,471	6,778				7,653	**7,653**
50 SYSTEMS	1.25	848,418	215,223	1,063,641	69%	66%	581,291	147,459	728,750	**93%**	**37%**	**25%**	**1,265,614**	**839,878**
50.01 Train control and signals		765,615	193,987	959,602	65%		498,424	126,288	624,712				1,141,820	**757,727**
50.02 Traffic signals and crossing protection				0			0	0	0				0	**0**
50.03 Traction power supply: substations		57,079	14,575	71,653	100%		57,079	14,575	71,653				85,260	**56,579**
50.04 Traction power distribution: catenary and third rail		11,627	3,137	14,764	100%		11,627	3,137	14,764				17,567	**11,658**
50.05 Communications		14,097	3,524	17,621	100%		14,097	3,524	17,621				20,967	**13,914**
50.06 Fare collection system and equipment				0			0	0	0				0	**0**
50.07 Central Control				0									0	**0**
Construction Subtotal (10 - 50)	1.25	910,690	232,500	1,143,190			643,563	164,737	808,300	**100%**	**39%**	**28%**	**1,355,134**	**929,398**
60 ROW, LAND, EXISTING IMPROVEMENTS	1.25	0	0	0		0%	0	0	0		**0%**	**0%**	**0**	**0**
60.01 Purchase or lease of real estate				0			0	0	0				0	**0**
60.02 Relocation of existing households and businesses				0			0	0	0				0	**0**
70 VEHICLES (number)	**306**	1,157,071	148,658	1,305,729	82%	82%	953,542	122,509	1,076,051		**4%**	**37%**	**1,618,449**	**1,333,764**
70.01 Light Rail				0			0	0	0				0	**0**
70.02 Heavy Rail	306	1,115,474	143,212	1,258,685	82%		919,286	118,024	1,037,310				1,560,138	**1,285,710**
70.03 Commuter Rail	0	0	0	0			0	0	0				0	**0**
70.04 Bus	0	0	0	0			0	0	0				0	**0**
70.05 Other	0	0	0	0			0	0	0				0	**0**
70.06 Non-revenue vehicles	0	0	0	0			0	0	0				0	**0**
70.07 Spare parts	0	41,597	5,446	47,043	82%		34,257	4,485	38,742				58,310	**48,053**
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	1.25	97,510	16,471	113,981	85%	86%	82,508	13,937	96,445	**10%**	**4%**	**3%**	**123,910**	**106,324**
80.01 Project Development		32,277	0	32,277	46%		14,740	0	14,740				35,088	**30,108**
80.02 Engineering		5,435	0	5,435	100%		5,435	0	5,435				5,908	**5,069**
80.03 Project Management for Design and Construction		59,274	16,340	75,614	100%		59,274	16,340	75,614				82,200	**70,534**
80.04 Construction Administration & Management		525	131	657	100%		525	131	657				714	**613**
80.05 Professional Liability and other Non-Construction Insurance		0	0	0			0	0	0				0	**0**
80.06 Legal; Permits; Review Fees by other agencies, cities, etc.		0	0	0			0	0	0				0	**0**
80.07 Surveys, Testing, Investigation, Inspection		0	0	0			0	0	0				0	**0**
80.08 Start up		0	0	0			0	0	0				0	**0**
Subtotal (10 - 80)	1.25	2,165,271	397,629	2,562,900			1,679,614	301,182	1,980,796		**47%**	**68%**	**3,097,492**	**2,369,485**
90 UNALLOCATED CONTINGENCY				255,669		76%			197,484				**309,718**	**236,587**
Subtotal (10 - 90)	1.25			2,818,569					2,178,280				**3,407,211**	**2,606,072**
100 FINANCE CHARGES (CC Only)				81,084		100%			81,084				**103,450**	**103,450**
Total Project Cost (10 - 100)	1.25			2,899,653					2,259,364				**3,510,661**	**2,709,523**

Table 2-3 Program Expenditure by Year

INFLATION WORKSHEET (Rev.18, May 2016)

BAY AREA RAPID TRANSIT DISTRICT **4/27/17**

TRANSBAY CORRIDOR CORE CAPACITY PROGRAM 2017

PROJECT DEVELOPMENT 2025

BASE YEAR DOLLARS (X$000)	Base Yr (CC+SGR) Dollars	Double-Check Total (CC+SGR)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
10 GUIDEWAY & TRACK ELEMENTS (route miles)	40,336	40,336	0	0	0	0	0	0	0	0	0	0	0	0	0	4,034	12,101	12,101	8,067	4,034	0	0	0	0	0	0	0	0	0	0	0	0	0
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	7,209	7,209	0	0	0	0	0	0	0	0	0	0	0	0	0	721	2,163	2,163	1,442	721	0	0	0	0	0	0	0	0	0	0	0	0	0
40 SITEWORK & SPECIAL CONDITIONS	32,004	32,004	0	0	0	0	0	0	0	0	0	0	0	0	0	3,453	8,870	8,682	6,045	3,409	773	773	0	0	0	0	0	0	0	0	0	0	0
50 SYSTEMS	1,063,641	1,063,641	0	0	0	0	0	0	0	0	0	0	0	0	0	121,384	122,536	143,275	144,125	143,610	115,660	106,439	62,416	39,799	28,662	24,176	11,558	0	0	0	0	0	0
60 ROW, LAND, EXISTING IMPROVEMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 VEHICLES (number)	1,305,729	1,305,729	0	0	0	0	0	0	0	0	0	0	0	50	1,893	5,631	7,231	141,408	84,560	46,679	294,077	524,493	171,196	7,074	6,248	6,319	8,870	0	0	0	0	0	0
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	113,981	113,981	0	0	0	0	0	0	0	904	1,586	3,472	5,718	10,528	20,399	14,552	13,855	13,379	13,360	12,734	1,747	1,747	0	0	0	0	0	0	0	0	0	0	0
90 UNALLOCATED CONTINGENCY	255,669	255,669	0	0	0	0	0	0	0	0	0	0	0	0	0	14,459	17,741	33,159	26,362	21,523	42,405	63,389	23,361	4,687	3,491	3,049	2,043	0	0	0	0	0	0
100 FINANCE CHARGES (CC Only)	81,084	81,084	0	0	0	0	0	0	0	0	0	0	0	0	0	1,338	5,198	5,046	4,899	6,713	10,315	10,015	9,723	9,440	7,454	5,518	3,632	1,793	0	0	0	0	0
Total Project Cost (10 - 100)	2,899,653	2,899,653	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**904**	**1,586**	**3,472**	**5,718**	**10,578**	**22,293**	**165,572**	**189,695**	**359,212**	**288,860**	**239,422**	**464,977**	**706,855**	**266,696**	**61,000**	**45,855**	**39,062**	**26,103**	**1,793**	**0**	**0**	**0**	**0**	**0**
Inflation Rate			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.035
Compounded Inflation Factor			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.762
YEAR OF EXPENDITURE DOLLARS (X$000)	YOE Dollars (CC+SGR)		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
10 GUIDEWAY & TRACK ELEMENTS (route miles)	45,290		0	0	0	0	0	0	0	0	0	0	0	0	0	4,279	13,223	13,620	9,352	4,816	0	0	0	0	0	0	0	0	0	0	0	0	0
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	8,094		0	0	0	0	0	0	0	0	0	0	0	0	0	765	2,363	2,434	1,671	861	0	0	0	0	0	0	0	0	0	0	0	0	0
40 SITEWORK & SPECIAL CONDITIONS	36,135		0	0	0	0	0	0	0	0	0	0	0	0	0	3,663	9,693	9,771	7,008	4,071	950	979	0	0	0	0	0	0	0	0	0	0	0
50 SYSTEMS	1,265,614		0	0	0	0	0	0	0	0	0	0	0	0	0	128,777	133,899	161,258	167,080	171,478	142,248	134,834	81,438	53,486	39,675	34,469	16,973	0	0	0	0	0	0
60 ROW, LAND, EXISTING IMPROVEMENTS	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 VEHICLES (number)	1,618,449		0	0	0	0	0	0	0	0	0	0	0	50	1,950	5,974	7,902	159,156	98,028	55,737	361,678	664,412	223,372	9,507	8,648	9,009	13,026	0	0	0	0	0	0
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	123,910		0	0	0	0	0	0	0	904	1,586	3,472	5,718	10,528	21,011	15,438	15,140	15,058	15,488	15,206	2,149	2,213	0	0	0	0	0	0	0	0	0	0	0
90 UNALLOCATED CONTINGENCY	309,718		0	0	0	0	0	0	0	0	0	0	0	0	0	15,339	19,386	37,321	30,561	25,700	52,153	80,299	30,481	6,299	4,832	4,348	3,000	0	0	0	0	0	0
100 FINANCE CHARGES (CC Only)	103,450		0	0	0	0	0	0	0	0	0					1,420	5,680	5,680	5,680	8,015	12,686	12,686	12,686	12,686	10,318	7,868	5,334	2,712	0	0	0	0	0
Total Project Cost (10 - 100)	3,510,661		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**904**	**1,586**	**3,472**	**5,718**	**10,578**	**22,962**	**175,655**	**207,285**	**404,297**	**334,867**	**285,883**	**571,863**	**895,423**	**347,978**	**81,979**	**63,474**	**55,694**	**38,333**	**2,712**	**0**	**0**	**0**	**0**	**0**

Table 2-4 Program Schedule

SCHEDULE (Rev.19, June 2017)		
BAY AREA RAPID TRANSIT DISTRICT	Today's Date	**5/10/17**
TRANSBAY CORRIDOR CORE CAPACITY PROGR	Yr of Base Year $	2017
PROJECT DEVELOPMENT	Yr of Revenue Ops	2026

Insert comments, notes, etc.	Start Date	End Date
Project Development	08/28/15	08/28/17
Design		
Develop cost estimate, schedule, ridership forecast		
Conduct reviews		
Develop NEPA document (DCE/EA/FEIS) and receive determination (CE/FONSI/ROD)		
Submit request / receive FTA approval to enter Engineering		
Engineering	08/29/17	01/03/19
Develop the contract documents for the Build Alternative		
Advertise CBTC RFP		
Advertise 306 Vehicle Procurement		
Conduct reviews		
Submit for Recommendation in FY19 Budget		
Submit request / receive FTA approval for LONP		
Submit request / receive FTA approval for FFGA		
TPSS Design		
TPSS Contract Procurement		
HMC Design		
Construction	01/04/19	09/29/28
NTP HMC Phase 2 Construction Contractor		
NTP CBTC supplier		
CBTC Phase 1		
CBTC Phase 2		
CBTC Phase 3		
CBTC Phase 4		
CBTC Implemented through Transbay Tube		
CBTC Phase 5		
CBTC Phase 6		
CBTC Phase 7		
CBTC Phase 8		
CBTC Phase 9		
Procure Vehicle Manufacturer		
Vehicle Pilot Testing	10/07/19	11/20/24
Manufacture and Deliver 306 Vehicles	11/21/24	11/13/26
Construct fixed infrastructure HMC	01/04/19	10/16/20
Construct fixed infrastructure TPSS	11/08/19	03/16/22
Revenue Ops / Closeout of Project	03/07/25	09/29/28
TPSS Closeout		
HMC Electrication and Commissioning		
Revenue Operations		
Before and After Study: Two years post Rev Ops		
Completion of project close-out, resolution of claims		

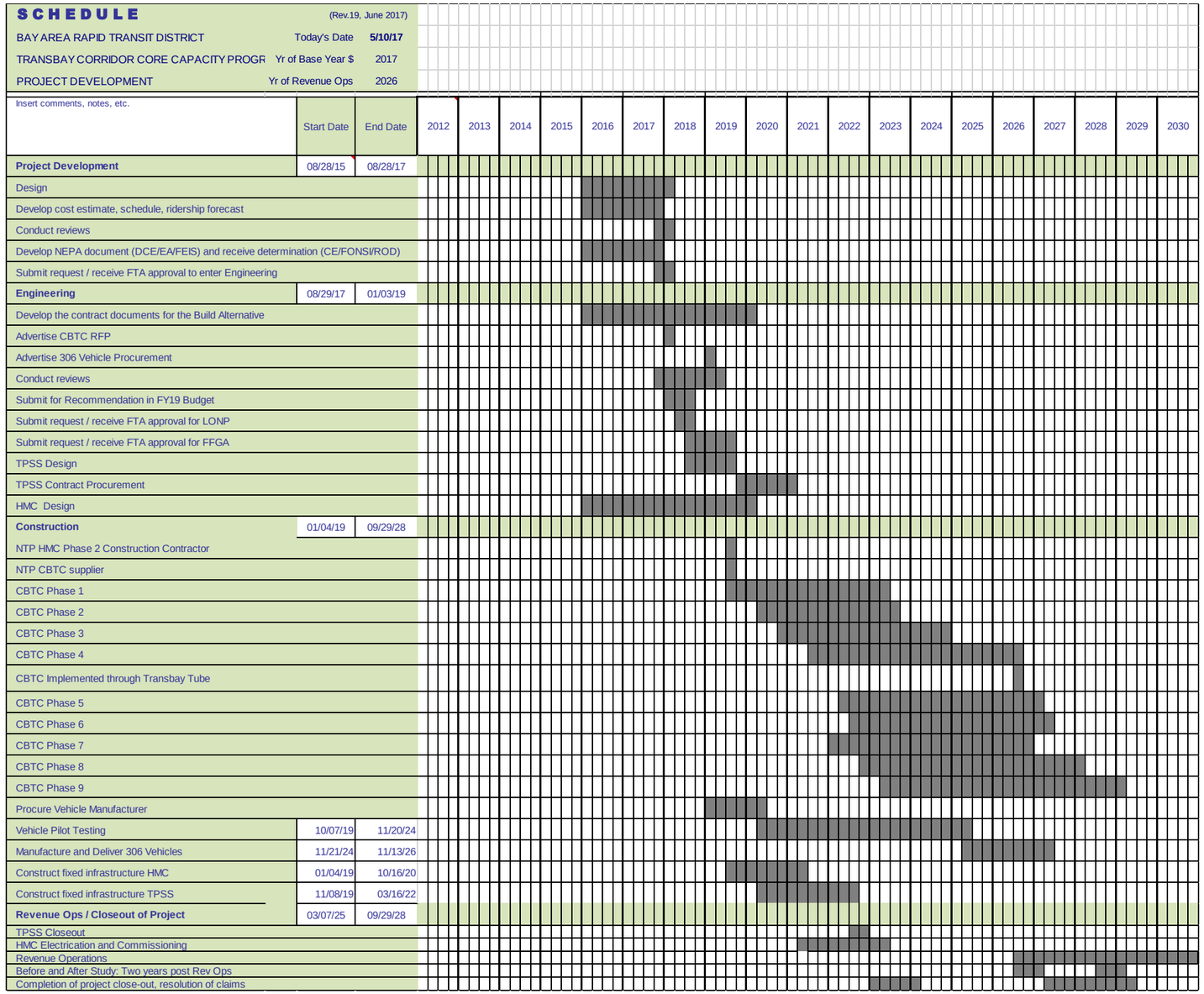


Table 2-5 CIG-eligible Expenditure by Year

INFLATION WORKSHEET (Rev.18, May 2016)

BAY AREA RAPID TRANSIT DISTRICT **3/13/17**

TRANSBAY CORRIDOR CORE CAPACITY PROGRAM 2017

PROJECT DEVELOPMENT 2025

BASE YEAR DOLLARS (X$000)	Base Yr (CC+SGR) Dollars	Double-Check Total (CC+SGR)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
10 GUIDEWAY & TRACK ELEMENTS (route miles)	40,336	40,336	0	0	0	0	0	0	0	0	0	0	0	0	0	4,034	12,101	12,101	8,067	4,034	0	0	0	0	0	0	0	0	0	0	0	0	0
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	7,209	7,209	0	0	0	0	0	0	0	0	0	0	0	0	0	721	2,163	2,163	1,442	721	0	0	0	0	0	0	0	0	0	0	0	0	0
40 SITEWORK & SPECIAL CONDITIONS	32,004	32,004	0	0	0	0	0	0	0	0	0	0	0	0	0	3,453	8,870	8,682	6,045	3,409	773	773	0	0	0	0	0	0	0	0	0	0	0
50 SYSTEMS	728,750	728,750	0	0	0	0	0	0	0	0	0	0	0	0	0	89,292	104,516	134,892	141,548	137,296	66,491	54,716	0	0	0	0	0	0	0	0	0	0	0
60 ROW, LAND, EXISTING IMPROVEMENTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 VEHICLES (number)	1,076,051	1,076,051	0	0	0	0	0	0	0	0	0	0	0	41	1,560	4,640	5,959	116,534	69,686	38,468	242,349	432,235	141,083	5,830	5,149	5,207	7,310	0	0	0	0	0	0
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	96,445	96,445	0	0	0	0	0	0	0	0	0	0	472	5,864	18,735	14,552	13,855	13,379	13,360	12,734	1,747	1,747	0	0	0	0	0	0	0	0	0	0	0
90 UNALLOCATED CONTINGENCY	197,484	197,484	0	0	0	0	0	0	0	0	0	0	0	0	0	11,225	15,786	29,726	24,387	19,497	31,311	49,095	14,108	583	515	521	731	0	0	0	0	0	0
100 FINANCE CHARGES (CC Only)	81,084	81,084	0	0	0	0	0	0	0	0	0	0	0	0	0	1,338	5,198	5,046	4,899	6,713	10,315	10,015	9,723	9,440	7,454	5,518	3,632	1,793	0	0	0	0	0
Total Project Cost (10 - 100)	2,259,364	2,259,364	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**472**	**5,905**	**20,295**	**129,256**	**168,447**	**322,522**	**269,435**	**222,871**	**352,985**	**548,580**	**164,914**	**15,852**	**13,117**	**11,246**	**11,673**	**1,793**	**0**	**0**	**0**	**0**	**0**
Inflation Rate			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.035
Compounded Inflation Factor			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.762

YEAR OF EXPENDITURE DOLLARS (X$000)	YOE Dollars (CC+SGR)		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
10 GUIDEWAY & TRACK ELEMENTS (route miles)	45,290		0	0	0	0	0	0	0	0	0	0	0	0	0	4,279	13,223	13,620	9,352	4,816	0	0	0	0	0	0	0	0	0	0	0	0	0
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS	8,094		0	0	0	0	0	0	0	0	0	0	0	0	0	765	2,363	2,434	1,671	861	0	0	0	0	0	0	0	0	0	0	0	0	0
40 SITEWORK & SPECIAL CONDITIONS	36,135		0	0	0	0	0	0	0	0	0	0	0	0	0	3,663	9,693	9,771	7,008	4,071	950	979	0	0	0	0	0	0	0	0	0	0	0
50 SYSTEMS	839,878		0	0	0	0	0	0	0	0	0	0	0	0	0	94,730	114,207	151,822	164,093	163,939	81,775	69,312	0	0	0	0	0	0	0	0	0	0	0
60 ROW, LAND, EXISTING IMPROVEMENTS	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 VEHICLES (number)	1,333,764		0	0	0	0	0	0	0	0	0	0	0	41	1,607	4,923	6,512	131,161	80,785	45,933	298,059	547,542	184,081	7,835	7,127	7,424	10,735	0	0	0	0	0	0
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)	106,324		0	0	0	0	0	0	0	0	0	0	472	5,864	19,297	15,438	15,140	15,058	15,488	15,206	2,149	2,213	0	0	0	0	0	0	0	0	0	0	0
90 UNALLOCATED CONTINGENCY	236,587		0	0	0	0	0	0	0	0	0	0	0	0	0	11,909	17,249	33,456	28,272	23,280	38,508	62,192	18,408	783	713	742	1,073	0	0	0	0	0	0
100 FINANCE CHARGES (CC Only)	103,450		0	0	0	0	0	0	0	0	0	0				1,420	5,680	5,680	5,680	8,015	12,686	12,686	12,686	12,686	10,318	7,868	5,334	2,712					
Total Project Cost (10 - 100)	2,709,523		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**472**	**5,905**	**20,904**	**137,127**	**184,067**	**363,001**	**312,349**	**266,120**	**434,127**	**694,925**	**215,176**	**21,304**	**18,158**	**16,034**	**17,142**	**2,712**	**0**	**0**	**0**	**0**	**0**

Table 2-6 CIG-eligible Schedule

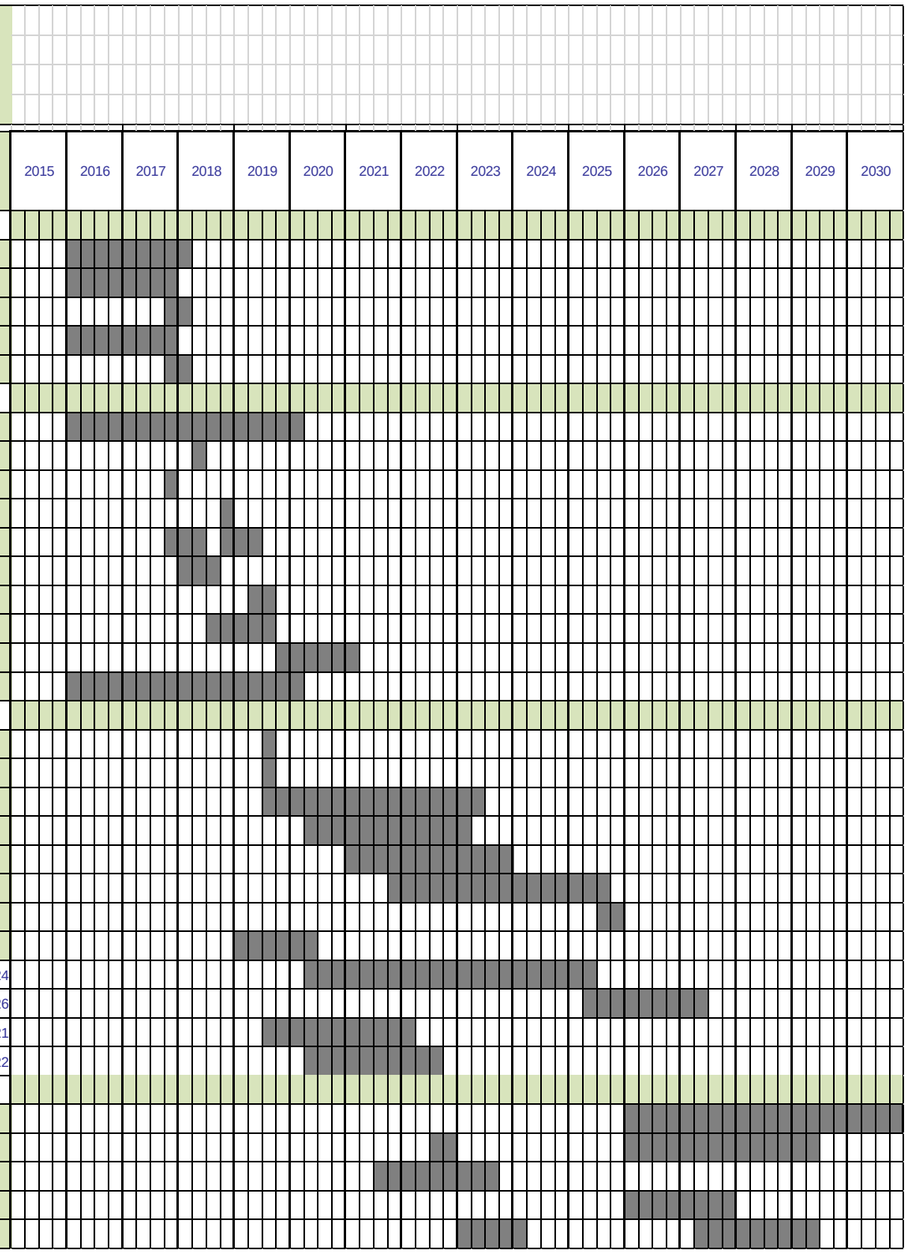
SCHEDULE (Rev.18, May 2016)

BAY AREA RAPID TRANSIT DISTRICT — Today's Date **5/10/17**

TRANSBAY CORRIDOR CORE CAPACITY PROGR — Yr of Base Year $ 2017

PROJECT DEVELOPMENT — Yr of Revenue Ops 2026

Insert comments, notes, etc.	Start Date	End Date
Project Development	08/28/15	08/28/17
Design		
Develop cost estimate, schedule, ridership forecast		
Conduct reviews		
Develop NEPA document (DCE/EA/FEIS) and receive determination (CE/FONSI/ROD)		
Submit request / receive FTA approval to enter Engineering		
Engineering	08/29/17	01/03/19
Develop the contract documents for the Build Alternative		
Develop cost estimate, schedule		
Advertise CBTC RFP		
Advertise 306 Vehicle Procurement		
Conduct reviews		
Submit request / receive FTA approval for LONP		
Submit request / receive FTA approval for FFGA		
TPSS Design		
TPSS Contract Procurement		
HMC Design		
Construction	01/04/19	09/29/28
NTP HMC Phase 2 Construction Contractor		
NTP CBTC supplier		
CBTC Phase 1		
CBTC Phase 2		
CBTC Phase 3		
CBTC Phase 4		
CBTC Implemented through Transbay Tube		
Procure Vehicle Manufacturer		
Vehicle Pilot Testing	10/01/19	11/14/24
Manufacture and Deliver 306 Vehicles	11/15/24	11/12/26
Construct fixed infrastructure HMC	01/04/19	10/06/21
Construct fixed infrastructure TPSS	11/08/19	03/16/22
Revenue Ops / Closeout of Project	03/07/25	09/29/28
Revenue Operations		
TPSS Closeout		
HMC Electrication and Commissioning		
Before and After Study: Two years post Rev Ops		
Completion of project close-out, resolution of claims		



2.1.2 Funding Sources

Capital funding for the full program is expected to come from nine sources:

- FTA Capital Investment Grants (CIG)
- MTC-administered Transit Capital Priorities (TCP)
- Advanced Automatic Train Control Grant (AATC) funds
- Cap and Trade/Transit and Intercity Rail (TIRCP) Program
- BART Capital Allocation
- BART Measure RR
- Regional Measure 3 (RM3) Bridge Tolls
- Congestion Management Agency Funds (CMAs)
- Santa Clara VTA Contribution

BART is seeking Federal Section 5309 New Starts funds totaling $1,250 million, an amount less than 50 percent of the total CIG eligible project cost (including finance charges). The contributions to the program total $3,510.7 million and to CIG eligible project total $2,709.5 million from the following sources detailed below.

Table 2-7 Funding Sources Breakout between CIG-eligible Costs and CIG-ineligible Costs (YOE$ Millions)

	Total Program		CIG-eligible		CIG-ineligible	
SOURCES OF FUNDS	**$**	%	**$**	%	**$**	%
FTA - Capital Investment Grant	1,250.0	35.6%	1,250.0	46.1%	-	-
MTC - administered Transit Capital Priorities	232.7	6.6%	218.1	8.0%	14.6	1.8%
AATC funds (Old Section 5307, 5309 & Settlement	44.9	1.3%	-	-	44.9	5.6%
Federal Sources	*1,527.6*	*43.5%*	*1,468.1*	*54.2%*	*59.5*	*7.4%*
TICRP	454.0	12.9%	144.5	5.3%	309.5	38.6%
State Sources	*454.0*	*12.9%*	*144.5*	*5.3%*	*309.5*	*38.6%*
BART Capital Allocation	214.8	6.1%	198.7	7.3%	16.1	2.0%
BART Refund	(49.1)	-1.4%	(49.1)	-1.8%	-	-
Measure RR	448.4	12.8%	448.4	16.5%	-	-
AATC funds (BART local match)	2.2	0.1%	-	-	2.2	0.3%
BART Sources	*616.3*	*17.6%*	*598.0*	*22.1%*	*18.3*	*2.3%*
Regional Measure 3	500.0	14.2%	498.9	18.4%	1.1	0.1%
AATC funds (AB664 Bridge Tolls - local match)	1.0	0.0%	-	-	1.0	0.1%
CMAs	300.0	8.5%	-	-	300.0	37.4%
Santa Clara VTA	111.8	3.2%	-	-	111.8	14.0%
Other Local Sources	*912.8*	*26.0%*	*498.9*	*18.4%*	*413.9*	*51.7%*
TOTAL SOURCES OF FUNDS	**3,510.7**	**100.0%**	**2,709.5**	**100.0%**	**801.1**	**100.0%**

Each funding source is described below. Table 2-7, Table 2-8, and Table 2-9 further expand on the funding sources. Table 2-7 shows the funding sources breakout between CIG-eligible costs and CIG-ineligible costs. Table 2-8 provides the funding matrix for each project in the program. Table 2-9 provides the funding matrix for each project in the CIG-eligible portion of the program. Additionally, Figure 2-1 and Figure 2-2 illustrate the funding sources by CIG-Eligible funds and by Program

Figure 2-1. Funding Sources (CIG-Eligible)

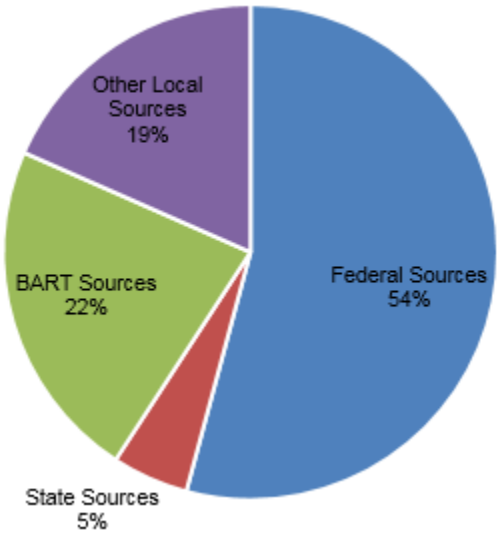
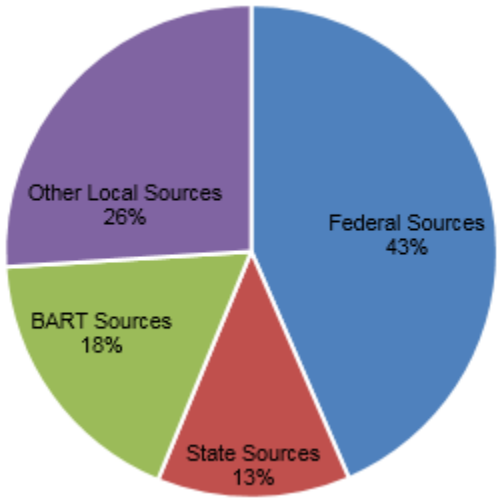


Figure 2-2. Funding Sources (Program)



FTA Capital Investment Grants

BART expects to request $1,250 million from the FTA's discretionary CIG program for those parts of the Transbay Corridor Core Capacity Program that are considered to be eligible under this program. Funding is dependent upon meeting FTA criteria for project justification and local financial commitment, and upon meeting readiness requirements. It also depends upon future appropriations by Congress and future authorizing legislation following expiration of the FAST Act in 2020. The program is highly competitive, and the $100 million per year CIG contribution assumed in this capital plan is not assured.

MTC-administered TCP

The MTC-administered Transit Capital Priorities (TCP) includes funds from several federal and regional programs, including but not limited to, Surface Transportation Program (STP), Congestion Mitigation and Air Quality (CMAQ), Section 5307, and AB 664 Bridge Tolls. MTC-administered TCP contributions towards the Transbay Core Capacity Program would be drawn from federal sources. An estimated $179 million has been committed towards the additional vehicles and $39.1 million is budgeted towards communication based train control.

The TCP program draws upon an array of funding sources to cover MTC's programming commitments. Decisions on which funding source to use for each project in the program are made during the program development process depending on project eligibility, cash flow needs, availability of funds, and the needs of other projects in the program.

The $179 million in TCP funds shown for the vehicles would be funded out of the Exchange Account, which is an account set up by agreement between MTC and the BART to fund BART railcar procurement. Details of the Exchange Account agreement and how it functions are contained in documents provided in Appendix D. MTC will consider a resolution for approval on September 27, 2017 that will make a specific commitment to the railcar project from the funds currently in the Exchange Account.

Additional details are provided in Appendix D. List of Supporting Documents, Section E-1.

Advanced Automatic Train Control (AATC) Grant Funds

Advanced Automatic Train Control (AATC) refers to Settlement Agreement Funds derived from litigation between BART and GE Transportation Systems, whose predecessor corporation was retained by BART in 1998 to develop a new train control system. BART spent approximately $92M on the project, but no product was received and installed. The subsequent settlement agreement resolved the matter. $48.1 million of the unspent balances, as listed below, are settlement funds now available to BART to use on a follow-up train control project:

- Old Section 5307 & 5309 - AATC grants unspent balances applied to this project - $14.1 million
- Assembly Bill 664 (AB664) Bridge Tolls - AB664 designated MTC to allocate certain bridge tolls for projects that relieve congestion on the southern bridges (Bay Bridge, San Mateo Bridge, and Dumbarton Bridge) of the Bay Area. These funds are split 70

percent for East Bay and 30 percent for West Bay projects. In the past, BART has used AB664 bridge toll funding primarily to match federal formula grants. In the future, MTC plans to allocate BART's share of AB 664 funding toward new rail cars. Previous allocations used for local match to AATC grants are available to the project - $1.0 million

- BART Local Match - Previously allocated for local match to AATC grants available to this project – $2.2 million
- Litigation funds - AATC settlement proceeds - $30.8 million.

Cap and Trade/Transit and Intercity Rail (TIRCP) Program

In 2013, California officially launched its Cap and Trade program for greenhouse gas emissions. California Carbon Allowances (CCAs) are auctioned by the State's Air Resources Board on a quarterly basis through 2020.

California's Transit and Intercity Rail Capital Program (TIRCP) will provide grants from the state's Greenhouse Gas Reduction Fund for transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems to reduce emissions of greenhouse gases by reducing congestion and vehicle miles traveled throughout California. The program will seek to fund projects that reduce greenhouse gas emissions; expand and improve rail service to increase ridership; and integrate the rail service of the state's various rail operations, and improve safety.

TIRCP funds are competitive. BART expects to apply for $454 million in TIRCP funds, $144.5 million of which will fund CIG-eligible scope. These funds are planned and designated for the Core Capacity Initiative in the Regional Transportation Plan.

The California State Transportation Agency (CalSTA) intends to approve a 5-year program of projects by July 1, 2018. BART intends to apply for these funds when the Call for Projects is released later this year.

Attached is the TIRCP Call for Projects 2016 from the previous TIRCP round for which BART submitted an application. The application and approval process are fully described in these documents, including the TIRCP Workshop Presentation Nov2015 attachment, published by the awarding agency.

Additional details are provided in Appendix D. List of Supporting Documents, Section D.

BART Capital Allocation

BART has made a commitment to fund three projects that are needed for system reliability and for system capacity increases to meet future ridership demand: new rail cars, HMC, and TCMP. Incremental fare revenue from the January 1, 2014 and 2016 fare increases and subsequent fare increases scheduled for 2018 and 2020 are directly allocated to a fund for these projects. To fund BART's capital contributions, the latest SRTP assumes some additional fare increase allocations through FY26. The BART Capital Allocation funds for the Core Capacity program ($214.8 million) include $49.1 million that will be advanced for project

expenses and repaid with CIG apportionments. The Capital Plan also has $14.8 million, $14.4 million of which will fund CIG-eligible scope, in previously committed BART Capital Allocation funds and $200 million budgeted/ planned Capital Allocation funds, $184.3 million of which will fund CIG-eligible scope.

BART Capital Allocations towards the project have been included in the SRTP, which will be adopted by Board Resolution. However, Capital Allocations follow an annual budgetary process which is subject to Board approval. Therefore, a board resolution would be required to commit remaining Capital Allocation funds to the CIG-eligible portion of the program.

Additional details are provided in Appendix D. List of Supporting Documents, Section F.

BART Measure RR

Measure RR is a general obligation bond measure which was passed by the voters within the BART District in November 2016. It will provide BART a total of $3.5 billion to fund the system's most critical investments for maintaining the system in a state-of-good-repair and crowding relief. BART staff will work to complete the Measure RR investments as quickly as possible, balancing the need for reinvestment with the need to minimize service disruption.

Measure RR is a committed funding source and $448.4 million in bond proceeds is targeted for elements of the Core Capacity Program, as specified in the ballot measure. Additional details are provided in Appendix D. List of Supporting Documents, Section B.

Regional Measure 3 (RM3) Bridge Tolls

In 2018, MTC expects to go to the voters with a measure to raise additional funds for regionally important transportation investments through an increase in bridge tolls. A portion of this funding would support BART projects to improve transportation in regional bridge corridors. Based on the distribution of funding from prior regional measures, BART anticipates up to $900 million in funding from the potential RM3. *Plan Bay Area* programs approximately $500 million to help fund BART's Core Capacity Initiative, $498.9 million of which will fund CIG-eligible scope. Additional details are provided in Appendix D. List of Supporting Documents, Section C.

Congestion Management Agency (CMA) Funds

The three BART district counties are expected to contribute $100 million each, $300 million in total, toward the purchase of the 306 rail vehicles. The source of these funds will be determined by the Counties, and may include money from:

- Alameda County Measure BB Sales Tax: Measure BB passed in 2014. The measure will generate nearly $8 billion over 30 years for essential transportation improvements. Funds began flowing to municipalities and transit agencies in July 2015.
- Contra Costa Sales Tax: CCTA is expected to present a sales tax measure to voters in Contra Costa County in 2018. The Measure is expected to authorize $100M of existing funding streams for the BART Core Capacity project.

- San Francisco County Transportation Authority (SFCTA) Proposition K Sales Tax: Proposition K is expected to be presented to voters in San Francisco County in 2018. The Measure would reauthorize $100 million of existing funding streams for the BART Core Capacity project.

Santa Clara VTA Contribution

Voters in Santa Clara County approved a sales tax measure in 2000 designed to fund transit service and the future extension of BART to Santa Clara, called Silicon Valley Rapid Transit (SVRT). The first phase of the SVRT program, a two-station extension to Berryessa, is now under construction and is scheduled to begin revenue service in June, 2018.

VTA and BART reached agreement in November 2001 regarding the relationship between the two organizations for the duration of the planning, building, and operating of the BART extension into Santa Clara County. The agreement commits VTA to fund the purchase of new rail cars needed to serve the SVRT project. VTA has agreed to purchase 60 rail vehicles that will be operated during the first phase of the extension, the Silicon Valley Berryessa Extension (SVBX). Approximately $178 million in VTA funds are anticipated for this purpose over the next 10 years.

VTA has also committed to funding the portion of the Train Control Modernization Program that will upgrade the SVRT segment to Communications-Based Train Control. VTA is thus expected to contribute $111.8 million towards the Transbay Corridor Core Capacity Program over the next 10 years.

Under the terms of the Comprehensive Agreement between the two agencies, VTA will also pay the capital cost of any BART system improvements outside of Santa Clara County that are made necessary by SVRT.

Summary

As stated above, the Transbay Corridor Core Capacity Program is estimated to cost $3,407.2 million plus financing costs, for a total of $3,510.7 million. Of this amount, $2,606.1 million plus financing costs, totaling $2,709.5 million, is considered to be CIG-eligible. BART is seeking $1,250 million or 46.1 percent of the CIG-eligible cost from the CIG program.

Some of the funding sources anticipated in the capital plan may only be used for certain elements of the overall program. Measure RR funds, for example, may not be used to acquire additional vehicles. Funds from the CMAs are expected to be designated for vehicles and thus would not be available for other program elements.

2.1.3 Committed, Budgeted and Planned

According to the FTA, the definitions for committed, budgeted, and planned are as follows:

Committed: Committed sources are programmed funds that have all the necessary approvals (legislative or referendum) to be used to fund the proposed project without any additional action. These funds have been formally programmed in the MPO's TIP and/or any related local, regional, or state CIP or appropriation. Examples include dedicated or approved tax

revenues, state grants that have been approved by all required legislative bodies, cash reserves that have been dedicated to the proposed project, and additional debt capacity that requires no further approvals and has been dedicated by the transit agency to the proposed project.

Budgeted: This category is for funds that have been budgeted and/or programmed for use on the proposed project but remain uncommitted, i.e., the funds have not yet received statutory approval. Examples include debt financing in an agency-adopted CIP that has yet to receive final legislative approval, or state grants that have been included in the state budget, but are still awaiting legislative approval. These funds are almost certain to be committed in the near future. Funds will be classified as budgeted where available funding cannot be committed until the Full Funding Grant Agreement (FFGA) is executed, or due to local practices outside of the project sponsor's control (e.g., the project development schedule extends beyond the TIP period).

Planned: This category is for funds that are identified and have a reasonable chance of being committed, but are neither committed nor budgeted. Examples include proposed sources that require a scheduled referendum, reasonable requests for state/local grants, and proposed debt financing that has not yet been adopted in the agency's CIP.

Table 2-8 indicates the funding sources to be used and the amount currently committed for each project in the program. Table 2-9 shows the same information for the CIG-eligible portion of the program. The TCP ($179 million), BART Capital Allocations ($23.5 million), and Measure RR ($448.4 million) will fund CIG-eligible scope. These funds add up to $641.8 million or 44.0 percent of the non-CIG funds, which is approaching the 50 percent required before FTA will consider recommending a project for funding in the President's budget. As stated above, the project aims to reach 50 percent by July 1, 2018 when the new Cap and Trade 5-Year Program is adopted. Table 2-10 shows the CIG-ineligible funding sources. The supporting documentation for committed funding is provided in Appendix D, List of Supporting Documents.

Table 2-8 Program Funding Sources Matrix (YOE$ Millions)

		Committed				Budgeted/ Planned								Totals		
	Total Program Cost	TCP	BART Capital Allocation	AATC funds	Measure RR	FTA CIG and GANs	TCP	RM3	TIRCP	CMAs	Santa Clara VTA	BART Capital Allocation	BART Refund	Total Sources of Funds	Total Committed	Total Planned
Vehicles	1,618.4	179.0	2.0			411.4		500.0	135.4	271.6		119.0		1,618.4	181.0	1,437.4
Communication Based Train Control	1,150.5	4.6	10.4	17.3	400.0	175.9	49.1		318.6		101.6	73.0		1,150.5	432.3	718.2
Hayward Maintenance Center Phase II	228.0				35.0	193.0								228.0	35.0	193.0
Traction Power	94.0				13.4	80.6								94.0	13.4	80.6
Program Management	6.6		2.3	0.3		-						4.0		6.6	2.6	4.0
Program Contingency	309.7		-	30.5	-	236.6				28.4	10.2	4.1		309.7	30.5	279.2
Total (without financing or refund)	**3,407.2**	**183.6**	**14.8**	**48.1**	**448.4**	**1,097.4**	**49.1**	**500.0**	**454.0**	**300.0**	**111.8**	**200.0**	**-**	**3,407.2**	**694.8**	**2,712.4**
Financing Costs	103.5					103.5							-	103.5	-	103.5
Refunds	-					49.1							(49.1)	-	-	-
Total Program	**3,510.7**	**183.6**	**14.8**	**48.1**	**448.4**	**1,250.0**	**49.1**	**500.0**	**454.0**	**300.0**	**111.8**	**200.0**	**(49.1)**	**3,510.7**	**694.8**	**2,815.8**

Table 2-9 CIG Eligible Funding Sources Matric (YOE$ Millions)

		Committed				Budgeted/ Planned								Totals		
	CIG-eligible Cost	TCP	BART Capital Allocation	AATC funds	Measure RR	FTA CIG and GANs	TCP	RM3	TIRCP	CMAs	Santa Clara VTA	BART Capital Allocation	BART Refund	Total Sources of Funds	Total Committed	Total Planned
Vehicles	1,333.8	179.0	1.6			411.4		498.9	135.4	-		107.4		1,333.8	180.6	1,153.1
Communication Based Train Control	707.4	-	10.4	-	400.0	175.9	39.1		9.1		-	73.0		707.4	410.4	297.1
Hayward Maintenance Center Phase II	228.0				35.0	193.0								228.0	35.0	193.0
Traction Power	94.0				13.4	80.6								94.0	13.4	80.6
Program Management	6.3		2.3			-						4.0		6.3	2.3	4.0
Program Contingency	236.6		-	-	-	236.6				-	-	-		236.6	-	236.6
Total (without financing)	**2,606.1**	**179.0**	**14.4**	**-**	**448.4**	**1,097.4**	**39.1**	**498.9**	**144.5**	**-**	**-**	**184.3**	**-**	**2,606.1**	**641.8**	**1,964.3**
Financing Costs	103.5					103.5							-	103.5	-	103.5
Refunds	-				-	49.1							(49.1)	-	-	-
Total CIG-eligible	**2,709.5**	**179.0**	**14.4**	**-**	**448.4**	**1,250.0**	**39.1**	**498.9**	**144.5**	**-**	**-**	**184.3**	**(49.1)**	**2,709.5**	**641.8**	**2,067.8**
Ratio of Committed to Non-CIG Funds	**44.0%**															

Table 2-10 CIG-ineligible Funding Sources Matrix

		Committed				Budgeted/ Planned								Totals		
	CIG-ineligible Cost	TCP	BART Capital Allocation	AATC funds	Measure RR	FTA CIG and GANs	TCP	RM3	TIRCP	CMAs	Santa Clara VTA	BART Capital Allocation	BART Refund	Total Sources of Funds	Total Committed	Total Planned
Vehicles	284.7	-	0.4	-	-	-	-	1.1	-	271.6	-	11.6	-	284.7	0.4	284.3
Communication Based Train Control	443.1	4.6	0.1	17.3	-	-	10.0	-	309.5	-	101.6	-	-	443.1	21.9	421.1
Hayward Maintenance Center Phase II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traction Power	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Program Management	0.3	-	0.0	0.3	-	-	-	-	-	-	-	-	-	0.3	0.3	-
Program Contingency	73.1	-	-	30.5	-	-	-	-	-	28.4	10.2	4.1	-	73.1	30.5	42.6
Total (without financing)	**801.1**	**4.6**	**0.4**	**48.1**	**-**	**-**	**10.0**	**1.1**	**309.5**	**300.0**	**111.8**	**15.7**	**-**	**801.1**	**53.1**	**748.1**
Financing Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Refunds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total CIG-ineligible	**801.1**	**4.6**	**0.4**	**48.1**	**-**	**-**	**10.0**	**1.1**	**309.5**	**300.0**	**111.8**	**15.7**	**-**	**801.1**	**53.1**	**748.1**
Ratio of Committed to Non-CIG Funds	**6.6%**															

2.1.4 Financing Strategy

Financing charges are included in the total program cost. The portion of the financing costs that are attributable to the CIG-eligible portion of the program are included as eligible project expenses as per FTA guidelines, as long as they are incurred prior to either the completion of the project or the fulfillment of the CIG funding commitment, whichever occurs later. The portion of finance charges which are applicable to the CIG-eligible portion of the Transbay Corridor Core Capacity Program amount to $103.5 million (YOE dollars).

This Capital Plan assumes grant anticipation notes (GANs) as a form of debt that would be secured by the Full Funding Grant Agreement. The plan assumes GAN issuances in FY2019 ($142 million in gross proceeds) and FY2023 ($233.6 million in gross proceeds), at a 4 percent and a 3 percent interest rate respectively with both maturing by 2031, the last year of CIG funds. Interest payments are capitalized until substantial program completion in FY2026. The annual principal and interest associated with the GANs is to be paid from annual CIG appropriations.

2.1.5 Summary of Capital Sources and Uses of Funds

The proposed capital uses and sources of funds, by year, for the Transbay Corridor Core Capacity Program are summarized below in Table 2-11. The uses and sources of funds for the CIG-eligible portion of the program are presented in Table 2-12 and the uses and sources for CIG-ineligible costs are presented in Table 2-13.

Table 2-11 Transbay Corridor Program Uses and Sources of Funds, by Fiscal Year (YOE$ Millions)

	Previous Years	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	Total	Total	%
USES OF FUNDS																								
Transbay Corridor Program Cost																								
Program Capital Cost (SCC 10 - 90)	11.7	10.6	23.0	174.2	201.6	398.6	329.2	277.9	559.2	882.7	335.3	69.3	53.2	47.8	33.0	-	-	-	-	-	-	3,407.2	3,407.2	97.1%
Vehicles	-	*0.0*	*2.0*	*6.0*	*7.9*	*159.2*	*98.0*	*55.7*	*361.7*	*664.4*	*223.4*	*9.5*	*8.6*	*9.0*	*13.0*	-	-	-	-	-	-	*1,618.4*	*1,618.4*	*46.1%*
Communication Based Train Control	*11.0*	*8.5*	*11.7*	*112.3*	*100.3*	*128.9*	*141.7*	*153.5*	*132.1*	*124.4*	*81.4*	*53.5*	*39.7*	*34.5*	*17.0*	-	-	-	-	-	-	*1,150.5*	*1,150.5*	*32.8%*
Hayward Maintenance Center Phase II	-	*0.6*	*5.0*	*27.5*	*58.7*	*60.4*	*45.7*	*30.1*	-	-	-	-	-	-	-	-	-	-	-	-	-	*228.0*	*228.0*	*6.5%*
Traction Power	-	*0.7*	*3.1*	*11.9*	*14.1*	*12.1*	*12.4*	*12.8*	*13.2*	*13.6*	-	-	-	-	-	-	-	-	-	-	-	*94.0*	*94.0*	*2.7%*
Program Management	*0.7*	*0.7*	*1.2*	*1.2*	*1.2*	*0.7*	*0.7*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*6.6*	*6.6*	*0.2%*
Program Contingency	-	-	-	*15.3*	*19.4*	*37.3*	*30.6*	*25.7*	*52.2*	*80.3*	*30.5*	*6.3*	*4.8*	*4.3*	*3.0*	-	-	-	-	-	-	*309.7*	*309.7*	*8.8%*
Finance Charges (SCC 100)	-	-	-	1.4	5.7	5.7	5.7	8.0	12.7	12.7	12.7	12.7	10.3	7.9	5.3	2.7	-	-	-	-	-	103.5	103.5	2.9%
GANs - Financing Costs	-	-	-	*1.4*	*5.7*	*5.7*	*5.7*	*8.0*	*12.7*	*12.7*	*12.7*	*12.7*	*10.3*	*7.9*	*5.3*	*2.7*	-	-	-	-	-	*103.5*	*103.5*	*2.9%*
TOTAL USES OF FUNDS	**11.7**	**10.6**	**23.0**	**175.7**	**207.3**	**404.3**	**334.9**	**285.9**	**571.9**	**895.4**	**348.0**	**82.0**	**63.5**	**55.7**	**38.3**	**2.7**	**-**	**-**	**-**	**-**	**-**	**3,510.7**	**3,510.7**	**100.0%**
SOURCES OF FUNDS																								
FTA - Capital Investment Grant	-	-	-	50.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-	1,250.0	1,250.0	35.6%
GANs Proceeds	-	-	-	142.0	-	-	-	233.6	-	-	-	-	-	-	-	-	-	-	-	-	-	375.5	375.5	10.7%
GANs Principal Repayment	-	-	-	-	-	-	-	-	-	-	-	(70.2)	(72.6)	(75.0)	(77.6)	(80.2)	-	-	-	-	-	(375.5)	(375.5)	-10.7%
MTC - administered Transit Capital Priorities	-	-	-	4.6	8.0	-	-	-	196.1	14.0	10.0	-	-	-	-	-	-	-	-	-	-	232.7	232.7	6.6%
AATC funds	11.1	6.4	-	30.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48.1	48.1	1.4%
TICRP	-	-	-	79.0	69.9	69.9	69.9	69.9	-	-	19.1	19.1	19.1	21.3	17.0	-	-	-	-	-	-	454.0	454.0	12.9%
BART Capital Allocation	4.4	5.0	6.5	0.9	1.0	0.5	17.0	35.0	47.0	45.0	45.0	3.5	-	2.3	1.7	-	-	-	-	-	-	214.8	214.8	6.1%
BART Refund	-	-	-	-	-	-	-	-	-	-	-	(8.5)	(9.3)	(8.9)	(5.3)	(17.1)	-	-	-	-	-	(49.1)	(49.1)	-1.4%
Measure RR	-	1.6	12.6	61.4	52.0	116.3	90.3	100.9	-	13.3	-	-	-	-	-	-	-	-	-	-	-	448.4	448.4	12.8%
Regional Measure 3	-	-	-	17.5	17.5	145.0	160.0	160.0	-	-	-	-	-	-	-	-	-	-	-	-	-	500.0	500.0	14.2%
CMAs	-	-	-	-	75.0	75.0	75.0	75.0	-	-	-	-	-	-	-	-	-	-	-	-	-	300.0	300.0	8.5%
Santa Clara VTA	-	-	-	8.6	7.7	9.9	10.9	11.8	10.1	8.8	17.6	26.4	-	-	-	-	-	-	-	-	-	111.8	111.8	3.2%
TOTAL SOURCES OF FUNDS	**15.6**	**13.0**	**19.2**	**394.5**	**331.1**	**516.6**	**523.0**	**786.0**	**353.2**	**181.1**	**191.7**	**70.3**	**37.3**	**39.6**	**35.8**	**2.7**	**-**	**-**	**-**	**-**	**-**	**3,510.7**	**3,510.7**	**100.0%**
Ending Program Fund Balance	**4.0**	**6.0**	**2.0**	**221.0**	**345.0**	**457.0**	**646.0**	**1,146.0**	**927.0**	**213.0**	**56.0**	**45.0**	**19.0**	**3.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**			

Table 2-12 CIG-eligible Project Uses and Sources of Funds, by Fiscal Year (YOE$ Millions)

	Previous Years	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	Total	Total	%
USES OF FUNDS																								
CIG-Eligible Transbay Corridor Program Cost																								
Project Capital Cost (SCC 10 - 90)	0.5	5.9	20.9	135.7	178.4	357.3	306.7	258.1	421.4	682.2	202.5	8.6	7.8	8.2	11.8	-	-	-	-	-	-	2,606.1	2,606.1	96.2%
Vehicles	-	*0.0*	*1.6*	*4.9*	*6.5*	*131.2*	*80.8*	*45.9*	*298.1*	*547.5*	*184.1*	*7.8*	*7.1*	*7.4*	*10.7*	-	-	-	-	-	-	*1,333.8*	*1,333.8*	*49.2%*
Communication Based Train Control	-	*3.8*	*10.0*	*78.3*	*80.6*	*119.5*	*138.7*	*146.0*	*71.7*	*58.9*	-	-	-	-	-	-	-	-	-	-	-	*707.4*	*707.4*	*26.1%*
Hayward Maintenance Center Phase II	-	*0.6*	*5.0*	*27.5*	*58.7*	*60.4*	*45.7*	*30.1*	-	-	-	-	-	-	-	-	-	-	-	-	-	*228.0*	*228.0*	*8.4%*
Traction Power	-	*0.7*	*3.1*	*11.9*	*14.1*	*12.1*	*12.4*	*12.8*	*13.2*	*13.6*	-	-	-	-	-	-	-	-	-	-	-	*94.0*	*94.0*	*3.5%*
Program Management	*0.5*	*0.7*	*1.2*	*1.2*	*1.2*	*0.7*	*0.7*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*6.3*	*6.3*	*0.2%*
Program Contingency	-	-	-	*11.9*	*17.2*	*33.5*	*28.3*	*23.3*	*38.5*	*62.2*	*18.4*	*0.8*	*0.7*	*0.7*	*1.1*	-	-	-	-	-	-	*236.6*	*236.6*	*8.7%*
Finance Charges (SCC 100)	-	-	-	1.4	5.7	5.7	5.7	8.0	12.7	12.7	12.7	12.7	10.3	7.9	5.3	2.7	-	-	-	-	-	103.5	103.5	3.8%
GANs - Financing Costs	-	-	-	*1.4*	*5.7*	*5.7*	*5.7*	*8.0*	*12.7*	*12.7*	*12.7*	*12.7*	*10.3*	*7.9*	*5.3*	*2.7*	-	-	-	-	-	*103.5*	*103.5*	*3.8%*
TOTAL USES OF FUNDS	**0.5**	**5.9**	**20.9**	**137.1**	**184.1**	**363.0**	**312.3**	**266.1**	**434.1**	**694.9**	**215.2**	**21.3**	**18.2**	**16.0**	**17.1**	**2.7**	**-**	**-**	**-**	**-**	**-**	**2,709.5**	**2,709.5**	**100.0%**
SOURCES OF FUNDS																								
FTA - Capital Investment Grant	-	-	-	50.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-	1,250.0	1,250.0	46.1%
GANs Proceeds	-	-	-	142.0	-	-	-	233.6	-	-	-	-	-	-	-	-	-	-	-	-	-	375.5	375.5	13.9%
GANs Principal Repayment	-	-	-	-	-	-	-	-	-	-	-	(70.2)	(72.6)	(75.0)	(77.6)	(80.2)	-	-	-	-	-	(375.5)	(375.5)	-13.9%
MTC - administered Transit Capital Priorities	-	-	-	-	8.0	-	-	-	196.1	14.0	-	-	-	-	-	-	-	-	-	-	-	218.1	218.1	8.0%
AATC funds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TICRP	-	-	-	34.2	25.1	25.1	25.1	35.1	-	-	-	-	-	-	-	-	-	-	-	-	-	144.5	144.5	5.3%
BART Capital Allocation	4.0	5.0	6.5	0.8	1.0	0.5	17.0	35.0	47.0	45.0	36.9	-	-	-	-	-	-	-	-	-	-	198.7	198.7	7.3%
BART Refund	-	-	-	-	-	-	-	-	-	-	-	(8.5)	(9.3)	(8.9)	(5.3)	(17.1)	-	-	-	-	-	(49.1)	(49.1)	-1.8%
Measure RR	-	1.6	12.6	61.4	52.0	116.3	90.3	100.9	-	13.3	-	-	-	-	-	-	-	-	-	-	-	448.4	448.4	16.5%
Regional Measure 3	-	-	-	16.4	17.5	145.0	160.0	160.0	-	-	-	-	-	-	-	-	-	-	-	-	-	498.9	498.9	18.4%
CMAs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Santa Clara VTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES OF FUNDS	**4.0**	**6.6**	**19.2**	**304.9**	**203.6**	**386.9**	**392.4**	**664.5**	**343.1**	**172.3**	**136.9**	**21.3**	**18.2**	**16.0**	**17.1**	**2.7**	**-**	**-**	**-**	**-**	**-**	**2,709.5**	**2,709.5**	**100.0%**
Ending Project Fund Balance	**4.0**	**4.0**	**2.0**	**170.0**	**190.0**	**214.0**	**294.0**	**692.0**	**601.0**	**78.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**			

Table 2-13 CIG-ineligible Project Uses and Sources of Funds, by Fiscal Year (YOE$ Millions)

	Previous Years	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	Total	Total	%
USES OF FUNDS																								
CIG-Ineligible Transbay Corridor Program Cost																								
Project Capital Cost (SCC 10 - 90)	11.2	4.7	2.1	38.5	23.2	41.3	22.5	19.8	137.7	200.5	132.8	60.7	45.3	39.7	21.2	-	-	-	-	-	-	801.1	801.1	100.0%
Vehicles	-	*0.0*	*0.3*	*1.1*	*1.4*	*28.0*	*17.2*	*9.8*	*63.6*	*116.9*	*39.3*	*1.7*	*1.5*	*1.6*	*2.3*	-	-	-	-	-	-	*284.7*	*284.7*	*35.5%*
Communication Based Train Control	*11.0*	*4.7*	*1.7*	*34.0*	*19.7*	*9.4*	*3.0*	*7.5*	*60.5*	*65.5*	*81.4*	*53.5*	*39.7*	*34.5*	*17.0*	-	-	-	-	-	-	*443.1*	*443.1*	*55.3%*
Hayward Maintenance Center Phase II	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traction Power	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Program Management	*0.3*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*0.3*	*0.3*	*0.0%*
Program Contingency	-	-	-	*3.4*	*2.1*	*3.9*	*2.3*	*2.4*	*13.6*	*18.1*	*12.1*	*5.5*	*4.1*	*3.6*	*1.9*	-	-	-	-	-	-	*73.1*	*73.1*	*9.1%*
Finance Charges (SCC 100)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL USES OF FUNDS	**11.2**	**4.7**	**2.1**	**38.5**	**23.2**	**41.3**	**22.5**	**19.8**	**137.7**	**200.5**	**132.8**	**60.7**	**45.3**	**39.7**	**21.2**	**-**	**-**	**-**	**-**	**-**	**-**	**801.1**	**801.1**	**100.0%**
SOURCES OF FUNDS																								
MTC - administered Transit Capital Priorities	-	-	-	4.6	-	-	-	-	-	-	10.0	-	-	-	-	-	-	-	-	-	-	14.6	14.6	1460.0%
AATC funds	11.1	6.4	-	30.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48.1	48.1	6.0%
TICRP	-	-	-	44.8	44.8	44.8	44.8	34.8	-	-	19.1	19.1	19.1	21.3	17.0	-	-	-	-	-	-	309.5	309.5	38.6%
BART Capital Allocation	0.4	-	-	0.1	-	-	-	-	-	-	8.1	3.5	-	2.3	1.7	-	-	-	-	-	-	16.1	16.1	2.0%
Measure RR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regional Measure 3	-	-	-	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1	1.1	0.1%
CMAs	-	-	-	-	75.0	75.0	75.0	75.0	-	-	-	-	-	-	-	-	-	-	-	-	-	300.0	300.0	37.4%
Santa Clara VTA	-	-	-	8.6	7.7	9.9	10.9	11.8	10.1	8.8	17.6	26.4	-	-	-	-	-	-	-	-	-	111.8	111.8	14.0%
TOTAL SOURCES OF FUNDS	**11.6**	**6.4**	**-**	**89.7**	**127.5**	**129.7**	**130.7**	**121.6**	**10.1**	**8.8**	**54.9**	**49.0**	**19.1**	**23.6**	**18.7**	**-**	**-**	**-**	**-**	**-**	**-**	**801.1**	**801.1**	**100.0%**
Ending Project Fund Balance	**-**	**2.0**	**-**	**51.0**	**155.0**	**244.0**	**352.0**	**454.0**	**326.0**	**134.0**	**56.0**	**45.0**	**19.0**	**3.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**			

2.2 Agency Wide Capital Plan

This section discusses BART's historic and forecasted capital sources and uses of funds. A brief overview of BART's capital program is provided first followed by BART's current capital expenditure forecast. The section then presents BART's historic sources of funds, followed by a discussion of the various projected sources of funds. Finally, BART's systemwide projected sources and uses of funds through FY2036 are provided.

All revenue and cost assumptions are as delineated in the BART Financial Forecasting Model for FY2017 to FY2036. The forecast is a derivative of the unconstrained 2017 Short Range Transportation Plan (SRTP) and Capital Improvement Program (CIP) and reflects changes to be implemented through this financial plan.

The SRTP/CIP is the guiding policy behind BART funding decisions. Major capital projects and programs that are identified in the 2017 SRTP/CIP have priority for future programming of funds. While these projects and programs require further Board approval at various stages of their development, they are priorities for further planning, design, construction, and the pursuit of additional funding.

The agency wide capital plan is fiscally constrained and it is assumed that expenditures will not exceed the forecast funding levels. However, and by contrast, BART's CIP includes all identified capital needs, regardless of priority or funding availability.

When forecasting funding availability for future capital investment at BART, funding is either allocated to capital project categories (mostly state of good repair) or specifically to large capital projects. The capital project categories generally align with funding eligibility so we can apply funding "rules" to the categories to make estimated apportionments to categories.

Programmed Funds

Some program categories include projects that have pre-defined funding plans. These projects include all current projects, including state of good repair; large capital projects that require participation from regional funding partners (e.g. earthquake safety projects, rail cars), and; those projects in the near term, including state of good repair, that have refined annual cost estimates (e.g., projects commencing in the next two years). Funding is a mix of committed and discretionary funds. Annual apportionments are assumed based on needs and estimated funding streams. The different types of can be summarized as:

- BART's approved capital budget: Funds assigned to active projects are recognized as committed to that project.
- Major capital project plans: BART's largest capital projects, which include the Earthquake Safety Program, rail car procurements, Hayward Maintenance Complex, Train Control Modernization, and others, have detailed year-by-year projections of expenditures and funding by source. The CIP projections integrate these plans.

- Measure RR and subsequent FY17-FY19 implementation plan: Measure RR dedicates bond funds to broad investment programs. More specificity for FY17-FY19 was included in an implementation plan presented to the BART Board of Directors in May 2017.
- Operating allocations to capital: The BART Board of Directors has approved policies assigning some future BART operating revenue to particular capital programs and projects. Except for 20% federal grant matching funds that are considered 'committed', operating allocation funds are considered 'discretionary' in the CIP since their availability depends on factors that affect the BART operating budget. These allocations are described in detail in BART's SRTP/CIP. Planned allocations include:
    - Fare increase and other revenue for three specific priority capital projects (rail cars, Hayward Maintenance Complex, and Train Control Modernization). These are included in the Major capital project plans.
    - Allocations of certain parking revenues to fund station and access enhancements.
    - Specific allocations to several smaller projects (budget initiatives).
    - Additional planned allocations of BART operating revenue projected to be available for investment in BART's state of good repair projects and projects that do not qualify for other funding sources. These funds are directed first toward the required 20% local match of FTA 5307 Urbanized Area Formula and 5337 SOGR funds. Thereafter, they are directed toward the highest priority eligible state of good repair needs as specified by BART's risk-based asset management program.
- Additional funding commitments: several other projected capital funding sources, such as certain State and County contributions, are committed to specific projects or programs by statute or agreements. These commitments are detailed in the CIP.

State of Good Repair & Major Systems Renewal Funding

Programmed funds reflect pre-defined funding plans due to timing (within next two years) and size (regional projects). The remaining projects, mostly state of good repair and major system renewal projects beyond year 2, are for capital asset replacement. These projects are categorized based on funding eligibility and prioritized as specified by BART's risk-based asset management program. Funds are apportioned in the CIP to projects/categories based on priority and funding eligibility rules.

BART's commitment to maintain and improve the Bay Area's transportation system will depend on future funding availability and strategies for securing new or increased funding.

2.2.1 Capital Expenditure Program

The SRTP/CIP identifies several groupings of capital projects or initiatives to be undertaken in the coming years.

Basic Infrastructure Renewal

Nearly half of the identified capital need through FY36 is for reinvestment in state of good repair for BART's original infrastructure outside of the 'Big 3' projects. Major categories of identified need include tracks and related infrastructure, stations; and traction power.

The "Big 3"

One grouping of projects in the SRTP/CIP is called the "Big 3: Infrastructure Renewal and Crowding Relief". The SRTP/CIP shows a major investment is required for the Big 3. The Big 3 projects will renew the existing system and provide critically needed peak period crowding relief. The Big 3 projects include:

- New Rail Cars: 775 new railcars that will replace BART's original fleet of 669 cars.
- The Hayward Maintenance Complex Phase 1: a renewed and expanded rail car maintenance facility in Hayward will service the new fleet
- Train Control Modernization Program: a modern communications based train control system will replace the aging original system and allow BART to offer higher-frequency peak period service

Transbay Core Capacity Program

MTC's Regional Transportation Plan, *Plan Bay Area 2040*, sets forth a vision in which public transportation forms the backbone for the next several decades of regional growth. By 2040, the Plan anticipates 820,000 thousand new households and 1.3 million new jobs in the nine-county Bay Area. It seeks to accommodate this growth by concentrating future population and employment around major transit hubs, including BART stations. To accommodate the planned growth, BART continues to work with regional and federal partners to plan for the next generation of investments, which will enable higher-capacity service to meet expected growth in travel demand in the core of the Bay Area's transportation system.

Station Modernization

BART's Station Modernization program will invest resources into the existing core stations and surrounding areas to advance transit ridership and enhance the quality of life around the stations. This plan also identifies the need to invest in opportunities for all access by all transportation modes, with a focus on increasing pedestrian and bike access, improving transit connections, and strategic investment in parking.

BART Metro

The BART Metro program will allow BART to evolve into a more flexible system, able to tailor services to the needs of riders within the core of the region and riders making commute trips across the region. The CIP identifies a set of projects that would enhance system flexibility and capacity to help achieve these objectives. They are:

- BART Metro Station Capacity Projects: Station improvements to increase the capacity of the stations, especially additional elevators, escalators and stairs in key stations;
- BART Metro Track Capacity Projects: Additional tracks, including crossover and turn-back tracks to improve operational flexibility and capacity, and additional storage tracks to allow longer trains to be stored at all locations to increase capacity.

BART Metro projects would complement the investments in the Core Capacity Initiative.

Earthquake Safety Program and Related Seismic Safety Investment
In 2004, BART District voters approved Proposition AA, a general obligation bond to fund BART's Earthquake Safety Program (ESP), and $458 million in ESP funding remains. The majority of this funding, along with an additional $54 million from Measure RR, will be dedicated to a four-year project to reduce the likelihood of flooding in the Transbay Tube during a catastrophic earthquake.

System Expansion
At the same time BART is reinvesting in core system infrastructure, BART is also working to complete ongoing system expansion projects, including eBART and the Silicon Valley Berryessa Extension (a partnership with the Santa Clara Valley Transportation Authority that will be constructed and operated at no cost to BART). BART is also working with partners to study the possibility of future expansion. No new system expansion projects are included in the CIP.

2.2.2 Funding Sources

This financial plan was developed using the constrained version of the draft Short Range Transportation Plan (STRP) / Capital Improvement Program (CIP) (2017-2031) (dated February 2017) updated with the preliminary FY18 budget. BART has identified available funding over the 15 years (2017-2031) of the CIP from a variety of federal, state, and local sources. For the remaining five years (through 2036), BART uses assumptions that feed into the updated Regional Transportation Plan (RTP).

The funding sources are as follows:

- FTA Section 5307
- FTA Section 5337
- Surface Transportation Program (STP)
- Congestion Mitigation and Air Quality (CMAQ) Funds
- Advanced Automatic Train Control (AATC) grant funds
- FTA Capital Investment Grant (CIG) Program
- State Transportation Improvement Program (STIP)
- Cap and Trade/Transit and Intercity Rail (TIRCP) Program
- Other State Sources
- BART Operating to Capital Allocations
- Measure RR
- BART Earthquake Safety Bonds
- Other BART

- AB664 Bridge Tolls
- Regional Measure 2
- Regional Measure 3
- Contra Costa Measure J Sales Tax
- Alameda County Measure BB Sales Tax
- Santa Clara VTA Contributions
- San Francisco Measure A GO Bond
- County Congestion Management Authorities
- Other Local

FTA Section 5307

Section 5307 – Urbanized Area Formula. This federal program distributes funds to regions based on an urbanized area formula. FTA identifies 12 urbanized areas in the Bay Area—five large and seven small. BART is eligible to receive federal formula funds in three urbanized areas: San Francisco-Oakland, Concord, and Antioch.

FTA Section 5337

FTA Section 5337 – State of Good Repair. This program provides grants to maintain transit systems in a state of good repair. These funds may be used only for equipment replacement or rehabilitation, or other capital projects needed to keep transit systems in good repair. These funds are distributed to BART through MTC's Transit Capital Priorities program for specific types of system renovation and repair projects.

Surface Transportation Program (STP)

BART is eligible for the Federal Surface Transportation Program funds, which are programmed by MTC on a two or three-year cycle. STP funds flow to BART and are administered by FTA as if they were Section 5307 formula grants. Eligible projects include regional planning, regional operations, regional bicycle program, transportation for livable communities, and transit capital rehabilitation. MTC allocates STP funds through the competitive Transit Capital Priorities program.

Congestion Mitigation and Air Quality (CMAQ) Funds

BART is eligible to receive federal funds from the Congestion Mitigation and Air Quality program. The CMAQ program, which is jointly administered by FHWA and FTA, provides funding to state departments of transportation, MPOs, and transit agencies to invest in projects that reduce air pollution in areas that do not meet the National Ambient Air Quality Standards, which are referred to as "nonattainment areas." MTC allocates CMAQ funds through its competitive Transit Capital Priorities program.

AATC Funds
Advanced Automatic Train Control (AATC) refers to Settlement Agreement Funds derived from litigation between BART and GE Transportation Systems. More details are provided in Section 2.1.2.

FTA Capital Investment Grant (CIG) Program
This is a competitive grant program, which will be a major contributor to the Transbay Corridor Core Capacity Program. Details provided in Section 2.1.2. For the purposes of this financial plan, to be conservative, the systemwide capital plan does not assume CIG funding for any other BART projects.

State Transportation Improvement Program (STIP)
BART expects to receive an additional $5 million in state funds over the lifetime of the CIP from the State Transportation Improvement Program (STIP). California's STIP is the biennial five-year plan adopted by MTC for future allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements. The STIP is updated every two years, with each new STIP adding two new years to prior programming commitments. BART expects to receive approximately $5.1 million from the STIP, which is specifically programmed toward a planned Transit Oriented Development project at Walnut Creek Station.

Cap and Trade/Transit and Intercity Rail (TIRCP) Program
In 2013, California officially launched its Cap and Trade program for greenhouse gas emissions. California Carbon Allowances (CCAs) are auctioned by the State's Air Resources Board on a quarterly basis through 2020.

California's Transit and Intercity Rail Capital Program (TIRCP) provides grants from the state's Greenhouse Gas Reduction Fund for transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems to reduce emissions of greenhouse gases by reducing congestion and vehicle miles traveled throughout California. The program funds projects that reduce greenhouse gas emissions, expand and improve rail service to increase ridership, integrate the rail service of the state's various rail operations, and improve safety.

TIRCP funds are competitive. BART expects to compete for approximately some of the total $450 million in TIRCP funds for the programmed over the 15-year period of the plan, and these funds are planned and designated for the Core Capacity Initiative in the Regional Transportation Plan. Additional details are provided in Appendix D.

Other State Sources
State transit capital funding opportunities over the next 10 years are expected to be more limited than they have been in the recent past. California voters have made significant resources available for transportation capital projects through propositions, including Proposition 1B (the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act. 2006), and Proposition 1A (The Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, 2008). All funds awarded through these programs have been allocated and are now supporting

BART investments in the Warm Springs Extension, eBART, Station Modernization, and security programs.

BART Operating to Capital Allocations

Since the 1970s, BART has reinvested annual operating revenues into its capital program. These annual allocations are used for many critical capital projects that do not qualify for grant funding or for which other funding sources may not be available.

Allocations from BART's operating revenue would provide funding to rail car replacement, renewed and expanded maintenance facilities, and other investments in state of good repair. The availability of these funds, while reasonably expected, is uncertain because it depends upon factors that affect BART's operating budget, including ridership, fare revenue, sales tax revenue, inflation, and operating costs.

To help fund the system's extensive capital needs, the program of small regular inflation-based fare increases was renewed in 2013, with all incremental fare increase revenue generated from the CPI-based increases in 2014, 2016, 2018, and 2020 dedicated to BART's capital expenditure needs. The fare increase amount is determined by averaging national and local inflation over a two-year period and then subtracting 0.5 percent to account for productivity improvements. Two increases since the renewal have been implemented to-date, January 1, 2014 and January 1, 2016. The next fare increase of 2.7 percent is planned for January 1, 2018. Continuation of the inflation based fare increase program beyond 2020 and continued direction of incremental fare revenue to high-priority capital projects are subject to Board approval.

Incremental revenue raised from the demand-based parking fee program, first implemented in 2013, is dedicated solely for investments in station access, station rehabilitation, and station modernization. Programs and projects funded by the increased parking revenue consist of both operating and capital efforts, some of which are one-time in nature and others ongoing.

In addition, BART generates a positive net operating result from its SFO Extension. Currently, proceeds from the SFO net operating reserve are directed to the 775 rail car procurement.

Measure RR

In November 2016, BART District voters approved Measure RR, the BART System Renewal Program. The measure authorizes the sale of $3.5 billion in general obligation bonds to invest in renewal and renovation of the BART system. The CIP assumes that the bonds will be sold over 18 years starting in 2017. Actual bond sales will depend on the pace of Measure RR funded work, and will be timed to minimize transaction and interest costs. The major elements of the System Renewal Plan include:

- Repair and replace critical safety infrastructure: BART will renew the basic infrastructure that comprises the core of the BART system, including tracks, power infrastructure, tunnels, and mechanical and electrical systems.
- Relieve crowding: BART will implement a package of projects that will allow it to meet growing peak period demand. Projects include modernizing and replacing major portions of the aging train control system, upgrading power infrastructure that limit BART's ability

to provide service, and expanding maintenance facilities to store and service a larger fleet of rail cars.

- Improve station access: BART will invest in improving and modernizing stations by improving station safety and security, adding elevators, and overhauling escalators to ensure fast and convenient access to platforms. BART will also make investments to improve accessibility of stations for people with disabilities and add more station access opportunities via upgraded bus facilities, bicycle facilities, and parking.

BART Earthquake Safety Bonds

In November 2004, BART district voters approved a bond measure to fund BART's Earthquake Safety Program. Funds from that bond have been invested in maintaining the safety of the BART system, including its elevated structures, stations, maintenance facilities, and other buildings. The program has upgraded critical elements of BART's infrastructure to current seismic design standards in support of the safety of BART riders and BART employees. Over its lifetime, the Earthquake Safety Program has achieved $350 million in construction savings that BART has been able to reinvest in the program to further strengthen the system.

Other BART

These comprise of previously allocated funding that is paying for projects now underway.

AB664 Bridge Tolls

Assembly Bill 664 designated MTC to allocate certain bridge tolls for projects that relieve congestion on the southern bridges (Bay Bridge, San Mateo Bridge, and Dumbarton Bridge) of the Bay Area. These funds are split 70 percent for East Bay and 30 percent for West Bay projects. In the past, BART has used AB664 bridge toll funding primarily to match federal formula grants. In the future, MTC plans to allocate BART's share of AB 664 funding toward new rail cars.

Regional Measure 2 Bridge Tolls

Voters in 2004 approved Regional Measure 2, raising the toll on the region's seven state-owned toll bridges by $1 (the Golden Gate Bridge is not included as it is owned by a special district). Referred to as RM2, the measure established a Regional Traffic Relief Plan to help finance highway, transit, bicycle and pedestrian projects in the bridge corridors and their approaches, and to provide operating funds for key transit services. In the past, RM2 has helped to fund the Transbay Tube seismic retrofit, BART-to-Oakland International Airport, and the Warm Springs extension. BART expects to compete for $40 million in RM2 funds to help fund the first 775 new rail cars.

Regional Measure 3

Regional Measure 1 (RM1) and Regional Measure 2 (RM2) were approved by voters in 1988 and 2004, respectively. Consistent with the investment strategy in Plan Bay Area, this plan assumes that in FY19 there would be an increase in the non-carpool vehicle toll on all state-owned bridges in the Bay Area. Regional bridge toll revenue forecasts are based on projected travel demand on the region's seven state-owned toll bridges.

Beginning in FY19, Plan Bay Area 2040 shows approximately $450 million from such a measure for BART's Core Capacity Initiative. Outside of the Core Capacity Initiative, the CIP assumes an additional $450 million from RM3 would support other BART capital needs that will maintain and improve mobility in major regional bridge corridors, for a total of $900 million.

Contra Costa Measure J Sales Tax

In November 2004, Contra Costa County voters approved Measure J, which took effect in 2009. BART received funding from Measure J for eBART, which received $150 million in 2004, as well as $41 million for "Parking, Access, and Other Improvements" projects. Of that total, $15 million remains unallocated. This plan assumes that BART will receive the remaining Contra Costa County Measure J allocation of $15 million, which will be spread over 10 years.

Alameda County Measure BB Sales Tax

In November 2016, Alameda County voters approved Measure BB, which authorized $100 million for the BART Metro/Bay Fair Connection, $90 million for Station Modernization Capacity enhancements and $38 million for BART Maintenance projects. Measure BB funding designated for capital programs still under evaluation, planning, and engineering are not included in this forecast ($400M for BART to Livermore Phase I and $120 for Irvington BART Station).

Santa Clara VTA Contribution to Major BART Projects

Voters in Santa Clara County approved a sales tax measure in 2000 designed to fund transit service and the future extension of BART to Santa Clara, called Silicon Valley Rapid Transit (SVRT). The first phase of the SVRT program, a two-station extension to Berryessa, is now under construction and is scheduled to begin revenue service in June 2018.

VTA and BART reached a Comprehensive Agreement in November 2001 regarding the relationship between the two organizations for the duration of the planning, building, and operating of the BART line in Santa Clara County. The agreement commits VTA to fund the purchase of new rail cars needed to serve the SVRT project. VTA has agreed to purchase 60 rail vehicles that will be operated during the first phase of the extension, the Silicon Valley Berryessa Extension (SVBX). Approximately $178 million in VTA funds are anticipated for this purpose over the next 10 years.

VTA has also committed to funding the portion of the Train Control Modernization program that will upgrade the SVRT segment to Communications-Based Train Control. BART expects to receive $111.8 million in VTA funds for this purpose over the next 10 years. Finally, VTA has agreed to contribute $27 million to fund a portion of a planned new Transit Operations Facility.

Under the terms of the Comprehensive Agreement between the two agencies, VTA will also have a responsibility to pay the capital cost of any BART system improvements outside of Santa Clara County that are made necessary by SVRT.

San Francisco GO Bond

In November 2014, San Francisco voters approved a general obligation bond to fund transportation improvements in the city. The bond included $30 million to help fund the new canopies to provide weather protection for the escalators serving BART/Muni Stations on Market Street.

County Congestion Management Authorities (CMAs)
Full implementation of BART's Core Capacity Initiative would require participation from the Congestion Management Authorities in Alameda, Contra Costa, and San Francisco Counties. This plan estimates the required contribution to be $300 million in total over the lifetime of the program. BART and MTC will work with these partner agencies to develop mutually agreeable funding strategies.

Other Local
These comprise of previously secured local funding that is paying for projects now underway.

Allocations of Funds Federal and Regional Funds from MTC

Based on policy set in the RTP, MTC distributes both federal transportation funds and regional bridge toll funds through a set of competitive regional programs: Transit Capital Priorities (TCP), the Transit Performance Initiative (TCI) and the One Bay Area Grant (OBAG). This section describes how the funds will be allocated to BART through MTC's capital funding programs.

MTC-administered Transit Capital Priorities
This program allocates limited federal and regional transit dollars to the highest priority projects for the region based on scoring criteria. According to MTC's guidelines, the process aims to: fund basic capital requirements; maintain reasonable fairness to all operators; and complement other MTC transit funding programs. BART expects to receive Transit Capital Priorities funding for the following uses:

- **Rail Car funding:** MTC will fund phase 1 of 775 new rail cars through the Transit Capital Priorities program. This funding, which is committed to the BART rail car procurement project in MTC resolutions 4126, will be drawn from:
    - Federal funds, including FTA 5307 and 5337 revenues, and previously received STP and CMAQ funds that have been banked by MTC on BART's behalf.
    - Regional funds, including AB 664 Bridge Tolls; as well as MTC financing against expected future bridge toll revenue.
- **State of Good Repair Funding;** MTC has committed to BART approximately $52.6 million per year in Federal Section 5337 funding between FY17 and FY20 toward BART's state of good repair needs in the following categories: traction power; train control; rail, way and structures; and automatic fare collection equipment. Based on guidance from MTC's Transit Finance Working Group, BART expects to receive the same level of funding, escalated by 3 percent annually for the remaining years of the CIP.
- **Transbay Corridor Core Capacity Program:** MTC will supply $179 million toward BART's next 306 cars. Additionally, MTC will supply up to $163 million towards train control. This funding is committed in MTC resolution 4123. This financial plan assumes $335.6 million in TCP funds towards the CIG-eligible portion of the Transbay Corridor Core Capacity Program. Additional details are provided in Section 2.1.2 and Section Appendix D, List of Supporting Documents, Section E-1.

MTC-administered Transit Performance Initiative (TPI)

This initiative is a pilot program that directs federal formula funds toward low-cost capital investments that can be implemented quickly and efficiently, and are designed to increase ridership and productivity. Based on forecasts from MTC's Transit Finance Working Group, BART expects to receive $3.5 million per year with a 3 percent annual increase each year. These funds will be directed toward the highest priority projects that increase productivity and ridership.

MTC-administered One Bay Area Grant Program (OBAG)

This program, established in 2012, directs federal funds toward regional transportation priorities while also advancing the Bay Area's land-use and housing goals. OBAG is a competitive funding source that is open to localities as well as transit operators. BART expects to compete for a limited amount of OBAG funding. BART estimates that it will receive approximately $2 million per year from this competitive funding source.

2.2.3 Capital Sources and Uses of Funds

The proposed capital uses and sources of funds, by year, for the BART agency wide capital plan are summarized in Table 2-14.

Table 2-14 Systemwide Capital Uses and Sources of Funds, by Fiscal Year (YOE$ Millions)

Fiscal Year	Total	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036
CAPITAL USES OF FUNDS																					
Basic Infrastructure Renewal	5,287	439.5	332.1	263.7	273.6	222.9	233.4	237.3	335.2	297.4	295.8	327.3	337.6	340.9	353.2	356.1	149.9	117.9	121.1	124.4	127.7
Major Systems Reinvesment: Big 3 (excl. CB	2,406	124.4	342.0	677.6	663.2	406.5	123.2	37.1	14.9	15.5	1.6	-	-	-	-	-	-	-	-	-	-
Transbay Core Capacity Program (incl. CBTC	3,499	10.6	23.0	175.7	207.3	404.3	334.9	285.9	571.9	895.4	348.0	82.0	63.5	55.7	38.3	2.7	-	-	-	-	-
Station Modernization and Station Access	649	58.2	40.2	34.2	34.1	34.6	35.2	34.7	35.3	35.9	35.9	35.1	35.9	33.7	34.5	35.4	17.1	18.1	19.1	20.3	21.5
BART Metro	198	9.4	3.6	3.7	3.8	3.9	4.0	4.1	24.2	24.3	24.5	24.6	24.8	4.9	5.0	5.2	5.3	5.5	5.7	5.8	6.0
Earthquake Safety Program	458	48.5	87.6	81.4	78.0	70.0	90.1	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-
System Expansion	251	46.4	32.2	0.5	0.5	0.3	0.3	0.3	0.3	0.3	-	-	-	-	-	-	56.9	56.9	56.9	-	-
TOTAL CAPITAL USES OF FUNDS	**12,749**	**737**	**861**	**1,237**	**1,261**	**1,142**	**821**	**602**	**982**	**1,269**	**706**	**469**	**462**	**435**	**431**	**399**	**229**	**198**	**203**	**150**	**155**
CAPITAL SOURCES OF FUNDS																					
Federal																					
MTC-administered Transit Capital Priorities	3,214.7	166.4	159.3	562.3	623.8	356.3	114.0	67.3	260.1	79.8	75.9	65.4	67.3	69.4	71.4	73.6	75.8	78.1	80.4	82.8	85.3
MTC-administered Transit Performance Initiati	92.6	3.6	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.5	4.6	4.8	4.9	5.0	5.2	5.3	5.5	5.7	5.8	6.0
MTC-administered One Bay Area Grant Progr	43.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7
AATC funds (Old Section 5307 & 5337, Settle	35.5	4.9	-	30.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FTA-Capital Investment Grant for Transbay Co	1,250.0	-	-	50.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-
GANs Proceeds (FTA - CIG Program Advance	375.5	-	-	142.0	-	-	-	233.6	-	-	-	-	-	-	-	-	-	-	-	-	-
GANs - Retired Principal (FTA - CIG Payment	(375.5)	-	-	-	-	-	-	-	-	-	-	(70.2)	(72.6)	(75.0)	(77.6)	(80.2)	-	-	-	-	-
BART Refund (FTA - CIG Program)	(49.1)	-	-	-	-	-	-	-	-	-	-	(8.5)	(9.3)	(8.9)	(5.3)	(17.1)	-	-	-	-	-
Total Federal	**4,587.3**	**176.9**	**164.9**	**790.5**	**729.6**	**462.2**	**220.0**	**407.0**	**366.4**	**186.2**	**182.3**	**93.4**	**92.4**	**92.5**	**95.9**	**83.8**	**83.5**	**86.0**	**88.6**	**91.3**	**94.0**
State																					
California State Transportation Improvement P	5.1	-	1.0	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cap & Trade Funds (TIRCP)	454.0	-	-	79.0	69.9	69.9	69.9	69.9	-	-	19.1	19.1	19.1	21.3	17.0	-	-	-	-	-	-
Other State	94.1	46.4	45.6	0.5	0.5	0.3	0.3	0.3	0.3	0.3	-	-	-	-	-	-	-	-	-	-	-
Total State	**553.2**	**46.4**	**46.6**	**80.4**	**71.3**	**71.1**	**71.1**	**70.1**	**0.3**	**0.3**	**19.1**	**19.1**	**19.1**	**21.3**	**17.0**	**-**	**-**	**-**	**-**	**-**	**-**
BART																					
Total BART Operating to Capital Allocations	1,586.2	111.4	136.7	100.2	104.8	92.2	85.9	107.7	104.4	103.6	92.1	52.2	51.4	52.4	52.2	52.1	53.7	55.5	57.3	59.2	61.2
BART Measure RR Bonds	3,500.0	220.0	220.0	230.5	242.0	274.3	265.2	248.5	212.7	185.7	170.0	200.0	210.0	210.5	220.0	220.0	56.9	56.9	56.9	-	-
BART Earthquake Safety Program Bonds	458.4	48.5	87.6	81.4	78.0	70.0	90.1	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-
AATC funds (BART local match)	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other BART	266.2	266.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total BART	**5,812.2**	**647.6**	**444.4**	**412.1**	**424.8**	**436.6**	**441.1**	**358.9**	**317.2**	**289.3**	**262.1**	**252.2**	**261.4**	**262.9**	**272.2**	**272.1**	**110.6**	**112.4**	**114.2**	**59.2**	**61.2**
Local																					
MTC-administered TCP - AB664 and RM2 Bric	52.6	-	12.6	40.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regional Measure 3	815.0	-	-	17.5	17.5	145.0	160.0	160.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	-	-	-	-
Contra Costa County Measure	15.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
Alameda County Measure BB	228.7	8.6	8.6	8.6	8.6	8.6	8.6	8.6	28.6	28.6	28.6	28.6	28.6	8.6	8.6	8.6	-	-	-	-	-
San Francisco Prop A GO Bond	30.0	-	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	-	-	-	-	-	-	-	-
Santa Clara VTA	289.7	9.0	29.3	55.0	47.8	46.7	23.7	13.0	10.7	10.1	17.9	26.4	-	-	-	-	-	-	-	-	-
CMAs	300.0	-	-	-	75.0	75.0	75.0	75.0	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Local	72.3	30.2	15.1	5.6	5.1	5.1	5.1	5.1	0.6	0.6	-	-	-	-	-	-	-	-	-	-	-
Total Local	**1,803.3**	**49.2**	**67.0**	**131.2**	**158.5**	**284.8**	**276.9**	**266.2**	**79.3**	**78.8**	**86.0**	**93.0**	**66.6**	**43.6**	**43.6**	**43.6**	**35.0**	**-**	**-**	**-**	**-**
TOTAL CAPITAL SOURCES OF FUNDS	**12,756.0**	**920.1**	**722.9**	**1,414.2**	**1,384.3**	**1,254.8**	**1,009.1**	**1,102.1**	**763.1**	**554.5**	**549.5**	**457.6**	**439.5**	**420.2**	**428.6**	**399.5**	**229.1**	**198.4**	**202.8**	**150.5**	**155.2**
Agencywide Surplus/(Deficit)	6.8	183.1	(137.8)	177.5	123.8	112.3	188.1	500.2	(218.6)	(714.3)	(156.3)	(11.4)	(22.2)	(14.9)	(2.5)	-	-	-	-	-	-
Ending Capital Plan Balance		**183.1**	**45.3**	**222.8**	**346.5**	**458.8**	**646.9**	**1,147.1**	**928.4**	**214.1**	**57.9**	**46.4**	**24.2**	**9.3**	**6.8**	**6.8**	**6.8**	**6.8**	**6.8**	**6.8**	**6.8**

3.0 OPERATING PLAN

This section describes the operating and maintenance (O&M) costs and revenues associated with the Transbay Corridor Core Capacity Program and O&M cost and revenue projections for BART's system.

3.1 Operating and Maintenance Costs

BART estimates O&M costs using a multi-factor resource build-up model that takes into account such variables as the type of service, level of service, year of service increase, ridership, and other characteristics considered important to the development of the O&M estimate. Model development included five steps:

- Select key driving supply variables
- Assemble recent operations data
- Assign a key driving supply variable to each expense line item
- Assign costs for each expense line item to key supply variables and calculate unit costs for key supply variables
- Estimate an inflation rate for each expense line item resource unit cost and multiply for the forecast year (Financial Planning Only)

See Operating & Maintenance Cost Methodology & Estimate Report for further details. The documents are located in the Appendix.

3.1.1 Project Operating Plan and Impact on System

BART tailors its operating plan, including train frequencies and train lengths, to the demand for service. With actual and projected increases in ridership demand, BART is underway in delivering service and capacity expansion through line extensions and the new vehicle "fleet of the future" program.

Under the no-build scenario, as new rail cars are delivered, BART will increase peak period train lengths for all Transbay trains. Service on the newly opened extension to Warm Springs, and later at Milpitas and Berryessa, will begin with single line service. As ridership demand increases, two line service will be introduced.

The no-build scenario service and capacity increases are made possible not only by the opening of the new extensions, but also by the 775 replacement and expansion vehicles that will replace the current aged fleet. Under the no-build scenario, which assumes no FTA Core Capacity funding, BART assumes that part of its existing legacy fleet will undergo an overhaul rehabilitation program to augment the total fleet size that maximize train lengths and minimize headways. The total fleet size is assumed to remain constant at 1081 after the delivery of the 775th new vehicle and the conclusion of the overhaul program, limiting additional or extensive future service enhancements.

The build alternative, which includes receiving FTA Core Capacity funding, assumes the delivery of the Transbay Corridor Core Capacity Program, which includes CBTC and the capability to run shorter, 12 minute, headways through the Transbay Tube while maintaining required safety distances for passenger rail service. Improved train control capacity would allow BART to provide 30 ten-car trains per hour service through the Transbay tube in each direction. To achieve this service level, BART would also have to acquire additional rail vehicles, enhance the electric traction power system, and build a rail storage yard.

3.1.2 Systemwide Operating and Maintenance Costs

Operating Uses includes two main categories: Operating Expenses, which are expenses related to operating the system, and Debt Service and Allocations, which include debt service payments and allocations to fund capital and other projects. Operating Uses increases by $20.9 million or 2 percent overall in FY18. Main drivers of the increase are funding extensions to eBART, the expansion of HMC, contractual wage increases, and other various non-labor investments detailed in following pages.

Operating expense projections use the FY18 budget as the base. Additional inputs for future years include labor contracts, anticipated changes to benefit costs, inflation, and agreements with other agencies, utilities and purchased transportation (BART-to-OAK contracted ADA service). Expenses include the anticipated cost of operating eBART and the opening of the Hayward primary shop as part of the expanded HMC, which will allow BART to expand its new Strategic Maintenance Program (SMP) aimed to improve vehicle reliability and support reduced headways. Operating expenses include expenses for the SVBX project, however, those costs are fully borne by VTA. In addition, the forecast reflects the operating expense of lengthening and adding trains to revenue service with the arrival of new cars, with deliveries and initial service beginning in FY18.

Total Labor

Labor costs, including both wages and benefits, are the primary driver for BART's operating uses, comprising about 72 percent of BART's operating expense. Labor costs reflect the wage increases and benefits included in the FY18 through FY21 labor agreements. For represented employees, annual wage increases of 2.50 percent are scheduled for FY18 and FY19, with a 2.75 percent wage increase scheduled for FY20 and FY21. For non-represented employees, wage increases are scheduled to be the same, but delayed six months. An annual wage increase of 2.0 percent is assumed for the years not covered by the labor contracts.

The other post-employment benefit (OPEB) unfunded liability is an accounting transaction to recognize liability for post-retirement benefits other than retiree medical and pension, specifically life insurance, with an equal offsetting budget adjustment. There is no net impact to the net operating result.

Other Non-Labor Expenses

Non-labor expenses include materials usage; rental and maintenance contracts; insurance; utilities other than traction and station power; professional and technical services; and other miscellaneous expenses, including fees paid to MTC and financial institutions to administer the

Clipper regional transit smart card program. Most other non-labor categories are assumed to increase at the rate of inflation.

Electrical power costs are a sizable component of BART's operating budget. Annually, BART uses about 390,000 megawatt hours of electrical power, making BART one of Northern California's largest users.

Future Service Changes
Future service changes include:

- Increased frequencies resulting from the Transbay Corridor Core Capacity Program starting in FY26
- Service changes associated with expanding the fleet from 669 to 775 cars. BART will go to all 10 car trains on Transbay lines by 2020 and increase car maintenance capacity accordingly through Phase 1 of the HMC project and related staffing increases in the Rolling Stock & Shops division.

eBART Extension
Work continues on the two-station eBART rail project, which will provide a key linkage to eastern Contra Costa County. eBART uses modern Diesel Multiple Unit (DMU) trains to provide rail service between BART's Pittsburg/Bay Point Station and Antioch. The system consists of eight DMUs, a maintenance and operations facility, two stations, a transfer platform, and approximately 10 miles of track. eBART anticipates revenue service by May of 2018.

Purchased Transportation
Purchased Transportation includes feeder bus services, BART services to Oakland International Airport, and ADA paratransit services. BART's cost of purchased transportation is projected to be $29M in FY18, an increase of $1 million over the adopted FY17 budget. The FY18 preliminary budget does not extend beyond August 2017 for Late Night Bus Service. It is expected that the Board will decide whether to extend through FY18 as part of the budget process.

- Paratransit: BART participates in the East Bay Paratransit Consortium (EBPC) for service in the East Bay and pays Muni for a share of paratransit services in the West Bay. BART also provides funding to other local bus operators in the BART service area. Paratransit expenses are estimated to be $15.0 million in FY18, an increase of $0.8 million, or 5 percent, over the adopted FY17 budget and a subsequent expense growth of 2.2 percent. These costs include vehicle and fuel costs, as well as wage increases to retain and recruit more drivers and staff. Ridership has been slowly increasing to levels seen before the economic downturn and cost of providing service has increased in kind. Passenger demand for service on EBPC is budgeted at 737,000 passenger trips for FY18, a 0.75 percent increase in ridership from FY17 expected levels.
- San Francisco Municipal Transportation Agency/AC Transit Feeder Agreements: BART has agreements with SFMTA and AC Transit which link the annual Purchased Transportation (Feeder) payments to the rate of change in riders transferring between

BART and the local operators and to changes in Bay Area inflation. The FY18 budgeted payments are $3.5 million for SFMTA and $4.2 million for AC Transit, a combined increase of $0.7 million over FY17. In addition, MTC directs nearly $7 million of BART STA funds annually to four East Bay operators providing service to BART stations, as discussed under STA in the Tax and Financial Assistance section. Subsequent expense growth of 5.0 million has been assumed.

- BART to OAK: BART service to the Oakland International Airport opened in November 2014 and will be operated and maintained (O&M) for 20 years by a private contractor, Doppelmayr Cable Car (DCC). The FY18 estimated O&M cost is $6.3 million with a subsequent expense growth of 2.2 percent. In its first year of operation, OAK experienced a 33 percent increase in ridership over the AirBART bus service, with associated fare revenue covering about 96 percent of its operating costs. Current FY17 average weekday ridership is 2,800 trips, 3.7 percent lower than FY16 YTD.

Rail Car Fund Swap Expense

Financial Assistance, MTC allocates Federal Section 5307 Urbanized Area Formula Grant funds to BART for preventive maintenance work. Through an agreement with MTC, BART spends the federal funds and returns an equivalent amount of BART funds that MTC places in an interest-generating reserve account to help MTC fund its share of the new rail cars. There is no net impact to BART's operating budget bottom line as the Section 5307 funds are merely swapped for other funds. FY17 is the final year of the fund swap program and, including the FY17 funds of $47.1 million, a total of $374 million has been directed to the MTC reserve account since FY07. Beyond FY17, MTC will program the federal funds directly to the rail cars.

Debt Service

As of December 2016, the outstanding principal for all outstanding sales tax revenue bonds was approximately $595 million. BART's last new bond sale was in 2012, with the issuance and refunding of bonds totaling $242 million, including $111 million for the BART-to-Oakland International Airport project. Since then, BART has refunded $326 million of outstanding debt, resulting in savings of $61 million. BART's credit rating for sales tax backed debt is currently "AA+," nearly the highest level given by credit rating agencies. No new sales tax backed debt has been assumed in this financial plan. Measure RR bonds are general obligation bonds and are not reflected in the operating plan.

Allocations – To Operating Reserve

In 2014, the Board revised BART's Financial Stability Policy to increase the operating reserve to account for economic uncertainty. The new goal seeks to increase the reserve to 15 percent of operating expenses, a reserve fund goal more closely matching a single month of expenses. Funding of the reserve requires transfer to the fund of 50 percent of any annual year-end positive result, up to $3.5 million, until the reserve is fully funded.

Allocations – To Capital Projects and Programs

Each fiscal year, BART allocates operating funds to capital projects and programs. These allocations support projects that may not be eligible for external funds, BART's local match to leverage outside funding, or may represent programmatic areas BART intends to advance. The

amount of capital allocations typically depends on the amount of operating funds available. The major categories of planned allocations are described below.

- Baseline Capital Allocation: BART has substantially increased annual allocations when funding sources, primarily ridership and fare revenue, have grown more than budgeted and expected. Conversely, BART has reduced allocations when facing reduced operating revenues associated with recessions and lower ridership. This approach allows for the increases in operating sources to be redirected to one-time or short-term capital needs and for scaling back when financial resources require, instead of reducing service. Anticipated baseline allocations of $20.6 million for capital investment were reduced by $10 million as part of the proposed FY18 budget balancing solutions. These allocations typically serve as local match for federal grants or to fund ongoing capital projects for which grants are not typically available, such as stations and facilities renovation, inventory buildup, non-revenue vehicle replacement, tools and other capitalized maintenance. It is expected that unused prior year allocations will be used to mitigate the impacts of the shortfall created by the one-time FY18 reduction.
- Priority Capital Program Allocations: Incremental fare revenue from BART's inflation-based fare increase program, effective January 2014, is directed to a fund for BART's highest-priority capital programs - additional rail cars beyond the original 410 car commitment, HMC and the Train Control Modernization Project. Actual allocations are based upon actual ridership and fare revenue. Additionally, in 2014, at BART's request, the California Transportation Commission shifted Proposition 1A High-Speed Rail bond funds from other BART projects to the HMC project. The agreement is to shift $5 million from the Millbrae Tail Track project; $20 million from the planned new Operations Control Center (OCC); and $13.6 million from un-programmed Proposition 1A funds to HMC. BART is making up for this shift by allocating an equal amount of operating funds originally programmed for the HMC project to the Millbrae Tail Track and OCC projects. The final three years of this action are shown in FY17 through FY19, at $6.0 million in FY17 and $1.0 million in FY18 and FY19.
- Rail Car Sinking Fund: To help reduce the FY18 budget shortfall, the FY18 $45 million allocation is proposed to be funded with $39 million of operating allocations and $6 million of LCTOP funds received in FY16 and FY17. This completes BART's 2012 commitment to fund $298 million for the first 410 cars of the Rail Car Replacement Program. Including FY17, operating allocations have funded $249M for the rail car program and $114 million has been drawn down, leaving a balance of $135 million as of June 2017.SFO Operations: Dependent upon ridership and fare revenue, net positive financial results from operations of the SFO Extension are allocated to a reserve account per the terms of the 2007 agreements relieving SamTrans of financial responsibility for the extension into San Mateo County. Per the terms of MTC's 2013 Transit Core Capacity Challenge Grant Program (Resolution 4123), the first $145 million in the SFO reserve account will be directed to the Rail Car Replacement Program. Including FY17 estimated results, a total of $75 million is in the reserve account.

- Access Programs: Allocation to Stations and Access Programs are funded by incremental parking fee revenue generated by BART's demand-based parking program. The incremental revenue is estimated at $15.2 million in FY18, of which $9.4 million will fund continuing station and access programs, including 64 positions, implemented in FY14 through FY17. The remaining $5.8 million is proposed for new operating initiatives.
- Other: This includes accounting entries, BART-to-OAK Capital Asset Replacement Program (CARP), Joseph P. Bort MetroCenter (Met) Building, and Additional Capital Initiatives. Accounting entries allocations of $0.6 million in FY18 offset amounts booked as Other Revenue or Financial Assistance for the Pleasant Hill/Contra Costa Centre and MacArthur stations. Allocation to the Capital Asset Replacement Program (CARP) for the BART-to-OAK project to fund future renovation and replacement needs. Fund expenditure is controlled jointly by BART and the contract provider, Doppelmayr Cable Car (DCC), based upon actual needs for refurbishment and replacement over the twenty years. DCC is required to fund costs in excess of the CARP. Allocation for the purchase of the MetroCenter building and one-time capital costs. There will be operating to capital allocations between FY18 and FY27 to fund repayment of the loan from BART cash reserves that will be used to purchase the building, totaling approximately $20 million. The FY18 amount is $1.36 million plus an additional $0.65 million for one-time capital costs. Additional Capital Initiatives Allocations include $1.5 million directed to the Train Control UPS Renovation (FY15-19) and $1.8 million ongoing and $0.8 million one-time to the OCIO as discussed in the previous section. Pre-revenue hiring, training and expenses for the eBART project require allocations of $9.7 million. Between FY16 and FY18, just over $20 million of operating funds have been allocated to eBART pre-revenue startup expenses.

3.2 Operating Revenues

Operating revenues for the BART system are made up of fare revenues, non-fare operating revenues, and financial assistance. The following list presents all operating revenues:

- Rail Passenger Revenues
- ADA Passenger Revenues
- Parking Fare Revenue
- Other Operating Revenue
- Sales Tax Revenue
- Property Tax Revenue
- State Transit Assistance
- Low Carbon Transit Operations Program (LCTOP)
- Low Carbon Fuel Standard Program (LCFS)

- VTA Financial Assistance
- Other Assistance

3.2.1 Fare Revenues

Fare revenues include rail passenger revenues and ADA passenger revenues.

Since emerging from the economic downturn in 2009, BART has seen five years of positive ridership growth over six years, resulting in a 27 percent increase in ridership, or an additional 27.5M annual trips. BART anticipated that this rate of growth was not sustainable and would eventually level off. In August of FY17 (August 2016) average weekday ridership began consistently coming in under budget and eventually started declining. A downward trend in weekend ridership had been experienced starting in FY16.

Total trips for the fiscal year through February 2017 are 6 percent below the FY17 budget for the same period, and 3 percent lower than the same period in FY16. Based upon these trends, total ridership for FY17 is forecast to be approximately 124.6M. This revised estimate is 6 percent less than the FY17 adopted budget of 132.4 million and 3 percent lower than FY16's actual ridership of 128.5 million.

Average weekday trips are currently below budget by 4.5 percent and 1.8 percent below the same period in the last fiscal year. Saturdays and Sundays also missed their budget projections by 12.1 percent and 16.2 percent and are lower than the same period last year by 7.3 percent and 7.0 percent respectively.

Rail Passenger Revenues

Rail passenger revenue is projected based on the rail ridership forecast. BART fares are computed using a distance-based formula with surcharges applied. Based on the trends reviewed above, this budget is based on a preliminary FY18 ridership estimate of approximately 125.7 million annual trips and 431,100 average weekday trips. This estimate reflects a forecast of continued decline in core system ridership offset by new trips from extension projects opening during the fiscal year. During FY18, an additional 600,000 annual trips are expected from the first full year of service to Warm Springs/South Fremont Station, which translates to approximately 2,000 weekday exits. eBART is projected to open in May 2018 adding an additional 2,000 average weekday exits and over 100,000 new trips in the last two months of the fiscal year. As with other newly opened BART stations, ridership is forecast to start low and grow rapidly over the first few years of service. The FY18 average weekday trip forecast of 431,100 represents an average over the entire fiscal year, with just a partial year of trips from the SVBX and eBART projects.

Passenger revenue through February FY17 is also below budget, although less so than ridership. BART's strongest trip market is Transbay trips, which have a higher average fare paid per rider than other declining market segments in the East Bay and West Bay. Increasing Transbay trips and the associated higher fare has helped increase BART's systemwide average fare. Fare revenue projections for FY18 have been adjusted to include the higher average fare.

To help fund the system's extensive capital needs, BART renewed its program of small regular inflation-based fare increases in 2013 and dedicated all incremental fare increase revenue to BART's priority capital program needs. The fare increase amount is determined by averaging national and local inflation over a two-year period and then subtracting 0.5 percent to account for productivity improvements. Two increases to-date, January 1, 2014 and January 1, 2016, combined with the next fare increase of 2.7 percent planned for January 1, 2018, are projected to generate $38.8 million in FY18. Continuation of the inflation based fare increase program beyond 2020 and continued direction of incremental fare revenue to high-priority capital projects are subject to Board approval.

ADA Passenger Revenues

BART complies with the Americans with Disabilities Act (ADA) requirement to provide paratransit service comparable and complementary to the BART system. In their areas of joint service, BART and AC Transit fund and administer the East Bay Paratransit Consortium (EBPC), which provides service through contractors. BART directly collects fare revenue from EBPC trips. Fare revenue projections are a function of ridership. Recent paratransit ridership has been relatively flat and is expected to remain flat during the time covered by this SRTP, with a projected growth in revenues of 0.7 percent per year.

The forecast of fare revenues may be conservative in that it does not account for any new trips that could be induced when BART starts to offer more frequent trains and less crowded peak hour conditions.

3.2.2 Non-Fare Operating Revenues

Non-fare operating revenues include parking fee revenue and other operating revenue.

Parking Fee Revenue

BART generates revenue from daily and permit parking fees charged at its 33 stations with parking facilities. Under a demand-based approach to pricing parking, daily parking fees are re-evaluated every six months. Costs for permits and fees may either increase or decrease, depending upon whether the facility's utilization is above or below 95 percent capacity. There currently is a daily fee maximum of $3 at all stations, except for West Oakland Station, which does not have a cap and is currently at $9. Parking fees have now reached the $3 daily fee limit at 32 of the 34 stations with parking. Coliseum and South Hayward stations are currently at $2.50 and $2, respectively. It is conservatively assumed that the $3 cap will stay in effect, with no increase due to inflation. Parking revenue generated at stations on the SVBX extension will be collected by VTA and is not included in the FY18 Preliminary Budget. The FY18 Preliminary parking revenue budget is $35.0 million. Parking fee revenue is tied to parking growth rate at 3 percent.

Under a program approved by the Board in 2013, incremental revenue raised from the demand-based parking fee program is dedicated to investments in station access, station rehabilitation, and station modernization. Programs and projects funded by the increased parking revenue consist of both operating and capital efforts, some of which are one-time in nature and others ongoing. Approximately $15.2 million of the FY18 parking revenue is generated by the demand-

based parking fee program to fund access projects, with $9.4 million funding ongoing access improvement initiatives implemented in prior years, such as additional station cleaners and station improvement efforts. The remaining approximately $5.8 million will fund new programs in FY18, as described in the Initiatives section.

Other Operating Revenue

BART also generates operating revenue from non-passenger sources, the value of which is expected to be $32.1 million in FY18. The two largest sources are advertising and the Commercial Communications Revenue Program (CCRP), budgeted at $11.7 million and $10.2 million, respectively. Smaller revenue sources include fines and forfeitures, investments, building and ground leases, concessions, and other miscellaneous revenues.

Advertising currently brings in more than $10 million per year in guaranteed revenue. BART entered into an Advertising Franchise Agreement with a third party that manages the sales and posting of advertising on BART's behalf. The Franchisee pays BART either a Minimal Annual Guarantee or 70 percent of net revenue, whichever amount is greater. Ads are sold in static poster frames, in illuminated sign boxes, as vinyl directly applied to surfaces, and on digital screens. The sale of new forms of advertising - Train Wraps and "Innovation" or "Amenity" Sponsorships - was recently authorized by the BART Board. These additional advertising media are expected to increase advertising revenue by approximately $1.2 million in FY18, bringing total ad revenues to $11.7 million. However, a slight drop in advertising revenue of 8.5 percent is shown in 2019 and revenues are then conservatively expected to be constant till 2028. A 2.2 percent annual growth rate is applied beyond 2028.

The CCRP is managed by the Office of the CIO, which works to expand the commercial fiber and wireless telecommunications revenue footprint. In FY17, BART executed a Communications Agreement with the San Francisco Municipal Transportation Agency (SFMTA) and the San Francisco Board of Supervisors. This Agreement grants BART authority to set pricing and establish contracts for fiber and wireless revenue services in the SFMTA tunnels. In addition, in FY17, BART published a commercial communications Invitation for Proposal – inviting firms to propose new revenue generating opportunities for BART Commercial License Agreements in Stations, Trains and along the wayside. The CCRP is estimated to generate $10.2 million in FY18.

Parking citation revenue, noted as fines and forfeitures, is budgeted at $3.1 million in FY18, a decrease of $0.2 million from the FY17 budget but an increase of approximately $1.0 from the FY17 year-end estimate for citation revenue. The approved citation fee increases for FY17 were not implemented until January 2017, a delay from the schedule anticipated by the FY17 budget.

Building and ground lease revenue is received from leasing vacant parcels and from Special Entrance Agreements at Powell Street Station that provide access from the station to the shopping center entrance. The budget for FY18 is $1.1 million.

Other revenue, budgeted at $6.0 million in FY18, includes investments, public telephones, concessions, ground leases at West Dublin/Pleasanton, Pleasant Hill/Contra Costa Centre, MacArthur and Castro Valley stations, special fees and permits, reimbursable support costs for

telecommunications, Capitol Corridor Joint Powers Authority's overhead recovery, Coliseum special events parking and other miscellaneous sources.

In November 2016, BART entered an agreement with SFMTA to manage the fiber optic and cellular licensing opportunities in the SFMTA underground. Although it will take one to two years to construct the necessary telecommunication infrastructure, this agreement has the potential to increase BART's revenue by an additional $1 to $3 million annually in coming years. This additional revenue is not included in the current forecast.

3.2.3 Finance Assistance

Finance assistance includes sales tax revenue, property tax revenue, state transit assistance, low carb transit operations program, and low carbon fuel standard program, and other assistance.

Sales Tax Revenue

A dedicated 75 percent share of a one-half cent sales tax levied in the three BART counties (San Francisco, Alameda and Contra Costa) is BART's second largest source of revenue after passenger fares. The remaining 25 percent is split equally between AC Transit and the SFMTA. BART's sales tax base is generally diverse, and data from the State Board of Equalization indicates that the largest economic segments driving BART sales tax include restaurants, retail, and new auto sales, all of which are susceptible to Bay Area economic cycles.

Annual sales tax growth for the five years prior to FY17 ranged from 4 to 8 percent, but in FY16, sales tax growth began to slow, partially due to lower fuel prices during 2016. A return to a more sustainable, long-term rate was anticipated for FY17, with a budgeted growth of 3.2 percent. With three quarters of actual FY17 data, sales tax is $1.0 million below budget and has grown just 2.6 percent. Currently, FY17 is projected to end the year at $247.5 million, which is $1.7 million below the adopted budget.

Based upon the FY17 results and the slowing growth rate over the past few quarters, FY18 is projected to grow 2.0 percent to $252.5 million, in line with MTC's 2017 Fund Estimate. Although sales tax growth has been extremely strong since the end of the recession, most regional economic forecasts anticipate Bay Area sales tax growth to settle down to a more sustainable growth rate of around 3 percent beyond FY18.

Property Tax Revenue

Property tax revenue is derived from a statutory portion of the 1percent ad valorem-based general levy in each of the three BART counties. This legacy property tax was originally enrolled in 1957 to fund planning and pre-development costs associated with construction the original BART system, and since then was permanently dedicated to fund ongoing operating needs.

The BART tax is a small, fixed percentage of tax based on assessed property values and has increased over the years with rising property values. County assessors are responsible for assessing the value of each home, as well as other residential and commercial property on January 1 of each year. That value is used to set the property tax bill that is due in December of that year and April of the following year. Although the actual BART property tax rate varies

between the multitude of distinct tax rate areas which exist within each of the three counties, in FY17 BART's share of the 1 percent averaged approximately $8 per each $100,000 of assessed value.

BART FY17 property tax revenue is projected to end at $40.2 million ($1.6 million, or 4.2 percent over budget), and future years revenues are estimated to grow at an annual rate of 5 percent.

State Transit Assistance

BART receives funding through appropriations of State Transit Assistance (STA), which is derived from actual receipts of the sales tax on diesel fuel. Statewide collections can fluctuate based on diesel prices and consumption. Appropriations to transit operators vary based on calculations of qualifying revenues for the local operator and the region. STA funding has been inconsistent throughout the years and can be subject to actions in the governor's state budget. In some years, BART received no STA funds and more recently, STA revenues statewide have declined due to lower diesel prices.

In 2015, the State Controller's Office implemented substantial changes to the revenue-based portion of the STA program in response to a legal challenge from several transit agencies. The changes have significantly altered the total funding Bay Area operators are eligible to receive. MTC, BART and other STA recipients are working with the California legislature and the California Transit Association on a legislative fix to the STA changes.

A transportation funding package "Senate Bill 1" that would invest $5.24 billion/year over the next decade to repair and maintain state highways and local roads, improve trade corridors, and support public transit and active transportation was recently passed in April 2017.

For public transit, the proposal would increase the incremental sales tax on diesel fuel dedicated to the STA program by 3.5 percent - generating approximately $250 million/year with CPI increases over time to be used for transit capital and operations purposes. The proposal also calls for another 0.50 percent increase on the incremental sales tax on diesel fuel - generating approximately $40 million per year with inflationary increases over time to intercity passenger and commuter rail systems.

A new "Transportation Improvement Fee" would also be established under the Vehicle License Fee law. Fee revenues would be dedicated to the STA program ($105 million per year) for "state of good repair" types of expenditures; the Transit and Intercity Rail Capital Program ($245 million per year); and a new "Solutions for Congested Corridors Program" ($250 million per year) for allocation to a balanced set of transportation, environmental and community access improvements within highly congested travel corridors in California – including public transit projects.

The proposal would also provide for accelerated loan repayment from the General Fund to public transit, which would be deposited into the Transit and Intercity Rail Capital Program. Leadership in both the Senate and the Assembly expect the package to be voted on by early April. A 2/3 vote in each house is necessary to pass the proposal and move the bill to Governor.

In October 2016, MTC estimated BART's share of FY17 STA at $15.9 million, with $6.8 million of that amount directed by MTC to feeder bus operators providing service to BART stations, leaving $9.1 million for BART operations, slightly higher than the FY17 budget. MTC's February 2017 FY18 Fund Estimate has BART's share of FY18 STA at $17.5 million, with $6.9 million of it directed to feeder bus operators, leaving a net of $10.6 million for the FY18 Preliminary Budget. The financial currently assumes at 3 percent annual growth rate. When approved by the Governor, BART could see an increase of STA funds. This increase is currently estimated at $14 million annually, starting with a partial year in FY18.

Low Carbon Transit Operations Program (LCTOP)

BART is eligible to receive funding from the Low Carbon Transit Operations Program (LCTOP), one of several programs of the Transit, Affordable Housing, and Sustainable Communities Program (Senate Bill 862) established in 2014 by the California Legislature. The LCTOP provides transit agencies with operating and capital assistance for programs to reduce greenhouse gas emissions and improve mobility and prioritizes serving disadvantaged communities.

LCTOP revenues are derived from Cap and Trade auction proceeds. Reduced auction proceeds greatly impacted FY17, which came in $4.9 million under budget. In FY18, the most recent quarterly auction generated $8 million statewide for all Cap and Trade programs, yielding just $1.5 million for LCTOP across the entire state. The continued uncertainty over the litigation appears to be driving down auction results. MTC reports that it is possible the state will suspend the program temporarily. Based on this, BART is assuming no LCTOP funds for FY18. The financial plan however estimates $4.5 million in annual future funding starting 2019.

Low Carbon Fuel Standard Program (LCFS)

The Low Carbon Fuel Standard Program (LCFS) is a state program administered by the California Air Resources Board. The purpose of the program is to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives. Under newly updated regulations, electric railroad operators such as BART are permitted to sell credits to producers of higher-carbon-intensity fuels for the purpose of meeting their program compliance obligations. Revenues collected from the LCFS credits depend on the LCFS credit market and the timing of BART's sales.

Based on four years of market history, BART expects annual revenue between $2.9 million and $10 million per year, though actual revenues in future years are unpredictable and will depend on market conditions at the time. An annual budget of $4.0 million is included in the financial plan starting 2018.

VTA Financial Assistance

As discussed previously, VTA is responsible for all O&M costs and overhead for service on the extension to Berryessa (SVBX). This new financial assistance category represents payment from VTA for the net operating cost of the extension. This is calculated as the difference between the net fare revenues associated with trips to or from the two SVBX stations and the calculated O&M costs to provide extension service. The $7.1 million budget for FY18 represents the estimated difference for the six months of service in FY18. Actual results for FY18 will be

used to calculate the final payment from VTA. At the Milpitas and Berryessa stations, VTA plans to collect all parking revenue and will cover associated parking O&M costs. A total of $53 million in financial assistance has been assumed in the financial plan. The VTA's planned extension from Berryessa to Santa Clara is not factored into this plan.

Other Assistance

BART also receives smaller amounts of annual funding from several local sources. Other Assistance to BART includes approximately $4.7 million annually from Alameda County's Measure BB and Measure B, which will be used for paratransit and transit operations in Alameda County. These voter-approved fund sources are assumed to be renewed at this same level when the current programs expire. The paratransit funds are estimated to increase by 2.2 percent annually till FY2028 and 1.2 percent in the later years. The transit funds are estimated to increase by 1.2 percent annually.

BART is also including $0.9 million paid by Caltrain for the Millbrae Station Use, Operations, and Maintenance Agreement and $80,000 from Contra Costa County's Measure J sales tax measure, both expected to increase by 2.2 percent annually, and one-time $0.5 million in federal funds for Technical Assistance and Workforce Development.

The City of Berkeley plans to provide $60,000 in annual funding for their bike stations in perpetuity while the City of Oakland will fund $50,000 annually until FY20.

Federal Section 5307 Urbanized Area Formula Grant funds are allocated to BART by the MTC for preventive maintenance work and then swapped with other funds to pay for new rail cars. There is no net impact to BART's operating budget bottom line as the Section 5307 funds are merely swapped for other funds.

3.3 Operating Sources and Uses of Funds

The proposed operating and maintenance uses and sources, by year, for the BART agency wide operating plan is summarized in Table 3-1.

Table 3-1. Systemwide Operating Uses and Sources of Funds, by Fiscal Year (YOE$ Millions)

Fiscal Year	Total	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036
OPERATING USES OF FUNDS																					
Operating Expenses																					
Rail Operating Expenses																					
Total Labor	14,702.8	502.1	538.9	562.3	591.5	620.3	644.0	666.7	688.3	708.5	722.0	744.5	766.3	789.2	812.7	837.2	862.5	888.6	915.7	906.9	934.6
Total Non-Labor	4,329.7	161.5	166.5	174.7	178.3	183.2	187.5	192.6	195.9	201.4	214.7	220.6	227.7	233.9	238.3	244.7	249.4	256.1	261.1	268.1	273.4
Future Service Changes	1,603.1	-	-	29.7	32.4	35.2	47.2	49.4	51.5	53.5	85.8	89.0	110.0	113.7	117.5	121.5	125.6	129.9	134.3	136.1	140.8
Alternate Mode Extensions (eBART)	312.4	-	-	14.2	14.5	14.9	15.2	15.6	15.9	16.3	16.7	17.0	17.4	17.8	18.2	18.6	19.1	19.5	19.9	20.4	20.9
Total Rail Operating Expenses	20,948.0	663.5	705.4	780.9	816.8	853.6	894.0	924.3	951.6	979.8	1,039.2	1,071.1	1,121.5	1,154.6	1,186.7	1,222.0	1,256.5	1,294.2	1,331.1	1,331.5	1,369.7
Non Rail Operating Expenses																					
Purchased Transportation	758.9	28.0	29.0	29.9	30.7	31.7	32.6	33.6	34.6	35.6	36.7	37.9	39.0	40.2	41.5	42.8	44.1	45.5	47.0	48.5	50.0
Total Non Rail Operating Expenses	758.9	28.0	29.0	29.9	30.7	31.7	32.6	33.6	34.6	35.6	36.7	37.9	39.0	40.2	41.5	42.8	44.1	45.5	47.0	48.5	50.0
Total Operating Expenses	**21,706.8**	**691.5**	**734.4**	**810.8**	**847.6**	**885.3**	**926.6**	**957.9**	**986.2**	**1,015.4**	**1,075.9**	**1,108.9**	**1,160.5**	**1,194.9**	**1,228.2**	**1,264.8**	**1,300.6**	**1,339.7**	**1,378.1**	**1,380.0**	**1,419.8**
Farebox Recovery Ratio		*77.0%*	*72.7%*	*70.4%*	*70.8%*	*71.1%*	*71.1%*	*71.2%*	*71.6%*	*71.9%*	*70.2%*	*70.4%*	*69.7%*	*70.1%*	*70.6%*	*71.0%*	*71.6%*	*72.0%*	*72.5%*	*75.1%*	*75.7%*
Debt Service Coverage Ratio		*4.8*	*5.0*	*5.0*	*5.1*	*5.3*	*5.4*	*5.5*	*5.7*	*5.8*	*6.0*	*6.2*	*6.3*	*12.2*	*12.5*	*12.7*	*13.0*	*13.3*	*15.5*	*19.8*	*20.2*
Debt Service and Allocations																					
Debt Service	845.9	51.7	50.8	52.1	52.3	52.5	52.6	52.8	53.0	53.2	53.3	53.5	53.7	28.7	28.9	29.1	29.3	29.6	26.2	21.1	21.3
Allocations - To Operating Reserve	47.1	-	0.0	3.5	-	-	-	3.3	1.8	3.5	-	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Allocations - Baseline Capital Renovation	572.9	23.2	10.6	21.1	21.5	8.0	0.2	30.2	30.8	31.5	32.2	32.9	33.6	34.4	35.1	35.9	36.7	37.5	38.3	39.2	40.0
Allocations - Priority Capital Projects/program	503.0	41.4	39.8	46.1	54.8	64.9	75.8	37.7	45.0	45.0	45.0	3.5	-	2.3	1.7	-	-	-	-	-	-
Allocations - Rail Car Sinking Fund	84.0	45.0	39.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allocations - To SFO Operations	98.8	13.3	7.5	8.2	9.7	10.6	11.4	12.1	13.0	12.9	-	-	-	-	-	-	-	-	-	-	-
Allocations - To Access Program from Parking	220.1	5.2	5.8	6.3	6.7	7.2	7.7	8.3	8.9	9.5	10.1	10.8	11.4	12.2	13.0	13.8	14.7	15.6	16.6	17.7	18.8
Allocations - Other	116.9	13.1	17.3	7.0	5.7	5.7	5.8	5.7	5.8	5.8	5.9	5.9	3.6	3.6	3.6	3.6	3.7	3.7	3.7	3.8	3.8
Total Debt Service and Allocations	**2,488.7**	**192.9**	**170.9**	**144.3**	**150.7**	**148.8**	**153.6**	**150.2**	**158.3**	**161.4**	**146.5**	**110.1**	**105.9**	**84.6**	**85.8**	**85.9**	**87.9**	**89.9**	**88.4**	**85.2**	**87.4**
TOTAL OPERATING USES OF FUNDS	**24,195.5**	**884.4**	**905.3**	**955.0**	**998.3**	**1,034.1**	**1,080.2**	**1,108.1**	**1,144.4**	**1,176.8**	**1,222.4**	**1,219.1**	**1,266.4**	**1,279.5**	**1,314.0**	**1,350.7**	**1,388.5**	**1,429.6**	**1,466.4**	**1,465.2**	**1,507.2**
OPEB Unfunded Liability	79.6	2.4	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.3	4.4	4.5	4.6	4.8	4.9	5.1	5.2
TOTAL OPERATING USES OF FUNDS (EXCL. OP	**24,115.9**	**882.0**	**902.2**	**951.9**	**995.0**	**1,030.8**	**1,076.7**	**1,104.5**	**1,140.8**	**1,173.0**	**1,218.5**	**1,215.0**	**1,262.2**	**1,275.2**	**1,309.6**	**1,346.2**	**1,383.8**	**1,424.8**	**1,461.5**	**1,460.1**	**1,502.0**
OPERATING SOURCES OF FUNDS																					
Fare Revenues																					
Fare revenue	12,297.0	474.6	472.8	503.8	522.9	540.8	558.6	570.0	581.8	594.0	606.6	619.6	633.0	647.0	661.2	676.5	692.4	708.9	726.0	743.9	762.7
Fare increase for priority caital	2,734.2	35.4	38.8	45.1	54.8	64.9	75.8	86.8	98.2	110.0	121.6	133.7	147.2	161.1	175.3	190.2	205.8	221.8	238.3	255.4	273.8
ADA Passenger Revenue	19.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Fare Revenues	**15,050.1**	**510.8**	**512.6**	**549.8**	**578.6**	**606.6**	**635.4**	**657.7**	**680.9**	**704.9**	**729.1**	**754.2**	**781.1**	**809.0**	**837.5**	**867.7**	**899.1**	**931.7**	**965.4**	**1,000.4**	**1,037.6**
Non-Fare Operating Revenues																					
Parking Revenue	912.6	33.5	35.0	36.1	37.1	38.2	39.4	40.6	41.8	43.0	44.3	45.7	47.0	48.4	49.9	51.4	52.9	54.5	56.2	57.9	59.6
Other Operating Revenue	633.5	27.5	32.1	29.1	29.2	29.5	29.7	30.0	29.9	30.2	30.5	30.8	31.1	31.7	32.4	33.1	33.8	34.6	35.3	36.1	36.9
Total Non-Fare Operating Revenues	**1,546.1**	**61.0**	**67.1**	**65.2**	**66.3**	**67.7**	**69.1**	**70.6**	**71.7**	**73.2**	**74.8**	**76.4**	**78.1**	**80.2**	**82.3**	**84.5**	**86.8**	**89.1**	**91.5**	**93.9**	**96.4**
Financial Assistance																					
Sales Tax Revenue	6,590.2	249.2	252.5	260.0	267.8	275.9	284.1	292.7	301.4	310.5	319.8	329.4	339.3	349.5	359.9	370.7	381.9	393.3	405.1	417.3	429.8
Property Tax	1,327.0	38.6	42.2	44.3	46.5	48.8	51.3	53.8	56.5	59.4	62.3	65.5	68.7	72.2	75.8	79.6	83.5	87.7	92.1	96.7	101.5
State Transit Assistance (STA)	275.4	8.9	10.6	10.9	11.3	11.6	11.9	12.3	12.7	13.0	13.4	13.8	14.3	14.7	15.1	15.6	16.0	16.5	17.0	17.5	18.1
Low Carbon Transit Operations Program	88.0	7.0	-	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Low Carbon Fuel Standard	76.0	-	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
VTA Financial Assistance	53.3	-	7.1	14.7	9.1	2.3	7.2	6.0	4.4	2.5	-	-	-	-	-	-	-	-	-	-	-
Other Local and Other Assistance	158.3	6.4	6.2	5.9	6.0	6.1	6.8	6.2	6.4	8.6	8.8	9.0	9.2	9.4	9.5	9.7	9.9	10.1	8.9	7.6	7.7
Total Financial Assistance	**8,568.2**	**310.1**	**322.6**	**344.3**	**349.2**	**353.2**	**369.8**	**379.5**	**389.9**	**402.5**	**412.9**	**426.2**	**440.0**	**454.2**	**468.9**	**484.1**	**499.8**	**516.1**	**531.6**	**547.6**	**565.6**
TOTAL OPERATING SOURCES OF FUNDS	**25,164.3**	**882.0**	**902.2**	**959.3**	**994.1**	**1,027.5**	**1,074.3**	**1,107.8**	**1,142.6**	**1,180.7**	**1,216.8**	**1,256.8**	**1,299.2**	**1,343.4**	**1,388.7**	**1,436.3**	**1,485.7**	**1,536.9**	**1,588.5**	**1,642.0**	**1,699.6**
Operating Surplus/(Deficit)	1,048.4	0.0	0.0	7.4	(0.9)	(3.3)	(2.4)	3.3	1.8	7.7	(1.7)	41.8	37.0	68.2	79.0	90.0	101.9	112.2	127.0	181.8	197.7
Ending Operating Cash Balance		**1.6**	**1.6**	**9.0**	**8.1**	**4.8**	**2.4**	**5.7**	**7.5**	**15.1**	**13.4**	**55.2**	**92.2**	**160.4**	**239.4**	**329.4**	**431.3**	**543.5**	**670.5**	**852.3**	**1,050.0**
Ending Operating Reserve Balance		**40.7**	**40.7**	**44.2**	**44.2**	**44.2**	**44.2**	**47.5**	**49.3**	**52.8**	**52.8**	**56.3**	**59.8**	**63.3**	**66.8**	**70.3**	**73.8**	**77.3**	**80.8**	**84.3**	**87.8**

4.0 CASH FLOW ANALYSIS

This chapter integrates and summarizes the sources and uses of funds from both the capital and operating plans to demonstrate that BART has the financial capacity to undertake the project without adversely affecting service and operations on the rest of the transit system.

4.1 Twenty-Year Cash Flow Projection

The systemwide capital plan is reflected in Table 2-14 and the systemwide operating plan is reflected in Table 3-1. The systemwide capital plan has a positive ending cash balance. As can be seen in the systemwide operating plan forecast, there is adequate capacity in the outer years to handle additional debt service and allocations to cover program cost increase and additional capital needs.

4.2 Financial Evaluation

Four key measures were used to reflect BART's financial capacity to implement the Transbay Corridor Core Capacity Program while continuing to operate, maintain, expand, and enhance the existing transit system over the FY 2017 to FY2036 period. These measures include consideration of current FTA criteria appropriate for the Transbay Corridor program at entry into Engineering:

- The current financial condition, both capital and operating, of the project sponsor;
- The proposed share of total project capital costs from sources other than the Section 5309 CIG program;
- The commitment of funds for both the capital cost of the proposed project and the ongoing transit system operation and maintenance;
- The reasonableness of the financial plan, including planning assumptions, cost estimates, and the capacity to withstand funding shortfalls or cost overruns.

4.2.1 Current Capital and Operating Condition

The current capital and operating condition of BART is expected to rate High, according to the following FTA criteria:

- **Current Ratio**— BART's FY2016 current operating condition and operating ratio of 2.51 which exceeds the High rating threshold of 2.0.
- **Bond Ratings**—Bond ratings for BART's senior lien sales tax revenue bonds are AA+ (Fitch and S&P), above the threshold for a High rating.
- **Cash Flows**—Historically, BART has had historical positive cash flows, with no cash flow shortfalls, which meets the threshold for a High rating.

- **Service Adjustments**—BART has had only minor service adjustments in recent years, exceeding the threshold for a Medium rating.
- **Average Fleet Age**— BART's average vehicle fleet age is 16.7 years, which earns a Low rating. However, after the acquisition of the new 775 vehicles, replacing the entire rail fleet, BART's average vehicle fleet age will be 1 year, which would earn a High rating.

4.2.2 Commitment of Capital and Operating Funds

Commitment of Capital Funding—Local and regional funding commitments for the Transbay Corridor project total 44.0 percent of the non-CIG share of costs. Based on FTA criteria, this level of commitment qualifies the project for a Medium rating.

Commitment of Operating Funding—Greater than 75 percent of the funds needed to operate and maintain the proposed transit system in the opening year of the project are committed or budgeted, which is sufficient to earn the project a High rating.

4.2.3 Reasonableness of Capital Plan

Systemwide Capital Planning Assumptions

As described in Section 2 of this document, BART has the financial capacity to fully fund the annual costs of the capital programs, including debt service over the FY2017 to FY2036 period.

System-wide capital cost estimates are realistic and include funding for system preservation and state of good repair. Appendix C-1 has historic systemwide capital source and uses data. Federal revenues are forecast to decline at a CAGR of approximately -3.3 percent per year between 2017 and 2036, which is conservative compared to the CAGR of 1.5 percent experienced between 2012 and 2016. Additionally, state revenues are conservatively forecast until year 2025, to decline at approximately 1.8 percent per year between 2017 and 2025, which is highly conservative compared to the CAGR of 3.9 percent experienced between 2012 and 2016. BART revenues are forecast to decline at approximately -11.4 percent per year between 2017 and 2036, which is conservative compared to the CAGR of -3.9 percent experienced between 2012 and 2016. Local revenues are conservatively forecast until year 2032, declining at approximately -2.2 percent per year between 2017 and 2032, compared to the CAGR of -6.4 percent experienced between 2012 and 2016.

A combination of local, state, and federal sources are proposed to fund annual system-wide capital costs in combination with bond proceeds to be repaid over the 20-year projection period. BART and local funds are the primary source of capital funding, providing 59.1 percent of revenues on a cash basis. Federal sources provide 36.8 percent with State sources contributing the remaining 4.1 percent of capital funding. The current amount of state funding assumed in the financial plan does not account for additional funds from the recent passage of California Senate Bill 1, and is therefore a highly conservative assumption.

In conclusion, the capital plan contains conservative planning assumptions and cost estimates when compared with recent historical experience, which is sufficient to earn a Medium-High rating.

Program Funding Capacity

The Transbay Corridor capital cost estimate is based on BART's experience and includes a 30 percent allocated and unallocated contingency. Moreover, as Section 5 of this report demonstrates, BART has access to funds via additional debt capacity, cash reserves, or other committed funds to cover project cost increases or funding shortfalls equal to at least 15 percent of the estimated project cost, which contributes to a Medium Reasonableness rating.

4.2.4 Reasonableness of Operating Plan

Systemwide Operating Planning Assumptions

As summarized in Section 3.0 of this document, BART maintains a balanced program to adequately fund the annual O&M costs of BART system services. Appendix C-2 has historic systemwide operating source and uses data. As shown in the financial plan, fare revenues are forecast to grow at approximately 3.8 percent per year between 2017 and 2036, which is highly conservative compared to the compounded average growth rate (CAGR) of 7.4 percent experienced between 2012 and 2016. Additionally, non-fare operating revenues are forecast to grow at approximately 2.4 percent per year between 2017 and 2036, which is also very conservative compared to the compounded average growth rate (CAGR) of 13.4 percent experienced between 2012 and 2016. Receipts from financial assistance programs are forecast to grow at approximately 3.2 percent per year between 2017 and 2036, which is conservative compared to the compounded average growth rate (CAGR) of 5.0 percent experienced between 2012 and 2016. Overall, total operating sources are forecast to grow at approximately 3.5 percent per year between 2017 and 2036, which is conservative compared to the compounded average growth rate (CAGR) of 6.9 percent experienced between 2012 and 2016.

Additionally, operating expenses are forecast to grow at approximately 3.9 percent per year between 2017 and 2036, which is lower than the compounded average growth rate (CAGR) of 4.8 percent experienced between 2012 and 2016. Total Debt Service and Allocations are forecast to decline at an overall rate of -4.6 percent per year between 2017 and 2036 due to no new issuances, compared to the compounded average growth rate (CAGR) of 11.1 percent experienced between 2012 and 2016. Total forecast operating uses of funds, including both operating and maintenance costs and allocations are forecast are forecast to grow at approximately 2.8 percent per year between 2017 and 2036 compared to the compounded average growth rate (CAGR) of 6.1 percent experienced between 2012 and 2016. This difference is understandable due to lesser debt service in future years and the higher than normal capital allocations over the last few years.

Therefore, the operating plan contains conservative planning assumptions and cost estimates when compared with recent historical experience, which is sufficient to earn a Medium-High rating.

Funding Capacity

Local funding sources (including fare and other system generated revenue) comprise the largest share of annual BART revenues, followed by state funding (1.7 percent), and minimal federal sources. The current amount of state funding assumed in the financial plan does not account for

additional funds from the recent passage of California Senate Bill 1, and is therefore is highly conservative assumption. This increase is currently estimated at $14 million annually, starting with a partial year in FY18.

BART has $40.7 million in reserve for economic uncertainty which is currently over 5 percent of annual operating expenses excluding any debt service or capital allocations. This reserve would cover less than a month of annual expenses. BART has a goal of increasing this reserve to 15 percent of annual operating expenses.

Other reserves demonstrate that BART has access to funds via additional cash reserves to cover at least 8 percent of annual system wide operating expenses, which is sufficient to earn the project a Medium-Low rating.

4.2.5 Conformance with Debt Policy

The District's Debt Policy as approved by the Board on February 23, 2017 establishes comprehensive guidelines for the issuance and management of the District's bonds, lease financing and other obligations for borrowed money. This Debt Policy is intended to help ensure that: (i) the District, the Board and other District management and staff adhere to sound debt issuance and management practices; (ii) the District achieves the most advantageous cost of borrowing commensurate with prudent levels of risk; and (iii) the District preserves and enhances the credit ratings of its Bonds. BART's debt outstanding from Sales Tax Revenue Bonds is payable from pledged sales tax revenues, and BART's debt outstanding from General Obligation bonds is payable from *ad valorem* property taxes.

Sales Tax Revenue Bonds

BART'S debt ratings indicate that it is in stable financial condition. BART's latest debt issuance includes $83 million in sales tax refunding revenue bonds 2016 refunding series A. This issuance was rated AA+ by S&P, and AA+ by Fitch Ratings. BART has maintained stable, high quality ratings from Moody's and Fitch, thereby demonstrating BART's consistently strong financial health. Sales Tax Revenue Bonds have financed a portion of capital projects.

BART has covenanted with bondholders certain minimum annual debt service coverage ratios (DSCRs) governing the level to which annual sales tax revenues must exceed annual debt service payments in order to issue additional senior lien debt. For the District to sell additional senior lien sales tax revenue bonds, annual sales tax revenues must exceed 1.5x the maximum annual debt service in any given fiscal year. BART is projected to exceed the minimum annual DSCR over the forecast period of 2017 – 2036.

General Obligation Bonds

BART's most recent General Obligation bond totals approximately $276 million of 2015 Refunding Series D. Moody's has assigned it a rating of Aaa and S&P has rated it AAA. As of May 1, 2017, BART also has $600,180,000 in General Obligation Bonds outstanding, they include the 2007 B Bonds, 2013 C bonds, ad 2015 D Bonds. Moody's has affirmed the outstanding GO Bonds a rating of Aaa and S&P has affirmed an AAA rating.

Measure RR – Property Tax Bonds

In November 2016, voters in the BART district passed a $3.5 billion regional bond measure. These bonds are payable solely from a levy of ad valorem taxes without limitation as to rate or amount upon all property subject to taxation within the District (except certain property which is taxable at limited rates) for the payment of and interest on the bonds.

4.2.6 Achieved Levels of System-Wide Farebox Recovery

With respect to the system operated by BART, the current system-wide farebox recovery is 77.0 percent as listed in the FY2017 adopted budget.

5.0 RISK ANALYSIS

The analysis presented in this Financial Plan provides BART's working assumptions for revenues and costs. This section identifies the primary risks and uncertainties surrounding the key assumptions and presents strategies for mitigating these risks for several risk scenarios.

5.1 Major Capital Sources of Risk and Uncertainty

This section identifies potential risks to the capital plan and BART's strategies for mitigating those risks.

5.1.1 Scope and Unit Cost Risk

Cost increases due to scope and unit cost changes could occur as a result of various factors, given the status of design underlying the current estimate. BART has assumed "worst case" costs where uncertainties exist. The current cost estimate also includes approximately 30 percent in allocated and unallocated contingencies to cover potential changes.

The identification and management of risks will continue as the project advances into Engineering. A Risk and Contingency Management Plan has been developed for the project to ensure risks are reviewed and managed, and procedures are developed to reduce or eliminate their impacts to the project. Risks which remain will be allocated in part or whole through the contractual arrangements and bidding process, conscious always that risks should be assigned and owned by the party best able to manage that risk.

5.1.2 Project Schedule

Scheduling delays can lead to cost increases that may impact the financial plan for a project, both in additional cost escalation and increased professional services costs. Schedule changes might result from delayed FTA approvals, scope changes, local permitting and approval processes, agreement negotiations, right-of-way acquisition, the availability of qualified labor, procurement delays, and vehicle manufacturing delays, construction delays, and litigation.

BART intends to construct Transbay Corridor Core Capacity Program concurrently with several other transit projects funded through Measure RR. As all of these projects will necessarily be implemented on an operating railroad, while service is being maintained, implementation of these other projects could impact the delivery schedule for the Transbay Corridor Core Capacity Program.

5.1.3 Vehicle Procurement

The baseline schedule for the Transbay Corridor Core Capacity Program anticipates that the program will be delivered over the next 10 years. The current critical path runs through the implementation of CBTC and assumes that CBTC-enabled vehicles will be available to provide increased peak hour service. The program cost estimate assumes that BART will procure the additional rail vehicles using a competitive bid procurement method. The corresponding schedule for this procurement would extend to the end of calendar year 2026. This schedule also assumes that BART would retrofit some of its legacy vehicles in order to run increased

service while the remainder of the new vehicles are fabricated and delivered to the District. BART performed two risk analyses, one that assumed a competitive bid procurement, and a second that assumed a sole source procurement and found that a sole source procurement would result in significant savings in cost as well as schedule. Thus, the procurement method chosen for the new vehicles may have an impact on BART's retrofitting strategy and the program cost while also providing opportunities for potential schedule savings.

5.1.4 Sources of Funds

Federal Funds

This financial plan assumes certain levels of Federal funds through the Section 5307 and Section 5309 grant programs. Funding to BART from these grant programs is expected to be consistent with projections contained in this financial plan. The amount of the FTA Section 5309 contribution to the Transbay Corridor Core Capacity Program would be identified in a future Full Funding Grant Agreement (FFGA) between FTA and BART. The FFGA would define the project scope and delivery schedule, fix the level of CIG funds to be provided, and identify the amount to be made available each year, subject to annual appropriations. This financial plan assumes that FTA will provide $50 million in FY2019 and $100 million per year to the project between FY2020 and FY2031.

One risk is the possibility of changes to federal legislation. The latest federal transportation authorizing legislation, the Fixing America's Surface Transportation (FAST) Act (P.L. 114-94) expires on September 30, 2020. While several of the FTA programs have continued to be in place for many years (the Section 5309 program has existed since the 1960s), through successive authorization cycles, there is a possibility that Congress could create new programs or eliminate old ones in the next authorization cycle. It might also increase or decrease the amount of funds authorized for particular programs, impose new rules on project eligibility, or revise the criteria that FTA is directed to use for evaluating potential projects.

CIG funding is also subject to several appropriation risks. Once an FFGA is signed, history has shown that Congress ultimately honors and appropriates the full amount spelled out in the FFGA. However, Congress could delay funding for the project by reducing or stretching out the annual appropriations. Any delay could necessitate additional borrowing or schedule delays.

A second appropriation risk is that FTA will not consider the project to be ready for funding in FY2019, that the FFGA would be delayed, and that FTA would not recommend that Congress appropriate funds until FY2020 or later. In order to be recommended for funding in FY2019, under current FTA guidance, more than half of the non-CIG share would need to be committed by the fall of 2017. As of the date of this financial plan, 50 percent of the non-CIG share is committed.

Third, the Trump Administration's FY2018 budget proposes that Congress phase out the Section 5309 CIG program by appropriating funds only for existing FFGAs. Under this proposal there would be no new FFGAs and Section 5309 funding would not be available for the Transbay Corridor Core Capacity program. In the appropriations process, Congress will establish the final budget for FY2018, and the extent to which Congress will accept the

Administration's budget proposal is not yet known. The Administration's proposal poses a significant funding risk and could, depending upon future congressional actions, result in significant cuts and reprioritization within BART's capital program.

Future Voter-Approved Regional/ Local Funding Measures

Over the past two decades, northern California voters have established a track record of passing transportation-related funding measures. The financial plan assumes that, starting in FY 2019, BART would receive additional capital funding for its capital program from future voter-approved funding measures including Regional Measure 3. If these revenues do not materialize, there is a risk that BART may have to modify project schedules or scopes for some of the capital projects in its long-term capital plan or identify other sources of state or federal revenues to help close the funding gap.

Financing

As in any capital project requiring the issuance of debt, the Transbay Corridor Core Capacity Program is subject to uncertainty associated with fluctuations in interest rates. Variations in interest rates could affect the interest paid on any outstanding debt, as well as the size of the debt requirements to finance the program. Fluctuations in interest rates are influenced by a number of factors, including the credit rating of the bond issuer and other external factors that are not directly under the control of the project sponsor, such as market risks. For the purposes of this financial plan, various interest rates were assumed for financing instruments which have been estimated to be appropriate given these risks.

5.1.5 Mitigation Strategies

BART has identified a number of potential mitigation strategies to address the identified risks and uncertainties to the capital plan.

Scope, Cost and Funding Uncertainty

The program cost estimate includes approximately 30 percent in contingencies (measured as a percentage of 2017 base year dollar costs without contingency). Conservative assumptions have been made for vehicle costs which may allow for additional funds to be available for other elements of the program if the rolling stock procurement comes under budget. If the costs increase beyond the estimated contingency, a possible mitigation would be to defer the non-CIG eligible costs (vehicles and train control program) to free up more funds for the CIG-eligible portion of the program.

BART currently intends to request a Letter of No Prejudice (LONP) from FTA allowing the program to proceed into implementation in advance of the FFGA. The LONP would also provide a mitigation measure in the event that the FFGA and congressional appropriations do not occur until FY2020. In this event, BART would seek to advance local funding to the extent possible in anticipation of FTA funding coming later in the program delivery phase.

In order to address uncertainty around future voter-dependent measures, the financial plan tries to build a cash-flow balance where possible. Additionally, interest earnings on cash balances have been excluded for the program as a mitigation measure. If deferral of non-CIG eligible

costs or using cash-flow balance isn't sufficient to cover any funding shortfall, BART could consider using debt and credit instruments like TIFIA to address additional funding gaps.

Financing

The program financial plan currently shows a potential refund to BART if available CIG funds exceed GAN debt service in the outer years. The systemwide capital plan does not incorporate these refunds – this could either allow for higher GANs to be issued due to potential funding gaps or mitigate any increase in interest rates.

5.2 Major Operating and Maintenance Sources of Risk and Uncertainty

This section identifies potential risks to the operating plan and BART's strategies for mitigating those risks.

5.2.1 Operating and Maintenance Cost Risks

In general, O&M unit costs are subject to many macroeconomic factors, including fuel prices, commodity prices, labor contracts, and security costs. These factors are all subject to the macroeconomic environment and are largely out of the hands of BART and thus are all potential risks that may have impacts on operating costs, either negative or positive. BART has estimated O&M costs as a function of vehicle-revenue hours, and any increase in unit costs could lead to an increase in overall O&M costs.

5.2.2 Operating and Maintenance Revenue Risks

Fare revenues make up a notable share of the BART's operating revenue. Ridership and a continuation of current fare levels in real terms could change due to economic conditions, the local job market, population growth or levels of traffic congestion on roads and major highways.

5.2.3 Mitigation Strategies

As described in 4.2.4, BART maintains a reserve for economic uncertainty to be used in the event of significant revenue decline to preserve the District's ongoing ability to deliver safe and reliable service to the customer and to reinvest in capital. BART's current reserve for economic uncertainty is $40.7 million with a goal to increase this reserve to 15 percent of the current fiscal year budget. This increase would yield a reserve fund which more closely matches a single month of District expenses. The funding of the reserve would be accomplished through a requirement to transfer 50 percent of any annual year-end positive result, up to $3.5 million, until the reserve is fully funded. The aforementioned reserve balance may be accessed only upon a finding that its use is necessary to either 1) provide emergency funding in the event of a major adverse natural event, or 2) supplement the budget due to an economic downturn when no other funding options are deemed feasible, as determined by the Board of Directors. Either action shall require a Board Resolution making the necessary findings supported by a majority of the full Board.

5.3 Sensitivity Analysis

This section presents an analysis of how a 15 percent increase in CIG-eligible project capital costs (SCCs 10 – 90) might be addressed. The project costs already include 30 percent of contingency. Project level risk registers are being developed as a part of project management plans and the project sponsor is committed to enacting cost containment measures as a primary tool to maintain the program's capital cost within the established budget.

This scenario illustrates the impact of a 15 percent increase in the CIG-eligible program's total capital cost estimate. The increase in cost starts showing from FY 2019 onwards since the costs over FY 2017 and FY 2018 are well-established and any increase in costs could be deferred. This scenario leads to a $390.9 million increase in the capital cost estimate and additional financing charge of $158.7 million through 2031 resulting in a total increase of $549.6 million for the CIG-eligible portion during the CIG period.

For this scenario, BART would potentially consider taking advantage of a US DOT credit instrument such as TIFIA to cover funding shortfall. This financial scenario shows BART utilizing TIFIA drawdowns until substantial completion in 2026, with a five year principal deferral after substantial completion resulting in $549.6 million in debt balance for amortization. Assuming a conservative 4 percent interest rate and 35 year maturity from substantial completion, BART would have adequate coverage to repay the TIFIA loan. Table 5-1 presents the sources of uses for the CIG-eligible portion of the program for this sensitivity case. Table 5-2 and Table 5-3 reflect the impact of the TIFIA debt service on the systemwide operating plan. As shown in these tables, BART maintains a healthy debt service coverage ratio and operating plan balance during the financial plan horizon.

Table 5-1. 15 percent increase in project costs: CIG-eligible Program Uses and Sources of Funds, by Fiscal Year (YOE$ Millions)

	Previous Years	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033	FY2034	FY2035	FY2036	Total	Total	%
USES OF FUNDS																								
CIG-Eligible Transbay Corridor Program Cost																								
Project Capital Cost (SCC 10 - 90)	0.5	5.9	20.9	160.2	205.1	410.9	352.7	296.8	484.7	784.6	232.9	9.9	9.0	9.4	13.6	-	-	-	-	-	-	2,997.0	2,997.0	92.0%
Vehicles	-	*0.0*	*1.6*	*9.9*	*15.3*	*140.2*	*87.6*	*50.5*	*298.1*	*547.5*	*184.1*	*7.8*	*7.1*	*7.4*	*10.7*	-	-	-	-	-	-	*1,368.0*	*1,368.0*	*42.0%*
Communication Based Train Control	-	*3.8*	*10.0*	*92.1*	*92.7*	*137.4*	*159.5*	*167.9*	*82.4*	*67.7*	-	-	-	-	-	-	-	-	-	-	-	*813.5*	*813.5*	*25.0%*
Hayward Maintenance Center Phase II	-	*0.6*	*5.0*	*28.4*	*59.6*	*80.1*	*57.9*	*37.0*	*44.7*	*82.1*	*27.6*	*1.2*	*1.1*	*1.1*	*1.6*	-	-	-	-	-	-	*428.1*	*428.1*	*13.1%*
Traction Power	-	*0.7*	*3.1*	*14.3*	*16.2*	*13.9*	*14.3*	*14.7*	*15.2*	*15.6*	-	-	-	-	-	-	-	-	-	-	-	*108.1*	*108.1*	*3.3%*
Program Management	*0.5*	*0.7*	*1.2*	*1.8*	*1.4*	*0.8*	*0.8*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*7.3*	*7.3*	*0.2%*
Program Contingency	-	-	-	*13.7*	*19.8*	*38.5*	*32.5*	*26.8*	*44.3*	*71.5*	*21.2*	*0.9*	*0.8*	*0.9*	*1.2*	-	-	-	-	-	-	*272.1*	*272.1*	*8.3%*
Finance Charges (SCC 100)	-	-	-	7.5	7.4	9.0	11.0	15.0	21.8	25.1	28.5	30.8	29.1	27.4	25.7	23.9	22.0	21.6	21.2	20.8	20.3	368.0	262.1	8.0%
GANs - Financing Costs	-	-	-	*1.4*	*5.7*	*5.7*	*5.7*	*8.0*	*12.7*	*12.7*	*12.7*	*12.7*	*10.3*	*7.9*	*5.3*	*2.7*	-	-	-	-	-	*103.5*	*103.5*	*3.2%*
TIFIA - Financing Costs	-	-	-	*6.1*	*1.7*	*3.3*	*5.3*	*7.0*	*9.1*	*12.4*	*15.9*	*18.1*	*18.8*	*19.5*	*20.3*	*21.1*	*22.0*	*21.6*	*21.2*	*20.8*	*20.3*	*264.5*	*158.7*	*4.9%*
TOTAL USES OF FUNDS	**0.5**	**5.9**	**20.9**	**167.7**	**212.6**	**419.9**	**363.7**	**311.9**	**506.4**	**809.6**	**261.4**	**40.7**	**38.1**	**36.8**	**39.2**	**23.9**	**22.0**	**21.6**	**21.2**	**20.8**	**20.3**	**3,365.0**	**3,259.1**	**100.0%**
SOURCES OF FUNDS																								
FTA - Capital Investment Grant	-	-	-	50.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-	1,250.0	1,250.0	38.4%
GANs Proceeds	-	-	-	142.0	-	-	-	233.6	-	-	-	-	-	-	-	-	-	-	-	-	-	375.5	375.5	11.5%
GANs Principal Repayment	-	-	-	-	-	-	-	-	-	-	-	(70.2)	(72.6)	(75.0)	(77.6)	(80.2)	-	-	-	-	-	(375.5)	(375.5)	-11.5%
TIFIA Proceeds	-	-	-	30.5	28.5	56.9	51.3	45.7	72.3	114.7	51.7	18.1	18.8	19.5	20.3	21.1	-	-	-	-	-	549.6	549.6	16.9%
TIFIA Principal Repayment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(9.8)	(10.2)	(10.6)	(11.0)	(11.5)	(53.1)	-	-
MTC - administered Transit Capital Priorities	-	-	-	-	8.0	-	-	-	196.1	14.0	-	-	-	-	-	-	-	-	-	-	-	218.1	218.1	8.7%
AATC funds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TICRP	-	-	-	25.1	25.1	25.1	25.1	35.1	-	-	-	-	-	-	-	-	-	-	-	-	-	135.4	135.4	3.5%
BART Capital Allocation	4.0	5.0	15.6	0.8	1.0	0.5	17.0	35.0	47.0	45.0	36.9	-	-	-	-	-	-	-	-	-	-	207.8	207.8	6.3%
BART Refund	-	-	-	-	-	-	-	-	-	-	-	(8.5)	(9.3)	(8.9)	(5.3)	(17.1)	-	-	-	-	-	(49.1)	(49.1)	-1.5%
BART Debt Service Allocation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31.8	31.8	31.8	31.8	31.8	158.9	-	-
Measure RR	-	1.6	12.6	61.4	52.0	116.3	90.3	100.9	-	13.3	-	-	-	-	-	-	-	-	-	-	-	448.4	448.4	14.0%
Regional Measure 3	-	-	-	16.4	17.5	145.0	160.0	160.0	-	-	-	-	-	-	-	-	-	-	-	-	-	498.9	498.9	13.8%
CMAs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Santa Clara VTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SOURCES OF FUNDS	**4.0**	**6.6**	**28.3**	**312.1**	**217.9**	**429.7**	**429.5**	**696.0**	**486.4**	**287.1**	**188.6**	**39.4**	**37.0**	**35.6**	**37.5**	**23.9**	**22.0**	**21.6**	**21.2**	**20.8**	**20.3**	**3,365.0**	**3,259.1**	**100.0%**
Ending Project Fund Balance	**4.0**	**4.0**	**12.0**	**156.0**	**161.0**	**171.0**	**237.0**	**621.0**	**601.0**	**78.0**	**5.0**	**4.0**	**3.0**	**2.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**			

Table 5-2. 15 percent increase in project costs: Debt Service Coverage Ratio, by Fiscal Year (YOE$ Millions)

Year	Sales Tax	Current Debt Service	Additional Debt Service	Total Debt Service	Debt Service Coverage Ratio
FY2017	249.2	51.7	-	51.7	4.8x
FY2018	252.5	50.8	-	50.8	5.0x
FY2019	260.0	52.1	-	52.1	5.0x
FY2020	267.8	52.3	-	52.3	5.1x
FY2021	275.9	52.5	-	52.5	5.3x
FY2022	284.1	52.6	-	52.6	5.4x
FY2023	292.7	52.8	-	52.8	5.5x
FY2024	301.4	53.0	-	53.0	5.7x
FY2025	310.5	53.2	-	53.2	5.8x
FY2026	319.8	53.3	-	53.3	6.0x
FY2027	329.4	53.5	-	53.5	6.2x
FY2028	339.3	53.7	-	53.7	6.3x
FY2029	349.5	28.7	-	28.7	12.2x
FY2030	359.9	28.9	-	28.9	12.5x
FY2031	370.7	29.1	-	29.1	12.7x
FY2032	381.9	29.3	31.8	61.1	6.2x
FY2033	393.3	29.6	31.8	61.3	6.4x
FY2034	405.1	26.2	31.8	58.0	7.0x
FY2035	417.3	21.1	31.8	52.9	7.9x
FY2036	429.8	21.3	31.8	53.1	8.1x

Table 5-3. 15 percent increase in project costs: Operating Plan Balance, by Fiscal Year (YOE$ Millions)

Year	Current Annual Surplus/ Deficit	Additional Debt Service	Total Annual Surplus/ Deficit	Operating Cash Balance
FY2017	0.0	-	0.0	1.6
FY2018	0.0	-	0.0	1.6
FY2019	7.4	-	7.4	9.0
FY2020	(0.9)	-	(0.9)	8.1
FY2021	(3.3)	-	(3.3)	4.8
FY2022	(2.4)	-	(2.4)	2.4
FY2023	3.3	-	3.3	5.7
FY2024	1.8	-	1.8	7.5
FY2025	7.7	-	7.7	15.1
FY2026	(1.7)	-	(1.7)	13.4
FY2027	41.8	-	41.8	55.2
FY2028	37.0	-	37.0	92.2
FY2029	68.2	-	68.2	160.4
FY2030	79.0	-	79.0	239.4
FY2031	90.0	-	90.0	329.4
FY2032	101.9	(31.8)	70.1	399.5
FY2033	112.2	(31.8)	80.4	479.9
FY2034	127.0	(31.8)	95.2	575.1
FY2035	181.8	(31.8)	150.0	725.2
FY2036	197.7	(31.8)	165.9	891.1

Appendix A – Summary of Regional Economic Conditions

A.1 Overview

This appendix presents a summary of economic forecasts for the Bay Area according to the following four economic indicators: population, employment, personal income, and inflation. The data provided by the Association of Bay Area Governments (ABAG) give additional information for evaluating the cost and revenue growth rates assumed in the financial plan. ABAG's forecast is based on version 1.7.8 of REMI PI+. Additional details regarding the data sources and estimation procedure are provided in Appendix D. List of Supporting Documents, Section G-1.

In general, the forecasts for the Bay area represent moderate growth during the planning horizon. Monetary values in this appendix are in constant YOE dollars unless otherwise specified.

A.2 Population

Table A-1 summarizes historic and forecasted population growth rates for the Bay Area from 2005 to 2040. The Bay Area region's population historic data is based on US Bureau of Economic Analysis.

Table A-1. 2005 to 2040 Population Growth for the Bay Area

Year	Total Population	Annual Growth rate
2005	6,817,670	
2010	7,167,871	1.01%
2015	7,654,870	1.32%
2020	7,890,281	0.61%
2025	8,225,158	0.83%
2030	8,599,989	0.90%
2035	9,034,359	0.99%
2040	9,522,251	1.06%
2005 - 2015 CAGR		**1.16%**
2015 - 2040 CAGR		**0.88%**

As is shown in Table A-1, population growth in the Bay Area is forecast to grow at approximately 0.88 percent per year between 2015 and 2040, which is conservative compared to the compounded average growth rate (CAGR) of 1.16 percent experienced between 2005 and 2040. This growth means the Bay Area will continue to be California's second-largest population and economic center.

A.3 Employment

Table A-2 presents the historic and forecasted employment growth for the Bay Area from 2005 to 2040. The Bay Area's historic information is from ABAG based on data obtained from the US Bureau of Labor Statistics (wage and salary employment), and the US Bureau of the Census (self-employment).

Table A-2. 2005 to 2040 Employment for the Bay Area

Year	Total Employment	Annual Growth rate
2005	3,449,740	
2010	3,410,853	-0.23%
2015	4,025,607	3.37%
2020	4,038,481	0.06%
2025	4,137,510	0.49%
2030	4,236,895	0.48%
2035	4,456,540	1.02%
2040	4,698,374	1.06%
2005 - 2015 CAGR		**1.56%**
2015 - 2040 CAGR		**0.62%**

Employment in the Bay Area is forecast to grow at a CAGR of 0.62 percent between 2015 and 2040, which is conservative compared to the 1.56 percent annual growth rate experienced historically between 2005 and 2015. This level of growth is consistent with expectations for the greater United States as economies recover from the recent recession.

As the Bay Area continues to recover from the lingering effects of the Great Recession, certain economic trends and indicators will likely rebound. As indicated in the Regional Forecast of Jobs, Population and Housing supplemental report to the draft Plan Bay Area (Appendix D. List of Supporting Documents, Section G-2), and strong job growth is expected in the professional services, health and education, and leisure and hospitality sectors. Plan Bay Area's distribution of jobs throughout the region is informed by changing trends in the locational preferences of the wide range of industry sectors and business place types in the Bay Area. These trends capture ongoing geographic changes, as well as changes in the labor force composition and workers' preferences. The employment distribution directs job growth toward the region's larger cities and Priority Development Areas with a strong existing employment base and communities with stronger opportunities for knowledge-sector jobs.

A.4 Personal Income

Table A-3 summarizes historic and forecasted personal income for the Bay Area from 2005 to 2040. The Bay Area's historic and forecasted median household income data was obtained from US Bureau of Economic Analysis.

Table A-3. 2005 to 2040 Personal Income for the Bay Area

Year	Personal Income	Annual Growth rate	Personal Income per capita	Annual Growth rate
2005	362,777		53,211	
2010	415,820	2.77%	58,012	1.74%
2015	582,565	6.98%	76,104	5.58%
2020	708,892	4.00%	89,844	3.38%
2025	911,343	5.15%	110,799	4.28%
2030	1,161,805	4.98%	135,094	4.04%
2035	1,426,984	4.20%	157,951	3.18%
2040	1,758,417	4.27%	184,664	3.17%
2005 - 2015 CAGR	**4.85%**		**3.64%**	
2015 - 2040 CAGR	**4.52%**		**3.61%**	

From 2015 to 2040, personal income is forecasted to grow at a CAGR of 4.52 percent. This growth rate is conservative compared to the historic CAGR of 4.85 percent experienced between 2005 and 2015. Similarly, personal income per capita is forecasted to grow at a CAGR of 3.61 percent compared to 3.64 percent from 2015 to 2040.

Personal incomes have been correlated with region's economic growth and decline over the past four decades. Since the most recent economic upswing, median regional incomes have risen as a result of reentry of workers into the labor force, additional members joining in to support their household, higher capital gains, and higher dividends as the stock market has recovered.

A.5 Inflation

The Bay Area's historic and forecasted consumer price index (CPI) from the years 2005 to 2040 is shown in Table A-4. The historic CPI and forecast growth data were obtained from the US Bureau of Labor Statistics and 2017 draft Plan Bay Area respectively. The 2017 draft Plan Bay Area assumes a 2.20 percent long-term forecast inflation rate (Appendix D. List of Supporting Documents, Section G-3) consistent with the 2014 ten-year inflation forecasts for the Bay Area from the California Department of Finance, the U.S. Federal Reserve, and the federal Office of Management and Budget (OMB). This is lower than the historic CAGR of 2.46 percent from 2005 to 2015.

Table A-4. 2005 to 2040 CPI for the Bay Area

Year	CPI	Annual Growth rate
2005	202.7	
2010	227.5	2.34%
2015	258.6	2.60%
2040	445.6	2.20%
2005 - 2015 CAGR		**2.46%**

Appendix B – Summary of Financial Condition of Project Sponsor

BART's audited financial statements, adopted budget, and short term plans indicate that BART is in strong financial health. With one of the highest system fare box recovery ratios in the country, federal funds, funding support from the State of California, and local sales tax measures. The 2016 budget for operating sources increased compared to the 2015 budget due to ridership and sales tax growth. The agency has a current liquidity ratio of 3.98, they maintain an operating reserve of 5 percent, and they receive consistently high debt ratings.

Cash Account Balances

The table below shows that BART maintains a healthy cash balance, according to audited financial statements. Unrestricted cash and cash equivalents have increased steadily from 2012 to 2016.

Table B-1. Cash Account Balances

	2012	2013	2014	2015	2016
Cash and cash equivalents - Unrestricted	89,106	123,682	293,447	222,851	265,069
Cash and cash equivalents - Restricted	502,836	429,578	466,272	332,126	434,304
Total	**591,942**	**553,260**	**759,719**	**554,977**	**699,373**

Revenues and Expenses

BART adopted a Financial Stability Policy in March 2003, which aims to achieve an operating ratio of at least 62 percent, and set aside 5 percent of operating costs in reserves. This goal has been updated to 15 percent as of 2014. This ensures a prudent reserve to be used when necessary, and ensures that BART is capable of delivering their service in times of economic change and uncertainty. As of FY 2017, BART had a balance of $40.7 million, representing approximately 5 percent of current operating costs.

BART also has optimized fare revenues by adjusting fares as necessary, while maintaining ridership. The fee structure is based on the cost of providing service and optimal use of the system. Prior to adjusting the fare structure, BART first tests it on a small scale in order to measure the change in ridership and revenue, thereby mitigating financial risk. BART also has maintained an impeccable credit rating.

Table B-2. Revenue and Expenses: History and Trends

	2012	2013	2014	2015	2016
Operating revenues	401,855	443,274	463,160	514,541	545,800
Operating expenses, net	(667,268)	(712,485)	(718,952)	(767,141)	(834,746)
Operating loss	(265,773)	(269,211)	(255,792)	(252,600)	288,946
Non-operating revenues, net	237,875	246,446	282,507	303,214	292,586
Capital contributions	355,462	419,852	326,690	256,231	328,123
Special item - settlement of loans			88,500		
Change in net position	327,564	397,087	441,905	306,845	331,763
Net position, beginning of year	5,042,947	5,370,511	5,767,598	5,710,347	6,017,192
Net position, end of year	5,370,511	5,767,598	6,209,503	6,017,192	6,348,955

Condition of Existing Asset Base and ongoing rehabilitation

BART's assets include guideways, revenue vehicles, non-revenue vehicles, facilities, systems, and support services. BART operates the oldest heavy rail transit fleet in the country. This has led to BART's fleet of the future project. Approximately 30 percent BART's asset value is in poor / very poor condition. Their stations have old roofs and plumbing/sewers drains which lead to leaks and flooding. BART faces challenges with non-revenue vehicles which include aging and inadequate shop space to support maintenance.

BART has plans to fund capital rehabilitation projects involving critical improvements for the system's safety and asset management. Ongoing projects which BART will continue include multi-year programs to replace railcar seats and floors and to retrofit inefficient subways and tunnel lighting. BART also has planned station upgrades, enhancements of shuttles and intermodal access, and adding bicycle storage. BART's FY 17 Preliminary budget includes $198 in rail replacement, trackway structural rehabilitation, and other mainline reinvestment projects. The FY18 Capital Program budget allocates 68 percent of their planned $1,026 million for system reinvestment.

Table B-3. Current Assets: Current Liabilities

	2012	2013	2014	2015	2016
Assets					
Current Assets					
Unrestricted assets					
Cash and cash equivalents	89,106	123,682	293,447	222,851	265,069
Investments	386	569	624	288,059	387,204
Capital grants receivable	356,854	392,210	248,837	192,420	139,283
Receivables and other assets	24,152	28,968	18,044	22,830	29,754
Materials and supplies	26,832	26,566	28,129	31,582	35,873
Total unrestricted current asset	497,330	571,995	589,081	757,742	857,183
Restricted assets					
Cash and cash equivalents	502,836	429,578	466,272	332,126	434,304
Investments	266	100,284	59,710	276,520	159,675
Receivables and other assets				2,291	1,070
Total restricted current asset	503,102	529,862	525,982	610,937	595,049
Total current assets	100,432	1,101,857	1,115,063	1,368,679	1,452,232
Noncurrent assets					
Capital assets					
Non-depreciable	2,378,971	2,793,967	3,110,048	2,342,153	2,336,792
Depreciable, net accumulated depreciation	3,698,338	3,725,082	3,783,984	4,787,540	5,041,241
Unrestricted assets					
Investments	22,620	22,620	22,704		
Receivables and other assets	10,103	6,857	267	226	198
Restricted assets					
Investments	44,288	14,202	162,277	20,035	
Receivables and other assets	31,342	11,866	13,265	11,040	11,287
Deposits for sublease and obligation	24,565	-			
Total noncurrent assets	6,210,227	6,574,594	7,092,545	7,160,994	7,389,518
Total assets	7,210,659	7,676,451	8,207,608	8,529,673	8,841,750
Liabilities					
Current Liabilities					
Accounts payable and other liabilities	255,371	232,892	187,731	184,013	222,409
Current portion of long-term debt	39,115	30,875	37,575	76,958	71,021
Self-insurance liabilities	13,988	15,141	18,067	27,540	27,225
Unearned revenue	77,118	73,167	43,680	17,300	18,479
Total current liabilities	385,592	352,075	287,053	305,811	339,134
Noncurrent liabilities					
Accounts payable and other liabilities	69,447	72,170	80,807	49,085	44,418
Long-term debt, net of current portion	1,237,598	1,242,320	1,416,356	1,384,546	1,334,403
Self-insurance liabilities, net of current portion	23,404	34,007	34,093	36,153	34,829
Unearned revenue	104,576	189,352	199,230	211,183	234,412
Other post-employment benefits			59,378	61,411	63,047
Net pension liability				397,465	467,222
Total noncurrent liabilities	1,435,025	1,537,849	1,730,486	2,139,843	2,178,331
Total liabilities	1,820,617	1,889,924	2,017,539	2,445,654	2,517,465
Current Ratio	0.26	3.13	3.88	4.48	4.28
Net Position					
Net investment in capital assets	5,067,636	5,302,267	5,689,954	5,816,753	6,055,965
Restricted for debt service and other liabilities	169,128	252,613	237,694	192,673	214,849
Unrestricted	153,278	231,647	281,855	7,766	78,141
Total net position	5,390,042	5,786,527	6,209,503	6,017,192	6,348,955

BART has maintained an ample margin of current assets over current liabilities. BART's ratio of current assets to current liabilities was 4.28 in 2016, based on 2016 Audited Financial Reports. The table above provides BART's current assets to current liabilities ratios for 2012 through 2016.

Appendix C – Historic Systemwide Capital and Operating Data

Appendix C-1 Historic Systemwide Capital Data

Table C-1 presents BART's historic capital sources and uses of funds. Additional details are provided in Appendix D. List of Supporting Documents, Section N. Historic capital sources of funds come from federal, state, BART, and local sources. In total, approximately 23 percent of capital sources come from federal, 17 percent from state, 28 percent from BART, and 32 percent from local. Historic capital uses of funds have been expended on infrastructure renewal, system reinvestment, system expansion, station modernization and access, and the earthquake safety program.

Table C-1 Historic Systemwide Capital Sources and Uses of Funds, by Fiscal Year (YOE$ Millions)

Fiscal Year	FY2012	FY2013	FY2014	FY2015	FY2016
CAPITAL SOURCES OF FUNDS					
Federal					
Total Federal	**122.6**	**125.3**	**78.2**	**105.8**	**130.3**
State					
Total State	**61.2**	**90.7**	**145.3**	**65.4**	**71.2**
BART					
Total BART	**133.8**	**170.2**	**197.2**	**83.9**	**114.0**
Local					
Total Local	**171.1**	**202.1**	**101.8**	**194.7**	**131.2**
TOTAL CAPITAL SOURCES OF FUNDS	**488.7**	**588.3**	**522.5**	**449.8**	**446.8**
CAPITAL USES OF FUNDS					
Basic Infrastructure Renewal	106.9	87.6	4.5	173.1	115.4
Major Systems Reinvesment: Big 3 (excl. CBTC)	8.9	106.2	142.7	61.9	136.3
Transbay Core Capacity Program (incl. CBTC)	-	0.9	1.6	3.5	5.7
Station Modernization and Station Access	5.0	12.2	11.6	17.2	19.9
BART Metro	-	-	-	-	1.9
Earthquake Safety Program	111.7	108.6	63.5	14.2	25.1
System Expansion	256.2	272.9	298.6	179.7	142.5
TOTAL CAPITAL USES OF FUNDS	**488.7**	**588.3**	**522.5**	**449.8**	**446.8**
Agencywide Surplus/(Deficit)	-	(0.0)	-	-	-
Ending Capital Plan Balance	**0**	**-**	**-**	**-**	**-**

Appendix C-2 - Historic Systemwide Operating Data

Table C-2 presents BART's historic systemwide operating sources and uses of funds. Additional details are provided in Appendix D. List of Supporting Documents, Section M. BART has maintained a farebox recovery ratio of more than 70 percent since 2012, showing a steady increase to 80 percent by 2016. Fare revenues and non-fare operating revenues have increased at a higher rate than operating and maintenance costs. Additionally, BART receives a considerable amount of financial assistance from sales tax revenues, and to a lesser extent property taxes and the State Transit Assistance program. The LCTOP program, and the Low Carbon Fuel Standard program which are reflected in the operating plan forecast are relatively new sources of funds.

Table C-2 Historic Systemwide Operating Sources and Uses of Funds, by Fiscal Year (YOE$ Millions)

Fiscal Year	FY2012	FY2013	FY2014	FY2015	FY2016
OPERATING USES OF FUNDS					
Operating Expenses					
Rail Operating Expenses					
Total Labor	381	407	411	422	452
Total Non-Labor	134	144	143	152	160
Total Rail Operating Expenses	**515**	**551**	**555**	**573**	**611**
Non Rail Operating Expenses					
Purchased Transportation	15	16	17	24	27
Total Non Rail Operating Expenses	**15**	**16**	**17**	**24**	**27**
Total Operating Expenses	**530**	**567**	**571**	**597**	**638**
Farebox Recovery Ratio	71.4%	73.8%	75.1%	80.9%	80.1%
Debt Service Coverage Ratio	3.13	3.34	3.80	4.16	4.97
Debt Service and Allocations					
Debt Service	62.3	62.5	58.3	56.0	48.6
Allocations - To Operating Reserve	1.2	-	6.0	5.0	-
Allocations - Baseline Capital Renovation	52.1	26.5	38.9	59.4	54.4
Allocations - Priority Capital Projects/programs	-	-	8.6	19.4	27.0
Allocations - Rail Car Sinking Fund	-	45.6	46.0	45.0	45.0
Allocations - To SFO Operations	8.6	7.0	6.4	11.0	12.2
Allocations - To Access Program from Parking Fees	-	-	2.2	5.9	8.1
Allocations - Other	2.2	4.6	5.1	2.1	(2.5)
Total Debt Service and Allocations	**126.4**	**146.2**	**171.5**	**203.7**	**192.9**
TOTAL OPERATING USES OF FUNDS	**656.0**	**713.2**	**742.8**	**800.9**	**831.2**
OPEB Unfunded Liability	5.1	5.8	2.2	(14.5)	(18.0)
TOTAL OPERATING USES OF FUNDS (EXCL. OPEB UNFUNDED LIABILITY)	**650.9**	**707.3**	**740.7**	**815.3**	**849.2**
OPERATING SOURCES OF FUNDS					
Fare Revenues					
Fare revenue	366.5	406.1	407.1	443.4	461.7
Fare increase for priority caital	-	-	8.6	19.4	27.0
ADA Passenger Revenue	0.9	0.8	0.8	0.9	0.9
Total Fare Revenues	**367.3**	**406.9**	**416.6**	**463.6**	**489.6**
Non-Fare Operating Revenues					
Parking Revenue	14.8	15.7	20.0	28.4	33.5
Other Operating Revenue	19.8	20.7	26.5	22.7	23.8
Total Non-Fare Operating Revenues	**34.6**	**36.4**	**46.6**	**51.1**	**57.3**
Financial Assistance					
Sales Tax Revenue	195.2	208.6	221.1	233.1	241.5
Property Tax	29.7	31.7	32.1	34.3	38.1
State Transit Assistance (STA)	18.3	17.3	20.0	18.1	11.3
Low Carbon Transit Operations Program	-	-	-	-	1.6
Low Carbon Fuel Standard	-	-	-	-	-
Other	5.7	6.5	4.3	15.1	9.8
Total Financial Assistance	**248.9**	**264.0**	**277.5**	**300.6**	**302.3**
TOTAL OPERATING SOURCES OF FUNDS	**650.9**	**707.3**	**740.7**	**815.3**	**849.2**
Operating Surplus/(Deficit)	0.0	0.0	0.0	0.0	(0.0)
Ending Operating Cash Balance	**1.6**	**1.6**	**1.6**	**1.6**	**1.6**
Ending Operating Reserve Balance	**29.7**	**29.7**	**35.7**	**40.7**	**40.7**

Appendix D – List of Supporting Documentation

BART Project Management Plan (PMP)

A-1. Draft Project Management Plan (PMP) –2017

Local Financial Commitment – Measure RR Funds

B-1. BART Measure RR Ordinance
B-2. Board Action – Measure RR Results

Local Financial Commitment – Regional Measure 3 (RM3) Funds

C-1. MTC RM3 Agenda

Local Financial Commitment – Cap and Trade

D-1. TICRP Program Resolution 4130 and Framework document

Local Financial Commitment – MTC

E-1. Transit Core Capacity Challenge Grant Program - MTC Resolution 4123

BART Financial Commitment

F-1. BART Capital Allocation to Program Management
F-2. Fare Allocation to Big 3 Capital Priority FY14 to current (Allocations towards Vehicles and Train Control)

Regional Economic Conditions

G-1. J-1 REMI PI+ v1.7 Data Sources and Estimation Procedures
G-2. Regional Forecast of Jobs, Population and Housing (Plan Bay Area 2040 Supplemental Report)
G-3. Financial Assumptions (Plan Bay Area 2040 Supplemental Report)

BART Annual Budgets

H-1. FY 2018 BART Preliminary Budget Memo
H-2. FY 2017 BART Adopted Budget Resolution
H-3. FY 2017 BART Budget Memo
H-4. FY 2016 BART Adopted Budget Resolution
H-5. FY 2016 BART Adopted Budget Memo
H-6. FY 2015 BART Adopted Budget Resolution
H-7. FY 2015 BART Adopted Budget Memo
H-8. FY 2014 BART Adopted Budget Resolution
H-9. FY 2014 BART Adopted Budget Memo

BART Annual Financial Reports

I-1. BART FY 2016 Annual Financial Report
I-2. BART FY 2015 Annual Financial Report
I-3. BART FY 2014 Annual Financial Report

Planning Documents

J-1. BART 2017 Draft Short Range Transit Plan (STRP) and Capital Improvement Program (CIP), February 2017
J-2. MTC 2017 Transportation Improvement Program (TIP)
J-3. MTC 2016 Regional Transportation Improvement Program (RTIP)
J-4. MTC 2016 State Transportation Improvement Program (STIP) Fund Estimate, January 21, 2016 (revised)
J-5. *Plan Bay Area*, 2040 Draft Regional Transportation Plan (RTP), March 2017

System Renewal Program Plan

K-1. BART System Renewal Program Plan – 2016

BART Key Board Policies

L-1. BART Strategic Plan Framework – 2015
L-2. BART Asset Management Policy – 2014
L-3. BART Bond Resolution – 2014
L-4. BART Debt Policy – 2017
L-5. BART Financial Stability Policy Board Action and Resolution
L-6. BART Financial Stability Policy (Revised 2014)

BART Operating Plan Budget vs. Actuals

M-1. Operating Plan Budget vs. Actuals FY 2012 – FY 2016

BART NTD Reports

N-1. NTD Capital FY 2016
N-2. NTD Report FY 2015
N-3. NTD Report FY 2014
N-4. NTD Report FY 2013
N-5. NTD Report FY 2012

Growth Rate Forecasts

O-1. State Board of Equalization Letter Regarding Statewide Sales Tax Growth Rates – June 2016

Financial Model

P-1. Financial Model Supporting Spreadsheet
P-2. BART Constrained Capital Plan and Operating Plan Spreadsheet, May 2017

BART Bond Prospectus

Q-1. Official Statement of San Francisco Bay Area Rapid Transit District, Sales Tax Revenue Bonds, 2016 Refunding Series A
Q-2. Official Statement of San Francisco Bay Area Rapid Transit District, General Obligation Bonds, 2015 Refunding Series D

Railcar Exchange Account

R-1. BART_MTC Car Replacement Exchange Agreement - Attachment B
R-2. BART EDD and Resolution Railcar Exchange Account
R-3. BART_MTC Car Replacement Exchange Agreement Signed

R-4. MTC Staff Report Railcar Exchange Resolution
R-5. Resolution No. 3738 - Approved

Appendix E – Local Financial Commitment Checklist

GRANTEE FINANCIAL SUBMITTAL	Included (check one)		Reason Why Information Has Not Been Provided
	Yes	No	
20-year cash flow statement (in year of expenditure dollars) including capital and operating financial plans (provided both electronically and in hardcopy). The cash flow statement should clearly show revenues and expenses for the project separated from those for the remainder of the transit system.	√		
Detailed written description/discussion of all assumptions used in the financial plan including: Federal/state/local/debt proceeds funding assumptions Average fare assumptions Average weekday ridership assumptions Debt coverage requirements/assumptions Assumptions used in the calculation of operating expenses for each mode (i.e. -- vehicle miles, vehicle hours of service provided, etc.)	√		
Project Description and Core Capacity Project Finance Template	√		
Capital cost estimate for the proposed project (in year of expenditure dollars) in the FTA standardized cost category worksheet format	√		
Sensitivity Analysis (spreadsheet calculations as well as narrative summary)	√		
Supporting Documentation Including:			
Background information and description of the New Starts project, including project status	√		
Historical revenue and expense data (minimum of 5 years required, more than 5 years appreciated)	√		
Commitment letters, contracts, agreements, legislative referenda or other documents demonstrating local share commitment of non-Federal funding partners	√		
Enacting legislative documents for tax referenda		√	Not Applicable
Joint development agreements, or description and supporting documentation of other innovative financing techniques, if applicable		√	Not Applicable
Annual Operating and Capital Budgets for the past 3 years	√		
Audited Financial Statements and Compliance Reports for the past 3 years	√		
Annual Reports/Comprehensive Annual Financial Reports (CAFR) for the past 3 years	√		
Background information and description of the transit agency, including organizational structure and enabling legislation	√		
TIP, STIP and Short Range Transit Plan (SRTP), if available (please provide only relevant pages of these documents)	√		
Regional Long Range Transportation Plan (please provide only relevant pages)	√		
Capital Improvement Program Documents	√		
Bus and Rail Fleet Management Plans including fleet replacement schedules			In progress
Latest bonding prospectus/credit facility documents (credit lines, commercial paper, etc.)	√		
Local development, demographic and economic studies used in preparing the financial plan, plus documentation supporting efficiency or productivity gain assumptions	√		
Other materials (if any), please describe:			