THE TRANSBAY CORRIDOR CORE CAPACITY PROGRAM

California State Transportation Agency
Transit and Intercity Rail Capital Program, 2018

Bay Area Rapid Transit District

January 2018

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SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
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2017

January 5, 2018

Ezequiel Castro, Acting Chief
Division of Rail and Mass Transit
Office of State Transit Programs and Plans (MS-39)
P. O. Box 942874
Sacramento, CA 94274-0001

RE: BART's Transbay Core Capacity Project – New Rail Cars and Train Control Components – 2018 Transit and Intercity Rail Capital Program (TIRCP)

Dear Mr. Castro:

On behalf of the San Francisco Bay Area Rapid Transit District, I am pleased to submit BART's request for $454 million in funding from the 2018 Transit and Intercity Rail Capital Program (TIRCP). Our project, BART's Transbay Core Capacity Project – New Rail Cars and Train Control Components, is an important element of a larger project to increase BART's system capacity. This larger project, BART's Transbay Core Capacity Project, which consists of multiple project elements and includes many funding partners, has regional and statewide significance in reducing greenhouse gas emissions, providing access to jobs and stimulating the economy, and providing mobility and regional and statewide transportation connections for all residents including those in disadvantaged communities.

The two components that comprise this TIRCP funding request include $135.4 million to fund the acquisition of additional new BART cars, and $318.6 million for BART's new state-of-the-art, communications-based train control system (CBTC), for a total of $454 million. Both the additional cars and the train control system are needed to achieve up to 30% in additional capacity on the existing BART system without adding a second Transbay Tube from the East Bay to downtown San Francisco. In addition, this project will improve system reliability and greatly enhance the customer experience.

BART's current Transbay Corridor ridership exceeds capacity in the peak hours between the Embarcadero station in downtown San Francisco and stations in the East Bay. Within this corridor, riders in the peak hours often endure excruciatingly crowded conditions while some choose other modes because BART trains are so crowded. BART's ability to increase ridership – and the region's ability to steer growth to places served by transit – depend upon additional BART capacity in the Transbay Corridor.

For the past few years, BART has worked diligently to design and identify costs of the project components of the Transbay Core Capacity Project, as well as identify potential funding sources. Funds will be provided by a combination of federal, state, regional and local sources, including BART's own capital allocations (funding transferred from BART's operating budget to its capital budget) and funding provided by the successful passage of a general obligation bond for BART, called Measure RR, in November 2016. In its Plan Bay Area 2040, adopted in July 2017, the Metropolitan Transportation Commission (MTC) identified the BART Transbay Core Capacity Project as a critical regional need, and has included this project in its Core Capacity Challenge grant program. BART is also working closely with the federal government on a New Starts grant through the Capital Investment Grant (CIG) program. In addition, BART has requested funding from various local county sales tax measures. The funds requested through the TIRCP program will close the remaining funding gaps and allow BART to achieve the biggest capacity boost possible while renovating and maintaining the core BART system.

Embedded in this grant proposal is a request for $250,000 to directly engage local community-based organizations in Disadvantaged Communities to solicit input on the potential impacts, both positive and negative, of BART's Transbay Core Capacity Project. BART has long-standing and successful experience working with members of low-income, minority, limited English speaking, faith-based, environmental, disability rights and social justice communities and organizations, and hopes to build upon that work in soliciting input on this important project.

We appreciate your consideration of this application, and would be happy to answer any questions or provide additional materials if needed. As BART's General Manager, I have reviewed the materials submitted and approved the cost estimates provided in this application, including the amounts and fund sources cited.

Please do not hesitate to contact me or Duncan Watry, Program Manager – Core Capacity, at (510) 287-4840, or dwatry@bart.gov.

Sincerely,

Grace Crunican
General Manager

Attachments

BEFORE THE BOARD OF DIRECTORS OF THE
SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

In the Matter of Authorizing the Filing of Applications, Providing Supporting Documents, and Executing Funding Agreements with the United States Government, the State of California, and other Entities

Resolution No. 5223

WHEREAS, the San Francisco Bay Area Rapid Transit District ("BART") is eligible to receive Federal and/or State funding for certain transportation planning related activities through the U.S. Department of Transportation and the California Department of Transportation; and

WHEREAS, pursuant to Board Resolutions Nos. 4372, 4373, 4898 and the Annual Budget Resolution, the BART General Manager is authorized to file funding applications and execute funding agreements with the United States Government and the State of California and with any other entity; and

WHEREAS, a Fund Transfer Agreement is needed to be executed with the California Department of Transportation before such funds can be claimed through the Transportation Planning Grant Programs; and

WHEREAS, funding agreements from the United States Government or the State of California will impose certain obligations upon the applicant, including the provision by the applicant of the project's local share of costs; and

WHEREAS, it would be in the best interests of the District for the General Manager to have standing authorization to apply, on behalf of the District, for funds from entities and to file necessary documents and execute funding agreements.

NOW, THEREFORE, BE IT RESOLVED by the BART Board of Directors:

1. That the BART General Manager, or her/his designee, is authorized to execute and file all applications on behalf of the BART for funds for District projects and activities with any agency of the United States Government or the State of California or any other entity.

2. That the BART General Manager, or her/his designee, is authorized to execute and file with such applications any assurance or other document required by the funding entity for the subject project.

3. That the BART General Manager, or her/his designee, is authorized to furnish such additional information as the funding entity may require in connection with the application or funding agreement for the subject project.

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
CERTIFIED A TRUE COPY

KENNETH A. DURON, DISTRICT SECRETARY

Adopted October 24, 2013

70070v1

4. That the BART General Manager, or her/his designee, is authorized to execute all funding agreements on behalf of BART with any agency of the United States Govemment or the State of California or any other entity

5. That the BART General Manager is authorized to execute and file applications on behalf of BART for funds for BART District projects and activities with any private entity, but execution of funding agreements with a private entity requires approval of the BART Board of Directors.

This Resolution supersedes Board Resolution No. 4898 dated October 9, 2003.

2 Program Narrative

Transbay Corridor Core Capacity Program

Applicant Name	San Francisco Bay Area Rapid Transit (BART) District
Program Purpose and Need	The Transbay Corridor Core Capacity (Core Capacity) Program will increase the number of trains operating through the Transbay Tube in the peak period, and increase train lengths, to reduce crowding and maximize throughput capacity in the most heavily used part of the existing BART system. This will lead to increased ridership and reduced GHG emissions throughout the Bay Area and specifically within the Transbay Corridor.
Program Location	BART is located in the San Francisco Bay Area, in the counties of San Francisco, Alameda, Contra Costa, San Mateo, and Santa Clara. Specifically, the Core Capacity Program is focused in the Transbay Corridor, connecting the East Bay with San Francisco and the Peninsula. See *Section 2.3.2.1. Program Background* for a map of BART.
Program Mode	Heavy Rail
Multi-Agency Coordination	BART is coordinating with MTC to complete the Core Capacity Program. The program is included in MTC's adopted RTP, and MTC has been working with BART to assemble funding from various sources. A letter confirming this in *Appendix A. Letters of Support*. BART is also coordinating with other regional and local transportation agencies. See *Section 2.3.3.3 Rail and Transit Integration*.
Green House Gas (GHG) Reductions	The Program increases BART ridership, thus reducing VMT and GHG emissions in the Bay Area. Additionally, increased BART capacity supports planned increases in housing and employment density around BART stations, allowing the Bay Area to meet requirements of the California Global Warming Solutions Act of 2006 (AB 32). Specifically, the Core Capacity Program will have the following benefits: • 4,748,924 metric tons of carbon dioxide-equivalent removed over Program period • .010460 metric ton carbon dioxide-equivalent removed per dollar of TIRCP funding requested
Funding	BART is requesting $454 million in TIRCP funds to help fund two elements of the Core Capacity Program, 306 new rail vehicles and the new communication-based train control system (CBTC). These elements are referred to as the TIRCP Scope. Additionally, $250,000 (included in the CBTC amount) is proposed for community outreach to communities who may be affected by the Program. BART has identified the CBTC as a usable segment, and can be fully funded with State support. See *Section 2.1 Program Costs* for more information.
BART Point of Contact	Duncan Watry, Program Manager – Core Capacity BART – Planning, Development & Construction 300 Lakeside Drive, 21st floor Oakland, CA 94612 (510) 287-4840 dwatry@bart.gov

2.1 Program Costs

The overall Core Capacity Program includes four elements – a new communication-based train control system, 306 additional rail vehicles, an additional rail vehicle storage and maintenance facility, and five additional traction power substations. BART is seeking TIRCP funding for two of these elements:

- A portion of the 306 new vehicles, and
- the communication-based train control system (CBTC).

Due to the integrated nature of the Program, the application shows combined total benefits for the overall Program (all four elements). However, benefits described in this application regarding GHG emissions, ridership, and more can be attributed to either the planned integration of the new vehicles or the CBTC system, the Program elements for which BART is currently requesting TIRCP funding. This is noted in the text when necessary.

Table 2-1 presents the total costs of the Program and the amount requested from TIRCP. BART is requesting $454 million for portions of both the new vehicles and CBTC system in two TIRCP funding cycles. The Program is currently at the 30% design stage, and cost estimates reflect this level of design, including appropriate level of contingency.

Table 2-1. Core Capacity Program Costs and TIRCP Scope Request

Program Scope	Total Program Cost ($ millions)	*TIRCP Scope Request ($ millions)*
Vehicles	$1,618.4	*$135.4*
Communication-Based Train Control (Including $250,000 for Post-Award Community Outreach)	$1,150.5	*$318.6*
TIRCP SCOPE TOTALS	**$2,768.9**	***$454.0***
Hayward Maintenance Center Phase II	$228.0	
Traction Power	$94.0	
Program Management	$6.6	
Program Contingency	$309.7	
Financing Costs	$103.5	
TOTAL	**$3,510.6**	***$454.0***

2.1.1 Community Outreach Funding

Additionally, the TIRCP requested amount includes $250,000 for post-award outreach to the disadvantaged communities that BART serves, seeking input on the potential impact of the Core Capacity Program, both positive and negative. A detailed breakdown of the proposed outreach is included in *Section 2.5.3 Proposed Community Outreach Plan.*

2.1.2 TIRCP Funding Cycle

The $454 million requested in this TIRCP application covers both the five-year funding cycle from FY 2018 through FY 2022 ($358.6 million) – and the second round of programmed funding from FY 2023 through 2027 ($95.6 million).

2.1.3 Useable Segment Request

As documented in the *Program Benefits* portion of this application, and additionally in the *Statement of Work*, for the many benefits outlined in this application to occur, a scaled request of $318.6 million is being submitted as a usable segment. This scaled down funding request would cover the necessary cost to complete the Communications Based Train Control system, which is the Program element necessary to realizing the majority of ridership, greenhouse gas, and community impact benefits described in detail in this application. As with the full $454 million request, this $318.6 million scaled request can be broken out over the two four-year funding cycles.

Table 2-2. Core Capacity Program Costs and TIRCP Usable Segment Request

Program Scope	Total Program Cost ($ millions)	*TIRCP Usable Segment Request ($ millions)*
Vehicles	$1,618.4	
Communication-Based Train Control (Including $250,000 for Post-Award Community Outreach)	$1,150.5	*$318.6*
TIRCP SCOPE TOTALS	**$2,768.9**	***$318.6***
Hayward Maintenance Center Phase II	$228.0	
Traction Power	$94.0	
Program Management	$6.6	
Program Contingency	$309.7	
Financing Costs	$103.5	
TOTAL	**$3,510.6**	***$318.6***

This usable segment of the Program (CBTC system) can be fully completed with funding through State of California Programs in 2018. As can be seen in *Table 3-4. Core Capacity Funding Plan 2017*, all funding elements have been secured (with the exception of Santa Clara VTA and FTA CIG and GANs) other than the State of California funding sources. These state sources include:

- TIRCP Usable Segment Request (Current Request) - $318.6 million
- SB1 Local Partnership Program (January 2018) - $50 million
- SB1 Congested Corridor Program (January 2018) - $100 million

The Santa Clara VTA portion of funding ($101.6 million) is not going to the Transbay Corridor portion of the Core Capacity Program, and only will be applied to the Santa Clara VTA extension of the BART system. Hence, the CBTC system can be implemented fully in the existing system (where ridership, GHG

emissions, and other benefits are realized) without Santa Clara VTA funds. Additionally, the FTA CIG amount of $25.9 million that is allocated to the CBTC system can be fully shifted to be funded by BART Capital Allocation funds if CIG funding is not approved by the FTA. **With the usable segment request of $318.6 million in TIRCP funds and $150 million in additional state program funding, the entire CBTC system is funded completely and can move forward without delay.**

2.2 BART Eligibility

BART is a public agency that operates the largest passenger/urban rail transit service in the San Francisco Bay Area. BART assumes responsibility and accountability for the use and expenditure of program funds. BART will comply with all relevant federal and state laws, regulations, policies, and procedures.

2.3 Core Capacity Program Benefits

The following section gives a brief overall introduction to the Transbay Corridor Core Capacity Program, including benefits derived. A more detailed discussion regarding the Program benefits, referencing the primary and secondary evaluation criteria outlined in the TIRCP Guidelines, is found below in *Section 2.3.3. Program Benefits* below.

2.3.1 Program Summary

The BART Core Capacity Program will relieve crowding, increase ridership, and decrease greenhouse gas (GHG) emissions by increasing the frequency and capacity of trains operating on the system. The Core Capacity Program will allow the number of trains operating through the Transbay Tube to increase from 23 to 30 per hour, and peak hour train lengths to be increased from an average of 8.9 to 10 cars, maximizing throughput capacity in the most heavily used part of the BART system. The Program includes four elements:

- Install new communication-based train control system;
- Expand the rail car fleet by 306 cars;
- Provide additional rail vehicle storage at the Hayward Maintenance Complex (HMC); and
- Install five new traction power substations.

Figure 2-1. Crowding on BART in Transbay Tube

These four Program elements will allow BART to decrease current headways on each line from 15 minutes to 12 minutes. Expansion of the rail car fleet will allow for trains of 10 cars, making additional capacity in the system. The overall increase in peak hour capacity created by the Core Capacity Program will be about 45%. (See *Appendix C. Ridership Modeling and Methodology* for more information. Decreased headways and increased capacity result in an estimated increased average weekday ridership of 202,972 riders beyond current levels and will decrease GHG emissions by at least 4,748,924 metric tons of carbon dioxide equivalent ($MTCO_2e$) over a 50-year period. Additionally, the new train control system, which will replace systems that are at the end of their service life, will enhance system reliability and safety.

Additional benefits include the reduction of vehicle miles traveled (VMT) on Bay Area roadways by making transit more attractive to existing and new riders. Specifically, this increased transit ridership will reduce VMT by an average of 525,263,200 miles per year. Increased frequency and quality of service (system reliability and reduced crowding for riders) will assist in retaining existing and attracting new riders to the system.

The many Disadvantaged Communities (DACs) and other designated communities located along the BART system and within the BART service catchment area, will also benefit from increased frequency, greater capacity and reduced crowding. Nearly all of the 46 BART stations have been designated by MTC as Priority Development Areas (PDAs). These PDAs are a key part of the region's strategy to meet requirements of the California Global Warming Solutions Act of 2006 (AB 32). The additional transit capacity resulting from this program will enable these areas to grow, which will help the Bay Area to realize its Sustainable Communities Strategy outlined in Plan Bay Area 2040 (*Appendix F*).

2.3.2 Detailed Program Description

2.3.2.1 Program Background

In 2016, the Bay Area became the fifth largest metropolitan region in the US.[1] In 2010, the nine-county region was home to more than 7.6 million people and 3.7 million jobs. Some 300,000 jobs are located in San Francisco's central business district alone, the fourth largest central business district in the country.[2] The Bay Area's economy is healthy and growing, driven in part by the technology sector that is vital to growing the nation's overall economy. Downtown San Francisco is undergoing large construction projects that will increase office space and enable the city to add more jobs. By 2040, the region expects 9.3 million residents and 4.5 million jobs[3] to be located here.

Figure 2-2. BART System Map

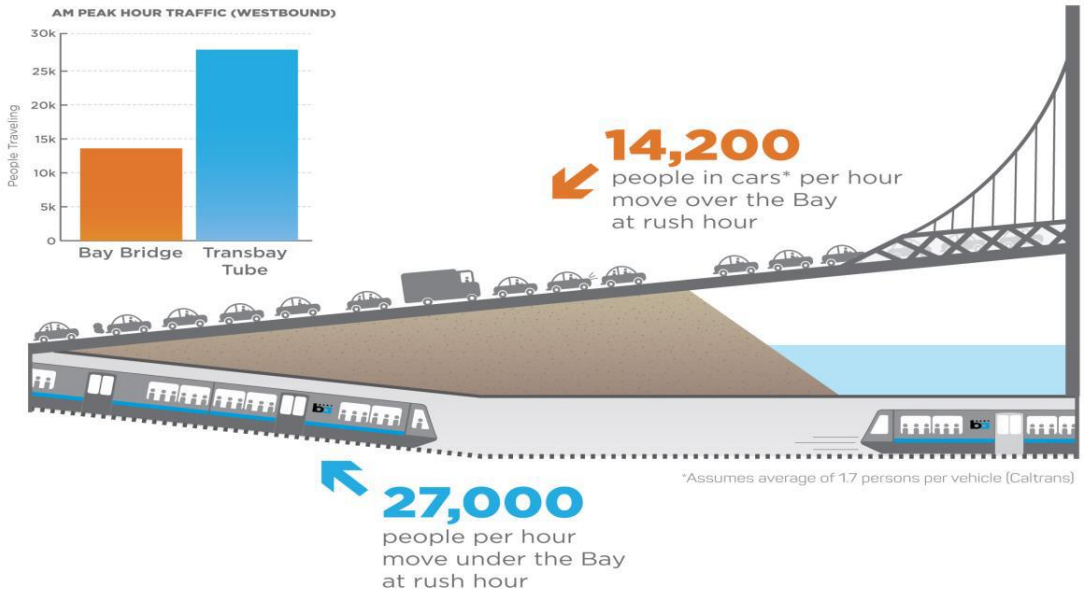
[1] Census – San Jose-San Francisco – Oakland, CA Combined Statistical Area
[2] As of 2010, American Community Survey 2006-2010
[3] https://mtc.ca.gov/sites/default/files/2-The_Bay_Area_In_2040.pdf

The Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) seek to manage this future growth by steering new development to PDAs in San Francisco, Oakland, and other parts of the region that are served by BART and other transit operators.

As the Bay Area's second largest transit network, BART currently operates and maintains 46 stations and 112 miles of revenue track, serving over 440,000 passengers every weekday in the counties of Alameda, Contra Costa, San Francisco, and San Mateo.[4] For more information on BART, please see *Section 3.1 About BART.*

The Transbay Corridor is the only connection between many East Bay residential areas and jobs in San Francisco. It is the region's most heavily used transportation link, carrying more than 40,000 trips per hour in the peak, two-thirds of which are made on BART's two tracks crossing under the Bay. Virtually all the remaining trips are in cars and buses that utilize the heavily congested San Francisco-Oakland Bay Bridge (Interstate 80).

Figure 2-3. BART's Peak Hour Transbay Market Share



On the main trunk of the BART system, from the Oakland wye (junction in downtown Oakland where trains of all routes merge) through the Transbay Tube to Daly City, BART currently operates a maximum of 23 trains per hour in each direction. Train lengths vary, but currently average 8.9 cars per train in the peak. Between the East Bay and San Francisco, peak hour trains are crowded and ridership has been growing. As the system expands – extensions into Santa Clara County and eastern Contra Costa will open in 2018 – and as the core continues to attract development, tens of thousands of new riders are expected.

[4] https://www.bart.gov/sites/default/files/docs/Role%20of%20BART%20in%20Region%20-%20Final%20Web%20Oct%202016_1.pdf

Figure 2-4. Crowding on BART Platform

BART's existing Transbay Corridor ridership exceeds capacity in the peak between the Embarcadero station in San Francisco and the Downtown Berkeley, Rockridge, and Bay Fair stations in the East Bay. Within this corridor, riders in the peak hour currently have an average of 5.2 square feet of space each, which is an uncomfortable level for passengers. The Transit Capacity and Quality of Service Manual published through the Transit Cooperative Research Program (TCRP) establishes 5.4 square feet of space per passenger as a comfortable loading level on U.S. rail transit systems.[5] The Federal Transit Administration (FTA) has adopted this as the threshold level of crowding for funding Core Capacity projects with Capital Investment Grant funds.

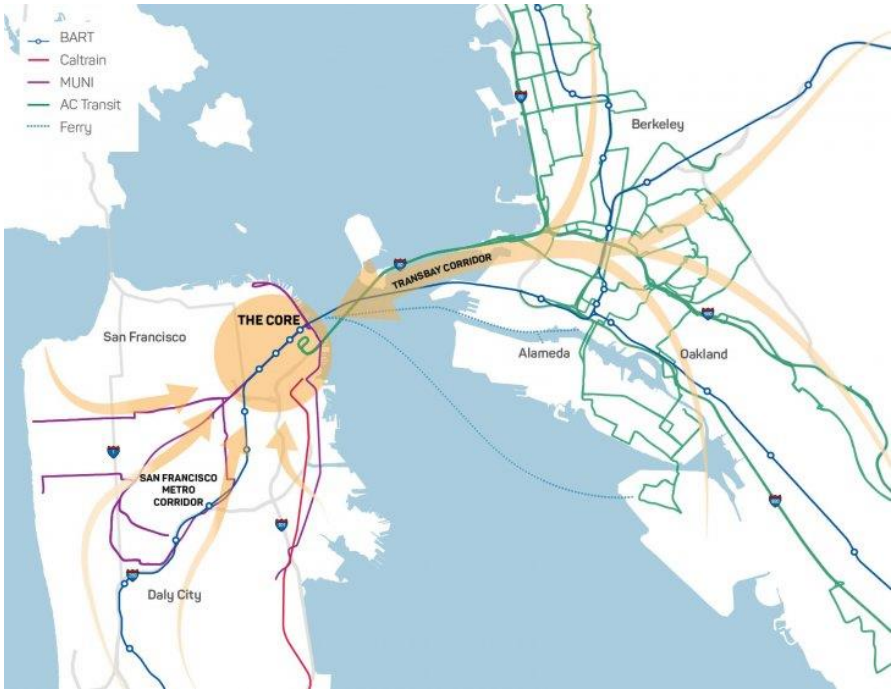
The most crowded part of the BART corridor is the five-mile-long Transbay Tube between the Embarcadero and West Oakland stations, where the average rider has just 4.7 square feet of space, far less than the FTA threshold. Current BART riders endure uncomfortably crowded conditions, while some commuters choose other modes to avoid the crush-load conditions on some BART trains. BART's ability to increase ridership – and the region's ability to steer growth to places served by transit – depend upon additional BART capacity in the Transbay Corridor.

Figure 2-5. Square Feet per Passenger in Transbay Corridor

[5] TCRP Report 165

The issue of transit overcrowding through the Transbay Corridor extends beyond the BART system. To better understand the Core Capacity needs of the Transbay Corridor, the Metropolitan Transportation Commission (MTC) undertook the Bay Area Core Capacity Transit Study (CCTS) as a collaborative effort to identify and prioritize investments that will improve travel on public transit to and from the San Francisco Core.[6] The study looked at short, medium and long-term investments that could help steadily upgrade the overall transportation system and keep pace with anticipated population growth for the next quarter century. Both the BART car expansion and the BART train control system modernization were included in the study's list of prerequisite projects. Please find the MTC CCTS, which was completed in 2017, in *Appendix G. MTC Core Capacity Study*. In addition, both projects are included in MTC's Core Capacity Challenge grant program.

Figure 2-6. MTC's Core Capacity Transit Study Area



2.3.2.2 Detailed Program Description

As summarized above, the Core Capacity Program includes four elements:

- A communications-based train control (CBTC) system, which will allow trains to be spaced more closely together, reducing headways. **(TIRCP scope)**
- Acquisition of 306 new rail cars, allowing for increased capacity per train. **(TIRCP scope)**
- Construction of Hayward Maintenance Complex Phase 2, which will create storage yard capacity for 250 rail cars. (Non-TIRCP scope)

[6] https://mtc.ca.gov/our-work/plans-projects/other-plans/core-capacity-transit-study

- Five new traction power substations, supplementing BART's existing traction power in those places where there is not sufficient power to operate 30 trains per hour. (Non-TIRCP scope)

The Core Capacity Program will relieve current levels of crowding during the peak while creating the opportunity for ridership growth. Based on current ridership, the space per passenger in the corridor will be increased from the current average of 5.2 square feet to a more comfortable 7.6 square feet.

Table 2-3 lists the current and proposed train frequencies by line after the Core Capacity Program is implemented.

Table 2-3. Headways by Line

BART Line	Current Peak Period Frequency (minutes)	Peak Period Frequency after Transbay Corridor Core Capacity Program (minutes)	Increase in frequency
Yellow	7.5	6	25%
Green	15	12	25%
Red	15	12	25%
Orange	15	12	25%
Blue	15	12	25%
Combined Transbay	2.5	2	25%

As discussed previously, BART is requesting TIRCP funds for two Program elements included in the Core Capacity Program, new vehicles and the CBTC system. These TIRCP Scope elements are discussed in more detail in the following page.

The TIRCP investment will not improve private infrastructure. Additionally, the Core Capacity Program will not be competing for funding from other greenhouse gas reduction programs.

306 Additional Vehicles - TIRCP Scope

Figure 2-7. Fleet of the Future BART Vehicle

In order to achieve 30 regularly scheduled ten-car trains per peak 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.

Train Control Modernization Project (TCMP) – TIRCP Scope

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 Springs 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 radio 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.

2.3.3 Program Benefits - Primary Evaluation Criteria

The Core Capacity Program meets each of the TIRCP's primary evaluation criteria in specific and measurable ways. The estimated useful life of the Program, for the dominant asset type of the CBTC system, is 50 years. This is discussed in more detail in *Section 2.3.3.1. Reduction of Greenhouse Gas Emissions.*

2.3.3.1 Reduction of Greenhouse Gas Emissions

For detailed methodology and results of the GHG analysis, please see *Appendix B. GHG Emissions Modeling and Methodology*. The excel version of the GHG emissions model is included in this application and is named "**CoreCapacity_calc**." Results of this analysis and some inputs are shown in this section.

Consistent with California Air Resources Board's (ARB) *Greenhouse Gas Quantification Methodology for the California State Transportation Agency Transit and Intercity Rail Capital Program Greenhouse Gas Reduction Fund FY 2016-17* (TIRCP GHG Guidance), CO_2e emissions reductions for the first operational year (Yr1 - 2027) and the final operational year (YrF - 2076) of portions of the Core Capacity Program were estimated based on Program operating data. GHG emissions reductions rely on the increased ridership estimates detailed in *Section 2.3.3.2. Increased Ridership* and *Appendix C. Ridership Modeling and Methodology.*

Table 2-3 summarizes the lifetime CO_2e reductions, which were quantified assuming a 50-year Program life. The Core Capacity Program life of 50 years is based on the expected service life of all elements of the BART Core Capacity Program, with the main element being the CBTC system.

Results are presented in terms of TIRCP and total GGRF funds requested per metric ton CO_2e reduced and lifetime CO_2e reductions per TIRCP and total GGRF funds requested.

Table 2-4. GHG Model Results

Pollutant	Results
Total GHG Reductions	**4,748,924 $MTCO_2e$**
Total GHG Emission Reductions/Total GGRF Funds Requested ($MTCO_2e$/$)	**.010460 $MTCO_2e$ /$**
Passenger VMT Reductions (miles)	525,263,200 VMT
Reactive Organic Gases (ROG)	162,199 ROG
Oxides of Nitrogen (NO_X)	891,662 NO_X
Fine Particulate Matter ($PM_{2.5}$)	27,476 $PM_{2.5}$
Diesel Particulate Matter (DPM)	55,666 DPM

Based on the total GHG reductions over the lifetime of the Program (4,748,924 $MTCO_2e$), the following equivalencies are shown for the Core Capacity Program[7]:

- Over 500 million gallons of gasoline

[7] These equivalencies were calculated based on the EPA Greenhouse gas equivalencies calculator: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

- Over 5 billion pounds of coal
- Over 500 thousand homes' energy use for 1 year
- Nearly 11 million barrels of oil

Additionally, GHG reductions from the Core Capacity Program is equivalent to carbon sequestered by:

- Nearly 125 million seedlings grown for 10 years
- Over 5 million acres of US forests in one year

Additional GHG Emissions Analysis

The ARB TIRCP Calculator quantifies GHG emissions associated with electricity consumption based on emission factors for the statewide grid average power mix. Because BART's GHG emissions from electricity generation will likely be lower in the future based upon plans to purchase a higher percentage of energy from renewable sources, the total program GHG benefits are likely understated.

BART currently receives 4% of its electricity supply from renewable sources, but that will increase dramatically with two recently approved 20-year renewable energy power purchase agreements. BART expects these agreements to provide about 75% of BART's electricity needs beginning in 2025 and has a goal to get 100% of its electricity from renewable sources by 2045.

The Core Capacity Program will begin operation in 2027, after these purchasing changes will take effect. To show a more precise GHG benefit that includes these purchasing changes, the GHG emissions output from the TIRCP tool was adjusted to reflect the additional GHG savings realized by operating the trains using power generated by a lower percentage of fossil fuels (Table 2.5). The GHG emissions from energy use were scaled by the percentage of fossil fuels used in 2025 (25%) by the percentage of fossil fuels used currently (96%). This is equal to a factor of .26 and is reflected in the table below.

Table 2-5. GHG Benefits Adjusted for Renewable Energy Assumptions

	Total Project $MTCO_2e$	Explanation
Total Project GHG Benefit	4,748,924	TIRCP Tool Output
Total Project GHG Benefit with no energy usage from new rail cars	8,376,045	TIRCP Tool Output
Calculated GHG emissions from new rail car energy usage	3,627,121	(8,376,045 – 4,748,924)
Adjusted emissions from energy usage assuming 75% renewables	944,563	(3,627,121 * 25% / 96%)
Adjusted total GHG Reduction	**7,431,482**	**(8,376,045 – 944,563)**

Accordingly, increased Program emissions reported by the ARB TIRCP Calculator overstate actual GHGs associated with added electricity consumption. Given BART's future renewable energy goals, the Program cost effectiveness reported is most likely conservative. For more information on BART's Strategic Energy Plan, please see *Section 2.3.4.10. Other Air Quality Benefits.*

2.3.3.2 Ridership Benefits

For detailed methodology and results of the ridership increase from the Core Capacity Program, please see *Appendix C. Ridership Modeling and Methodology*. Results of this analysis and some inputs are shown here.

The Core Capacity Program, and specifically the CBTC system, is expected to increase ridership by increasing service frequency throughout the system. The methodology described in *Appendix C. Ridership Modeling and Methodology* details how the following increases in ridership were developed, as well as constraints on ridership increases. This ridership increase was a main input to the GHG emissions modeling described in the previous section.

For the BART Core Capacity TIRCP application, an updated ridership estimate was determined based on the increased frequency described above for the Program once complete. To predict the ridership benefits of the Core Capacity Program, the June 2016 level of 435,973 riders per day was established as the constrained baseline. The capacity of the system through the Transbay Tube will stay constrained until the completion of the Core Capacity Program in FY 2027.

Table 2-6. Capacity Constrained Ridership Increase from Core Capacity Program

Program Milestone	Date	Capacity Constrained Ridership
Base Ridership – At Capacity	2016	435,973
Core Capacity Program Complete	2027	
Projected Ridership – At Capacity	2037	638,945

Completion of the Core Capacity Program will allow BART to increase the peak hour capacity through Transbay Tube by 45 percent during the peak period. Assuming current ridership trends continue, the capacity constrained ridership after the completion of the Core Capacity Program will be about 45 percent higher than the current capacity constrained ridership. This leads to an average weekday systemwide capacity constrained ridership of 638,945 with the Core Capacity Program. This is an increase of 202,972 average weekday riders due to increased capacity alone. Under the most likely ridership increase scenario, which is based on increased frequency, shown in *Appendix C. Ridership Modeling and Methodology*, this 638,945 capacity limit is expected to be reached in 2037.

Additionally, this increase in average weekday riders could, at a minimum, increase ticket revenue by over $400,000 per weekday.

This ridership analysis did not include other factors that could affect increases in ridership, including decreased crowding, new vehicles, and overall access to transportation.

2.3.3.3 Rail and Transit Integration

BART provides the backbone transit system throughout the Bay Area. Every BART station provides local bus connections, with some BART stations providing major intermodal transit connections to a

substantial number of other transit services such as Caltrain, MUNI light rail and bus, AC Transit, SamTrans, Golden Gate Transit, ACE commuter rail, WETA ferries, and bus services to and from Solano and Napa counties (Figure 2-8).

Capitol Corridor, which provides rail service from the Sacramento Valley to San Jose, connects with BART at both the Richmond and Coliseum stations, and in 2017, over 160,000 riders transferred between systems at these two stations. The Richmond BART station also provides connections to Amtrak's San Joaquin and California Zephyr services. In addition, BART provides direct service to both the San Francisco and the Oakland International Airports. Over 125 private and publicly funded shuttle services – from medical, university, senior center, employment and high tech services – provide rides to and from BART stations throughout the system, and many BART riders increasingly rely on the emerging Transportation Network Companies (TNCs) such as Uber and Lyft for "last mile" trips.

Table 2-7 lists major transfer points to rail systems and with multiple bus systems, although bus to BART transfers occur at virtually every station in the system.

Table 2-7. BART Major Transfer Points

BART Stations	Other System Connections
Embarcadero (Transbay Terminal)	MUNI light rail Muni bus and cable car AC Transit WETA ferries SamTrans Golden Gate Transit Future California High-Speed Rail WestCAT SolTrans Amtrak buses Greyhound
Richmond	Capital Corridor AC Transit Amtrak San Joaquin and Zephyr Golden Gate Transit
Oakland Civic Center and 19th Street	AC Transit
Oakland Coliseum	Oakland International Airport Capitol Corridor AC Transit
El Cerrito del Norte	AC Transit SolTrans (Solano County) Napa Valley Transit WestCAT Golden Gate Transit
Dublin/Pleasanton	AC Transit County Connection MAX BART Express

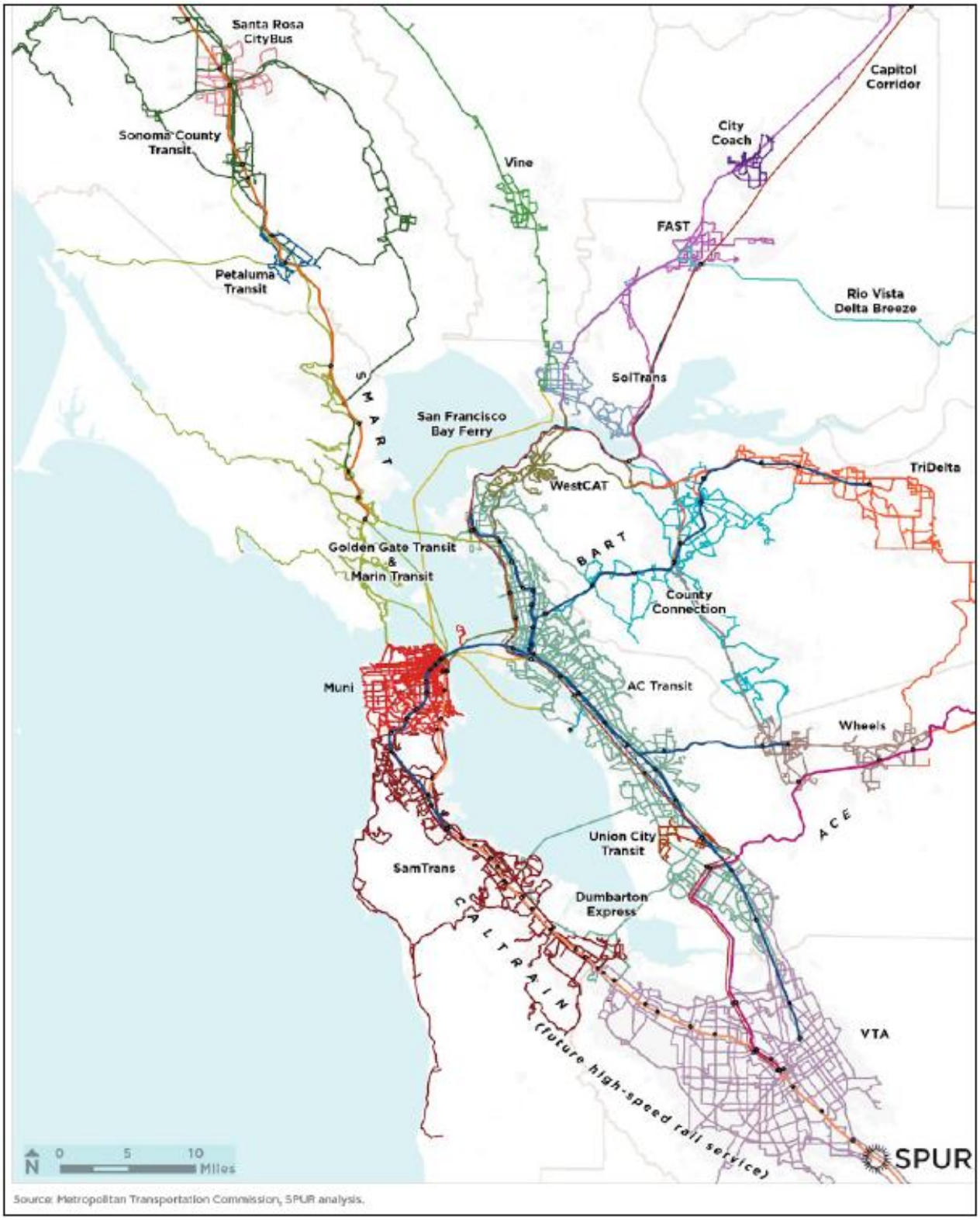
	San Joaquin RTD Stanislaus Regional Transit Livermore-Amador Valley Transit (LAVTA)
Berryessa (opens 2018)	VTA light rail and bus
Millbrae	Caltrain SamTrans Future California High Speed Rail
Fremont	ACE (via AC Transit) AC Transit VTA
Powell	MUNI light rail (central subway) MUNI bus and cable car
San Jose Diridon (Future)	Caltrain ACE Amtrak Intercity Capitol Corridor VTA Light Rail and Bus Future California High Speed Rail

BART and 21 other Bay Area transit systems use the regional the Clipper Card fare collection system, facilitating transfers from one system to another. In a regular month in 2017, approximately 24% of all BART's riders transferred to or from another Bay Area operator. On an average weekday, approximately 67,000 riders use a shared trip as part of their journey to work or school. Looking at Clipper usage data from February 2017, BART can identify riders that use their Clipper Card on more than one transit system in a regular month. Of the 21 transit operators that were using Clipper at that time, all services that connect with BART have riders that use Clipper on both systems. For the major transit operators that connect to BART, 60% of AC Transit riders, 47% of SF MUNI riders, 42% of Caltrain riders, and 47% of SamTrans riders also use Clipper Card on BART in a regular month. For the smaller bus operators and the San Francisco Bay Ferry system, the proportion of their riders that utilize Clipper on both the bus/ferry and the BART system range as high as 85%.

Starting January 1, 2018, BART instituted fare changes that included a 50-cent per trip surcharge on the magnetic stripe tickets, in part as an incentive to move riders to using the Clipper card. BART has also completed the installation of Clipper card vending machines at all BART stations. It is anticipated that these changes will substantially increase the percentage of riders using Clipper cards. Seamless ticketing between systems will further encourage riders to use transit to access the BART system.

Transit agencies that are either currently connected to the BART system or have plans for integration will benefit from growth in BART capacity through the Core Capacity Program, as BART provides its passengers with connections to destinations throughout the Bay Area.

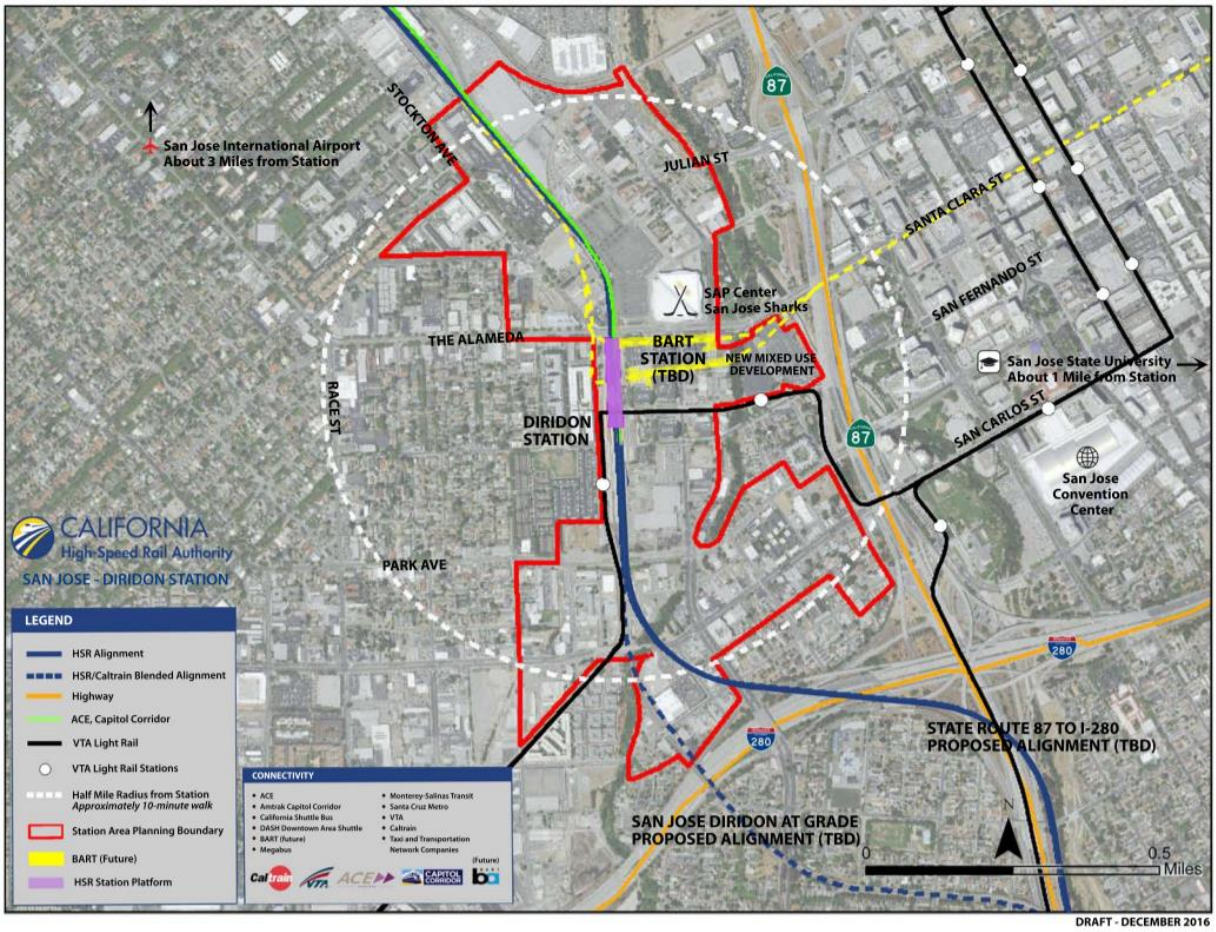
Figure 2-8. BART Connections in Bay Area



California High-Speed Rail Connections

Increasing BART capacity is particularly important for accommodating those travelers who will use the California High-Speed Rail System, which is currently under construction in the Central Valley and will connect San Jose to north of Bakersfield in 2025, according to the California High-Speed Rail 2016 Business Plan.[8] The success of the high-speed rail system is highly dependent on connections to those transit systems that provide regional and local access. BART interfaces will occur at the downtown San Francisco Transbay Terminal, the San Jose Diridon Station, and the Millbrae BART station (Figures 2-9, 2-10, 2-11). Once built, the California High-Speed Rail system is estimated to bring 24,100 daily entries and exits to the SF Transbay Terminal and 2,500 to the Millbrae station. These new trips would yield approximately 3,300 daily transfers to BART.

Figure 2-9. Proposed Diridon Station and BART Connection[9]



[8] http://hsr.ca.gov/docs/about/business_plans/2016_BusinessPlan.pdf

[9] http://www.hsr.ca.gov/docs/newsroom/maps/San_Jose_StationMap.pdf

Figure 2-10. Proposed Transbay Transit Center

Figure 2-11. Proposed Millbrae Station[10]

[10] http://www.hsr.ca.gov/programs/station_communities/millbrae-SFO.html

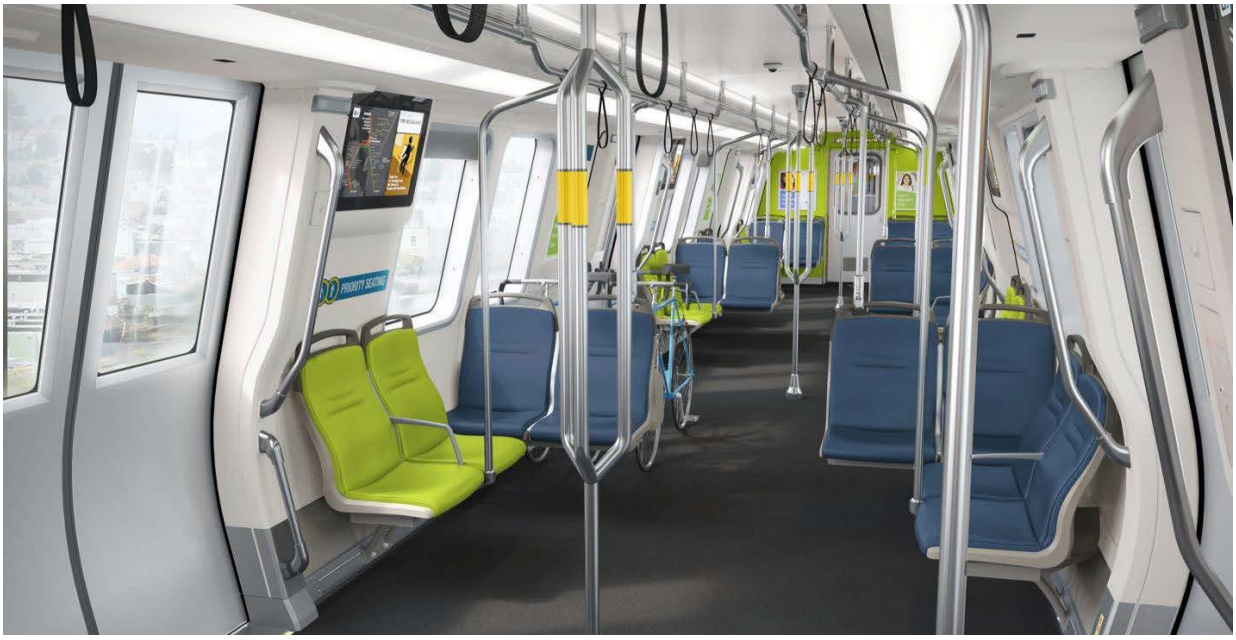
2.3.3.4 Improve Safety

BART's existing train control system, originally built over 40 years ago, is reaching the end of its useful life. The new CBTC system will be a proven technology, ensuring that BART can operate more trains closer together, while maintaining the highest level of safety in train operation. Many systems worldwide have now converted to CBTC, such as the London Underground, the Paris Metro, portions of the New York City subway, and others, and BART will be following this path using fully tested and certified technology.

Currently in the evening peak, the BART platforms at Embarcadero and Montgomery tend to become extremely crowded, particularly when there is a service disruption. Extreme crowding on the platform can lead to unsafe conditions when people are too close to the platform edge. More frequent and longer trains will relieve crowding on BART platforms.

Additionally, the new rail cars will be part of BART's Fleet of the Future and will include many new safety features. BART's new car design includes tripod poles that are strategically placed to give riders additional support, especially during times of peak hour crowding (Figure 2-12), while also ensuring room for people in wheelchairs and those with luggage or strollers. Seats are positioned slightly higher providing room to stow backpacks, luggage and strollers. Specially designated bicycle parking is included as well.

Figure 2-12. Interior of New BART Car, Tripod Poles



To address the needs of customers with vision and hearing impairments, the new BART cars include interior and exterior digital displays, inter-car barriers, clear, automated announcements, and pole markings to improve contrast. For customers with mobility impairments, the new BART cars include differently-colored priority seating, floor markings for wheelchair areas, seats that are higher off the floor making it easier to sit down and stand up, and intercoms located near doors.

Additionally, though not included in the TIRCP request, but a part of the overall Program, the Hayward Maintenance Complex (HMC) facility will ensure that the new cars will receive the maintenance and servicing necessary to operate safely and efficiently throughout their lifetime.

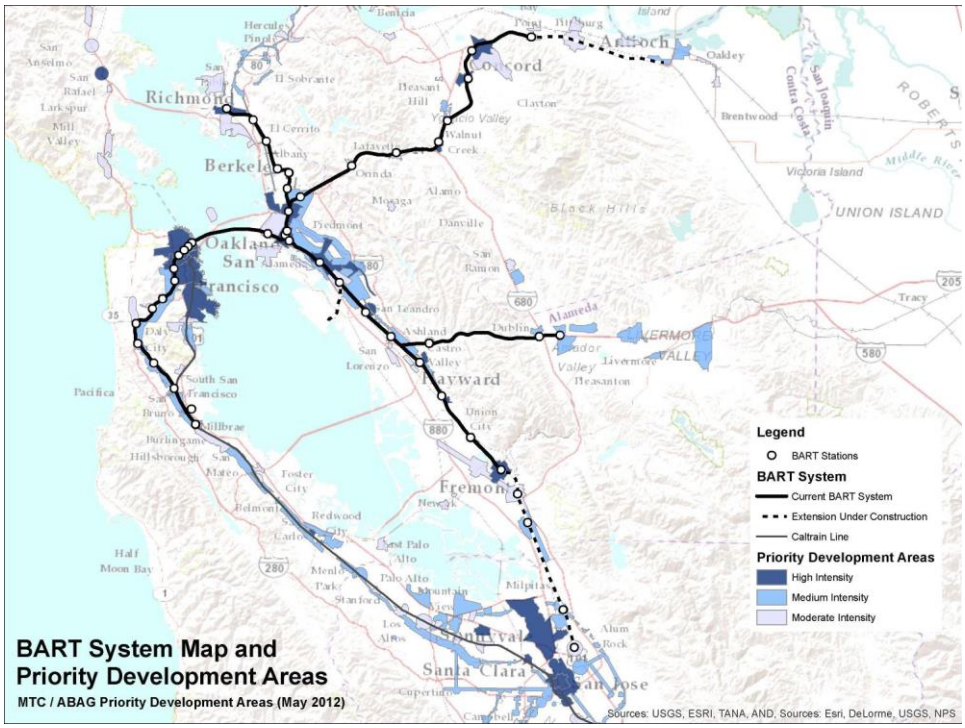
2.3.4 Additional Core Capacity Benefits - Secondary Evaluation Criteria

2.3.4.1 Reduced VMT through Growth in Ridership

As stated in previously, the increased capacity from the Core Capacity Program will increase BART peak period ridership by approximately 45 percent. Based on this ridership increase, an average trip length of 13.5 miles, and an adjustment factor for transit dependency of 291.5[11], the ARB TIRCP Calculator estimates that implementation of the Program will reduce regional VMT by an average of 525 million miles per year. Over the 50-year life of the project, this equates to approximately 26 billion vehicle miles reduced as result of the Program. For more details on reduction in VMT, please see *Appendix B. GHG Emissions Modeling and Methodology.*

2.3.4.2 Housing Development

Figure 2-13. BART System Map and Priority Development Areas



A key aspect of Plan Bay Area (*Appendix F. Plan Bay Area 2040*), which contains the Bay Area's strategy for reducing GHG emissions, is to concentrate new housing and jobs in designated Priority Development Areas (PDAs) that are served by BART and other transit operators (Figure 2-13). Plan Bay Area 2040 is both a transportation plan and a housing plan, and makes the case that the Bay Area currently has a housing crisis, with a need for a tremendous amount of additional affordable and other housing to support a growing population. Additionally, Plan Bay Area's Sustainable Communities Strategy calls for a 33 percent increase in the

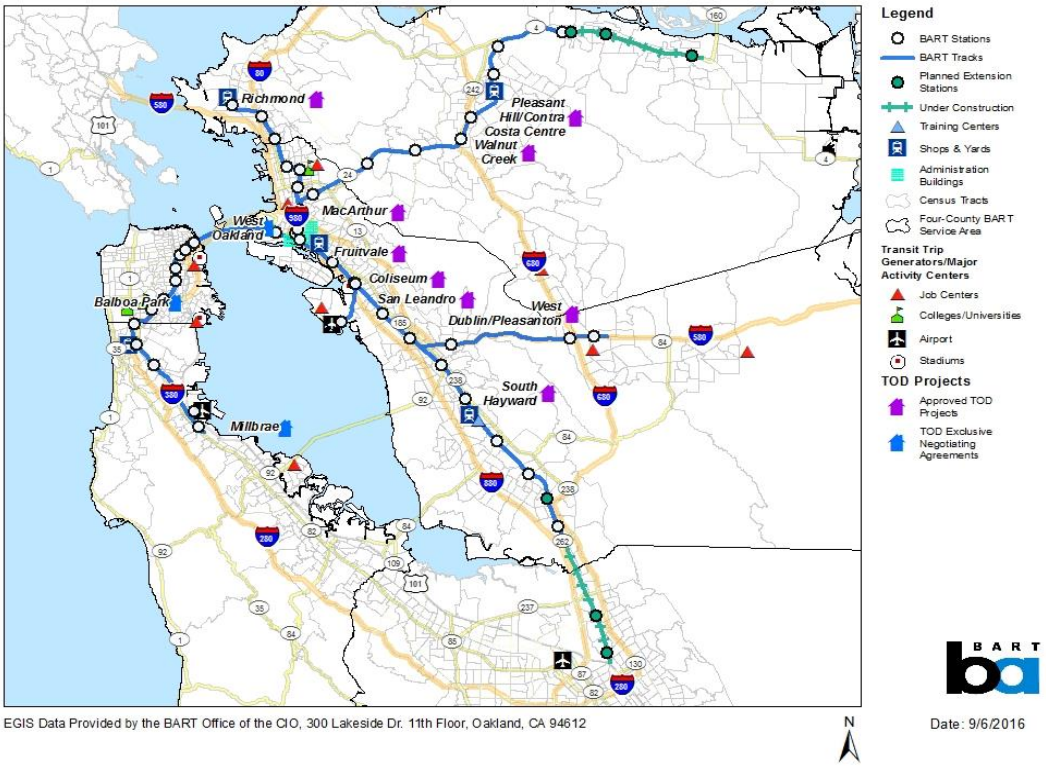
[11] The 291.5 is based on average ratio of systemwide annual trips to systemwide average weekday trips included in the BART ridership forecast (2018-2040).

share of housing units located in PDAs that are well served by transit, many of which are centered around BART stations.

While BART is not directly responsible for building housing, sustaining high quality transit service is essential to supporting the regional plan for concentrating housing in places best served by transit. BART proactively supports Transit Oriented Development (TOD) on its property and around its stations. Twenty-two TOD projects are currently underway on BART-owned property near stations, representing over $3 billion in private investment. These projects will add 6,917 new housing units within walking distance of BART stations (Figure 2-14). In general, BART's TOD Policy encourages and supports high quality TOD, including new housing within walking distance of BART stations.

In 2016, the BART Board of Directors adopted an affordable housing policy and performance targets setting a goal of 35 percent affordable housing on its station sites which could result in an additional 7,000 affordable units over the next ten years. In addition, the BART Board also adopted TOD land use strategies, which ensure that TOD opportunities are explicitly accounted for in the acquisition of new properties, the location of new station sites, and the design and construction of station facilities. It is estimated that the TOD Policy will offset GHG emissions by 24% versus convential development. This means that if BART produces 20,000 units on its property versus elsewhere in Alemeda and Contra Costa counties, households will drive approximately 24% less. Additionally, by supporting TOD in these areas, BART is contributing to the region's Sustainable Communities Strategy goal of reducing per capita GHG emissions in 2035 by 16 percent.

Figure 2-14. Station Modernization Program: Transit Oriented Development (TOD) Projects



In addition to new housing units, the 22 TOD projects in which BART is currently engaged will bring 292,100 square feet of retail and 467,000 square feet of commercial space within walking distance of BART stations in the Bay Area. These developments will support local job growth that is transit accessible, reducing VMT for commuting purposes.

2.3.4.3 Attractiveness of Transit

The new rail vehicles supported by TIRCP funds will help bolster the attractiveness of transit by reducing crowding on BART trains. Overcrowding can significantly impact both train and passenger on-time performance. BART statistics show that increasing the number of passengers per car decreases train on-time performance and passenger on-time performance, as boardings take more time and some riders delay their trips to wait for a less crowded train. The new rail cars have three doors (current BART trains have only two) which decreases the time for riders to on- and off-board the trains. Efficient on- and off-boarding improves on-time performance as well as the overall customer experience.

Additionally, newly designed cars include features that make it more pleasant for people to ride, including:

- Easy to clean, wipeable seats.
- 50 percent more doors, making getting on and off the train faster and easier.
- Improved cooling system that distributes air directly to the ceilings, making it more comfortable for standees on hot days.
- Micro plug doors that seal out noise, making rides more quiet and pleasant.
- Digital displays and recorded announcements for announcing train stops and train destinations.

In addition, the new train control system will greatly improve system reliability. BART estimates that up to 40% of current system delays are due to train control issues. Better reliability results in enhanced confidence in the system which leads to increased ridership. Research has shown that travelers are more sensitive to travel time reliability than they are to travel time itself.

2.3.4.4 Expanding Existing Rail and Public Transit Systems

The Core Capacity Program expands service on the existing BART system by increasing both frequency and train lengths. The Program does not extend the existing system or expand the number of stations served by BART, but it does expand the potential ridership, as discussed in the *Primary Program Benefits* discussed above.

2.3.4.5 Acceleration of Later Phases

Not Applicable

2.3.4.6 Connectivity, Integration, and Coordination

Please see *Section 2.3.3.3. Rail and Transit Integration* for details on connectivity, integration, and coordination with other transit and regional organization.

2.3.4.7 Clean Vehicle Technology

The newly designed rail cars are electric-powered and include state-of-the-art clean vehicle technology features. The new cars are 10 percent more efficient than those currently in service, largely due to improvements to the regenerative braking system. They are designed to be extremely lightweight, with most of the exterior constructed out of aluminum. Aluminum is abundant, does not rust, and when properly finished, reflects heat and light, keeping the train cars cool and reducing air conditioning costs. Aluminum is also lightweight but strong, and fairly easy to work with, reducing the energy investment during the manufacturing process. Additionally, aluminum is easily and readily recyclable, making it very low impact when the cars are eventually retired and dismantled. Because the new BART cars are so lightweight (weighing 15,000–20,000 pounds less than a Washington Metro rail car, for example), they will use significantly less energy over their lifetimes.

Figure 2-15. BART Fleet of the Future Car

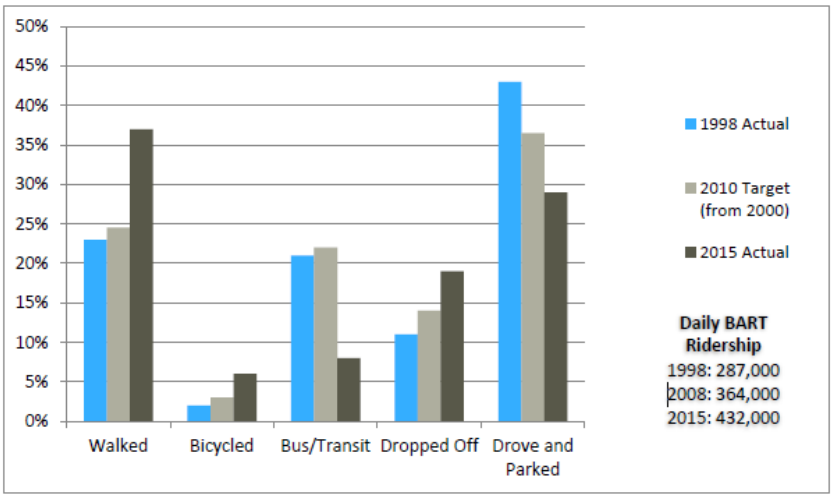
In addition to the natural heat and light reflection properties of aluminum, each car will be equipped with a white roof that will deflect heat and light away from the interior of the train. The white roof will help lessen the load on the interior cooling system, keeping passengers comfortable and decreasing energy consumption. To reduce heating and cooling energy, as well as wear and tear on the doors, the new cars will be equipped with a door sensor that will only activate if there is motion in front of the door. At the outset, this feature will be deactivated, but eventually this feature will be activated in off-peak hours. In addition, the new cars will be equipped with an LED lighting system to sense the amount of available sunlight in each car and adjust lighting intensity automatically, saving additional energy.

For more information on future renewable energy purchasing, please see *Section 2.3.4.10. Other Air Quality Impacts.*

2.3.4.8 Active Transportation

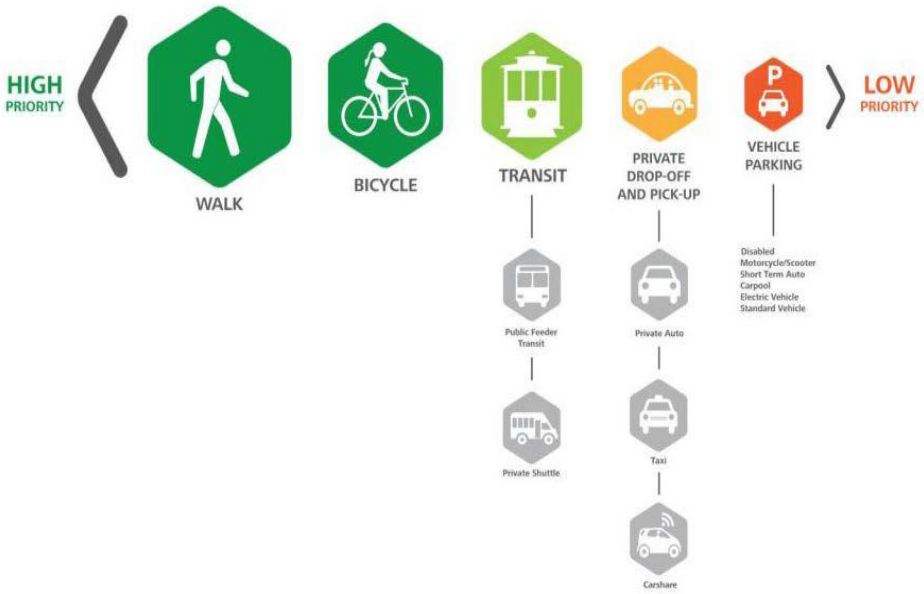
BART proactively supports projects and programs that encourage and support riders to access the BART system by walking and bicycling. BART regularly uses existing revenues and grant funds to improve pedestrian walkways, lighting and signage, and to provide secure bicycle parking at or near its stations. In 2015, over 40 percent of BART riders accessed stations by bicycling and walking (Figure 2-16). By increasing ridership, the Program will likely result in a proportional increase in bicycling/walking trips to BART stations.

Figure 2-16. BART Station Access Mode Share



To encourage alternative access modes, BART recently revised its Station Access Policy, which prioritizes investments to improve active transportation mode share and safety. With a clear focus on improved access, BART anticipates that the percentage of riders who use active transportation to reach BART will be even greater in the future. Figure 2-17 depicts BART's station access investment priorities, with walking and bicycling receiving the highest investments of all access types.

Figure 2-17. BART Station Access Investment Priorities



In addition, the newly designed train cars include bicycle racks, making it easier for riders to get to their destinations by bicycle once they have arrived at their stop. This improvement will help facilitate growth in bicycle station access.

2.3.4.9 Improve Public Health

The Core Capacity Program will improve public health by increasing ridership and improving regional air quality. By making BART service more comfortable, reliable, and convenient, the Program will support ridership growth that displaces automobile travel. Reducing the number of miles driven by vehicles in the Bay Area improves air quality by reducing criteria pollutant emissions, which will improve respiratory health and other impacts throughout the region. Reductions in criteria pollutants is particularly important for communities located along high-traffic roadways. Since 30 percent of BART stations are located within a disadvantaged community, and many more stations serve DACs (are within a half mile), the public health benefits of the Program are largely concentrated in these areas.

Overall, the increase in BART riders accessing the stations by modes other than automobile supports an active lifestyle. Please see *Section 2.3.3.1 Reduction of Greenhouse Gas Emissions* for details on quantified GHG emissions benefits and reductions in VMTs due to the Core Capacity Program.

2.3.4.10 Other Air Quality Impacts

Overall, BART is working diligently to decrease the GHG emissions of its system primarily through sourcing the electricity portfolio needed to run the system to more zero or low-carbon sources. Specifically, GHG benefits realized by the new 306 vehicles and CBTC system (funded by TIRCP) will be amplified by BART's separate efforts to decrease GHG emissions from the existing system.

BART's wholesale electricity portfolio policy can be found in *Appendix H. BART Strategic Energy Plan* and zero and low carbon sourcing is already underway. In 2016, about 27% of BART's contract power was zero or low carbon as compared to 13% in 2015. Because of this increase in power purchasing from zero or low carbon sources, BART generated 119,795 MT CO2e of emissions (or 1.61 kg CO2e/BVM) in 2016, a decrease of 7.7% from 2015 unnormalized.

While most transit agencies receive their power from local utilities under standard rates, has statutory authority to procure its own power supply. BART has adopted a Strategic Energy Plan that includes renewable energy procurement goals of 75 percent by 2017 and 100 percent by 2020. Please see *Appendix H* for BART's Strategic Energy Plan.

BART has recently signed two important agreements for procuring its energy supply. The first agreement is with NextEra Energy for energy generated from a new 61.7 MW wind project location in Kern County, California. The second agreement, with Recurrent Energy, will supply energy generated from a new 45 MW solar project also to be located in Kern County, California. In the near term, these projects will meet approximately 90% of BART's energy needs when they come online in 2021. As BART's energy needs increase between 2021-2026, due to the addition of new services and the upgraded train control system, the projects will then meet approximately 75% of BART's energy needs. In the long term, these agreements will put BART well on the path of achieving 100% of its electric power from eligible renewable sources by 2045.

2.3.5 Tracking and Reporting Metrics

According to the most recent California ARB's Funding Guidelines[12], CalSTA is required to report on project outcomes for all TIRCP projects. As such, BART will provide tracking information for both TIRCP Scope components, vehicle purchases and the new CBTC system.

The Core Capacity TIRCP Scope includes projects that cover both "Capital Improvements that Result in New or Expanded Transit Service or Increase of Mode Share on Existing Transit Service" as well as "New Vehicles for Existing Transit Service." Table 2-8 outlines the metrics and reporting methods that BART will undertake as a part of TIRCP funding requirements.

Table 2-8. TIRCP Scope Metrics and Evaluation

Project	Metric	Unit	Evaluation Method
Vehicles	Tracking dates of data submission	mm/dd/yyyy	N/A
	Fuel/energy consumption or vehicle miles traveled	Gallons/year by fuel type, kWh/year, scf/year, or vehicle miles traveled/year	Evaluation of fueling, utility, mileage, or other operating records
	Change in fuel/energy consumption or annual vehicle miles traveled		
CBTC	Tracking dates of data submission	mm/dd/yyyy	N/A
	Days of operation per year	Days/year	Evaluation of service schedule
	Average daily ridership	Unlinked trips/day	Ridership survey, ticket and transit pass sales, automatic passenger counter, driver counts, etc.

[12] https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/2017_draft_funding_guidelines.pdf

2.4 Program Impacts

The following section describes how the Core Capacity Program could impact other transit services and other potential projects in the corridor.

For a full discussion of the Program's benefits and specifically how the BART Core Capacity Program will be tied into planned high-speed rail access, please see *Section 2.3 Program Benefits.*

2.4.1 Program Impacts on Other Transit Services

The Core Capacity Program will not impact the operation of other transit services, with the possible exception of the construction related to the additional 5 traction power substations (TPSS). See *Statement of Work* for more details on the TPSS. The installation of the TPSS at the BART Civic Center Station has the potential to temporarily impact MUNI light rail services in the Market Street tunnel. During the design phase, BART will work closely with MUNI to avoid and/or mitigate any service impacts due to this construction. The TPSS at Civic Center Station is not included in the TIRCP scope for the Core Capacity Program.

Because the Core Capacity Program is expected to increase ridership throughout the system, it is expected to also have a positive impact on the ridership numbers of connecting transit services. However, this increase in ridership has neither been quantified nor included in the GHG reduction model. Please see *Section 2.3.3.3 Rail and Transit Integration* for more information on connections to other transit systems, including the multiple connections with the planned California High-speed Rail system.

2.4.2 Program Impacts on Planned Projects

The Core Capacity Program will not impact other planned or underway projects within the Bay Area. VTA's project to extend BART to San Jose and Santa Clara will utilize fully compatible vehicles and the same train control system to allow for a seamless operation.

The BART service to Antioch, anticipated to open by June 2018, is a connecting rail service, designed, built and operated by BART, which uses a different technology (diesel multiple unit), and will connect with the existing BART system at the Pittsburg/Bay Point BART station. Therefore, the Core Capacity Program will not impact this service.

2.5 Disadvantaged Communities, Low Income Communities, and/or Low Income Households

The many disadvantaged communities (DACs), low income communities, and other minority or at risk communities located along the BART system will benefit from the increased frequency, greater capacity and reduced crowding gained from the Core Capacity Program. This section provides an overview of these benefits, while *Appendix D. Outreach to Disadvantaged and Low Income Communities* describes outreach to these communities in detail. Additionally, *Appendix I. BART Rider Demographics* details the demographics of BART users in detail.

2.5.1 Qualifications for ARB Funding

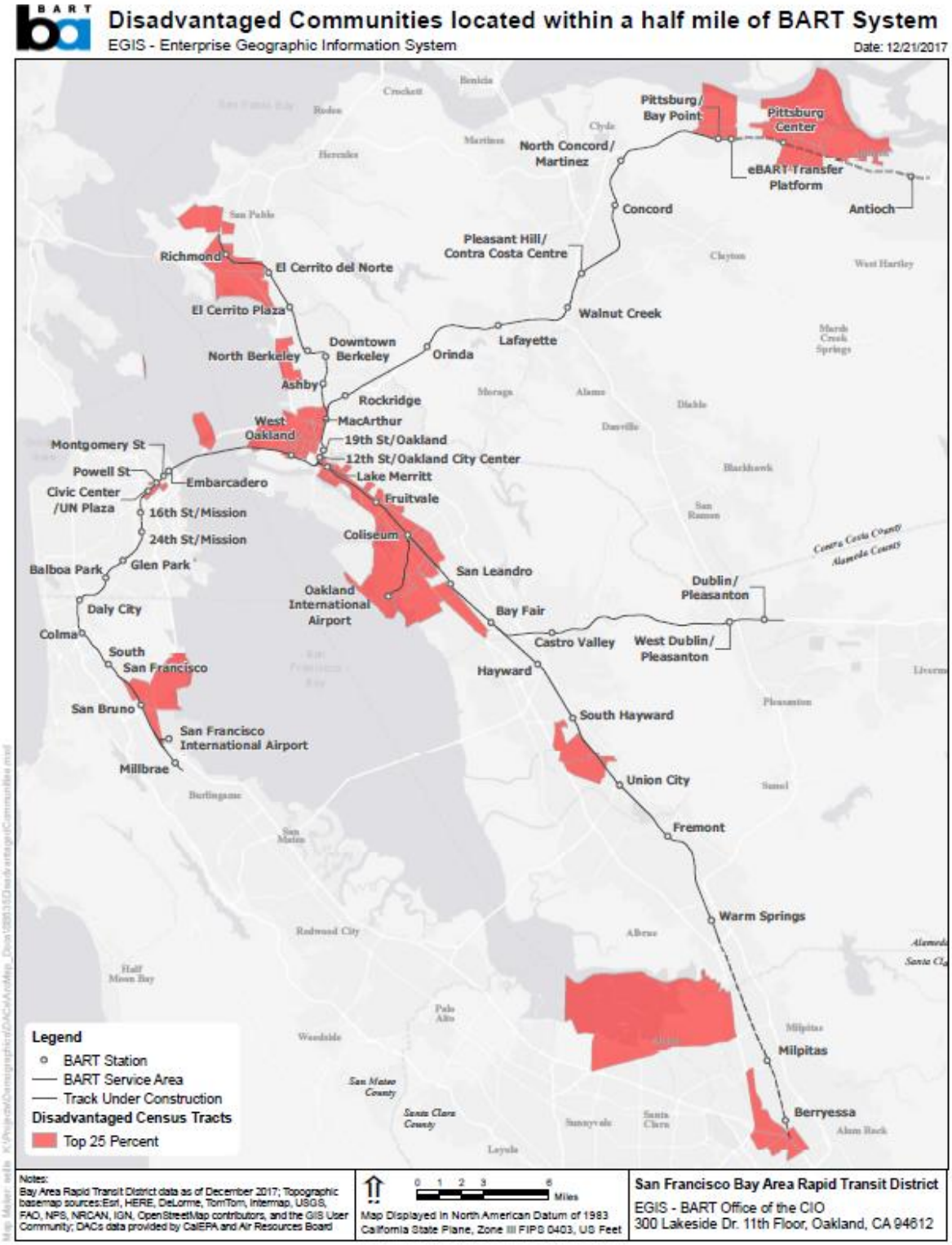
According to the California Air Resource Board's Funding Guidelines[13], the Core Capacity Program is classified as a Transit project, as it will achieve GHG reductions by reducing passenger vehicle miles travelled (VMT) through operational improvements, including increased service frequency and safety. Additionally, the Core Capacity Program qualifies for ARB funds because of the following criteria:

- The Program serves multiple disadvantaged communities along the BART system. See Figure 2-18 for a map showing DACs along the BART alignment.
- BART has and will continue to host community meetings, as part of the planning process to engage local residents and community groups for input on community and household needs, and will continue to provide documentation showing how the input will be considered and addressed.
- The Program provides improved transit service for stations and stops within multiple AB 1550 communities on the BART system.

Specifically, designated disadvantaged communities located along/within a half mile the BART line and to the Core Capacity Program can be seen in Figure 2-18. The Core Capacity Corridor includes 9 BART stations located directly within disadvantaged communities. Additionally, for the most overburdened section of the Core Capacity corridor from West Oakland to Embarcadero Station, the West Oakland Station is also located in a disadvantaged community. In total, at least 15 of the over 50 existing and planned BART stations are located in disadvantaged communities. This is equal to 30% of all stations.

[13] https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/2017_draft_funding_guidelines.pdf

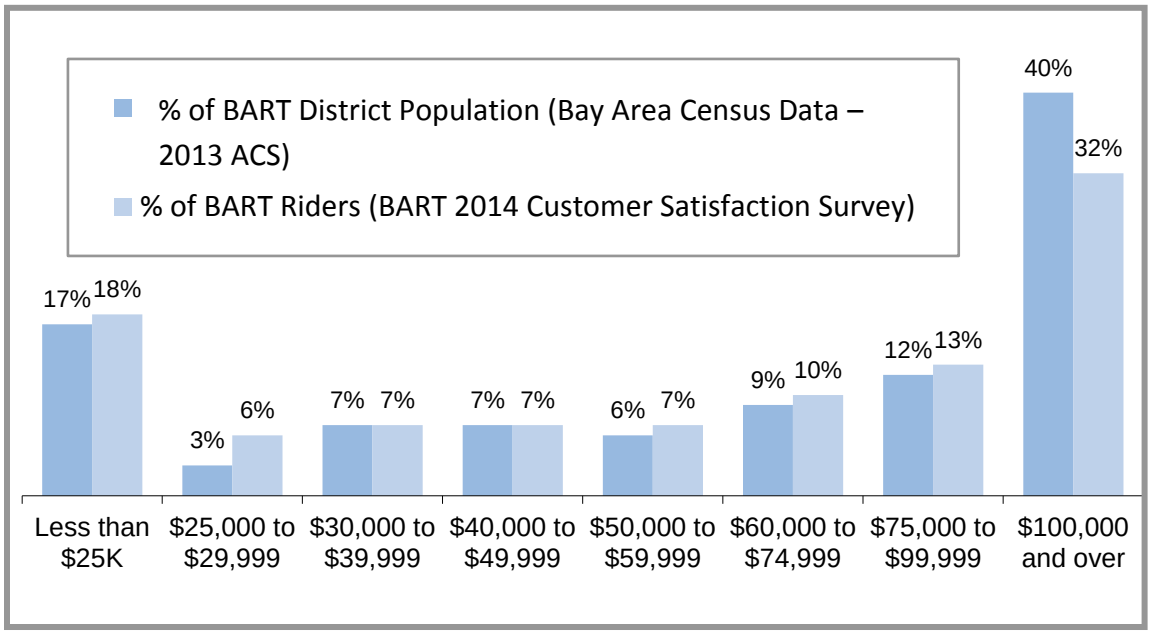
Figure 2-18. Disadvantaged Communities located within half mile of BART System



2.5.2 Program Benefits to Disadvantaged or Low-Income Communities

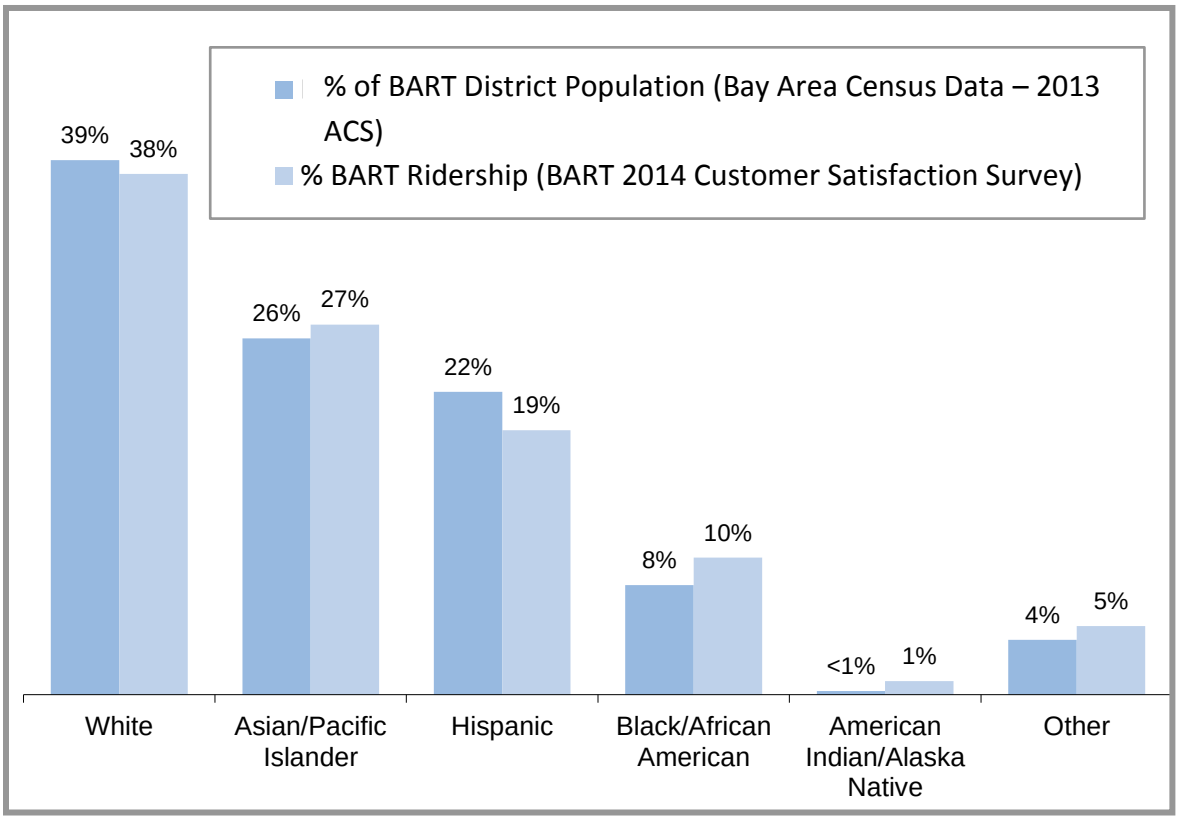
BART riders come from across the income spectrum and from the full diversity of the region's racial and ethnic groups in rough proportion to their representation in the population of the BART district as a whole (Figure 2-19). Additionally, BART offers an essential travel option for people with disabilities, for youth and seniors, for those living in households without access to a car, and for whom daily driving would be an unaffordable expense. As the spine of the regional transit system, BART helps to make the Bay Area more affordable for lower-income households and is accessible to all. For more information on BART's impacts, please see *Appendix E. Role of BART in the Region.*

Figure 2-19. BART Riders and District Population by Income



Likewise, riders are as racially and ethnically diverse as the Bay Area's population. By serving diverse populations, BART helps to knit the region together as one community. Figure 2-20 compares the racial/ethnicity composition of the region (based on 2013 data) with that of BART riders (based on BART's 2014 Customer Satisfaction Survey), showing that they are very similar.

Figure 2-20. BART Riders and District Population by Race/Ethnicity

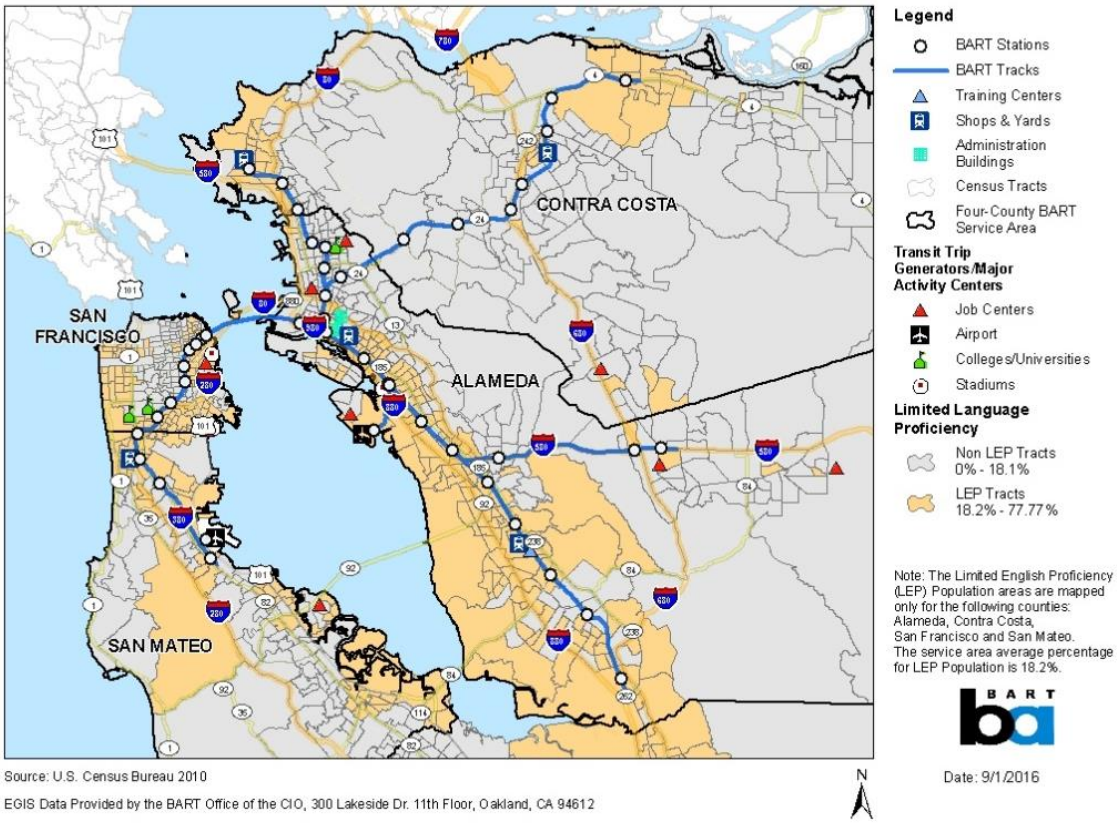


BART has a long and successful history of interacting and working with social justice, environmental, community-based, faith-based, disability rights and other groups in the BART service area. BART has solicited input and sought ideas on a wide variety of both programs and projects – from the design of new rail cars, to station area improvements or development, to changes in fares and their potential impact. BART has successfully implemented a number of community-based grants such as Caltrans' Environmental Justice grants, MTC's Community-based Transportation Planning grants, as well as the successful Better BART outreach campaign in 2016.

BART's outreach efforts are designed to ensure meaningful access and participation by minority, low income, and Limited English Proficient (LEP) populations and the two projects included in the Core Capacity Program provides benefits to these groups.

Figures 2-21 and 2-22 show the direct overlap of both LEP communities as well as Low Income Communities with the BART system.

Figure 2-21. Limited English Proficiency (LEP) Population and BART System



2.5.3 Summary of Outreach to Disadvantaged Communities

BART's Public Participation Plan (PPP) was developed in 2011 and followed extensive outreach throughout the BART service area and guides the organizations ongoing public participation endeavors (*Appendix J*). The PPP ensures that BART utilizes effective means of providing information and receiving public input on transportation decisions from low income, minority and limited English proficient (LEP) populations.

As recommended in the PPP, BART has implemented a variety of outreach techniques for projects related to the Core Capacity Program. In 2014, BART launched its "Fleet of the Future" outreach campaign to obtain public feedback on the design of BART's new vehicles. A series of ten events were held at BART stations and in local communities throughout the San Francisco Bay Area. Approximately 17,500 people attended the events and a total of 7,666 surveys were collected. BART staff consulted regularly with members of the disability community including its the BART Accessibility Task Force (BATF), on the design and functionality of the new BART trains. The BATF provided hands-on feedback on all aspects of the car design.

Outreach related to the 2014 BART Vision Plan engaged over 2,000 people in exploring the tradeoffs involved in considering how BART can meet its future needs. The public helped BART staff narrow down future projects and investments BART should focus on by determining which ones are most important to

the public and fit best into BART's goals of serving the Bay Area for years to come. A total of ten in-station events were held and a total of 2,551 surveys were collected.

BART's Title VI/Environmental Justice Advisory and Limited English Proficiency Advisory committees meet regularly to assist BART on all issues of policy with a focus on meeting the needs of minority and disadvantaged communities and riders. In November 2017, both committees received a presentation on the Core Capacity Program.

In 2017, BART also partnered with MTC to conduct outreach on its Core Capacity Transit Study (*Appendix G*), a collaborative effort to improve public transportation to and from the San Francisco core. Outreach activities consisted of two public meetings to identify investments and improvements to increase transit capacity to the San Francisco Core. Approximately 80 people participated in the public meetings.

Outreach to Disadvantage or Low-Income Communities

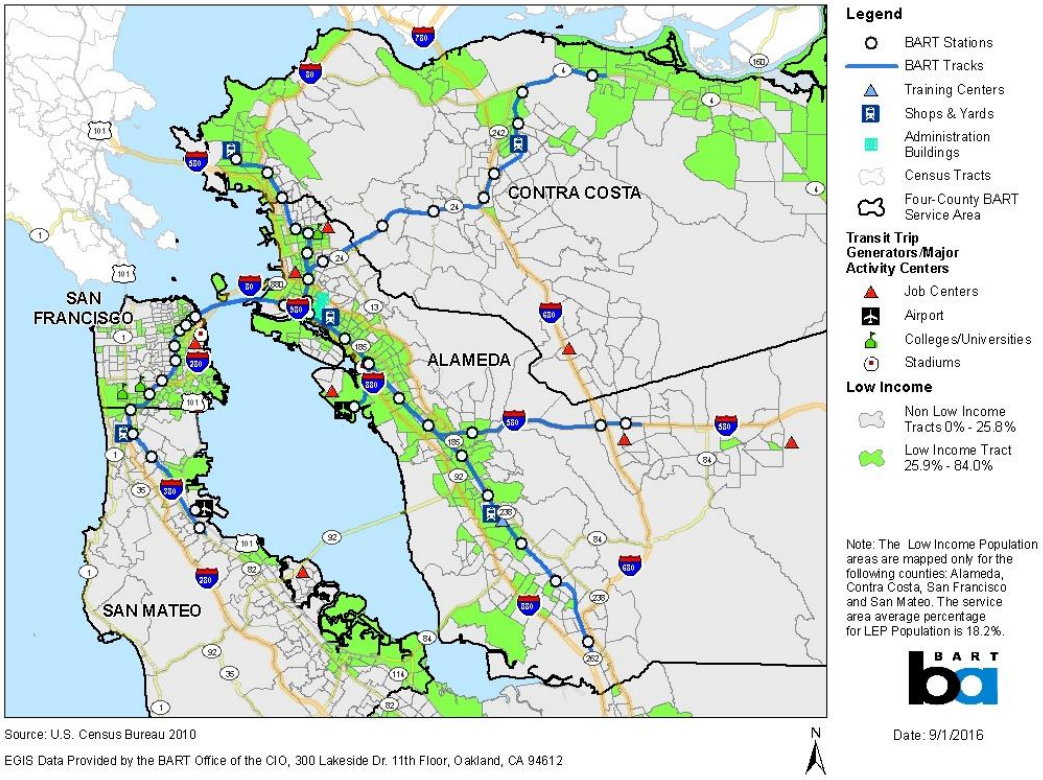
- The PPP outlines strategies to engage disadvantage and low-income communities, including: Translation of flyers and other meeting materials and interpretation services
- Outreach to Community Based Organizations (CBOs)
- Providing notification using Ethnic Media
- Hosting meetings in accessible locations

Additional Outreach Activities

Appendix D. Outreach to Disadvantaged and Low Income Communities provides a detailed overview of public outreach activities undertaken by projects under the Core Capacity Program from 2010 – 2017. Outreach activities include:

- Fleet of the Future New Train Car Model
- BART Vision – Future BART
- Embarcadero-Montgomery Capacity Implementation and Modernization Study
- Better BART
- MTC Plan Bay Area
- MTC Core Capacity Transit Study
- Hayward Maintenance Complex Noise Study

Figure 2-22 Low-Income Tracts and BART System



2.5.4 Proposed Additional Outreach to Disadvantaged and Low Income Communities

Because of BART's extensive community work, BART is in an excellent position to implement a new round of outreach, specifically focused on garnering input on the changes proposed by the BART Core Capacity Program in its entirety, and to measure potential impacts, both positive and negative, on the increased capacity achieved by this Program as well as any impacts caused by construction activities.

Included in this application for state funding, BART proposes to implement a $250,000 outreach program working directly with community-based organizations in key Disadvantaged Communities (as identified by the CalEnviro Screen 3.0) located within BART station areas or along BART lines. BART proposes to pass through a portion of these grant funds directly to 4-5 local community-based groups to conduct outreach meetings, workshops and focus groups that will provide input on potential local impacts of the project. The targeted DACs could include the communities of South Hayward, Richmond, Antioch, San Bruno, Oakland Coliseum and West Oakland, as illustrated on Figure 2-18.

To maximize the participation of community members, BART will work with the selected local community groups to structure the meetings and focus groups in a such a way as to meet the needs of the participants. For example, meetings may be held in the evening or on a weekend, and babysitting services and culturally appropriate food and drink may be provided. In all cases, translators and materials in a variety of languages will be provided. BART proposes to allow the local community groups

with which it engages to take the lead on determining the best and appropriate methods for engaging their communities.

To augment this outreach, BART proposes to provide survey instruments to gather input from BART riders and members of the public to solicit further input on this project. This survey could take the form of paper and/or online surveys. As is routine, BART will provide this survey in multiple languages.

In addition, BART will use its significant media network to advertise community meetings and workshops as well as the survey. BART utilizes in-station messaging, media advisories, direct mail and email, and social media to inform and involve residents, riders and the general public. The following details the preliminary budget for the post-award outreach activities.

Table 2-9. Outreach Program Cost

Outreach Program Component	Cost
Grant pass through ($20,000 for each of 5 groups or $25,000 for 4)	$100,000
Materials (surveys, translations, other media, etc.)	$90,000
Program oversight (legal review, contract administration)	$50,000
Draft/Final report	$10,000
Total	**$250,000**

Table 2-10. Outreach Program Schedule

Outreach Program Component	Schedule
Finalize program design	Fall 2018
Contact community groups/set up pass through agreements	Winter 2019 – Spring 2019
Develop materials	Spring 2019
Conduct workshops, focus groups and surveys	Summer 2019 – Summer 2020
Assess outcomes/prepare draft report	Summer 2020
Issue Final Report	**Fall 2020**

2.6 BART Management Capability

Since the 1950s when planners, politicians and engineers designed and built the original BART system, BART has amassed a proven track record of successfully delivering large-scale, complex projects, including system extensions, new stations to existing lines, a billion dollar earthquake safety retrofit projects, major system upgrades, and other state-of-good repair projects.

As a recent example, in March of 2017, BART service was extended south 5.4 miles from the Fremont Station to a new station in the Warm Springs district of Fremont in southern Alameda County (the "Warm Springs Extension"). The Warm Springs Extension alignment is mostly at-grade; however, it runs beneath Fremont Central Park in a mile-long cut and cover subway. The project funding plan for the $890 million extension included substantial contributions from a variety of local and State sources and surplus revenues from the SFO Extension. The project had no federal funding. The project was implemented via two major contracts: the $137 million Fremont Central Park Subway contract which

was begun in August 2009 and completed on schedule and within budget in April 2013 and the $299 million design-build Line, Track, Station and Systems ("LTSS") contract which was begun in October 2011. The project was completed approximately $100 million under budget.

BART has also successfully added new rail services using non-BART technology, further demonstrating the agency's engineering and project management expertise. Both the Oakland Airport Connector (opened in 2014) which provides rail service from the Oakland Coliseum BART station to the Oakland International Airport, and a new rail service extension called the eBART/East Contra Costa Rail Extension (set to open May 2018) which extends ten miles from the Pittsburg/Bay Point BART line to the City of Antioch, and operates using non-BART technology (cable-propelled people mover, and diesel multiple unit, respectively).

2.7 Program Implementation and Management

As a rail provider for over 40 years, BART has fully demonstrated its capacity, knowledge and skills to successfully deliver highly complex, major construction and procurement projects. BART will manage the Core Capacity Program using an integrated approach that makes use of BART's existing organization and specialized skills and resources to deliver each Program element while integrating the relevant components, delivery schedules, funding streams, testing and commissioning requirements, and maintenance and operation considerations.

A centralized Program Management Team has been established and will have the following functions:

- Program controls and monitoring
- Program coordination among the four Program elements
- Program funding and funding timelines

A Program Management Coordinating Committee (PMCC), consisting of the Program Management Team and the project managers for each element, meets regularly (currently weekly).

Delivery of each individual element will be the responsibility of separate Program teams, one for each element. Each Program team will establish the appropriate delivery mechanism for its element in coordination with the management framework and schedule established for the overall program. The elements will be delivered by separate contracts. Tentative decisions on delivery method are:

- Vehicles: Negotiated procurement
- HMC Phase 2: Design-bid-build
- CBTC: Design-build TPSS: Five new TPSS will be delivered by contractors hired as part of BART's traction power refurbishment program. A sixth TPSS, within the HMC Phase 2, will be delivered by the contractor delivering the HMC storage facility.

The BART divisions most directly involved in delivery are:

- Planning, Development and Construction (PD&C)
- Operations, primarily Rolling Stock & Shops, Maintenance & Engineering (M&E)

PD&C will be responsible for delivering three elements – HMC Phase 2, CBTC, and traction power – with M&E playing a strong technical support role for traction power. Rolling Stock & Shops will be responsible for the vehicles element. Ancillary departments at BART will provide support throughout design, procurement, construction, manufacturing, delivery, and testing.

Recurring meetings and regular reports will be used to track, communicate and resolve issues as they arise. Program reporting will include the communication of scope, time, and cost requirements to management and appropriate members of the delivery team in accordance with the Program controls framework.

Regular reporting for the program and each Program element will use existing web-based project and financial management tools such as PeopleSoft and Oracle Business Intelligence Enterprise Edition (OBIEE). PMs can develop progress report data once a project is initiated in BART's online database. The format and content of these reports is set by each Assistant General Manager (AGM) and may differ by department.

Program Contracting & Contract Oversight: BART follows federal guidelines on all procurement processes, from contractors to equipment, as laid out in its detailed Procurement Manual. The manual explains delegation of authority, legal review requirements, procurement protests, and other contract oversight. This Manual can be provided upon request.

Change-order Management: All executed construction contracts under BART shall contain requirements regarding contract adjustments in the contract general provisions. Approval authority and limitations established by the District act and by the Board of Directors are explained in detail under BART's Delegation of Authority Management Procedure.

Risk Management: BART has implemented a risk management strategy for the program that establishes a formal, systematic approach to identifying, assessing, evaluating, documenting and managing risks that could jeopardize the success of the project.

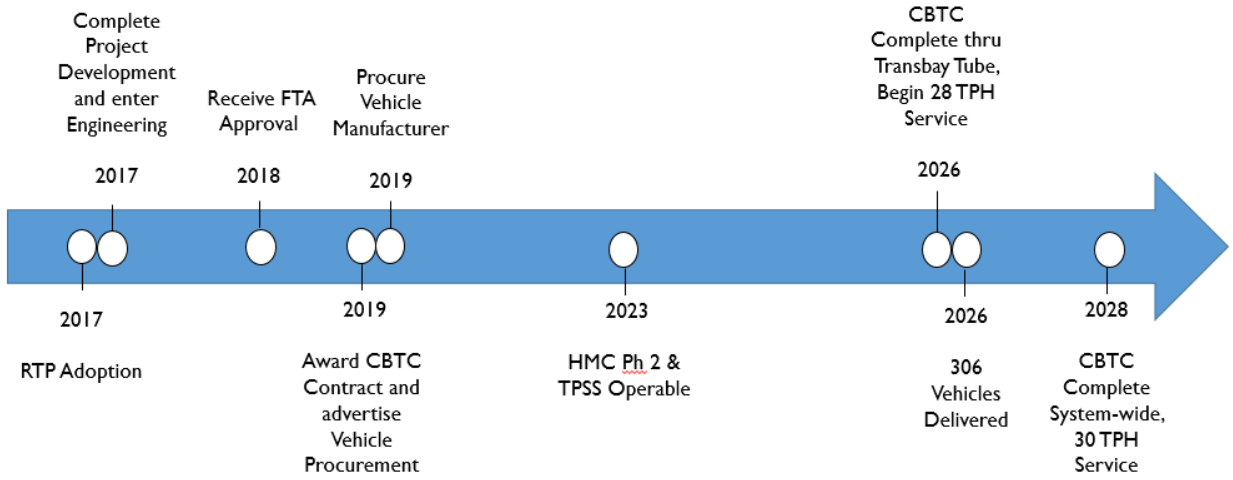
Upon request, BART can provide a Program Management Plan as well as a Risk and Contingency Management Plan for further details.

2.8 Program Readiness

The overall Core Capacity Program is currently at 30% design and the CEQA and NEPA processes have been completed. The procurement process for CBTC is underway, with BART currently reviewing responses to a Request for Qualifications (RFQ).) Final vehicle specifications for the latest round of cars are nearly complete and by mid-2018 BART expects to initiate the vehicle procurement.

The Program has been sequenced to deliver all four component projects concurrently to minimize the overall Program duration and bring the Program benefits to fruition as quickly as possible. As shown in Figure 2-23, CBTC contains the longest schedule duration in the Program. Accordingly, the Program critical path extends through the CBTC implementation schedule.

Figure 2-23. Core Capacity Program Delivery Schedule Summary



The Core Capacity Program is expected to be fully operational by 2028, with the deployment of CBTC system wide, followed by a 2-year closeout period. BART is just over one year away from giving notice to proceed (NTP) to a CBTC supplier. The actual delivery schedule will be negotiated as part of that contract negotiation. The CBTC schedule anticipates that the CBTC system will be ready to demonstrate 28 train per hour (TPH) capacity through the Transbay Tube by 2026 and begin 30 TPH peak service by 2028. By the time 30 TPH Transbay service is achieved, the new order of 306 additional vehicles will be delivered, HMC Phase 2 will be completed, and the new traction power substations will be operational.

The program schedule also shows that BART is currently receiving a delivery of 775 replacement and expansion vehicles. BART recognizes that the delivery of these new cars, along with the schedule for retiring the existing legacy fleet, will require vehicle storage issues to be addressed before HMC Phase 2 becomes operational. While this is an important issue for BART to address, it is outside the scope of and not on the critical path for the Core Capacity Program or the TIRCP scope.

For a detailed look at the entire Core Capacity Program timeline, please see *Section 3.7 Program Schedule*.

2.8.1 Environmental Review

In September of 2017, BART received confirmation that its Core Capacity Program qualified for a Categorical Exclusion (CE) from NEPA. The September 2017 CE confirmation letter from FTA is found in *Appendix K*. *Categorical Exclusion*. The rail vehicle acquisition, traction power improvements and CBTC system are statutorily excluded from the California Environmental Quality Act, and the BART Board adopted the project and certified the statutory exemption in November 2016. HMC Phase 2 was cleared through CEQA with a Negative Declaration (2011) and two addenda to the Negative Declaration (2013 and 2016).

2.8.2 Agreements with Key Partners

The TIRCP Scope components, additional cars and the CBTC system, do not require any third party involvement to begin implementation. Both the additional traction power stations as well as the maintenance facility will require some coordination with key partners. These partners and their applicable agreements are show in Table 2-11.

Table 2-11. Agreements with Key Partners

Program Element	Third Party	Agreement, Coordination, Permit	Anticipated Date of Agreement or Permit
Traction Power	Caltrans (2 Agreements)	Agreement	September 2018
Traction Power	SFMTA	Coordination	Existing Maintenance Agreement
Traction Power	City and County of SF (2 Agreements)	Agreement	Existing Master Agreement
Traction Power	City of Oakland	Coordination	Spring 2018
Traction Power	City of Richmond	Coordination	Spring 2018
Traction Power	City of Concord	Coordination	Spring 2018
Traction Power	City of Hayward	Coordination	Existing

2.8.2.1 Program Funding Partners

The implementation of BART's Core Capacity Program will involve funding from a number of federal, state and local partners. Please see *Section 3.8 Funding* of the *Statement of Work* for detailed descriptions of each Funding Partner.

3 Statement of Work

The following *Statement of Work* provides additional detail on the Core Capacity Program, and specifically the TIRCP Scope. Some of the information in this section is covered in the *Program Narrative* above, however, is copied again below for completeness.

The following Core Capacity Program documents can be made available upon request:

- Capital Cost Methodology and Estimate Report
- Basis of Schedule Report
- Financial Plan
- Project Management Plan
- Conceptual Engineering Documents

3.1 About BART

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 the East Bay 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.

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 crush-loaded, and the program goal is to reduce the level of crowding and allow for continued ridership growth.

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 3-1. Current BART Map

3.2 Program Scope

In order to achieve 30 regularly scheduled ten-car trains per hour service, BART will require the following program elements:

- 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 (TIRCP Scope)
- 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 (TIRCP Scope)
- 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 (Not TIRCP Scope)
- Added traction power facilities with the ability to support 30 ten-car trains per hour in each direction (Not TIRCP Scope)

For detailed descriptions of the TIRCP Scope Core Capacity elements, please see *Section 2.3.2. Detailed Program Description*. As mentioned previously, the TIRCP Scope and funding request includes the additional vehicles and the Communications Based Train Control system only.

Below, please find detailed descriptions of the non-TIRCP Scope Program elements.

Hayward Maintenance Complex Phase 2

Though not part of the TIRCP request, the Hayward Maintenance Complex and new Traction Power Substations are also vital elements of the overall Core Capacity Program.

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 position trains, BART will construct the Hayward Maintenance Complex Phase 2 (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 so that it may serve as a fully operational vehicle storage facility. The HMC offers the only practical site to expand storage within the BART system to accommodate the additional cars that are part of the Core Capacity Program. HMC Phase 2 provides for additional storage capacity only and is not part of the TIRCP funding request

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. The TPSS are not part of the TIRCP funding request.

BART has conducted multiple 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, and took into consideration 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

BART is currently undertaking a major replacement and upgrading of its existing traction power system, aimed at returning the traction power system to a state of good repair. While distinct from the Core

Capacity Program in terms of purpose and funding, the replacement and upgrade will occur concurrently with the Core Capacity Program, requiring close coordination.

The successful planning, financing, procurement, design, construction, manufacturing, testing and commissioning of each of each program element are key milestones to achieving the goal of increased Transbay capacity. A detailed schedule with Core Capacity Program milestones can be found in *Section 3.2.4. Program Schedule*.

3.2.1 Program Location

BART is located in the San Francisco Bay Area, and specifically San Francisco, Alameda, Contra Costa, San Mateo, and Santa Clara Counties. The Core Capacity Program is located in the Transbay Corridor, connecting the East Bay with the San Francisco Peninsula.

The TIRCP scope of the Program will relieve crowding through the Transbay Tube, as well as additional locations throughout the East Bay. The location of the TIRCP Scope is denoted by **heavy** dashed line in Figure 3-2.

Figure 3-2. Transbay Corridor Core Capacity Program

Figure 3-2 also shows the location of the non-TIRCP scope Core Capacity elements, including the five planned traction power substations and the Hayward Maintenance Complex (Phase 2).

For additional maps showing disadvantaged communities, low income communities, and other designated communities along the BART alignment, please see *Section 2.5.1. Program Benefits to Disadvantaged and Low-Income Communities.* Additionally, for more information on GHG reducing features of the Program, as well as land use density, housing development along the BART system, and more – please see multiple sections in the *Project Benefits Section*.

Table 3-1 lists census tracts and corresponding zip codes, cities, and counties where disadvantaged communities are within a half mile of the BART alignment.

Table 3-1. Disadvantaged Communities Located within a half mile of BART Alignment

County	City	ZIP	Census Tract
Alameda	Berkeley	94710	6001422000
Alameda	Emeryville	94608	6001401000
Alameda	Emeryville	94608	6001401400
Alameda	Emeryville	94608	6001401500
Alameda	Emeryville	94608	6001425104
Alameda	Hayward	94544	6001438203
Alameda	Oakland	94601	6001406100
Alameda	Oakland	94601	6001406201
Alameda	Oakland	94601	6001407200
Alameda	Oakland	94601	6001407300
Alameda	Oakland	94601	6001407400
Alameda	Oakland	94603	6001409100
Alameda	Oakland	94603	6001409200
Alameda	Oakland	94603	6001409300
Alameda	Oakland	94603	6001409400
Alameda	Oakland	94606	6001405401
Alameda	Oakland	94606	6001406000
Alameda	Oakland	94607	6001401600
Alameda	Oakland	94607	6001401700
Alameda	Oakland	94607	6001401800
Alameda	Oakland	94607	6001402200
Alameda	Oakland	94607	6001402400
Alameda	Oakland	94607	6001402500
Alameda	Oakland	94607	6001403000
Alameda	Oakland	94607	6001403300
Alameda	Oakland	94607	6001410500
Alameda	Oakland	94612	6001402700
Alameda	Oakland	94621	6001408800
Alameda	Oakland	94621	6001408900
Alameda	Oakland	94621	6001409000
Alameda	Oakland	94621	6001409500

Alameda	San Leandro	94577	6001432400
Alameda	San Leandro	94577	6001432501
Alameda	San Leandro	94578	6001433200
Alameda	Union City	94587	6001440301
Contra Costa	Antioch	94509	6013305000
Contra Costa	Pittsburg	94565	6013309000
Contra Costa	Pittsburg	94565	6013310000
Contra Costa	Pittsburg	94565	6013311000
Contra Costa	Pittsburg	94565	6013312000
Contra Costa	Pittsburg	94565	6013313101
Contra Costa	Pittsburg	94565	6013313102
Contra Costa	Pittsburg	94565	6013314103
Contra Costa	Pittsburg	94565	6013314104
Contra Costa	Richmond	94801	6013365002
Contra Costa	Richmond	94801	6013375000
Contra Costa	Richmond	94801	6013376000
Contra Costa	Richmond	94801	6013377000
Contra Costa	Richmond	94804	6013379000
Contra Costa	Richmond	94804	6013380000
Contra Costa	Richmond	94804	6013381000
Contra Costa	Richmond	94804	6013382000
Contra Costa	San Pablo	94806	6013368001
San Francisco	San Francisco	94102	6075012502
San Francisco	San Francisco	94103	6075017601
San Francisco	San Francisco	94107	6075017801
San Francisco	San Francisco	94130	6075017902
San Mateo	San Bruno	94066	6081604200
San Mateo	South San Francisco	94080	6081602300
Santa Clara	Alviso	95002	6085504602
Santa Clara	San Jose	95112	6085500100
Santa Clara	San Jose	95112	6085501102
Santa Clara	San Jose	95116	6085501401
Santa Clara	San Jose	95131	6085504318
Santa Clara	San Jose	95133	6085503601

A KMZ file has also been provided separately for the Program with the transit route/Program location represented by lines and stops represented by points. It is included in this application separately and named ProgramLocation_KMZ. For maps and descriptions of the Program outcomes of reduced GHG emissions, surrounding landuse density, housing and employment centers, transit oriented development, and more, please see multiple sections in the Program Narrative. Additional data regarding BART station locations and communities of interest can be provided as needed.

3.2.2 Program Costs and TIRCP Funds Requested

Core Capacity Program Costs are shown below in Table 3-2. All cost estimates described and shown in this application are escalated to the year of proposed delivery.

Table 3-2. Total Program Cost

Program Scope	Total Cost ($ millions)	TIRCP Requested Amount ($ millions)
Vehicles	$1,618.4	*$135.4*
Communication-Based Train Control (Including $250,000 for Post-Award Community Outreach)	$1,150.5	*$318.6*
TIRCP SCOPE TOTALS	**$2,768.9**	***$454.0***
Hayward Maintenance Center Phase II	$228.0	
Traction Power	$94.0	
Program Management	$6.6	
Program Contingency	$309.7	
Financing Costs	$103.5	
TOTAL	**$3,510.6**	***$454.0***

3.2.3 Program Operating Plan

BART has completed a detailed Operating and Maintenance Cost Estimate Report that shows the next 20 years of operation and evaluates what the costs are associated with increased Core Capacity Program operations by using a model that was originally based on FTA guidance. The model looks at Build versus No Build alternatives for the next 20 years and the Build Alternative is driven by key factors for this project, such as car miles, number of stations, ridership, number of vehicles, etc. Key factors determine the BART departmental costs and allow for projecting increases in those operating costs over the next 20 years. BART revises departmental budgets annually, and those revisions include a 5-year forecast including any necessary budget adjustments.

Additionally, there is a ramp up period associated with the Core Capacity Program. With the arrival of additional cars, BART will initially increase the length of trains while keeping headways the same. At that point, BART will begin to ramp up frequency until the system hits 28 trains per hour. Depending on demand, in 2026 BART will evaluate whether to ramp up to 30 trains per hour at that time.

Because BART will be retiring older cars and accepting new cars as the Core Capacity Program moves forward, BART is looking at adjusting its staffing resources from an emphasis on maintenance and overhaul to material expediters and strategic maintenance professionals. The timing of this transition is such that much of the BART staff doing maintenance will transition to focus on the “fleet of the future”

as older vehicles are pulled offline. This transition will require a retraining of existing maintenance professionals rather than hiring new professionals.

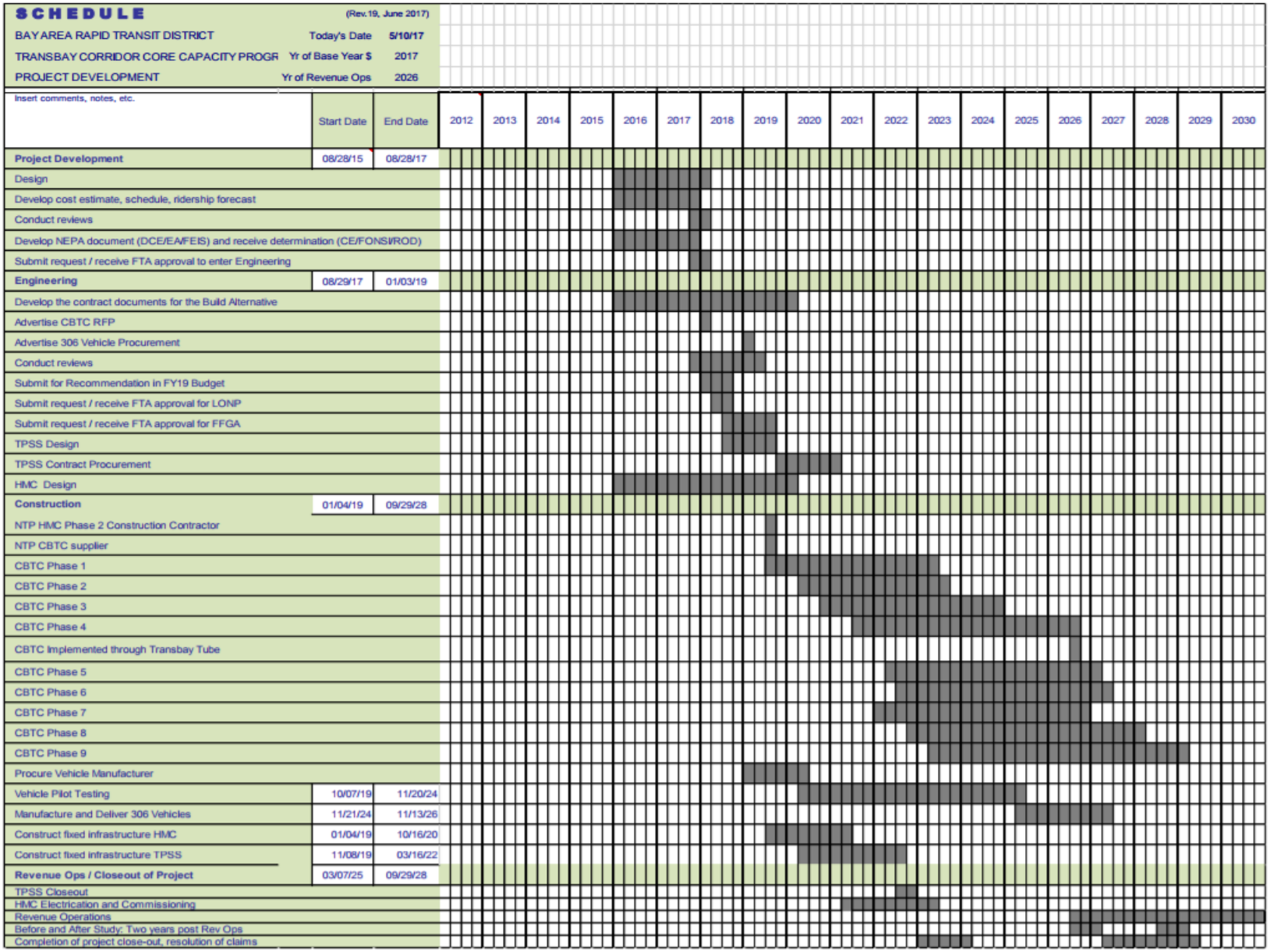
In general, BART tailors its operating plan, including train frequencies and train lengths, to the demand for service. With actual and projected near-term increases in ridership demand, BART will deliver service and capacity increases through new BART line extensions (to Berryessa and Antioch) and the new vehicle "fleet of the future", all of which are anticipated to be online within a year.

3.2.4 Program Schedule

BART has developed a schedule to coordinate delivery of the four program elements and achieve 28 trains per hour (TPH) through the Transbay Tube by 2026 and 30 TPH beginning in 2028. For high-level view of the Core Capacity Program schedule, please see *Section 2.7. Program Readiness*.

The Program has been sequenced to deliver all four component projects concurrently to minimize the overall Program duration and bring the benefits to fruition as quickly as possible. CBTC contains the longest schedule duration in the Program. Accordingly, the Program critical path extends through the CBTC implementation schedule.

Figure 3-3. Core Capacity 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		

2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

3.2.5 Current Program Status

The Federal Transit Administration (FTA) approved the Core Capacity Program into the Capital Investment Grant (CIG) pipeline in August 2015, and anticipates approval for entry into Engineering in January, 2018. Program design is currently at the 30 percent level. BART has initiated a design-build procurement for the communications-based train control system and is developing specifications to procure the 306 new vehicles. With approval into Engineering, BART will continue to advance HMC Phase 2 and the traction power substations beyond the 30 percent design stage.

The Program will take place entirely within publicly owned transportation right-of-way, the vast majority of which is already owned by BART. BART will seek a cooperative agreement from Caltrans for the installation of a TPSS on the sole piece of property not owned by BART. The TPSS on Caltrans property is not included in this request.

3.2.6 Procurement Progress

Table 3-3 summarizes the current procurement status.

Table 3-3. Procurement Status

Program Element	Procurement Status
Vehicles	RFP scheduled for release in September 2018.
HMC Phase 2	Construction contract documents are under development. Awards are expected in August 2018 for track, March 2019 for storage yard construction, and April 2019 for flyover construction.
Communications Based Train Control	Request for design-build qualifications released August 15, 2017. BART anticipates issuing NTP to the selected bidder in February, 2019.
Traction Power	The fabrication and installation of traction power substations will be procured following completion of the design phase, now underway. BART anticipates entering into a contract in 2019.

3.2.7 Funding

Table 3-4 on the following page summarizes the funding sources that BART intends to use for the entire Core Capacity Program. This section presents the various capital funding sources that BART is assembling. For the total TIRCP Scope elements, 30 percent of funding is fully committed. For more details on committed funds, see *Section 3.8.2 Committed and Planned Funds.*

Table 3-4. Core Capacity Funding Plan 2017

	Committed ($ millions)					Budgeted/ Planned ($ millions)								Totals ($ millions)		
	Exchange Account	TCP	BART Capital Allocation	AATC funds	Measure RR	FTA CIG and GANs	RM3	TIRCP	CMAs	Santa Clara VTA	BART Refund	SB1 Local Partner	SB1 Cong Corr	Total Program Cost	Total Committed	Total Planned
Vehicles (TIRCP SCOPE)	$ 179.0		$ 121.0			$ 411.4	$ 500.0	$ 135.4	$ 271.6					$ 1,618.4	$ 300.0	$ 1,318.4
Communication Based Train Control (TIRCP SCOPE)		$ 53.7	$ 83.4	$ 17.3	$ 400.0	$ 25.9		$ 318.6		$ 101.6		$ 50.0	$ 100.0	$ 1,150.5	$ 554.4	$ 596.1
Hayward Maintenance Center Phase II					$ 35.0	$ 193.0								$ 228.0	$ 35.0	$ 193.0
Traction Power					$ 13.4	$ 80.6								$ 94.0	$ 13.4	$ 80.6
Program Management			$ 6.3	$ 0.3										$ 6.6	$ 6.6	
Program Contingency			$ 4.1	$ 30.5		$ 236.6			$ 28.4	$ 10.2				$ 309.8	$ 34.6	$ 275.1
Total (without financing)	**$ 179.0**	**$ 53.7**	**$ 214.8**	**$ 48.1**	**$ 448.4**	**$ 947.4**	**$ 500.0**	**$ 454.0**	**$ 300.0**	**$ 111.8**		**$ 50.0**	**$ 100.0**	**$ 3,407.2**	**$ 944.0**	**$ 2,463.2**
Financing Costs						$ 103.5								$ 103.5		$ 103.5
Refunds						$ 49.1					$ (49.1)			$ 0.0		$ 0.0
Total Program	**$ 179.0**	**$ 53.7**	**$ 214.8**	**$ 48.1**	**$ 448.4**	**$ 1,100.0**	**$ 500.0**	**$ 454.0**	**$ 300.0**	**$ 111.8**	**$ (49.1)**	**$ 50.0**	**$ 100.0**	**$ 3,510.6**	**$ 944.0**	**$ 2,566.6**

This TIRCP application includes a request for only two portions of the overall project, Vehicles ($135.4 million) and the Communication-Based Train Control ($318.6 million) system, for a total $454 million. As stated previously, BART is requesting $454 million in TIRCP funds to be broken out in FY 2019 – FY 2023 and the second round of programmed funding, FY 2026 – FY 2030. As discussed in *Section 3.8.6. Program Scalability*, the scalable amount of $318.6 million can also be broken out by fiscal year.

Other sources of funding for the TIRCP Scope components include:

- Exchange Account
- TCP – MTC Administered Transit Capital Priorities
- BART Capital Allocation
- AATC Funds – Advanced Automatic Train Control Grant Funds
- BART Measure RR
- FTA CIG – Federal Transit Administration Capital Investment Grants
- RM3 – Regional Measure 3, Bridge Tolls
- CMAs – Congestion Management Agency Funds
- Santa Clara VTA
- SB1 – Local Partnership and Congested Corridor

3.2.8 Committed and Planned Funds

According to the TIRCP guidelines, nearly 28% of the total Core Capacity Program funds are committed at the time of this application. Additionally, of the TIRCP Scope of requested funds, 30% of funds are committed at this time. The Usable Segment (CBTC only) portion of this request would be considered 100% funded if all State Program funds that will be requested in 2018 are granted. For specifics on the committed funds for the usable segment, please see *Section 3.8.5. Usable Segment & Program Scalability*.

As stated above, the Core Capacity Program is estimated to cost $3,510.7 million. BART is seeking $454 million or nearly 13 percent of the total Program cost in TIRCP funds. Due to program requirements, some of the funding sources anticipated may only be used for certain elements of the overall program. Measure RR funds, for example, may not be used to acquire rail vehicles. Funds from the CMAs are likely to be designated for vehicles and thus may not be available for other program elements.

See Table 3-4 for a breakdown of funding sources and what is committed versus planned. The following sources of funding are designated as committed, according to TIRCP guidelines:

BART Capital Allocation: BART Capital Allocation funds in the Program have been included in BART's Short-Range Transit Plan (SRTP). These are considered committed funds because they are BART-controlled, though a board resolution is needed to fully allocate.

TCP & Exchange Account: An estimated $179 million has been committed towards the additional vehicles and $39.1 million is budgeted towards communication-based train control. 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.

AATC: All AATC funds are currently in hand and fully committed to the CBTC portion within the Core Capacity Program.

Measure RR: 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. It is considered committed for the TIRCP request.

For more details on all funding sources, see *Section 3.8.3 Funding Sources in Detail.*

3.2.9 Funding Sources in Detail

Each funding source is described below in detail.

3.2.9.1 FTA Capital Investment Grants

BART expects to request $1.1 billion from the FTA's discretionary CIG program for those parts of the 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 on future appropriations by Congress and future authorizing legislation following expiration of the FAST Act in 2020.

BART is seeking a substantial amount of funding from the FTA's CIG Program. The Program rates very well on the FTA's project justification criteria. Some 44 percent of the non-CIG share is already committed. In September 2017, BART requested that the Program be recommended for funding in the President's FY2019 budget scheduled for release in February 2018, in anticipation of a Full Funding Grant Agreement (FFGA) in 2019. A copy of the request letter is provided in *Appendix L*. BART recognizes that the President has proposed to phase out the CIG program, and has recommended that there be no new FFGAs. BART is also aware that the House and Senate appropriations committees have both directed, in their reports on FY2018 appropriations, that the administration continue to advance CIG projects in accordance with the FAST Act. Resolution of these differences is expected to occur in the coming months.

3.2.9.2 MTC-administered TCP

The MTC-administered Transit Capital Priorities (TCP) process 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 Core Capacity Program would be drawn from federal sources. An estimated $179 million has been committed by MTC 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 can be provided upon request. MTC approved a resolution on September 27, 2017 that made a specific commitment to the railcar project from the funds currently in the Exchange Account.

3.2.9.3 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 subsequent train control project:

- Old Section 5307 & 5309 - AATC grants unspent balances applied to this Program - $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 Program - $1.0 million
- BART Local Match - Previously allocated for local match to AATC grants available to this Program – $2.2 million
- Litigation funds - AATC settlement proceeds - $30.8 million.

3.2.9.4 BART Capital Allocations

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 train control modernization. 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 separate account to fund these projects. To fund these capital contributions, the latest Short Range Transit Plan (SRTP) assumes 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 Program expenses and repaid with CIG apportionments.

BART Capital Allocations towards the Program 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.

3.2.9.5 BART Measure RR

Measure RR is a general obligation bond measure which was passed by the voters in the BART District in November 2016. The measure provides $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 is currently working to implement 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. It is considered committed for the TIRCP request.

3.2.9.6 Regional Measure 3 (RM3) Bridge Tolls

In 2018, MTC expects to go to the region's voters with a ballot measure, called Regional Measure 3, to raise tolls on the seven state-owned bridges in the San Francisco Bay Area. The $4.5 billion measure would provide critical funding for highway, rail, transit, and bridge projects that will constrain or reduce congestion in the bridge corridors. As delineated in the authorizing legislation, SB 595 (Ch. 650, 2017), BART would receive $500 million in Regional Measure 3 funding for the expansion of the BART fleet.

3.2.9.7 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: This 2014 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: The Contra Costa Transportation Authority (CCTA) is expected to propose a transportation sales tax measure to voters in 2018 or 2020. The Measure is expected to authorize $100M of this new funding for additional BART cars.
- San Francisco County Transportation Authority (SFCTA): The San Francisco County Transportation Authority (SFCTA) is exploring several revenue-generating measures for transportation projects and programs for a ballot measure in 2018. It is anticipated that additional BART cars and/or a contribution to the train control system would be a designated recipient of at least $100 million of these revenues.

3.2.9.8 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.

3.2.9.9 SB1 – Solutions for Congested Corridors Program (SCCP)

The purpose of the Solutions for Congested Corridors Program is to provide funding to achieve a balanced set of transportation, environmental, and community access improvements to reduce traffic congestion throughout the state. This statewide, competitive program makes $250 million available annually for projects that implement specific transportation performance improvements and are part of a comprehensive corridor plan by providing more transportation choices while preserving the character of local communities and creating opportunities for neighborhood enhancement.

BART expects to submit a $100 million funding request for the SCCP program in February 2018.

3.2.9.10 SB1 – Local Partnership Program (LPP)

The purpose of the LLP is to provide local and regional transportation agencies that have passed sales tax measures, developer fees, or other imposed transportation fees with a continuous appropriation of $200 million annually to fund improvements to state highways, transit facilities and local roads, and the acquisition, retrofit or rehab of rolling stock, buses or other transit equipment, including facilities The California Transportation Commission is responsible for guidelines development and administration of this program.

BART expects to submit a $50 million funding request for the LPP program in January 2018.

3.2.10 Funding Partners

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.

To comply with the Americans with Disabilities Act (ADA), 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. BART contributes to the operation of these feeder services by providing a share of its State Transit Assistance (STA) funds allocated by MTC, and funding from BART's operating budget.

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.

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 producing and updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle and pedestrian facilities. MTC's current RTP, known as Plan Bay Area 2040, was adopted on July 26, 2017 and includes the 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.

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 up to $1.1 billion in capital funding from FTA's CIG program. Given the uncertainties of federal funding at this time, including the current administration's proposals to potentially phase out the CIG program and competition from other projects nationally, BART is not expecting to receive that full amount at this time.

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 SFCTA is exploring several revenue-generating measures for transportation projects and programs for a ballot measure in 2018. It is anticipated that additional BART cars and/or a contribution to the train control system would be a designated recipient of at least $100 million of these revenues.

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 Congestion Management Plan, 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.

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 conduct 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 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. It is anticipated that the Measure would authorize $100 million for rail vehicles as part of BART's Core Capacity Program.

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.

3.2.11 Project Programming Request (PPR) Form

Please find separate PPR forms per TIRCP Scope (Vehicles and CBTC) on the following pages.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013) *General Instructions*

☑ New Project					**Date:**	1/8/18
District	**EA**	**Project ID**	**PPNO**	**MPO ID**		
04						

County	**Route/Corridor**	**PM Bk**	**PM Ahd**	**Project Sponsor/Lead Agency**	
SF				SF Bay Area Rapid Transit District (BART)	
ALA				**MPO**	**Element**
CC				MTC	Mass Transit

Project Manager/Contact	**Phone**	**E-mail Address**
Duncan Watry	510-287-4840	dwatry@bart.gov

Project Title

Transbay Corridor Core Capacity Program: Communication-Based Train Control (CBTC)

Location, Project Limits, Description, Scope of Work ☑ See page 2

The Transbay Corridor Core Capacity Program is located in Alameda, Contra Costa, and San Francisco Counties but benefits the entire BART system beyond the Transbay Corridor. This TIRCP Scope element, the communication-based train control (CBTC) system, will replace the existing train control system with a new CBTC, allowing BART to achieve shorter headways and increased capacity, to operate 30 regularly scheduled trains per hour on the trunk line between Daly City and the Oakland Wye.

☑ GHG Reductions ☑ Integrated Service ☑ Increase Ridership

Component	**Implementing Agency**
PA&ED	BART
PS&E	BART
Right of Way	BART
Construction	BART

Purpose and Need ☑ See page 2

BART's existing Transbay Corridor ridership exceeds capacity in the peak hours between Embarcadero station in San Francisco and many East Bay locations. The most crowded part of this corridor is the five-mile-long Transbay Tube, where average riders have just 4.7 square feet of space, far lower than the FTA threshold for normal crowding. Current BART riders endure this crowding, while many commuters choose other modes. BART's ability to increase ridership, and the region's ability to steer growth to places served by transit, depend upon additional BART capacity in the Transbay Corridor. BART's Core Capacity Program is absolutely necessary to realize the benefits listed here and below.

Project Benefits ☑ See page 2

The new CBTC system will directly allow for increased capacity, decreased crowding, and encourage increased ridership. Specifically, the Core Capacity Program will increase average daily ridership by over 200,000 riders, decrease GHG emissions in the corridor by over 4 million metric tons of carbon dioxide-equivalent over the lifetime of the project, and support a more reliable and safer BART system for all users.

☑ Supports Sustainable Communities Strategy (SCS) Goals ☑ Disadvantaged Communities

Project Milestone			**Proposed**
Project Study Report Approved			**N/A**
Begin Environmental (PA&ED) Phase			N/A
Circulate Draft Environmental Document	**Document Type**	CE	N/A
Draft Project Report			N/A
End Environmental Phase (PA&ED Milestone)			N/A
Begin Design (PS&E) Phase			06-2015
End Design Phase (Ready to List for Advertisement Milestone)			08-2017
Begin Right of Way Phase			N/A
End Right of Way Phase (Right of Way Certification Milestone)			N/A
Begin Construction Phase (Contract Award Milestone)			02-2019
End Construction Phase (Construction Contract Acceptance Milestone)			2027-2029
Begin Closeout Phase			2029
End Closeout Phase (Closeout Report)			2030

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 1/8/18

District	County	Route	EA	Project ID	PPNO	
04	SF, ALA, CC					
Project Title:	Transbay Corridor Core Capacity Program: Communication-Based Train Control (CBTC)					

Proposed Total Project Cost ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
E&P (PA&ED)								
PS&E		9,845	13,508					43,729
R/W SUP (CT)								
CON SUP (CT)		601	25,900	26,145	43,212	39,774	218,178	353,810
R/W								
CON		1,250	751,711					752,961
TOTAL	20,376	11,696	791,119	26,145	43,212	39,774	218,178	1,150,500

Notes

See application narrative for additional details on funding sources.

Fund No. 1: TIRCP

Program Code

Proposed Funding ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
E&P (PA&ED)								
PS&E								
R/W SUP (CT)								
CON SUP (CT)								
R/W								
CON			318,600					318,600
TOTAL			318,600					318,600

Funding Agency

State of California

Fund No. 2: FTA TCP

Program Code

Proposed Funding ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
E&P (PA&ED)								
PS&E	14,008	2,000						16,008
R/W SUP (CT)								
CON SUP (CT)			1,250					1,250
R/W								
CON			36,442					36,442
TOTAL	14,008	2,000	37,692					53,700

Funding Agency

MTC Administered

Federal S5337 funds administered by MTC. Called Transit Capital Priorities Program.

Fund No. 3: BART Capital Allocation

Program Code

Proposed Funding ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
E&P (PA&ED)								
PS&E	6,368	7,845						14,213
R/W SUP (CT)								
CON SUP (CT)			6,595					6,595
R/W								
CON		1,250	61,342					62,592
TOTAL	6,368	9,095	67,937					83,400

Funding Agency

BART

BART funds allocated from the Operating Budget to the Capital Budget

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 1/8/18

District	County	Route	EA	Project ID	PPNO	
04	SF, ALA, CC					
Project Title:	Transbay Corridor Core Capacity Program: Communication-Based Train Control (CBTC)					

Fund No. 4:	**AATC Funds (Settlement)**								**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									Proceeds from the settlement of the AATC Project.
R/W SUP (CT)									
CON SUP (CT)		601						601	
R/W									
CON			16,699					16,699	
TOTAL		601	16,699					17,300	

Fund No. 5:	**Measure RR**								**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
E&P (PA&ED)									Local
PS&E									Local $3.5B bond measure for BART, approved by voters in 2016.
R/W SUP (CT)									
CON SUP (CT)			9,609			22,187	116,578	148,374	
R/W									
CON			251,626					251,626	
TOTAL			261,235			22,187	116,578	400,000	

Fund No. 6:	**Santa Clara VTA**								**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
E&P (PA&ED)									Local
PS&E									VTA Funding to be use for Phase 9 of the project only (will start in FY23)
R/W SUP (CT)									
CON SUP (CT)							101,600	101,600	
R/W									
CON									
TOTAL							101,600	101,600	

Fund No. 7:	**SB1 Congested Corridor**								**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
E&P (PA&ED)									State of California
PS&E			13,508					13,508	
R/W SUP (CT)									
CON SUP (CT)			8,446	26,145	24,954			59,545	
R/W									
CON			26,947					26,947	
TOTAL			48,901	26,145	24,954			100,000	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 1/8/18

District	County	Route	EA	Project ID	PPNO	
04	SF, ALA, CC					
Project Title:	Transbay Corridor Core Capacity Program: Communication-Based Train Control (CBTC)					

Fund No. 8:	**SB1 SLPP**								**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
E&P (PA&ED)									State of California
PS&E									
R/W SUP (CT)									
CON SUP (CT)					18,258	17,587		35,845	
R/W									
CON			14,155					14,155	
TOTAL			14,155		18,258	17,587		50,000	

Fund No. 9:	**CORE CAPACITY CHALLENGE/NEW START**								**Program Code**
Proposed Funding ($1,000s)									
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
E&P (PA&ED)									Federal Transit Administration
PS&E									Federal New Starts Grant
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			25,900					25,900	
TOTAL			25,900					25,900	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013) *General Instructions*

☑ New Project					Date: 1/8/18
District	**EA**	**Project ID**	**PPNO**	**MPO ID**	
04					

County	**Route/Corridor**	**PM Bk**	**PM Ahd**	**Project Sponsor/Lead Agency**	
CC				SF Bay Area Rapid Transit District (BART)	
ALA				**MPO**	**Element**
SF				MTC	Mass Transit

Project Manager/Contact	**Phone**	**E-mail Address**
Duncan Watry	510-287-4840	dwatry@bart.gov

Project Title

Transbay Corridor Core Capacity Program: 306 New Vehicles

Location, Project Limits, Description, Scope of Work ☑ See page 2

The Transbay Corridor Core Capacity Program is located in Alameda, Contra Costa, and San Francisco Counties but benefits the entire BART system beyond the Transbay Corridor. This TIRCP Scope element, purchasing of 306 new vehicles, will assist in relieving current levels of crowding during the peak, while also creating opportunity for ridership growth. In order to achieve 30 regularly scheduled ten-car trains per peak hour service, BART will require a total fleet of 1,081 vehicles.

☑ GHG Reductions ☑ Integrated Service ☑ Increase Ridership

Component	**Implementing Agency**
PA&ED	BART
PS&E	BART
Right of Way	BART
Construction	BART

Purpose and Need ☑ See page 2

BART's existing Transbay Corridor ridership exceeds capacity in the peak hours between Embarcadero station in San Francisco and many East Bay locations. The most crowded part of this corridor is the five-mile-long Transbay Tube, where average riders have just 4.7 square feet of space, far lower than the FTA threshold for normal crowding. Current BART riders endure this crowding, while many commuters choose other modes. BART's ability to increase ridership, and the region's ability to steer growth to places served by transit, depend upon additional BART capacity in the Transbay Corridor. BART's Core Capacity Program is absolutely necessary to realize the benefits listed here and below.

Project Benefits ☑ See page 2

The expanded fleet of 306 cars will allow for increased capacity, decreased crowding, and encourage increased ridership. Specifically, the Core Capacity Program will increase average daily ridership by over 200,000 riders, decrease GHG emissions in the corridor by over 4 million metric tons of carbon dioxide-equivalent over the lifetime of the project, and support a more reliable and safer BART system for all users.

☑ Supports Sustainable Communities Strategy (SCS) Goals ☑ Disadvantaged Communities

Project Milestone			**Proposed**
Project Study Report Approved			**N/A**
Begin Environmental (PA&ED) Phase			N/A
Circulate Draft Environmental Document	**Document Type**	CE	N/A
Draft Project Report			N/A
End Environmental Phase (PA&ED Milestone)			N/A
Begin Design (PS&E) Phase			4/3/2017 - Co
End Design Phase (Ready to List for Advertisement Milestone)			11/14/2024 -
Begin Right of Way Phase			N/A
End Right of Way Phase (Right of Way Certification Milestone)			N/A
Begin Construction Phase (Contract Award Milestone)			11/15/2024 -
End Construction Phase (Construction Contract Acceptance Milestone)			8/28/2026 - A
Begin Closeout Phase			8/28/2026 - E
End Closeout Phase (Closeout Report)			9/3/2030 - En

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 1/8/18

District	County	Route	EA	Project ID	PPNO	
04	CC, ALA, SF					
Project Title:	Transbay Corridor Core Capacity Program: 306 New Vehicles					

Proposed Total Project Cost ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
PS&E				90,000	90,000	110,000	110,000	400,000
CON				1,218,400				1,218,400
TOTAL				1,308,400	90,000	110,000	110,000	1,618,400

Notes

See application narrative for additional details on funding sources.

Fund No. 1: TIRCP

Program Code

Proposed Funding ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
PS&E				20,000	20,000	20,000	20,000	80,000
CON				55,400				55,400
TOTAL				75,400	20,000	20,000	20,000	135,400

Funding Agency

State of California

Fund No. 2: Exchange Account (FTA-BART-MTC)

Program Code

Proposed Funding ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
PS&E								
CON				179,000				179,000
TOTAL				179,000				179,000

Funding Agency

MTC & FTA

FTA Preventive Maintenance funds awarded to BART; equivalent amt of BART funds placed in MTC administered bank account.

Fund No. 3: BART Capital Allocation

Program Code

Proposed Funding ($1,000s)

Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total
PS&E						20,000	20,000	40,000
CON				81,000				81,000
TOTAL				81,000		20,000	20,000	121,000

Funding Agency

BART

Allocations made from BART's Operating Budget to Capital Budget due to surplus funds.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2013)

Date: 1/8/18

District	County	Route	EA	Project ID	PPNO	
04	CC, ALA, SF					
Project Title:	Transbay Corridor Core Capacity Program: 306 New Vehicles					

Fund No. 4:	**FTA - Core Capacity Challenge/New Start**								**Program Code**
	Proposed Funding ($1,000s)								
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
PS&E				20,000	20,000	20,000	20,000	80,000	Federal Sources
CON				331,400				331,400	FTA New Starts Capital Improvement Grant Program.
TOTAL				351,400	20,000	20,000	20,000	411,400	

Fund No. 5:	**RM3**								**Program Code**
	Proposed Funding ($1,000s)								
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
PS&E				20,000	20,000	20,000	20,000	80,000	MTC
CON				420,000				420,000	Regional Measure 3 Bridge Toll
TOTAL				440,000	20,000	20,000	20,000	500,000	

Fund No. 6:	**CMAs**								**Program Code**
	Proposed Funding ($1,000s)								
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
PS&E				30,000	30,000	30,000	30,000	120,000	Congestion Management Agency
CON				151,600				151,600	Alameda, Contra Costa, and SF Congestion Management Agency county sales taxes
TOTAL				181,600	30,000	30,000	30,000	271,600	

Fund No. 7:									**Program Code**
	Proposed Funding ($1,000s)								
Component	Prior	17/18	18/19	19/20	20/21	21/22	22/23+	Total	**Funding Agency**
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

3.2.12 Usable Segment & Program Scalability

As documented in the *Program Benefits* portion of this application, and additionally in the *Statement of Work*, for the many benefits outlined in this application to occur, a scaled request of $318.6 million is being submitted as a usable segment. This scaled down funding would cover the necessary cost to complete the Communications Based Train Control system, which is the Program element necessary to realizing the majority of ridership, greenhouse gas, and community impact benefits described in detail in this application. As with the full $454 million request, this $318.6 million scaled request can be broken out over the two four-year funding cycles.

Table 3-5. Core Capacity Program Costs and TIRCP Usable Segment Request

Program Scope	Total Program Cost ($ millions)	*TIRCP Usable Segment Request ($ millions)*
Vehicles	$1,618.4	
Communication-Based Train Control (Including $250,000 for Post-Award Community Outreach)	$1,150.5	*$318.6*
TIRCP SCOPE TOTALS	**$2,768.9**	***$318.6***
Hayward Maintenance Center Phase II	$228.0	
Traction Power	$94.0	
Program Management	$6.6	
Program Contingency	$309.7	
Financing Costs	$103.5	
TOTAL	**$3,510.6**	***$318.6***

This usable segment of the Program (CBTC system) can be fully completed with funding through State of California Programs in 2018. As can be seen in *Table 3-4. Core Capacity Funding Plan 2017*, all funding elements have been secured (with the exception of Santa Clara VTA and FTA CIG and GANs) other than the State of California funding sources. These state sources include:

- TIRCP Usable Segment Request (Current Request) - $318.6 million
- SB1 Local Partnership Program (January 2018) - $50 million
- SB1 Congested Corridor Program (January 2018) - $100 million

The Santa Clara VTA portion of funding ($101.6 million) is not going to the Transbay Corridor portion of the Core Capacity Program, and only will be applied to the Santa Clara VTA extension of the BART system. Hence, the CBTC system can be implemented fully in the existing system (where ridership, GHG emissions, and other benefits are realized) without Santa Clara VTA funds. Additionally, the FTA CIG amount of $25.9 million that is allocated to the CBTC system can be fully shifted to be funded by BART Capital Allocation funds if CIG funding is not approved by the FTA. With the usable segment request of $318.6 million in TIRCP funds and $150 million in additional state program funding, the entire CBTC system is funded completely and can move forward without delay.

4 Support Documentation

4.1 Cost Estimate Certification

All costs included in this TIRCP application are approved by the General Manager, as attested to in the authorization letter.

4.2 Letters of Support

The Core Capacity Program has broad support from State elected officials, regional organizations, and community based non-profits. In *Appendix A*, please find the following letters of support for BART application for TIRCP funds for the Core Capacity Program:

- Metropolitan Transportation Commission – Consistency with Regional Sustainable Communities Strategy Confirmation
- San Francisco County Transportation Authority

Elected Officials

- Senator Nancy Skinner, 9th Senate District, and Senator Scott Wiener, 11th Senate District
- Rob Bonta, Assemblymember 18th District, Bill Quirk, Assemblymember 20th District, Steven Glazer, Senator 7th District, Timothy Grayson, Assemblymember 14th District, Philip Ting, Assemblymember 19th District, Kansen Chu, Assemblymember 25th District, David Chiu, Assemblymember 17th District
- Acting Mayor London Breed, City of San Francisco, Office of the Mayor

Community Organizations

- La Clinica de La Raza, Inc
- East Bay Asian Local Development Corporation
- The Unity Council
- Asian Health Services
- Low Income Investment Fund

Transportation and Policy Organizations

- Bay Area Council
- TransForm
- San Francisco Transit Riders

Environmental Organizations

- Greenbelt Alliance
- Coalition for Clean Air

5 Appendices

A. Letters of Support
B. GHG Emissions Modeling and Methodology
C. Ridership Modeling and Methodology
D. Outreach to Disadvantaged and Low Income Communities
E. Role of BART in the Region
F. Plan Bay Area 2040 (Sustainable Communities Strategy)
G. MTC Core Capacity Study
H. BART Strategic Energy Plan
I. BART Rider Demographics
J. BART Public Participation Plan
K. Categorical Exclusion
L. BART Request for FY 2019 Funding for Transbay Corridor Core Capacity Program

METROPOLITAN
TRANSPORTATION
COMMISSION

Bay Area Metro Center
375 Beale Street, Suite 800
San Francisco, CA 94105
415.778.6700
www.mtc.ca.gov

January 5, 2018

Mr. Ezequiel Castro, Acting Chief
Division of Rail and Mass Transportation
Office of State Transit Programs and Plans (MS 39)
P.O. Box 942874
Sacramento, CA 94274-0001

RE: 2018 Transit and Intercity Rail Capital Program Application from BART – Consistency with Regional Sustainable Communities Strategy

Dear Mr. Castro:

The Metropolitan Transportation Commission (MTC) is the Metropolitan Planning Organization (MPO) for the nine-county Bay Area. Our current regional Sustainable Communities Strategy, *Plan Bay Area 2040*, was adopted in July 2017.

We have reviewed BART's planned application for the 2018 Transit and Intercity Rail Capital Program, *Transbay Core Capacity Project*, and confirm that it is consistent with Plan Bay Area 2040.

Please feel free to contact me with any questions.

Sincerely,

Anne Richman

Anne Richman
Director, Programming and Allocations

AR: CB
J:\PROJECT\Funding\Cap and Trade\TIRCP\TIRCP 2018\SCS Consistency Letters\BART.docx

San Francisco County Transportation Authority

1455 Market Street, 22nd Floor
San Francisco, California 94103
415.522.4800 FAX 415.522.4829
info@sfcta.org www.sfcta.org

December 29, 2017

Secretary Brian Kelly
California State Transportation Agency
915 Capitol Mall, Suite 350 B
Sacramento, CA 95814

Subject: Letter of Support for 2018 Transit and Intercity Rail Capital Program Grant for BART's Core Capacity Project

Dear Secretary Kelly,

The San Francisco County Transportation Authority is pleased to support the San Francisco Bay Area Rapid Transit District's (BART's) 2018 Transit and Intercity Rail Capital Program (TIRCP) grant application for the **BART Core Capacity Project**.

This project proposes a comprehensive and coordinated package of investments including new rail cars, maintenance facility expansion, train control, and substations that will increase BART's capacity between San Francisco and Oakland by more than 30 percent. The program will allow BART to operate up to 30 ten-car trains per hour on the main trunk of the existing system between San Francisco and Oakland, maximizing throughput in the most heavily used part of the system. Furthermore, the additional vehicles and train control modernization will increase capacity throughout the BART system and allow for an increase in the number of cars per train. Improvements will decrease current train headways for much of the system from 15 minutes during peak periods to 12 minutes. By making BART a more attractive option, these improvements will encourage more drivers to get out of their cars, decreasing vehicle miles traveled, congestion, and greenhouse gas emissions.

Low income residents, many of them transit-dependent, will benefit from this project as the BART system passes through numerous disadvantaged communities. A significant portion of the Bay Area's priority development areas are centered around BART stations, and the additional transit capacity provided by this project will catalyze sustainable housing and job growth and help the region meet the ambitious climate protection, equitable access, economic vitality, and affordability goals laid out in the Bay Area's Sustainable Communities Strategy. This project is also a key recommendation of the Metropolitan Transportation Commission's Core Capacity Transit Study, underscoring its importance to communities across the entire Bay Area.

On behalf of the Transportation Authority, I respectfully urge funding support for this project to help minimize greenhouse gases and improve health and mobility for current and future transit riders.

Sincerely,

Tilly Chang
Executive Director

cc: S. Heminger, A. Richman - MTC
D. Heitman - BART
MEL, AC, AL, AS, OQ

Plan, Fund, Deliver

OFFICE OF THE MAYOR
SAN FRANCISCO

January 5, 2018

Brian Kelly, Secretary
California State Transportation Agency
915 Capitol Mall, Suite 350B
Sacramento, CA 95814

Dear Secretary Kelly:

I am pleased to submit a letter of support for BART's application for $454 million in funding from the 2018 Transit and Intercity Rail Capital Program (TIRCP). The BART Transbay Core Capacity Project – New Rail Cars and Train Control Components is an important element of a larger project to increase BART's system capacity. This larger project, which consists of multiple project elements and includes many funding partners, has regional and statewide significance in increasing BART ridership, reducing greenhouse gas emissions, providing access to jobs and stimulating the economy, and providing mobility and regional and statewide transportation connections for all residents including those in disadvantaged communities.

Specifically, BART is requesting TIRCP funding for two project components, including $135.4 million to fund a portion of the acquisition of 306 additional new BART cars, and $318.6 million for BART's new state-of-the-art, communications-based train control system (CBTC), for a total of $454 million. Both the additional cars and the train control system are needed to achieve up to 30% in additional capacity on the existing BART system without adding a second Transbay Tube from the East Bay to downtown San Francisco. These elements will improve system reliability and greatly enhance the customer experience by reducing crowding.

Additionally, BART is also proposing to spend $250,000 of the requested funds to conduct outreach focused on disadvantaged and low income communities that may be affected by the Transbay Core Capacity Project. These outreach activities are designed to receive input, concerns, and suggestions on the potential impacts, both positive and negative, of the project on these communities.

BART's current Transbay Corridor ridership exceeds capacity in the peak hours between the Embarcadero station in downtown San Francisco and stations in the East Bay. Within this corridor, riders in the peak hours often endure excruciatingly crowded conditions while some choose other modes because BART trains are so crowded. BART's ability to increase ridership –

1 DR. CARLTON B. GOODLETT PLACE, ROOM 200
SAN FRANCISCO, CALIFORNIA 94102-4681
TELEPHONE: (415) 554-6141

OFFICE OF THE MAYOR
SAN FRANCISCO

and the region's ability to steer growth to places served by transit – depends upon additional BART capacity in the Transbay Corridor.

The Metropolitan Transportation Commission's (MTC) Plan Bay Area 2040, adopted in July 2017, identified the Transbay Core Capacity Project as a critical regional need, and included this project in its Core Capacity Challenge grant program. BART is also working closely with the Federal Transit Administration on a New Starts grant through the Capital Investment Grant program. In addition, BART has requested funding from various local county sales tax measures. Funds requested through the TIRCP program will close the remaining funding gap for the absolutely necessary Transbay Core Capacity Project, while still reserving funds to renovate and maintain the core BART system overall.

We appreciate your consideration of this application, and would be happy to answer any questions or provide additional materials as needed.

Sincerely,

London Breed
Acting Mayor
City and County of San Francisco

1 DR. CARLTON B. GOODLETT PLACE, ROOM 200
SAN FRANCISCO, CALIFORNIA 94102-4681
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STATE CAPITOL
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OAKLAND, CA 94612
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FAX (510) 286-3885

SENATOR.SKINNER@SENATE.CA.GOV

California State Senate

SENATOR
NANCY SKINNER
MAJORITY WHIP
NINTH SENATE DISTRICT

CHAIR
PUBLIC SAFETY
BUDGET & FISCAL REVIEW
SUBCOMMITTEE 5:
PUBLIC SAFETY & LABOR

COMMITTEES
ENERGY, UTILITIES & COMMUNICATIONS
ENVIRONMENTAL QUALITY
TRANSPORTATION & HOUSING

December 21, 2017

The Honorable Brian Kelly
Secretary, California State Transportation Agency
915 Capitol Mall, Suite 350 B
Sacramento, CA 95814

RE: San Francisco Bay Area Rapid Transit District application to the State of California's 2018 Transit and Intercity Rail Capital Program

Dear Secretary Kelly:

We are writing in support of the San Francisco Bay Area Rapid Transit (BART) District's application to the 2018 Transit and Intercity Rail Capital Program for funding for BART's Core Capacity Project.

BART's Core Capacity Project will address severe overcrowding and help accommodate future ridership growth. BART already averages over 420,000 passengers per weekday, but BART's capacity is limited by its existing infrastructure and total number of train cars. The Core Capacity Project would increase train frequency and capacity by: purchasing new train cars; expanding car storage and maintenance facilities; modernizing train control systems; and upgrading power infrastructure. BART estimates that additional train cars alone would provide 49 percent more seats systemwide, and that the Core Capacity Project would increase peak capacity between San Francisco and the East Bay by 31 percent.

Increased capacity and reduced overcrowding are essential to ensuring that BART remains a viable alternative to driving in the Bay Area. Longer, more frequent trains would not only allow BART to accommodate more riders, but would also make BART a more convenient transportation option. Additional people riding BART instead of driving would mean fewer vehicle miles traveled (VMT), decreased air pollution, reduced greenhouse gas emissions, improved public health, and better quality of life.

Non-riders and disadvantaged communities located along the BART system would also benefit from the Core Capacity Project. Increased capacity would reduce overcrowding at West Oakland Station, which is located in and serves a disadvantaged community. Reduced VMT would also help limit traffic-related air pollution in disadvantaged communities. Furthermore, many BART stations are surrounded by Priority Development Areas; this project would allow those areas to accommodate additional housing and jobs.

We strongly support BART's efforts to expand the system's capacity for the benefit of the whole Bay Area and urge you to prioritize BART's Core Capacity Project for 2018 TIRCP funding.

Sincerely,

Nancy Skinner

Senator Nancy Skinner
9th Senate District

Scott Wiener

Senator Scott Wiener
11th Senate District

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E-MAIL: Assemblymember.Bonta@assembly.ca.gov

Assembly
California Legislature

ROB BONTA
ASSISTANT MAJORITY LEADER
ASSEMBLYMEMBER, EIGHTEENTH DISTRICT

COMMITTEES
APPROPRIATIONS
COMMUNICATIONS AND CONVEYANCE
GOVERNMENTAL ORGANIZATION
HEALTH

December 21, 2017

The Honorable Brian Kelly
Secretary, California State Transportation Agency
915 Capitol Mall, Suite 350 B
Sacramento, CA 95814

RE: San Francisco Bay Area Rapid Transit District application to the California Transit and Intercity Rail Capital Program

Dear Secretary Kelly:

We write today in support of the San Francisco Bay Area Rapid Transit District's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program (TIRCP) for their Core Capacity Project.

With BART ridership growing significantly over the last decade, trains are becoming crowded. BART's Core Capacity Project, which provides new rail cars, in addition to an associated maintenance facility, train control system, and additional substations, will play an integral role in ensuring that transit remains a viable alternative to driving through this corridor and the overall system. Once complete, BART's Core Capacity Project will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of residents by reducing greenhouse gas emissions and encouraging mass transit options.

In order to meet this increased need, the comprehensive and coordinated package of investments that is the Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. This project, which will request $454 million from the TIRCP over five years, will reduce vehicle miles traveled by improving the quality of service, reducing crowding for riders, and supporting continued growth of the BART system.

The many disadvantaged communities located along the BART system will also benefit from increased capacity and reduced crowding, as well as reduced greenhouse gas emissions from fewer drivers on the road. Several of the Bay Area's priority development areas are centered around BART stations, and this project supports additional transit capacity that will enable these areas to grow, which will help to realize the Bay Area's Sustainable Communities Strategy and other concurrent community, health, and environmental efforts in the region.

We support BART in their efforts to bring these additional benefits to the Bay Area. Thank you for your thoughtful consideration of this project.

Sincerely,

ROB BONTA
Assemblymember, 18th District

Signatures on the previous page are as follows:

Rob Bonta
Assemblymember, 18th District

Philip Ting
Assemblymember, 19th District

Bill Quirk
Assemblymember, 20th District

Kansen Chu
Assemblymember, 25th District

Steven Glazer
Senator, 7th District

David Chiu
Assemblymember, 17th District

Timothy Grayson
Assemblymember, 14th District

La Clínica
a california health+ center

La Clínica de La Raza, Inc.

Mailing Address: Post Office Box 22210 Oakland, CA 94623 • Tel 510-535-4000 • Fax 510-535-4189 • www.laclinica.org

December 18, 2017

Subject: Bay Area Rapid Transit application to the California's Transit and Intercity Rail Capital Program

To whom it may concern:

On behalf of La Clinica de La Raza, I am writing in support of Bay Area Rapid Transit's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program for the **Core Capacity Project**. Once complete, BART's Core Capacity Project will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of residents by reducing greenhouse gas emissions and encouraging mass transit options.

With BART ridership growing significantly over the past decade, trains are becoming crowded. New rail cars, in addition to an associated maintenance facility, train control system, and additional substations will play an integral role in ensuring that transit remains a viable alternative to driving through this corridor and the overall system. In order to meet this increased need, the comprehensive and coordinated package of investments that is the Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. This project will reduce vehicle miles traveled by improving the quality of service, reducing crowding for riders, and supporting continued growth of the BART system. The many disadvantaged communities (DACs) located along the BART system will benefit from increased capacity and reduced crowding, as well as reduced greenhouse gas emissions from less drivers on the road. Several of the Bay Area's priority development areas are centered around BART stations, and this project supports additional transit capacity that will enable these areas to grow, which will help to realize the Bay Area's Sustainable Communities Strategy and other concurrent community, health, and environmental efforts in the region.

La Clinica de La Raza fully support BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding La Clinica's support, please reach out to me directly. Thank you in advance for your consideration of this project.

Sincerely,

Jane Garcia

Chief Executive Officer

EAST BAY ASIAN LOCAL
DEVELOPMENT CORPORATION

BUILDING HEALTHY, VIBRANT AND SAFE NEIGHBORHOODS

NeighborWorks® CHARTERED MEMBER

December 19, 2017

SUBJECT: Bay Area Rapid Transit application to the California's Transit and Intercity Rail Capital Program

To whom it may concern:

On behalf of East Bay Asian Local Development Corporation (EBALDC), I am writing in support of Bay Area Rapid Transit's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program for the **Core Capacity Project**. Once complete, BART's Core Capacity Project will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of residents by reducing greenhouse gas emissions and encouraging mass transit options.

EBALDC's Healthy Neighborhood approach to community development relies on partnerships with agencies that are not typically part of grassroots community efforts. We have a long history of partnering with BART to build affordable housing (as we did at Madison Park, Lion Creek Crossings, and Fruitvale Transit Village), secure resources to improve pedestrian access to BART stations (as we did Prosperity Place), or secure resources to improve the actual BART Stations themselves (as we did through the Affordable Housing and Sustainable Communities program for the Lake Merritt/Oakland Chinatown BART station). All of these programmatic partnerships support the stronger use of public transit in our neighborhoods. These benefits should accrue in terms of increased BART ridership, but also should benefit existing residents and workers in the neighborhoods where BART has historically operated, and be a tool for improving equitable outcomes for our urban places.

With BART ridership growing significantly over the past decade, trains are becoming crowded. New rail cars, in addition to an associated maintenance facility, train control system, and additional substations will play an integral role in ensuring that transit remains a viable alternative to driving through this corridor and the overall system. In order to meet this increased need, the comprehensive and coordinated package of investments that is the Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. This project will reduce vehicle miles traveled by improving the quality of service, reducing crowding for riders, and supporting continued growth of the BART system. The many disadvantaged communities (DACs) located along the BART system will benefit from increased capacity and reduced crowding, as well as reduced greenhouse gas emissions from fewer drivers on the road. Several of the Bay Area's priority development areas are centered around BART stations, and this project supports additional transit capacity that will enable these areas to grow, which will help to realize the Bay Area's Sustainable Communities Strategy and other concurrent community, health, and environmental efforts in the region.

EBALDC fully supports BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding our support, please reach out to me directly. Thank you in advance for your consideration of this project. I am available at jsimon@ebaldc.org .

Sincerely,

Joshua Simon
Executive Director

THE UNITY COUNCIL

December 18, 2017

Subject: Bay Area Rapid Transit application to the California's Transit and Intercity Rail Capital Program

To whom it may concern:

On behalf of The Unity Council, I am writing in support of Bay Area Rapid Transit's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program for the Core Capacity Project. Once complete, BART's Core Capacity Project will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of residents by reducing greenhouse gas emissions and encouraging mass transit options.

The Unity Council is a community development/social equity development corporation founded in 1964. Our agency employs a comprehensive strategy to assist individuals and families build assets by focusing on economic, social, and neighborhood needs. We serve 8,000-10,000 clients annually and operate 11 different program lines in over six languages.

With BART ridership growing significantly over the past decade, trains are becoming crowded. New rail cars, in addition to an associated maintenance facility, train control system, and additional substations will play an integral role in ensuring that transit remains a viable alternative to driving through this corridor and the overall system. In order to meet this increased need, the comprehensive and coordinated package of investments that is the Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. This project will reduce vehicle miles traveled by improving the quality of service, reducing crowding for riders, and supporting continued growth of the BART system. The many disadvantaged communities (DACs) located along the BART system will benefit from increased capacity and reduced crowding, as well as reduced greenhouse gas emissions from less drivers on the road. Several of the Bay Area's priority development areas are centered around BART stations, and this project supports additional transit capacity that will enable these areas to grow, which will help to realize the Bay Area's Sustainable Communities Strategy and other concurrent community, health, and environmental efforts in the region.

The Unity Council fully supports BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding our support, please reach out to me directly. Thank you in advance for your consideration of this project.

Sincerely,

Chris Iglesias
Chief Executive Officer

NeighborWorks®
CHARTERED MEMBER

The Unity Council
Executive Office
1900 Fruitvale Ave, Suite 2A, Oakland, CA 94601
Tel: 510-535-6900 • Fax: 510-534-7771 • www.unitycouncil.org

ASIAN HEALTH SERVICES

Asian Medical Center
818 Webster St
Oakland, CA 94607
Offfice 510-986-6830
Office Fax 510-986-6890
Clinic 510-986-6800
Clinic Fax 510-986-6896

Rolland and Kathryn Lowe Medical Center
835 Webster St
Oakland, CA 94607
510-318-5800
Fax 510-986-8681

Frank Kiang Medical Center
250 East 18th St, 2nd Floor
Oakland, CA 94606
510-735-3888
FAX 510-628-0568

AHS Dental Clinic
345 9th St #302
Oakland, CA 94607
510-986-6888
FAX 510-986-6816

College of Alameda Dental Clinic
555 Ralph Appezzato
Memorial Parkway Building 218A
Alameda, CA 94501
510-986-6812
FAX 510-986-9216

ARC Clinic
510-986-0430
FAX 510-986-0572

Wildcats Clinic
Oakland High School
510-874-7152
FAX 510-874-3694

www.asianhealthservices.org

December 15, 2017

Subject: Bay Area Rapid Transit application to the California's Transit and Intercity Rail Capital Program

To whom it may concern:

On behalf of Asian Health Services, I am writing in support of Bay Area Rapid Transit's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program for the **Core Capacity Project**. Once complete, BART's Core Capacity Project will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of residents by reducing greenhouse gas emissions and encouraging mass transit options.

With BART ridership growing significantly over the past decade, trains are becoming crowded. New rail cars, in addition to an associated maintenance facility, train control system, and additional substations will play an integral role in ensuring that transit remains a viable alternative to driving through this corridor and the overall system. In order to meet this increased need, the comprehensive and coordinated package of investments that is the Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. This project will reduce vehicle miles traveled by improving the quality of service, reducing crowding for riders, and supporting continued growth of the BART system. The many disadvantaged communities (DACs) located along the BART system will benefit from increased capacity and reduced crowding, as well as reduced greenhouse gas emissions from less drivers on the road. Several of the Bay Area's priority development areas are centered around BART stations, and this project supports additional transit capacity that will enable these areas to grow, which will help to realize the Bay Area's Sustainable Communities Strategy and other concurrent community, health, and environmental efforts in the region.

Asian Health Services fully support BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding Asian Health Services support, please reach out to me directly. Thank you in advance for your consideration of this project.

Sincerely,

Sherry Hirota

CEO, Asian Health Services

capital for healthy
families & communities

12/22/17

Ezequiel Castro, Acting Chief
Division of Rail and Mass Transportation
Office of State Transit Programs and Plans (MS 39)
P.O. Box 942874
Sacramento, CA 94274-0001

Subject: Bay Area Rapid Transit District's application to California's Transit and Intercity Rail Capital Program

Dear Mr. Castro:

On behalf of the Low Income Investment Fund I am writing in support of Bay Area Rapid Transit's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program for the **Transbay Corridor Core Capacity Project**. Once complete, BART's Core Capacity Project will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of residents by reducing greenhouse gas emissions and encouraging mass transit options. It also will contribute to improving the quality of life for disadvantaged populations that rely solely on public transportation.

The Low Income Investment Fund is dedicated to creating pathways of opportunity to low income people and communities by investing capital in affordable housing, childcare, healthy food access, health centers, schools and more. Through our equitable transit-oriented development (ETOD) program we have dedicated over $130 million to ETOD in the Bay Area to place affordable housing near transit centers like BART. However, our region is undergoing displacement at a rapid pace which is taking a huge toll on our transit infrastructure as people are commuting further and further away from their jobs.

With BART ridership growing significantly over the past decade, trains are becoming crowded. New rail cars, in addition to an associated maintenance facility, train control system, and additional substations will play an integral role in ensuring that transit remains a viable alternative to driving through this corridor and the overall system. In order to meet this increased need, the comprehensive and coordinated package of investments that is the Transbay Corridor Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. This project will reduce vehicle miles traveled by improving the quality of service, reducing crowding for riders, and supporting continued growth of the BART system. The many disadvantaged communities (DACs) located along the BART system will benefit from increased capacity and reduced crowding, as well as reduced greenhouse gas emissions from less drivers on the road. Several of the Bay Area's priority development areas are centered around BART stations, and this project supports additional transit capacity that will enable these areas to grow, which will help to realize the Bay Area's Sustainable

Low Income Investment Fund
50 California Street
Suite 2900
San Francisco, CA 94111

415.772.9094 tel
415.772.9095 fax

San Francisco
Los Angeles
New York

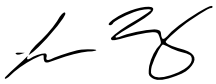
capital for healthy
families & communities

Communities Strategy and other concurrent community, health, and environmental efforts in the region.

Additionally, I am a committee member of BART's Title VI Environmental Justice/Civil Rights Advisory Committee which ensures that BART takes into account impacts on disadvantaged populations. This project is aligned with improving outcomes for disadvantaged populations and communities of color who do not have alternative methods of commuting and rely on BART. As displacement is rapidly increasing in the region, reliable transportation is critical for displaced people to maintain connected to their jobs and networks.

The Low Income Investment Fund fully supports BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions about our support, please reach out to me directly. Thank you in advance for your consideration of this project.

Sincerely,



Lauren Valdez, MCP/MPH
SPARCC Program Officer
Low Income Investment Fund
(415) 489-6115
lvaldez@liifund.org

BAYAREA COUNCIL

January 5, 2018

Brian Kelly, Secretary
California State Transportation Agency
915 Capitol Mall, Suite 350B
Sacramento, CA 95814

RE: Support for Bay Area Rapid Transit Application to Transit and Intercity Rail Capital Program

Dear Secretary Kelly:

On behalf of the Bay Area Council, a public policy organization representing hundreds of the largest employers in the Bay Area, I'm pleased to express my strong support for Bay Area Rapid Transit's (BART) application to the Transit and Intercity Rail Capital Program (TIRCP). Their funding request will be used to invest in over 300 new rail cars and a new train control system as part of the BART Core Capacity Program to significantly add capacity in the severely congested Transbay corridor.

BART serves as the backbone of the Bay Area economy, moving over 400,000 Bay Area residents to and from work or school every day. Yet the system is bursting at the seams, and it is in desperate need of new rail cars and infrastructure improvements to accommodate its existing demand and support future economic growth. These new TIRCP funds will help BART address crucial safety, reliability, and crowding concerns, and increase capacity by up to 40 percent in the particularly strained San Francisco-Oakland Transbay corridor. This project will greatly improve regional quality of life and reduce greenhouse gas emissions by encouraging mass transit ridership over driving on the region's congested highways.

BART's Transbay Corridor Core Capacity Program will greatly increase capacity by investing in new rail cars and infrastructure improvements to ensure that BART will continue to support economic growth throughout the Bay Area.

For these reasons, the Bay Area Council supports BART's grant application for TIRCP funds to improve capacity and service in the Transbay corridor.

Sincerely,

Jim Wunderman
President & CEO

P 415.946.8777
F 415.981.6408

353 Sacramento Street, 10th Floor
San Francisco, California 94111

1215 K Street, Suite 2220
Sacramento, California 95814

TransForm

Our communities. Our transportation. Our future.

Ezequiel Castro, Acting Chief
Division of Rail and Mass Transportation
Office of State Transit Programs and Plans (MS 39)
P.O. Box 942874
Sacramento, CA 94274-0001

December 20, 2017

Subject: Bay Area Rapid Transit application to the California's Transit and Intercity Rail Capital Program

Dear Mr. Castro,

TransForm is writing in support of BART's application to the State of California's 2018 Transit and Intercity Rail Capital Program for the **Core Capacity Project**. The grant will allow BART to get closer to a "state of good repair", which will tremendously improve the transportation system of the Bay Area, as well as improve our environment, our air quality and public health by reducing greenhouse gas emissions and making mass transit more competitive to driving single occupancy vehicles.

TransForm is a nonprofit community development organization with over 20 years of experience building healthy, vibrant and safe neighborhoods in the greater Bay Area and throughout California. We have a successful history of planning transit-oriented development and promoting walkable communities with excellent transportation choices to connect people of all incomes to opportunity, keep California affordable and help solve our climate crisis. Our experience leads us to conclude that BART's application is exactly what programs like the Intercity Rail Capital Program should be for.

As a nonprofit organization whose primary goal is to improve public transit, TransForm fought hard to help win $3.5B for BART through Measure RR in the November 2016 election. While that was a terrific start, it is far from what we need, and the entire state will benefit when BART –and the Bay Area economy- is performing optimally. Ridership on BART has significantly grown over the past decade. Trains and new rail cars, an improved maintenance facility, train control system, and additional substations are all long overdue and will play an integral role in ensuring that transit remains a viable alternative to driving as ridership continues to grow. In addition to maintaining existing capacity, this grant would help BART increase capacity by as much as 30%. As a daily rider myself, I can attest to how deeply this extra capacity is needed.

TransForm fully supports BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding our support, please reach out to me directly. Thank you in advance for your consideration of this project.

Sincerely

Joël Ramos
Regional Planning Director

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SACRAMENTO: 717 K STREET, SUITE 300, SACRAMENTO, CA 95814 | T: 916.441.0204 |
SILICON VALLEY: 48 SOUTH 7TH STREET, SUITE 103, SAN JOSE, CA 95112 | T: 408.406.8074 |

WWW.TRANSFORMCA.ORG

January 2, 2018

Ezequiel Castro, Acting Chief
Division of Rail and Mass Transportation
Office of State Transit Programs and Plans (MS 39)
P.O. Box 942874
Sacramento, CA 94274-0001

Subject: Bay Area Rapid Transit application to California's Transit and Intercity Rail Capital Program

Dear Mr. Castro,

On behalf of San Francisco Transit Riders I am writing in support of Bay Area Rapid Transit's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program for the **Transbay Corridor Core Capacity Program**. Once complete, this program will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of residents by reducing greenhouse gas emissions and encouraging mass transit options.

As the city's grassroots transit advocacy organization, San Francisco Transit Riders represent the interests of hundreds of thousands of daily transit riders. BART is a key piece in moving massive amounts of people into and around San Francisco's core, and we are supportive of any and all efforts to improve this crucial link in our transit network.

With BART ridership growing significantly over the past decade, trains are becoming crowded. New rail cars, in addition to the associated infrastructure, will play an integral role in ensuring that transit remains a viable alternative to driving through this corridor. In order to meet this increased need, the comprehensive and coordinated package of investments that is the Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. This project will reduce vehicle miles traveled by improving the quality of service, reducing crowding for riders, and supporting continued growth of the BART system.

We fully support BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding SFTR's support, please reach out to me directly. Thank you in advance for your consideration of this project.

Sincerely,

Rachel Hyden
Executive Director, San Francisco Transit Riders
rachel@sftransitriders.org
www.sftransitriders.org

GREENBELT ALLIANCE

San Francisco Office
312 Sutter Street, Suite 510
San Francisco, CA 94108
(415) 543-6771

December 18, 2017

California State Transportation Agency
915 Capitol Mall, Suite 350B
Sacramento, CA 95814

RE: Subject: BART application to the California's Transit and Intercity Rail Capital Program

To whom It May Concern:

I am writing on behalf of Greenbelt Alliance to express my strong support of Bay Area Rapid Transit's (BART) application to the 2018 Transit and Intercity Rail Capital Program (TIRCP) for the **Core Capacity Project**. Once complete, BART's Core Capacity Project will positively impact a crucial portion of the transportation system serving the Bay Area, as well as benefit the health and quality of life of all Bay Area residents by reducing greenhouse gas emissions, encouraging mass transit options, and supporting climate-smart growth patterns.

Greenbelt Alliance is the San Francisco Bay Area's leading organization working to protect natural and agricultural landscapes from sprawl development and help our cities and towns implement smart land-use and transportation decisions. Such decisions allow our communities to grow in smart ways the protect our environment, improve public health, strengthen our economy, and improve the lives of residents across the income spectrum. We are the champions of the places that make the Bay Area special, with more than 10,000 supporters and a 60-year history of local and regional success.

BART's application for The Core Capacity project is a smart choice for the TIRCP program. New rail cars, in addition to an associated maintenance facility, train control system, and additional substations will play an integral role in ensuring that transit can be a viable alternative to driving as the Bay Area grows. We are excited that the project is expected to increase capacity between San Francisco and Oakland by more than 30 percent. Several of the Bay Area's priority development areas are centered around BART stations, and this project supports additional transit capacity that will enable these areas to grow, which will help to realize the Bay Area's Sustainable Communities Strategy and other concurrent community, health, and environmental efforts.

We fully support BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding Greenbelt Alliance's support, please reach out to me directly. Thank you in advance for your consideration of this project.

Sincerely,

Matt Vander Sluis
Deputy Director

COALITION FOR CLEAN AIR

December 21, 2017

Ezequiel Castro, Acting Chief
Division of Rail and Mass Transportation
Office of State Transit Programs and Plans (MS 39)
P.O. Box 942874
Sacramento, CA 94274-0001

Subject: Bay Area Rapid Transit application to the California's Transit and Intercity Rail Capital Program

Dear Director Castro,

On behalf of the Coalition for Clean Air, I am writing in support of Bay Area Rapid Transit's (BART) application to the State of California's 2018 Transit and Intercity Rail Capital Program for the **Core Capacity Project**. Once complete, BART's Core Capacity Project will positively impact the health and quality of life in the Bay Area and beyond by reducing greenhouse gas emissions and other harmful air pollutants, as well as encouraging mass transit options throughout the region.

Founded in 1971, the Coalition for Clean Air is California's only statewide organization working exclusively on air quality issues. CCA has been at the forefront of many of California's landmark air quality and climate policies, including recent measures focusing the state's climate investments on disadvantaged communities. Investing in transit reduces dependency on cars, cuts greenhouse gas emissions, improves air quality, and creates opportunities for gainful employment. As such, transit must be among the top priorities for California's climate strategy.

With BART ridership growing significantly over the past decade, trains are becoming crowded. Yet, there is little ability to increase capacity with the current rail car fleet, train control system and other limitations. In order to meet this increased need, the comprehensive and coordinated package of investments that is the Core Capacity Project will increase capacity between San Francisco and Oakland by more than 30 percent, encouraging drivers to leave their cars at home. Reducing vehicle miles traveled will not just result in fewer greenhouse gas emissions, but also improve air quality, which will lead to improved community health. Additionally, these projects will create meaningful jobs, and provide a more affordable transportation option for all.

The Coalition for Clean Air fully supports BART in their efforts to bring these additional benefits to the Bay Area. If you have any questions regarding CCA's support, please reach out to me directly. Thank you in advance for your consideration of this project.

660 S. Figueroa Street, Suite 1140
Los Angeles, California 90017
(213) 223-6860

1107 Ninth Street, Suite 440
Sacramento, California 95814
(916) 527-8048

www.ccair.org

Sincerely,

Bill Magavern
Policy Director
Coalition for Clean Air