Agenda Item 5

San Francisco County Transportation Authority
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Memorandum

Date: March 20, 2019

To: Transportation Authority Board

From: Anna LaForte – Deputy Director for Policy and Programming

Subject: 4/9/2019 Board Meeting: Allocate $62,767,634 in Prop K Sales Tax Funds, with Conditions, to the San Francisco Municipal Transportation Agency for Light Rail Vehicle Procurement

RECOMMENDATION ☐ **Information** ☒ **Action**

Allocate $62,767,634 in Prop K funds, with conditions to the San Francisco Municipal Transportation Authority (SFMTA) for Light Rail Vehicle (LRV) Procurement.

☒ Fund Allocation
☒ Fund Programming
☐ Policy/Legislation
☐ Plan/Study
☐ Capital Project Oversight/Delivery
☐ Budget/Finance
☐ Contracts
☐ Other:

SUMMARY

SFMTA has been working with the Metropolitan Transportation Commission (MTC) and the Transportation Authority to explore the possibility of accelerating procurement of 151 new LRVs to replace the existing Breda fleet which is reaching the end of its useful life, as well as filling a funding gap that existed whether the procurement is accelerated or not. In November 2018, as part of the Prop K Strategic Plan and 5-Year Prioritization Program updates, the Transportation Authority programmed $62,767,634 for the subject project to support the accelerated schedule, subject to three conditions. The conditions include presenting an updated cost benefit analysis of the early retirement of the LRVs, along with an updated funding plan; obtaining allocation of the subject Prop K funds prior to issue the Notice to Proceed to Siemens for the replacement vehicles; and providing evidence of a full funding plan. SFMTA staff will attend the March CAC meeting to present on the cost benefit analysis and to answers any questions. We have worked closely with the SFMTA and the MTC on the request and supporting documentation and are recommending allocation of the funds. Attachment 1 summarizes the request, including the total project cost, requested phase and the amount of funds leveraged by Prop K. Attachment 2 provides a brief description. Attachment 3 contains the staff recommendation, including special conditions.

DISCUSSION

In November 2018 the Transportation Authority programmed $62,767,634 in Prop K funds for SFMTA's LRV procurement, subject to the following three conditions:

(1) SFMTA may not give notice to proceed on procurement of the 151 replacement vehicles prior to allocation of additional Prop K funds (up to $62.7 million);

(2) As a prerequisite to allocation of additional Prop K funds, SFMTA shall present to the SFMTA Board and Transportation Authority CAC and Board the proposed schedule, cost and funding plan, including any associated financing costs, along with an updated cost benefit analysis of early retirement of the LRVs; and

(3) Allocation of additional Prop K funds will be conditioned upon SFMTA and MTC providing evidence that all their respective funds are committed to the project.

The SFMTA would like to give notice to proceed to Siemens in May 2019 to enable the proposed accelerated schedule and therefore, SFMTA staff have requested that the Transportation Authority Board consider allocating the subject Prop K funds in April 2019. SFMTA staff will present their request, including the updated cost benefit analysis of the accelerated procurement to our CAC at its March 27 meeting, to the SFMTA Board on April 2, to the Transportation Authority Board on April 9.

The SFMTA's Cost-Benefit Analysis, attached to the allocation request form, provides insight and transparency into the decision-making process for early retirement of the LRV fleet. The motivation behind the request is the diminishing reliability and increasing costs of continuing to operate the legacy Breda LRV fleet. For example, at present the SFMTA reports that vehicle mechanical failures account for more than 50% of all subway delay time. And, as new Siemens cars are delivered and put into service, SFMTA staff will have to face the challenge of operating and maintaining a mixed fleet (e.g. requiring stocking of parts of both fleets, ensuring mechanics are fully trained across both fleets).

We appreciate SFMTA's consideration of input provided by both MTC and our staff on the updated cost benefit analysis, which addresses both quantifiable and non-quantifiable costs and benefits. The updated analysis concludes that the estimated $44-$89 million in potential costs associated with contract acceleration (such as financing costs for Prop K and federal funds if Regional Measure 3 funds are not available when needed, and Siemens contract modification to retool the production facilities) would be offset by the up to $81 million in potential savings through reduced system overhaul and maintenance costs from early retirement of the Breda LRVs currently in service. The total estimated bottom line is a best case of $37 million in savings and worst case $8 million in direct costs with contract acceleration. Even with the estimated worst case scenario, the SFMTA's staff recommendation is to approve the accelerated delivery in light of diminishing performance benefits from the Breda fleet and reviewing both the quantifiable and soft benefits of early retirement.

The attached allocation request form also includes a table showing that all funds are committed to the project, along with a memo from SFMTA's Chief Financial Officer committing the SFMTA to providing $20.5 million in SFMTA controlled funds that are planned but not yet secured. Potential sources include Transit Sustainability Fee revenues or future General Fund SFMTA baseline transfer revenues. The memo also outlines a commitment by SFMTA and the Metropolitan Transportation Commission to seek financing against future federal transit formula funds as a back-up plan in the event Regional Measure 3 funds are not available.

FINANCIAL IMPACT

The recommended action would allocate $62,767,634 in Prop K funds. The allocation would be subject to the Fiscal Year Cash Flow Distribution Schedule contained in the attached allocation request form.

Attachment 4 shows the approved Fiscal Year (FY) 2018/19 allocations and appropriations to date, with associated annual cash flow commitments as well as the recommended allocation and cash flow amounts that are the subject of this memorandum. The impact of the proposed Prop K Strategic Plan amendment to advance a $96,661 in Prop K funds would be an estimated $12,096 in additional financing costs, a negligible increase in the portion of available funds spent on financing for the program as a whole, which we consider to be insignificant.

Sufficient funds are included in the adopted FY 2018/19 budget to accommodate the recommended action. Furthermore, sufficient funds will be included in future budgets to cover the recommended cash flow distribution for those respective fiscal years.

CAC POSITION

The CAC will be briefed on this item at its March 27, 2019 meeting.

SUPPLEMENTAL MATERIALS

Attachment 1 – Summary of Application Received
Attachment 2 – Project Description
Attachment 3 – Staff Recommendations
Attachment 4 – Prop K Allocation Summaries – FY 2018/19
Attachment 5 – Prop K/AA Allocation Request Form, including:
    -Cost-Benefit Analysis: Accelerated Replacement of the SFMTA Light Rail Fleet
    -LRV Procurement - Committed Funds
    -Memo from Leo Levinson dated March 19, 2019: Light Rail Vehicle Procurement: Allocation Request and Funding Commitment

Attachment 1: Summary of Applications Received

Source	EP Line No./ Category [1]	Project Sponsor [2]	Project Name	Current Prop K Request	Total Cost for Requested Phase(s)	Leveraging: Expected Leveraging by EP Line [3]	Leveraging: Actual Leveraging by Project Phase(s)[4]	Phase(s) Requested	District(s)
Prop K	15, 17M, 17U	SFMTA	Light Rail Vehicle Procurement	$ 62,767,634	$ 1,112,450,187	84%	94%	Construction	Citywide
			TOTAL	**$ 62,767,634**	**$ 1,112,450,187**	**84%**	**94%**		

Footnotes

[1] "EP Line No./Category" is either the Prop K Expenditure Plan line number referenced in the 2019 Prop K Strategic Plan or the Prop AA Expenditure Plan category referenced in the 2017 Prop AA Strategic Plan, including: Street Repair and Reconstruction (Street), Pedestrian Safety (Ped), and Transit Reliability and Mobility Improvements (Transit).

[2] Acronym: SFMTA (San Francisco Municipal Transportation Agency)

[3] "Expected Leveraging By EP Line" is calculated by dividing the total non-Prop K funds expected to be available for a given Prop K Expenditure Plan line item (e.g. Pedestrian Circulation and Safety) by the total expected funding for that Prop K Expenditure Plan line item over the 30-year Expenditure Plan period. For example, expected leveraging of 90% indicates that on average non-Prop K funds should cover 90% of the total costs for all projects in that category, and Prop K should cover only 10%.

[4] "Actual Leveraging by Project Phase" is calculated by dividing the total non-Prop K or non-Prop AA funds in the funding plan by the total cost for the requested phase or phases. If the percentage in the "Actual Leveraging" column is lower than in the "Expected Leveraging" column, the request (indicated by yellow highlighting) is leveraging fewer non-Prop K dollars than assumed in the Expenditure Plan. A project that is well leveraged overall may have lower-than-expected leveraging for an individual or partial phase.

Attachment 2: Brief Project Descriptions [1]

EP Line No./ Category	Project Sponsor	Project Name	Prop K Funds Requested	Project Description
15, 17M, 17U	SFMTA	Light Rail Vehicle Procurement	$62,767,634	Requested funds ($62,670,973) from the Vehicles - Muni and Vehicles - Undesignated categories will be used to purchase 151 new light rail vehicles (LRVs) to replace Breda vehicles that are approaching the end of their useful life. This request also includes a modest amount ($96,661) from the Purchase Additional Light Rail Vehicles category that will be used for the warranty phase of the additional 68 LRVs to expand Muni's light rail fleet. SFMTA is proposing an accelerated schedule for the LRV replacement. Allocation is conditioned on SFMTA presenting to the Transportation Authority Board the proposed schedule, cost and funding plan, including any associated financing costs, along with an updated cost benefit analysis of early retirement of the LRVs, and confirmation that all funds are committed to the project. All 219 LRVs will be procured through the existing contract with Siemens Industry, Inc. The proposed accelerated schedule could mean delivery of the first replacement vehicles as much as six months sooner (Dec. 2020) and shorten the overall delivery window from 6.5 years to 5 years (ending Dec. 2025). See proposed schedule and cost benefit analysis memo attached to the allocation request for more details.
		TOTAL	**$62,767,634**	

[1] See Attachment 1 for footnotes.

Attachment 3: Staff Recommendations [1]

EP Line No./ Category	Project Sponsor	Project Name	Prop K Funds Recommended	Recommendations
15, 17M, 17U	SFMTA	Light Rail Vehicle Procurement	$ 62,767,634	**Prop K Strategic Plan Amendment:** Recommended allocation is contingent on a Prop K Strategic Plan amendment to advance the year in which the requested funds are programmed from FY2019/20 to FY2018/19, and only in the Purchase Additional Light Rail Vehicles category ($96,661) concurrent advancement of funds from FY2019/20 to FY2018/19. This results in a negligible $12,096 increase in financing costs to the category (from $842,583 to $854,679). **Special Condition:** SFMTA will participate, along with the Transportation Authority and the Metropolitan Transportation Commission, in **quarterly project delivery meetings** on scope, schedule, budget, cash flow and funding plan, including assessing the plan for potential financing. Special Condition: The recommended allocation is contingent upon a commitment by the SFMTA to maintain the 219 LRVs in a state of good repair, including a mid-life overhaul program providing that funding is available to allow them to meet or exceed expectations for their useful lives per FTA guidelines.
		TOTAL	**$62,767,634**	

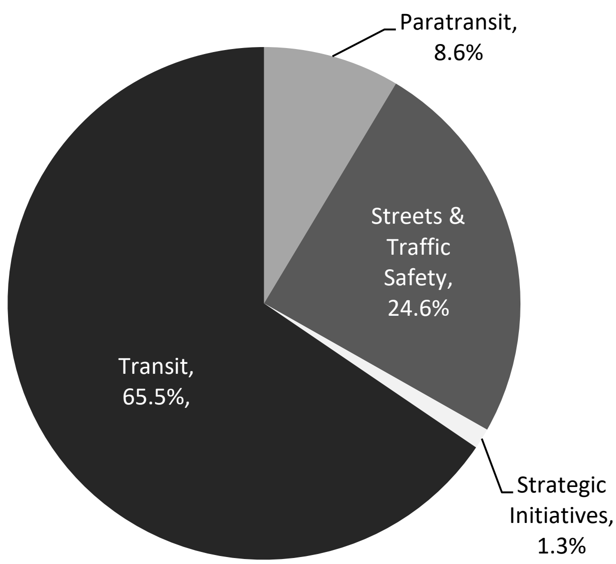
[1] See Attachment 1 for footnotes.

Attachment 4.
Prop K Allocation Summary - FY 2018/19

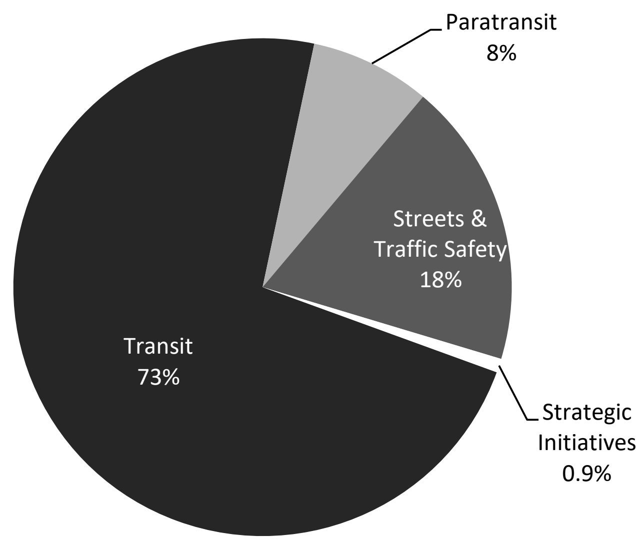
PROP K SALES TAX	1384671	90000	1209671	85000	0	0	0
	Total	**FY 2018/19**	**FY 2019/20**	**FY 2020/21**	**FY 2021/22**	**FY 2022/23**	**FY 2023/24**
Prior Allocations	$ 86,181,612	$ 34,090,507	$ 28,224,999	$ 19,378,931	$ 3,918,112	$ 569,063	$ -
Current Request(s)	$ 60,695,495	$ -	$ -	$ -	$ 17,280,086	$ 10,545,950	$ 32,869,459
New Total Allocations	$ 146,877,107	$ 34,090,507	$ 28,224,999	$ 19,378,931	$ 21,198,198	$ 11,115,013	$ 32,869,459

The above table shows maximum annual cash flow for all FY 2018/19 allocations and appropriations approved to date, along with the current recommended allocation(s).

Investment Commitments, per Prop K Expenditure Plan



Prop K Investments To Date



San Francisco County Transportation Authority
Prop K/Prop AA Allocation Request Form

FY of Allocation Action:	FY2018/19
Project Name:	Light Rail Vehicle Procurement
Grant Recipient:	San Francisco Municipal Transportation Agency

EXPENDITURE PLAN INFORMATION

Prop K EP categories:	Vehicles - Undesignated, Purchase Additional LRV's, Vehicles - MUNI
Current Prop K Request:	$62,767,634
Supervisorial District(s):	Citywide

REQUEST

Brief Project Description
Purchase 151 new Light Rail Vehicles (LRVs) to replace outdated Breda vehicles that are approaching the end of their useful life, and purchase an additional 68 LRVs to expand Muni's light rail fleet.

Detailed Scope, Project Benefits and Community Outreach

See detailed scope description and project background, attached.

Project Location
Citywide

Project Phase(s)
Construction

5YPP/STRATEGIC PLAN INFORMATION

Type of Project in the Prop K 5YPP/Prop AA Strategic Plan?	Named Project
Is requested amount greater than the amount programmed in the relevant 5YPP or Strategic Plan?	Greater than Programmed Amount
Prop K 5YPP Amount:	$62,767,638
Justification for Necessary Amendment	
The SFMTA is requesting an amendment to the Prop K Strategic Plan to advance the year in which the $62,767,638 in requested funds are programmed for allocation from FY2019/20 to FY2018/19 and, in the Purchase Additional Light Rail Vehicles category, to advance the cash flow of the funds from the from FY2023/24 to FY2021/22, resulting in a 0.21% or $12,096 increase in financing costs to the category (from $842,583 to $854,679). This is a negligible increase in finance costs for the Strategic Plan as a whole.	

Light Rail Vehicle (LRV) Procurement
Background and Detailed Scope

On September 9, 2014, the San Francisco Board of Supervisors unanimously approved a 15-year light rail vehicle (LRV) procurement contract with Siemens Industry, Inc., for the San Francisco Municipal Transportation Agency (SFMTA) to purchase up to 260 new LRVs. The base contract is for 175 cars, 151 cars to replace the existing Breda LRVs and 24 additional cars needed for fleet expansion to meet increased service demand for the Central Subway and Mission Bay. The contract also includes two options to acquire up to a total of 85 LRVs for additional fleet expansion to meet projected future ridership growth and system capacity expansion needs through 2040. Including all options the total contract includes 151 replacement vehicles and 113 fleet expansion vehicles for a total of 264 new light rail vehicles.

Highlights of the project are:

1. With both expansion options the project will grow SFMTA's LRV fleet by more than 70 percent and will help move the SFMTA forward toward achieving its strategic goal of creating a safer, more efficient and reliable transportation system.
2. The new vehicles will be purchased at a 20 percent lower cost than the SFMTA projected cost.
3. The purchase includes all engineering, design, manufacture, test, and warranty of the vehicles together with training, manuals, spare parts and special tools to support the new fleet.
4. The new cars will be much easier to maintain, and reliability will improve from the current level of around 5,000 miles between failures to a contractual requirement of 25,000 miles between failures. (The contractor is projecting an even higher level of 59,000 miles between failures).
5. LRVs will be designed and built at the Siemens plant in Sacramento, CA which will stimulate economic growth by creating more jobs in the Northern California region while facilitating communications between Siemens and the SFMTA, enabling faster response of post-delivery support while saving on costs for delivery and travel.
6. The proposed vehicle offers safety enhancements such as hydraulic brakes, bright LED lighting, and improved driver visibility.

In 2012, the SFMTA broke ground on the first major subway system expansion in decades. The Central Subway project connects the existing T-Third light rail line to a new subway tunnel at 4th & King and will bring subway service to three new subway stations: Yerba Buena/Moscone Center, Union Square, and Chinatown. To support the increased service demand for the Central Subway project as well as system-wide growth along the Mission Bay corridor, the SFMTA selected Siemens Mobility to replace the existing fleet of 151 light rail vehicles. Under the contract Siemens is also providing 24 new light rail vehicles for critically-needed expansion of the existing fleet, which will reach the end of its useful life beginning in 2021. The SFMTA has since optioned an additional 40 expansion vehicles to support increased ridership along the T-Third corridor and purchased an additional four cars funded out of the Mission Bay Transportation Improvement Fund to better serve the new Chase Event Center. This represents a total of 68 expansion and 151 replacement vehicles. The first phase of the Siemens contract will deliver these 68 expansion vehicles. The SFMTA reserves the right to exercise the remaining contract option for 45 additional expansion vehicles, but has not yet identified funding.

As of the December 2018, 50 of the 68 expansion vehicles had been delivered to SFMTA – over four months ahead of schedule – with 40 of the cars certified for revenue service. Deliveries continue at the rate of one per week, and the last of the expansion vehicles is expected to enter revenue service by summer 2019, six months ahead of the anticipated opening of the Central Subway tunnel.

The SFMTA is pursuing a very aggressive manufacturing and delivery schedule: the SFMTA issued Notice to Proceed for 24 expansion vehicles on September 19, 2014. The first vehicle was delivered in January

Light Rail Vehicle (LRV) Procurement
Background and Detailed Scope

2017 and entered service in November 2017. By the fall of 2018 the SFMTA had completed software upgrades to the train control system and trained enough operators to allow the new LRVs to operate system-wide throughout the regular service schedule. SFMTA is now seeking to accelerate second phase of the procurement: purchase of 151 replacement light rail vehicles.

The SFMTA has worked with the Metropolitan Transportation Commission (MTC) and the Transportation Authority to explore the possibility of accelerating procurement of the replacement vehicles. Together, the three agencies have developed a funding plan that facilitates the accelerated schedule and have evaluated the advantages and disadvantages of this approach. See SFMTA's Cost Benefit Analysis: Accelerated Replacement of the SFMTA Light Rail Fleet, attached. The subject request incorporates the accelerated schedule and funding plan. See the Funding Status Summary, Budget Summary, and Cash Flow Schedule, all attached to this request, for additional details.

The revised timeline could advance delivery of the first of the replacement vehicles by as many as 6 months and shorten the overall delivery window from six and a half years to only five. The chief advantages are providing more reliable service sooner to the public and reducing operations and maintenance costs by retiring older vehicles that cost more to maintain in a good condition. Tradeoffs include financing costs needed to ensure cash is on hand to meet the proposed accelerated schedule and incurring costs due to replacing LRVs prior to the end of the Federal Transit Administration (FTA) established useful life. These costs reduce funds that would be available for other projects, including future vehicle procurements.

The Transportation Authority's approval of the 2019 Prop K 5-Year Prioritization Programs for the Vehicles–Muni and Vehicles–Undesignated categories, in which $62,767,638 in Prop K funds were programmed to the subject project, was contingent on the following special conditions:

1. SFMTA may not issue notice to proceed on accelerated procurement of the replacement LRVs prior to allocation of additional Prop K funds (up to $62.7 million) for the LRV replacement project.
    - Status: SFMTA would like to issue notice to proceed on May 31, 2019 for accelerated procurement of the replacement LRVs, and is therefore seeking allocation of Prop K funds in April 2019.
2. As a prerequisite to the Prop K allocation, SFMTA shall present to the SFMTA Board and Transportation Authority Board and CAC the proposed schedule, cost and funding plan, including any associated financing costs, along with an updated cost benefit analysis of early retirement of the LRVs, and confirmation that all funds are committed to the project.
    - Status: SFMTA will present the attached Cost-Benefit Analysis: Accelerated Replacement of the SFMTA Light Rail Fleet to the SFMTA Board on April 2, 2019, the Transportation Authority CAC on March 27, 2019, and the Board on April 9, 2019.
3. Allocation of additional Prop K funds will be conditioned upon SFMTA and MTC providing evidence that all their respective funds are committed to the project.
    - Status: See Funding Status Summary and memo from SFMTA's Chief Financial Officer, attached.

San Francisco County Transportation Authority
Prop K/Prop AA Allocation Request Form

FY of Allocation Action:	FY2018/19
Project Name:	Light Rail Vehicle Procurement
Grant Recipient:	San Francisco Municipal Transportation Agency

ENVIRONMENTAL CLEARANCE

Environmental Type:	EIR/EIS

PROJECT DELIVERY MILESTONES

Phase	Start		End	
	Quarter	Calendar Year	Quarter	Calendar Year
Planning/Conceptual Engineering				
Environmental Studies (PA&ED)				
Right of Way				
Design Engineering (PS&E)				
Advertise Construction	Jul-Aug-Sep	2013		
Start Construction (e.g. Award Contract)	Jul-Aug-Sep	2014		
Operations				
Open for Use			Oct-Nov-Dec	2025
Project Completion (means last eligible expenditure)			Oct-Nov-Dec	2026

SCHEDULE DETAILS

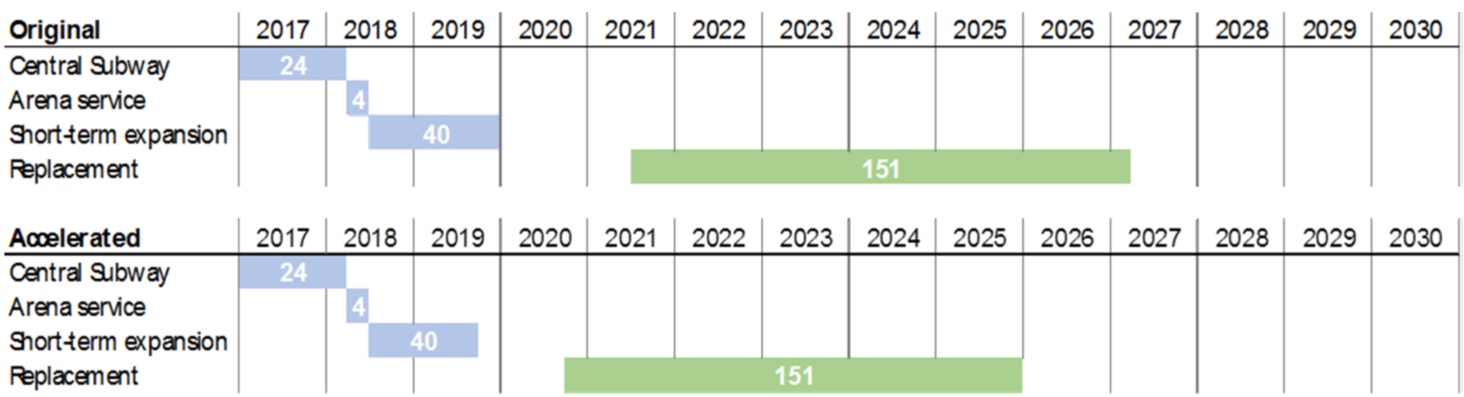
First replacement LRV will be placed in service in December 2020.
Last replacement LRV will be placed in service in December 2025.

See attached schedule for more details.

Light Rail Vehicle Procurement - Contract Summary and Schedule

	Number of Light Rail Vehicles			Delivery Schedule (Fiscal Years)		
Contract Segmemt	**Replacement**	**Expansion**	**Total**	**Original**	**Accelerated**	**Status (12/31/2018)**
Base Contract (Prop K funded)	151		**151**	**FY 2021/22 - 2026/27**	**FYs 2020/21 - 2025/26**	**None delivered**
Base Contract (Prop K funded)		24	**24**	**FY 2016/17**	**FYs 2017/18 2018/19**	**Complete**
Option I	0	40	**40**	**FY 2018/19 - 2019/20**	**FY 2018/19**	**12 delivered**
Option II	0	45	**45**			**Not executed**
Modification 3 - Design Change Order	NA	NA	**0**			
Modification 4 - Warriors LRVs	0	4	**4**	**FY 2018/19**	**FY 2018/19**	**Complete**
Modification 5 - Design & Schedule Change Order (anticipated - not included in the funding plan for the subject request)	NA	NA	**NA**			
Total	**151**	**113**	**264**			

Schedule Comparison



San Francisco County Transportation Authority
Prop K/Prop AA Allocation Request Form

FY of Allocation Action:	FY2018/19
Project Name:	Light Rail Vehicle Procurement
Grant Recipient:	San Francisco Municipal Transportation Agency

FUNDING PLAN - FOR CURRENT REQUEST

Fund Source	Planned	Programmed	Allocated	Project Total
PROP K: Vehicles - Undesignated	$0	$10,545,950	$0	$10,545,950
PROP K: Purchase Additional LRV's	$0	$96,661	$0	$96,661
PROP K: Vehicles - MUNI	$0	$52,125,023	$0	$52,125,023
Phases in Current Request Total:	$0	$62,767,634	$0	$62,767,634

FUNDING PLAN - ENTIRE PROJECT (ALL PHASES)

Fund Source	Planned	Programmed	Allocated	Project Total
PROP K	$0	$62,767,634	$131,153,146	$193,920,780
TIRCP	$0	$26,867,000	$86,273,000	$113,140,000
REVENUE BOND	$0	$0	$145,050,650	$145,050,650
OPERATING FUNDS	$0	$0	$8,000,000	$8,000,000
MTA CONTROLLED TBD SOURCE (E.G. TSF, PROP B GENERAL FUND)	$20,459,409	$0	$0	$20,459,409
FTA OTHER	$0	$0	$10,227,539	$10,227,539
FTA FORMULA	$0	$505,765,669	$0	$505,765,669
CENTRAL SUBWAY (FTA, PTMISEA)	$0	$0	$16,800,000	$16,800,000
CCSF - ERAF ALLOCATION TO GENERAL FUND	$0	$19,247,904	$0	$19,247,904
BATA PROJECT SAVINGS	$0	$5,992,652	$59,118,014	$65,110,666
AB 664	$0	$14,727,570	$0	$14,727,570
Funding Plan for Entire Project Total:	$20,459,409	$635,368,429	$456,622,349	$1,112,450,187

Light Rail Vehicle Procurement - 151 Replacement and 68 Expansion

Funding Status March 2019

Fund Source	Amount	Status
Metropolitan Transportation Commission Funds		
FTA 5307/5337 formula funds	$ 397,329,679	Committed per MTC Resolution 4123, approved 12/18/13
Regional Measure 3/FTA Swap	$ 108,435,990	See attached letter from Leo Levinson, dated 3/19/2019 stating that these funds are committed to the project. Intent is to use RM3 funds, but if they are not available, then MTC and SFMTA will work together to obtain a Letter of No Prejudice from the FTA, which would allow MTC or SFMTA to finance against future federal funds.
AB 664 Bridge Tolls	$ 14,727,570	Committed per MTC Resolution 4123, approved 12/18/13
Bay Area Toll Authority (BATA) Project Savings	$ 65,110,666	Committed per MTC Resolution 4123, approved 12/18/13
MTC Subtotal	**$ 585,603,905**	
SFMTA Funds		
Prop K (151 replacement vehicles)	$ 189,328,294	Committed: $126,560,654 allocated on 10/21/2014; $62,767,634 request pending
Prop K (24 expansion vehicles)	$ 4,592,490	Committed: $4,592,490 allocated by SFCTA 10/21/2014, fully expended
Revenue Bond	$ 145,050,650	Committed per SFMTAB approval of SFMTA revenue bond series 2013, 2014 and 2017
TIRCP	$ 113,140,000	Committed per California Transportation Commission Master Agreement No. 64SFMTAMA
Educational Revenue Augmentation Fund (ERAF)	$ 19,247,904	Committed per City and County of San Francisco Ordinance 34-19, approved 2/26/19
Central Subway	$ 16,800,000	Committed/fully expended ($10.08 million in FTA funds, $6.72 million in PTMISEA funds)
Other - FTA 5307	$ 10,227,539	Committed/ fully expended
SFMTA Operating	$ 8,000,000	Committed/ fully expended
Educational Revenue Augmentation Fund (ERAF) Backfill	$ 20,459,409	See attached letter from Leo Levinson, dated 3/19/2019, stating that these funds are committed to the project. SFMTA will determine an SFMTA controlled fund source (e.g. Prop B General Fund, MTA Operating) before the SFMTA Board approves the contract modifications to accelerate procurement, anticipated May 2019.
SFMTA Subtotal	**$ 526,846,286**	
Total Funding	**$ 1,112,450,192**	

COST SUMMARY

Phase	Total Cost	Prop K - Current Request	Source of Cost Estimate
Planning/Conceptual Engineering	$0	$0	
Environmental Studies (PA&ED)	$0	$0	
Right of Way	$0	$0	
Design Engineering (PS&E)	$0	$0	
Construction	$1,112,450,187	$62,767,634	negotiated contract with vendor+engineer's estimate
Operations	$0	$0	
Total:	$1,112,450,187	$62,767,634	

% Complete of Design:	100.0%
As of Date:	09/30/2014
Expected Useful Life:	25 Years

MAJOR LINE ITEM BUDGET

Light Rail Vehicle Procurement - 151 Replacement and 68 Expansion

REPLACEMENT VEHICLES (151 LRVS)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	Total
Contract Payment Schedule	-	-	-	-	10,000,000	44,209,871	55,045,728	93,753,353	95,475,354	118,626,692	123,218,693	61,532,813	**601,862,505**
Project Development Cost Share (219 LRVs)*	174,849	6,393,473	15,696,363	3,491,927	8,680,041	1,455,165	-	1,175,352	-	-	-	-	**37,067,169**
Project Development Cost Share~ (175 LRVs)	-	-	-	2,141,493	-	610,637	10,964,286	-	-	-	-	-	**13,716,415**
Contract Subtotal	**174,849**	**6,393,473**	**15,696,363**	**5,633,419**	**18,680,041**	**46,275,672**	**66,010,014**	**94,928,706**	**95,475,354**	**118,626,692**	**123,218,693**	**61,532,813**	**652,646,089**
Other Costs													
*Support Costs (7.5%)**	-	-	-	-	725,000	3,205,216	4,785,726	6,797,118	6,921,963	8,600,435	8,933,355	4,461,129	**44,429,942**
Taxes (8.75%)	-	-	-	-	-	-	3,867,326	9,140,952	8,789,377	10,547,252	12,656,703	8,086,227	**53,087,836**
Contingency (5%)	-	-	-	-	500,000	2,210,494	3,300,501	4,687,668	4,773,768	5,931,335	6,160,935	3,076,641	**30,641,340**
Other Costs Subtotal	**-**	**-**	**-**	**-**	**1,225,000**	**5,415,709**	**11,953,553**	**20,625,738**	**20,485,108**	**25,079,022**	**27,750,993**	**15,623,996**	**128,159,118**
Cash Need (Grand Total)	**174,849**	**6,393,473**	**15,696,363**	**5,633,419**	**19,905,041**	**51,691,382**	**77,963,567**	**115,554,443**	**115,960,461**	**143,705,714**	**150,969,686**	**77,156,809**	**780,805,207**
Cumulative Cash Need	**174,849**	**6,568,321**											**780,805,207**
Funds Programmed	-	15,725,564	11,512,539	117,812,547	38,124,000	37,578,106	32,374,181	38,652,134	58,223,185	58,258,549	5,219,565	3,749,565	428,164,083
Cumulative Funds in Hand	-	15,725,564	27,238,103	145,050,650	183,174,650	220,752,756	253,126,937	291,779,071	350,002,256	408,260,805	413,480,370	417,229,935	
Net Cash Flow	(174,849)	9,332,091	11,541,740	139,417,231	163,269,609	169,061,374	175,163,370	176,224,628	234,041,795	264,555,091	262,510,684	340,073,126	(173,698,422)
Tentative LRV Delivery Schedule**							15	26	25	32	36	17	**151 LRVS**

EXPANSION VEHICLES (68 LRVS)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	Total
Contract Payment Schedule	3,764,038	427,650	39,588,455	148,714,904	32,168,414	54,337,701	-	-	-	-	-	-	**279,001,161**
Project Development Cost Share (219 LRVs)*	233,132	2,879,180	7,068,561	1,572,523	3,908,892	655,306	-	529,298	-	-	-	-	16,846,892
Project Development Cost Share~ (175 LRVs)	-	-	-	340,370	-	97,055	-	-	-	-	-	-	437,425
Contract Subtotal	**3,997,170**	**3,306,829**	**46,657,016**	**150,627,797**	**36,077,306**	**55,090,062**	**-**	**529,298**	**-**	**-**	**-**	**-**	**296,285,478**
Other Costs													
*Support Costs (7.5%)**	199,858	165,341	2,332,851	7,514,371	-	-	-	-	-	-	-	-	10,212,422
Taxes (8.75%)	339,759	281,080	3,965,846	12,774,431	3,066,571	4,674,406	-	44,990	-	-	-	-	25,147,085
Contingency (5%)	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Costs Subtotal	**539,618**	**446,422**	**6,298,697**	**20,288,803**	**3,066,571**	**4,674,406**	**-**	**44,990**	**-**	**-**	**-**	**-**	**35,359,507**
Cash Need (Grand Total)	**4,536,788**	**3,753,251**	**52,955,713**	**170,916,599**	**39,143,877**	**59,764,468**	**-**	**574,288**	**-**	**-**	**-**	**-**	**331,644,985**
Cumulative Cash Need	**4,536,788**	**8,290,039**	**61,245,752**	**232,162,351**	**271,306,229**	**331,070,697**	**331,070,697**	**331,644,985**	**331,644,985**	**331,644,985**	**331,644,985**	**331,644,985**	**331,644,985**
Funds Programmed	-	59,408,539	3,092,490	59,592,000	30,667,000	-	-	-	-	-	-	-	152,760,029
Cumulative Funds in Hand	-	59,408,539	62,501,029	122,093,029	152,760,029	152,760,029	152,760,029	152,760,029	152,760,029	152,760,029	152,760,029	152,760,029	
Net Cash Flow	(4,536,788)	55,655,288	9,545,316	(48,823,570)	113,616,152	92,995,561	152,760,029	152,185,741	152,760,029	152,760,029	152,760,029	152,760,029	(126,241,132)
LRV Delivery Schedule			1	27	40								**68 LRVs**
Total Net Cash Flow*	**4,711,637**	**14,858,361**	**83,510,437**	**260,060,456**	**319,109,374**	**430,565,223**	**508,528,790**	**624,657,521**	**740,617,983**	**884,323,697**	**1,035,293,382**	**1,112,450,192**	**1,112,450,192**

**Positive total net cash flow indicates expected savings due to acceleration*

SFMTA LRV Procurement - Funding and Cashflow
151 Replacement 68 Expansion LRVs - Accelerated Schedule

Expenses	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
68 Expansion	8,290,039	52,955,713	170,916,599	39,143,877	59,764,468	-	670,949	-	-	-	-	331,741,646
151 Replacement	6,568,321	15,696,363	5,633,419	19,905,041	51,691,382	77,963,567	115,457,782	115,960,461	143,705,714	150,969,686	77,156,809	780,708,546
Total	14,858,361	68,652,076	176,550,019	59,048,918	111,455,850	77,963,567	116,128,731	115,960,461	143,705,714	150,969,686	77,156,809	**1,112,450,192**
Cum. Expenses	14,858,361	83,510,437	260,060,456	319,109,374	430,565,223	508,528,790	624,657,521	740,617,983	884,323,697	1,035,293,382	1,112,450,192	

Revenues	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
MTC												-
FTA Formula	-	-	-	-	-	13,220,000	43,472,599	65,006,111	71,284,403	127,189,756	77,156,809	397,329,679
RM3/FTA Swap	-	-	-	-	-	26,364,387	46,201,050	-	14,162,762	21,707,791	-	108,435,990
Bridge Tolls	-	-	-	59,118,014	20,720,222	-	-	-	-	-	-	79,838,236
Financing				-	-	-	-	-	-	-	-	-
Total MTC	-	-	-	59,118,014	20,720,222	39,584,387	89,673,649	65,006,111	85,447,165	148,897,547	77,156,809	**585,603,905**
SFMTA												
Prop K (151 replacement vehicles)	-	-	-	-	19,213,993	32,374,181	26,551,743	50,954,350	58,161,888	2,072,139	-	189,328,294
Rev Bond	15,725,564	11,512,539	117,812,547	-	-	-	-	-	-	-	-	145,050,650
CCSF - ERAF	-	-	-	19,247,904	-	-	-	-	-	-	-	19,247,904
Prop K (24 expansion vehicles)	-	3,092,490	1,500,000	-	-	-	-	-	-	-	-	4,592,490
Central Subway	-	-	13,000,000	3,800,000	-	-	-	-	-	-	-	16,800,000
Operating	8,000,000	-	-	-	-	-	-	-	-	-	-	8,000,000
Other - FTA 53307	10,227,539	-	-	-	-	-	-	-	-	-	-	10,227,539
TIRCP	41,181,000	-	45,092,000	26,867,000	-	-	-	-	-	-	-	113,140,000
ERAF Backfill					18,876,096	1,583,313						20,459,409
Total SFMTA	75,134,103	14,605,029	177,404,547	49,914,904	38,090,089	33,957,494	26,455,082	50,954,350	58,258,549	2,072,139	-	**526,846,286**
Total Funding	75,134,103	14,605,029	177,404,547	109,032,918	58,810,311	73,541,882	116,128,731	115,960,461	143,705,714	150,969,686	77,156,809	**1,112,450,192**
Cumulative Revenues	75,134,103	89,739,132	267,143,679	376,176,597	434,986,908	508,528,790	624,657,521	740,617,983	884,323,697	1,035,293,382	1,112,450,192	
Annual Balance	60,275,742	(54,047,047)	854,528	49,984,000	(52,645,539)	(4,421,685)	-	-	-	-	-	-
Cum. Balance	60,275,742	6,228,695	7,083,223	57,067,223	4,421,685	0	0	0	0	0	0	
Unfunded Need	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

San Francisco County Transportation Authority
Prop K/Prop AA Allocation Request Form

FY of Allocation Action:	FY2018/19
Project Name:	Light Rail Vehicle Procurement
Grant Recipient:	San Francisco Municipal Transportation Agency

SFCTA RECOMMENDATION

Resolution Number:		Resolution Date:	
Total Prop K Requested:	$62,767,634	Total Prop AA Requested:	$0
Total Prop K Recommended:	$62,767,634	Total Prop AA Recommended:	$0

SGA Project Number:	115-910bcd	Name:	Light Rail Vehicle Procurement - EP-15
Sponsor:	San Francisco Municipal Transportation Agency	Expiration Date:	12/31/2023
Phase:	Warranty	Fundshare:	17.02

Cash Flow Distribution Schedule by Fiscal Year

Fund Source	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24 +	Total
PROP K EP-115	$0	$0	$0	$96,661	$0	$0	$96,661

Deliverables

1. See Deliverable 1 for SGA 117-910xxx.

Special Conditions

1. Recommended allocation is contingent on an amendment to the Prop K Strategic Plan to advance the year in which the $96,661 are programmed in the Purchase Additional Light Rail Vehicles category from FY2019/20 to FY2018/19, and to advance the cash reimbursement schedule from FY2023/24 to FY2021/22, resulting in a negligible ($12,096) increase in financing costs to the category (from $842,583 to $854,679).

2. See Special Condition 2 for Light Rail Vehicle Procurement - EP-17M (SGA 117-910abc)

3. See Special Condition 3 for Light Rail Vehicle Procurement - EP-17M (SGA 117-910abc)

4. See Special Condition 4 for Light Rail Vehicle Procurement - EP-17M (SGA 117-910abc)

Notes

1. Funds from the Purchase Additional Light Rail Vehicles (EP-15) category are eligible only for purchase of vehicles for the expansion of SFMTA's transit fleet.

SGA Project Number:	117-910abc	Name:	Light Rail Vehicle Procurement - EP-17M
Sponsor:		Expiration Date:	12/31/2026
Phase:	Construction	Fundshare:	17.02

Cash Flow Distribution Schedule by Fiscal Year

Fund Source	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24 +	Total
PROP K EP-117M	$0	$0	$0	$17,183,425	$0	$34,941,598	$52,125,023

Deliverables

1. Quarterly progress reports shall provide percent complete for the overall project scope, the number of vehicles received, the number of vehicles placed into revenue service, and total expenses incurred (not necessarily invoiced to Prop K) in the previous quarter, in addition to the requirements described in the Standard Grant Agreement (SGA). See SGA for definitions.

Special Conditions

1. Recommended allocation is contingent on a finance cost neutral amendment to the Prop K Strategic Plan to advance the year in which the funds are programmed for allocation from FY2019/20 to FY2018/19, without advancing the cash flow.

2. SFMTA will participate, along with the Transportation Authority and the Metropolitan Transportation Commission, in quarterly project delivery meetings on scope, schedule, budget, cash flow and funding plan, including assessing the plan for potential financing.

3. The recommended allocation is contingent upon a commitment by the SFMTA to maintain the 219 LRVs in a state of good repair, including a mid-life overhaul program providing that funding is available to allow them to meet or exceed expectations for their useful lives per FTA guidelines.

4. The Transportation Authority will only reimburse SFMTA up to the approved overhead multiplier rate for the fiscal year that SFMTA incurs charges.

Notes

1. Funds from the Vehicles-Muni catedgory (EP-17M) are eligible only for purchase of replacement transit vehicles.

SGA Project Number:		Name:	Light Rail Vehicle Procurement - EP-17U
Sponsor:	San Francisco Municipal Transportation Agency	Expiration Date:	12/31/2026
Phase:	Construction	Fundshare:	17.02

Cash Flow Distribution Schedule by Fiscal Year

Fund Source	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	Total
PROP K EP-117U	$0	$0	$0	$0	$10,545,950	$10,545,950

Deliverables

1. See Deliverable 1 for Light Rail Vehicle Procurement - EP-17M (SGA 117-910abc)

Special Conditions

1. Recommended allocation is contingent on an amendment to the Prop K Strategic Plan to advance the year in which the funds are programmed for allocation from FY2019/20 to FY2018/19, without advancing the cash flow.

2. See Special Condition 2 for Light Rail Vehicle Procurement - EP-17M (SGA 117-910abc).

3. See Special Condition 3 for Light Rail Vehicle Procurement - EP-17M (SGA 117-910abc).

4. See Special Condition 4 for Light Rail Vehicle Procurement - EP-17M (SGA 117-910abc).

5. Any project cost savings will be returned to the Vehicles-Undesignated category for future allocation to a project to be determined.

Notes

1. Funds from the Vehicles-Undesignated catedgory (EP-17U) are eligible only for purchase of replacement transit vehicles.

Metric	Prop K	Prop AA
Actual Leveraging - Current Request	0.0%	No Prop AA
Actual Leveraging - This Project	82.57%	No Prop AA

San Francisco County Transportation Authority
Prop K/Prop AA Allocation Request Form

FY of Allocation Action:	FY2018/19
Project Name:	Light Rail Vehicle Procurement
Grant Recipient:	San Francisco Municipal Transportation Agency

EXPENDITURE PLAN INFORMATION

Current Prop K Request:	$62,767,634

1) The requested sales tax and/or vehicle registration fee revenues will be used to supplement and under no circumstance replace existing local revenues used for transportation purposes.

Initials of sponsor staff member verifying the above statement
JM

CONTACT INFORMATION

	Project Manager	Grants Manager
Name:	Janet Gallegos	Joel C Goldberg
Title:	Project Manager	Grants Procurement Manager
Phone:	(415) 579-9791	(415) 646-2520
Email:	janet.gallegos@sfmta.com	joel.goldberg@sfmta.com

Prop K 2019 Strategic Plan
Amendment 1 - LRV Procurement

EP No.	EP Line Item	Total Available Funds	Percent of Available Funds Spent on Financing		Total Programming & Finance Costs	FY2018/19	FY2019/20	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
15	Purchase Additional Light Rail Vehicles	$ 5,677,463	14.84%	Programming	$ 4,694,972	$ -	$ 96,661	$ -	$ -	$ -	$ -	$ -
				Finance Costs	$ 842,583	$ 61,143	$ 92,739	$ 77,490	$ 70,911	$ 65,715	$ 85,070	$ 73,029
				Total	$ 5,537,554	$ 61,143	$ 189,400	$ 77,490	$ 70,911	$ 65,715	$ 85,070	$ 73,029
17M	New and Renovated Vehicles-MUNI	$ 475,009,592	13.03%	Programming	$ 411,420,696	$ 33,320,938	$ 56,616,219	$ -	$ 3,304,749	$ -	$ -	$ -
				Finance Costs	$ 61,883,001	$ 1,560,806	$ 4,256,269	$ 4,653,997	$ 5,087,403	$ 4,666,520	$ 7,269,230	$ 6,386,827
				Total	$ 473,303,697	$ 34,881,744	$ 60,872,488	$ 4,653,997	$ 8,392,152	$ 4,666,520	$ 7,269,230	$ 6,386,827
17U	New and Renovated Vehicles-Discretionary	$ 84,832,551	9.06%	Programming	$ 76,990,293	$ -	$ 10,545,950	$ -	$ -	$ -	$ -	$ -
				Finance Costs	$ 7,686,090	$ -	$ -	$ -	$ -	$ 154,310	$ 1,331,291	$ 1,149,794
				Total	$ 84,676,383	$ -	$ 10,545,950	$ -	$ -	$ 154,310	$ 1,331,291	$ 1,149,794

Current Run

EP No.	EP Line Item	Total Available Funds	Percent of Available Funds Spent on Financing		Total Programming & Finance Costs	FY2018/19	FY2019/20	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
15	Purchase Additional Light Rail Vehicles	$ 5,677,461	15.05%	Programming	$ 4,694,972	$ 96,661	$ -	$ -	$ -	$ -	$ -	$ -
				Finance Costs	$ 854,679	$ 61,143	$ 92,739	$ 77,490	$ 74,596	$ 69,508	$ 85,448	$ 73,398
				Total	$ 5,549,651	$ 157,804	$ 92,739	$ 77,490	$ 74,596	$ 69,508	$ 85,448	$ 73,398
17M	New and Renovated Vehicles-MUNI	$ 475,009,431	13.03%	Programming	$ 411,420,696	$ 85,445,961	$ 4,491,196	$ -	$ 3,304,749	$ -	$ -	$ -
				Finance Costs	$ 61,883,179	$ 1,560,806	$ 4,256,269	$ 4,653,997	$ 5,087,243	$ 4,665,695	$ 7,269,381	$ 6,387,050
				Total	$ 473,303,874	$ 87,006,767	$ 8,747,465	$ 4,653,997	$ 8,391,992	$ 4,665,695	$ 7,269,381	$ 6,387,050
17U	New and Renovated Vehicles-Discretionary	$ 84,832,522	9.06%	Programming	$ 76,990,293	$ 10,545,950	$ -	$ -	$ -	$ -	$ -	$ -
				Finance Costs	$ 7,686,365	$ -	$ -	$ -	$ -	$ 154,282	$ 1,331,326	$ 1,149,841
				Total	$ 84,676,658	$ 10,545,950	$ -	$ -	$ -	$ 154,282	$ 1,331,326	$ 1,149,841

Change from Prior Run

EP No.	EP Line Item	Total Available Funds	Percent of Available Funds Spent on Financing		Total Programming & Finance Costs	FY2018/19	FY2019/20	FY2020/21	FY2021/22	FY2022/23	FY2023/24	FY2024/25
15	Purchase Additional Light Rail Vehicles	$ (2)	0.21%	Programming	$ -	$ 96,661	$ (96,661)	$ -	$ -	$ -	$ -	$ -
				Finance Costs	$ 12,096	$ (0)	$ (0)	$ (0)	$ 3,685	$ 3,793	$ 378	$ 369
				Total	$ 12,096	$ 96,661	$ (96,661)	$ (0)	$ 3,685	$ 3,793	$ 378	$ 369
17M	New and Renovated Vehicles-MUNI	$ (161)	0.00%	Programming	$ -	$ 52,125,023	$ (52,125,023)	$ -	$ -	$ -	$ -	$ -
				Finance Costs	$ 177	$ 0	$ 0	$ (0)	$ (160)	$ (825)	$ 151	$ 223
				Total	$ 177	$ 52,125,023	$ (52,125,023)	$ (0)	$ (160)	$ (825)	$ 151	$ 223
17U	New and Renovated Vehicles-Discretionary	$ (29)	0.00%	Programming	$ -	$ 10,545,950	$ (10,545,950)	$ -	$ -	$ -	$ -	$ -
				Finance Costs	$ 274	$ -	$ -	$ -	$ -	$ (28)	$ 35	$ 48
				Total	$ 274	$ 10,545,950	$ (10,545,950)	$ -	$ -	$ (28)	$ 35	$ 48

EP No.	EP Line Item	Total Available Funds	Percent of Available Funds Spent on Financing		Total Programming & Finance Costs
	TOTAL STRATEGIC PLAN - Prior Run	$ 2,793,528,781	9.11%	Programming	$ 2,480,831,072
				Finance Costs	$ 254,528,259
				Total	$ 2,735,359,332
	TOTAL STRATEGIC PLAN - Current Run	$ 2,793,527,918	9.11%	Programming	$ 2,480,831,072
				Finance Costs	$ 254,540,857
				Total	$ 2,735,371,929
	TOTAL STRATEGIC PLAN - Change	$ (863)	0.0005%	Programming	$ -
				Finance Costs	$ 12,597
				Total	$ 12,597

Prop K 2019 Strategic Plan
Amendment 1 - LRV Procurement

EP No.	EP Line Item	FY2025/26	FY2026/27	FY2027/28	FY2028/29	FY2029/30	FY2030/31	FY2031/32	FY2032/33	FY2033/34
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15	Purchase Additional Light Rail Vehicles	$ 65,944	$ 59,027	$ 51,896	$ 44,429	$ 36,648	$ 25,798	$ 12,937	$ -	$ -
		$ 65,944	$ 59,027	$ 51,896	$ 44,429	$ 36,648	$ 25,798	$ 12,937	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17M	New and Renovated Vehicles-MUNI	$ 5,819,535	$ 5,271,623	$ 4,698,264	$ 4,106,004	$ 3,517,431	$ 2,693,935	$ 1,895,156	$ -	$ -
		$ 5,819,535	$ 5,271,623	$ 4,698,264	$ 4,106,004	$ 3,517,431	$ 2,693,935	$ 1,895,156	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17U	New and Renovated Vehicles-Discretionary	$ 1,046,378	$ 946,412	$ 844,360	$ 739,070	$ 634,884	$ 489,065	$ 350,527	$ -	$ -
		$ 1,046,378	$ 946,412	$ 844,360	$ 739,070	$ 634,884	$ 489,065	$ 350,527	$ -	$ -

Current Run

EP No.	EP Line Item	FY2025/26	FY2026/27	FY2027/28	FY2028/29	FY2029/30	FY2030/31	FY2031/32	FY2032/33	FY2033/34
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15	Purchase Additional Light Rail Vehicles	$ 66,328	$ 59,432	$ 52,329	$ 44,901	$ 37,195	$ 26,446	$ 13,920	$ -	$ -
		$ 66,328	$ 59,432	$ 52,329	$ 44,901	$ 37,195	$ 26,446	$ 13,920	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17M	New and Renovated Vehicles-MUNI	$ 5,819,755	$ 5,271,778	$ 4,698,414	$ 4,106,145	$ 3,517,556	$ 2,693,969	$ 1,895,121	$ -	$ -
		$ 5,819,755	$ 5,271,778	$ 4,698,414	$ 4,106,145	$ 3,517,556	$ 2,693,969	$ 1,895,121	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17U	New and Renovated Vehicles-Discretionary	$ 1,046,425	$ 946,448	$ 844,396	$ 739,105	$ 634,917	$ 489,084	$ 350,540	$ -	$ -
		$ 1,046,425	$ 946,448	$ 844,396	$ 739,105	$ 634,917	$ 489,084	$ 350,540	$ -	$ -

Change from Prior Run

EP No.	EP Line Item	FY2025/26	FY2026/27	FY2027/28	FY2028/29	FY2029/30	FY2030/31	FY2031/32	FY2032/33	FY2033/34
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15	Purchase Additional Light Rail Vehicles	$ 384	$ 405	$ 433	$ 472	$ 547	$ 648	$ 983	$ -	$ -
		$ 384	$ 405	$ 433	$ 472	$ 547	$ 648	$ 983	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17M	New and Renovated Vehicles-MUNI	$ 219	$ 155	$ 149	$ 141	$ 125	$ 34	$ (35)	$ -	$ -
		$ 219	$ 155	$ 149	$ 141	$ 125	$ 34	$ (35)	$ -	$ -
		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17U	New and Renovated Vehicles-Discretionary	$ 47	$ 36	$ 35	$ 35	$ 33	$ 19	$ 13	$ -	$ -
		$ 47	$ 36	$ 35	$ 35	$ 33	$ 19	$ 13	$ -	$ -

SFMTA

March 19, 2019

Tilly Chang, Executive Director
San Francisco County Transportation Authority
1455 Market St., 22nd Floor
San Francisco, CA 94103

RE: **Light Rail Vehicle Procurement: Allocation Request and Funding Commitment**

Dear Ms. Chang,

On February 5, 2019, the San Francisco Municipal Transportation Agency (SFMTA) Board of Directors supported a supplemental appropriation to the SFMTA Capital Budget to fund the acceleration of the purchase of Light Rail Vehicles (LRVs) for the Muni Transit Fleet.

Subsequently on February 25, 2019, the SFMTA submitted an Allocation Request Form (ARF) to the San Francisco County Transportation Authority (SFCTA) to allocate $62.8 million in Proposition K sales tax dollars for LRVs. As part of the ARF submittal, SFMTA included the full funding plan for the accelerated project of $1.1 billion including $20.5 million in planned SFMTA controlled funds.

This letter serves as SFMTA's commitment to fully fund the project, including the $20.5 million. The source of those funds may include Transit Sustainability Fee revenues, future General Fund SFMTA baseline transfer as a result of extra property tax the City is receiving due to reaching an Educational Revenue Augmentation Fund (ERAF) formula cap, or another source subject to approval of the SFMTA Board of Directors.

Further, the Federal Transit Administration (FTA) formula funds originally anticipated to fund the project may not be available in time to meet the project's cash flow needs. Regional Measure 3 funds are planned to be used to bridge those cash flow gaps, beginning in 2022. In the event Regional Measure 3 funds are not available, financing against federal funds will be required. SFMTA and the Metropolitan Transportation Commission (MTC) have agreed to request a letter of no prejudice against future federal funds in order to allow either MTC or SFMTA to finance against the FTA formula funds.

We look forward to working with the SFCTA and other project partners to deliver this project.

Sincerely,

Leo Levenson

Leo Levenson
Chief Financial Officer

cc: Jonathan Rewers, Senior Manager, Budget, Financial Planning and Analysis

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Cost-Benefit Analysis: Accelerated Replacement of the SFMTA Light Rail Fleet

Updated March 2019

BACKGROUND

In 2012, the San Francisco Municipal Transportation Agency (SFMTA) broke ground on the first major subway system expansion in decades. The Central Subway project connects the existing T-Third light rail line to a new subway tunnel at 4th & King and will bring subway service to three new subway stations: Yerba Buena/Moscone Center, Union Square, and Chinatown. To support the increased service demand for the Central Subway project as well as system-wide growth along the Mission Bay corridor, we selected Siemens Mobility to provide 24 expansion vehicles and to provide a critically-needed replacement fleet of 151 existing vehicles, which will reach the end of their useful life beginning in 2021. The SFMTA has since optioned an additional 40 expansion vehicles to support increased ridership along the T-Third corridor and purchased an additional 4 cars funded out of the Mission Bay Transportation Improvement Fund to better serve the new Chase Event Center. This represents a total of 68 expansion cars, the last of which is expected to enter revenue service by summer 2019, six months ahead of the anticipated opening of the Central Subway tunnel.

In selecting Siemens Mobility, we exceeded all our procurement objectives. Central to this procurement was the need to integrate lessons learned from prior procurements and make improvements on deficiencies on our existing fleet. We utilized a performance-based specification that allowed car builders to provide proven designs that addressed our concerns. Siemens has a long and solid history of producing and delivering quality cars on time, and went above and beyond in numerous categories:

- The vehicles are being manufactured locally at the Sacramento, California plant, providing local reinvestment of public resources.
- The anticipated 30-year life span exceeds the 25 year expectation of the Federal Transit Administration (FTA).
- The vehicles' predicted reliability metrics will exceed the specifications of the RFP.
- Siemens provided the opportunity for faster delivery—which they have met.

This was all accomplished at a very competitive price: their bid was nearly 20% below the engineer's estimate and the next-most-competitive bidder.

The SFMTA pursued a very aggressive manufacturing and delivery schedule: the SFMTA issued Notice to Proceed on September 30, 2014. The first vehicle was delivered in January 2017 and entered service in November 2017. To support this effort, the SFMTA created an Acceptance Team comprised of knowledgeable operations, engineering, and maintenance staff. This team spent the majority of 2017 working to ensure the smooth acceptance and safety certification of this new fleet. This involved developing and implementing an operator training program, surveying the existing right of way and making modifications to the dynamic envelope where required, ensuring the vehicles communicated with our existing train control systems, and configuring and implementing a new on-board passenger information system. The SFMTA obtained California Public Utilities

Commission (CPUC) safety certification approval on the first application—something peer agencies have failed to achieve.

PROGRESS TO DATE

Since entering revenue service, the public support for this new fleet, often referred to as “LRV4,” has only grown. The car body features wider gangways with increased space for wheelchairs and strollers. The side-running seating has expanded the space available for all riders, reducing rush hour crowding. The on-board signage provides new color displays with improved wayfinding and system-wide visual and auditory stop announcements. The cars are lighter than their predecessors and quietly move through the city’s neighborhoods. The vehicles are designed for up to four-car consists, permitting an increased flexibility for future fleet deployment. Most importantly for operations are the improved crashworthy design, which meets updated safety standards, and the improved reliability and maintenance program. The fleet will be far more reliable and far easier to maintain than the legacy Breda (also referred to as LRV2 and/or LRV3) fleet. The time and energy spent incorporating lessons learned into the vehicle specifications have ultimately paid off. Siemens Mobility has been a collaborative partner: we’re able to receive and incorporate feedback on an iterative basis.

In January 2019, the SFMTA performed a Passenger Satisfaction Survey and hosted two focus groups to gather feedback on the public satisfaction with the new Siemens vehicles. The vast majority of riders surveyed--two -thirds--are satisfied with the vehicles, with less than a quarter reporting overall dissatisfaction. The improvements made to the interior vehicle design, which were based on a previous 2014 survey of riders, all resulted in positive marks. Passengers agreed that there are plenty of places to stand (87%), the trains are attractive (85%), and the vehicles are easy to enter and exit (83%). There were areas for improvement as well: based on rider feedback, we are working to improve the interior seating and stanchion design to increase passenger comfort. We are also working to make other less visible mechanical improvements using lessons learned for the next phase of the procurement. The primary feedback we now receive from the public is: Why aren’t there more of these vehicles entering service sooner?

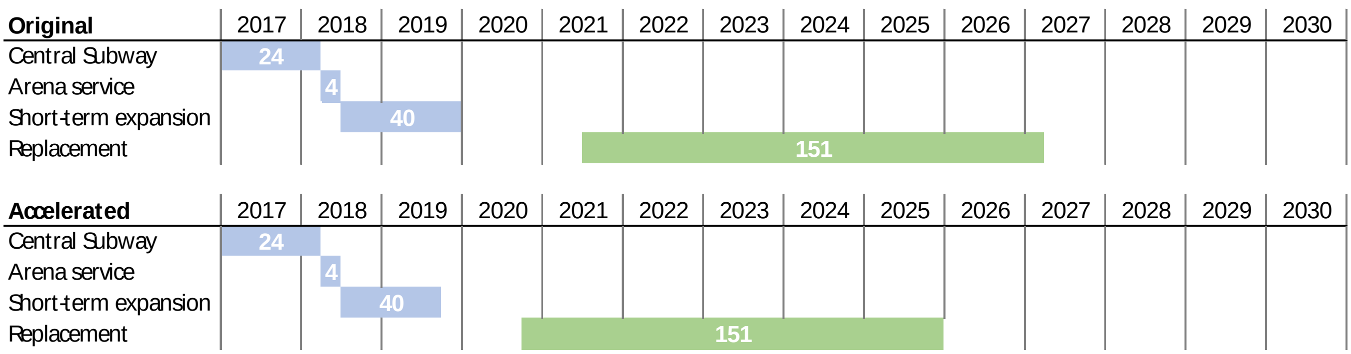
As of the time of writing—March 2019—49 of the total 68 expansion fleet have entered service, with another dozen cars in various stages of delivery, acceptance, and burn-in. Our dedicated Acceptance Team has become familiar with the vehicles and works collaboratively with Siemens Mobility to address manufacturing issues and ensure the vehicles are in top shape ahead of acceptance. Developing this process took substantial time and energy and has produced an expert staff on both the Siemens Mobility and the SFMTA sides.

MOTIVATION

Over recent years, the volume of revenue miles for the Muni light rail operation has grown significantly. The number of annual miles travelled by the legacy Breda fleet has increased by over 20% in the last five years alone. This increased service has strained performance of the Muni rail fleet, especially as the Breda fleet enter their last years of life. At present, vehicle mechanical failures account for more than 50% of all subway delay time. Considering the diminishing reliability and increasing costs of continuing to operate the Breda fleet, we decided to assess the benefits derived by the early retirement of the Breda fleet. We reviewed the projected costs associated with the continued operation of the Breda fleet through the end of their 25-year life. We have a unique opportunity to replace this aging fleet early to save both staff time and Agency funds while simultaneously improving the passenger experience through improved reliability and upgraded facilities. While not all costs or benefits can be easily monetized, we have summarized our areas of examination below.

Working collaboratively with Siemens Mobility, we have developed an updated replacement schedule proposal that maximizes resources and benefits. This timeline both accelerates the delivery of the first replacement vehicle by as many as 6 months and compresses the delivery window from six and a half years to five. This change would continue the current expansion fleet delivery pace Siemens Mobility has successfully accelerated of approximately two vehicles per month through 2023, at which point Siemens would increase the delivery pace to three vehicles per month through the end of the replacement vehicle phase.

Figure 1: Original vs. Accelerated Replacement Schedule



BENEFITS

There are several benefits that can be derived from the acceleration of the Siemens contract and the early retirement of the Breda fleet. The benefits examined are:

1. Direct financial:
    a. Reduction in contract escalation costs
    b. Deferred costs for the current Breda fleet that could be put to more beneficial use
2. Indirect financial: improved efficiencies resulting in staff time and Agency resource savings
3. Operational efficiencies: improved operations outcomes from less complex service and maintenance environment

Direct financial

Escalation

Large long-term contracts typically encounter variability due to cost escalation over time. However, the light rail vehicle (LRV) procurement is largely insulated from variable cost escalation due to the structure of the contract. The Base contract calls for the purchase of 24 LRVs (Phase I) and the subsequent replacement of 151 LRVs (Phase II). The escalation rate for the purchase price of the vehicles is outlined in the contract, and is enacted only once at the execution of Phase II. Once this vehicle price is negotiated according to the terms in the contract, there is no further cost escalation in contract payments. Because the contract payments account for approximately 85% of Phase II project expenditures, costs will remain very stable regardless of the final delivery pace. An earlier execution of replacement will result in a slightly lower per-vehicle price as the price index has increased during the last two quarters and is expected to continue to increase. However, there is no substantial benefit or dis-benefit to the overall project cost by controlling escalation costs through an accelerated schedule.

Deferred heavy overhauls

Over the next few years, the Agency will be required to replace several key systems on the Breda vehicles to ensure they continue to operate as needed through the end of their useful lives. Without these major overhauls, the vehicles will experience an increasingly frequent rate of operating failures and result in a reduced quality of service to Muni patrons. The Air Compressors, Propulsion Inverter module (GTO), Truck Overhaul and Train Control System all require heavy overhauls. Preliminary engineering estimates for these system overhauls exceed $85 million over the next four years.

While this work will be necessary to ensure that equipment can operate safely and last long enough to reach retirement, such expenditures fleetwide are uneconomical as there will be minimal remaining value left when the equipment is finally retired. Unlike the rubber-tire fleet, there is no aftermarket for LRVs, and therefore no opportunity to defray the costs of this investment. Furthermore, parts are becoming increasingly difficult to procure as more and more systems cease to be manufactured. The parts are also becoming increasingly expensive: between 2011 and 2015 the cost of LRV parts doubled. Instead, investing limited capital funds towards the vehicle procurement and acceleration will provide a better return-on-investment through the improved vehicle performance discussed below.

Indirect financial

The preventive maintenance of the Breda fleet is very labor intensive. In procuring the Siemens fleet, we sought a less labor-intensive maintenance program. In accepting and utilizing our new fleet, we have been able to assess both the reliability predictions as well as the actual time savings associated with fleet replacement. Mean Distance Between Failures (MDBF) is the performance metric used to assess the state of good repair of a transit fleet. It demonstrates the number of miles traveled, on average, by a fleet before it encounters a mechanical failure resulting in delayed service. Our legacy light rail fleet currently has an MDBF of approximately 5,000 miles. The Siemens vehicles are contractually required to average 25,000 between failures—meaning the vehicles could more than travel five times the distance before encountering a failure resulting in a service impact.

The improved design of the Siemens vehicle has also reduced both time and cost of the vehicle maintenance. An example of this is illustrated in the maintenance of the step assembly unit. Doors and steps are the top two causes of vehicle delays in service, and their maintenance is complex: During the quarterly preventive maintenance interval (PMI) on the Breda fleet, mechanics must disassemble multiple components to access the linkage system where they must manually clean and lubricate the gears. This process compounds not only the time required to complete this PMI, but also introduces the possibility of human error during reassembly. The Siemens cars simply require a function check and visual inspections for wear or damage and cleaning as needed. With several other main assemblies following this pattern, the overall time saved for major inspections increase. If we continue to utilize the fleet at a rate of 40,000 miles per year, SFMTA staff can expect to save 182 labor hours per vehicle per year. Between 2021 and 2025, the compounding savings provided by the new Siemens fleet, for preventive maintenance alone, is approximately $6 million.

Operational efficiencies

In addition to these financial benefits, there is a real complexity to operating a mixed rail fleet. At present, the SFMTA operates rail service out of the Green Yard near Balboa Park and the Muni Metro East (MME) Yard along the T-Third line in the Dogpatch neighborhood. Procuring and stocking progressively obsolete parts at both locations will become an increasingly difficult challenge. Ensuring mechanics are fully trained across both fleets will prove difficult and will no doubt represent a serious training and staffing challenge, particularly as mechanics experienced in maintaining the Breda fleet retire. While this transition period exists with any new fleet procurement—rail or rubber-tire—the length of time our staff faces this dual fleet maintenance will have dramatic impact on our ability to successfully navigate these challenges.

Under the original contract pace, the first Siemens vehicle entered service in November 2017. Under the original schedule, the last Breda vehicle would be retired in 2027—10 years of operating a mixed fleet. In addition to the continued challenges of locating critical parts, utilizing a dual fleet for a decade will serve as a major operational challenge. All operators must become certified on each unique vehicle type before they can regularly operate the vehicle in service. Continuing to dual-certify operators will lengthen the amount of time each operator must spend in training before they become available for revenue service. Under the accelerated plan, the final Breda would be retired in fall 2025, reducing the mixed operations window by almost two years.

COSTS

There are several costs associated with the accelerated procurement and early retirement. The costs examined are:

1. Direct financial:
    a. Contract modification costs
    b. Financing costs associated with faster procurement
2. Indirect financial:
    a. Alternative uses of local funds
    b. Remaining federal interest on Breda fleet

Direct financial

Contract modification

We are currently negotiating contract modification costs with Siemens to facilitate the accelerated delivery of the replacement fleet. There are two types of contract modifications currently being considered: 1. Vehicle improvements and 2. Acceleration modifications. During the past 18 months of vehicle operations, SFMTA staff has identified desired alterations to the vehicles that will result in a contract modification ahead of initiating the replacement phase. These improvements primarily address vehicle maintainability and passenger comfort, and will be negotiated with Siemens for additional cost regardless of the pacing of the schedule. There is one cost associated directly with the acceleration timeline: to enable the pacing outlined in this memo, Siemens will need to add production capacity, which requires the retooling of production facilities. We anticipate this will result in a one-time cost of $20-25M.

Financing costs

Consolidating the funds required for vehicle replacement on an accelerated timeline requires financing against future local funds. We have worked with the Metropolitan Transportation Commission (MTC) and the San Francisco County Transportation Authority (SFCTA) to develop a funding plan to support the proposed accelerated schedule. The SFCTA contributions are inclusive of SFCTA's anticipated financing costs and are within the Proposition K Vehicles category's available capacity which was approved by the SFCTA in 2018. Funding this project will largely exhaust the Muni Vehicles category through the end of the local sales tax authorization in 2033. At present, the SFMTA does not expect to need to finance against Federal funds. However, as part of the funding plan, we have included Regional Measure 3 (RM3) Bridge Toll funds; these funds are currently the subject of litigation. In the event that these funds are not available in the required timeframe, or become entirely unavailable, we plan to finance against future federal funds. The estimated cost of this financing is expected to be in the range of $0-40 million. Financing against future federal funds requires MTC's approval and a Letter of No Prejudice (LONP) from FTA. Based on cash flow projections, financing would be needed starting in 2022. Debt could be issued by either MTC or SFMTA.

Indirect financial

Funding for Future Vehicle Replacements

Exhausting the Prop K Muni Vehicles category will nearly fully draw down the SFMTA's most reliable source of "matching" local funds for federally-supported fleet procurements. The SFMTA expects to be required to contribute approximately 25% in local funds of the cost of any future revenue vehicle replacement. Between 2019 and 2033, the SFMTA expects to replace the entirety of its rubber-tire fleet—the 30' fleet is currently at the end of its useful life and will be replaced within the next five years. The 40' and 60' Motor and Trolley coach fleets will become eligible for replacement beginning in 2025. The SFMTA will need to identify another large source of local funds ahead of the next major fleet procurement.

Federal Interest and Early Retirement

On February 22, 2019, the SFMTA obtained a waiver from the FTA for the early retirement of the Breda fleet. When a transit service provider retires their revenue fleet ahead of the end of useful life, they must calculate the remaining federal interest for each vehicle (based on the percentage of federal funds that were used to pay for that vehicle and the number length of time remaining in the FTA useful life—25 years for LRVs). In accordance with FTA policies, the remaining federal interest in the Breda vehicles will be invested in a future SFMTA vehicle procurement. This is not a direct payment to the FTA, but instead, SFMTA will account for this remaining federal interest by providing local match in excess of 20 percent to a future vehicle procurement in an amount equal to the remaining federal interest. As the Breda vehicles are retired, we will work collaboratively with the FTA to calculate the specific amount of federal interest remaining--currently estimated at up to $30 million--and the future procurements to which that will be applied. It is also possible that the remaining federal interest could be applied to the Siemens LRVs, which has local funds in excess of FTA's requirement ($384 million total local match which is approximately 50 percent of the replacement car procurement cost).

Direct costs and savings associated with contract acceleration

Activity	Estimated Savings (Costs)
Prop K Financing (SFCTA)	($24 million)
FTA Financing (MTC/SFMTA)	($0-40 million)
Contract Modification	($20-25 million)
System Overhauls	$75 million
Maintenance Costs	$6 million
TOTAL SAVINGS (COSTS)	$37-($8) million

SUMMARY

It is quite rare that a transit agency would procure an expansion fleet ahead of a replacement fleet. However, spurred on by the Central Subway timeline, the SFMTA has now initiated, executed, and accepted the majority of the 68 expansion vehicles. With the complex work of design and safety certification behind us, we could choose to execute the replacement portion of the contract immediately and benefit sooner from the improved operations and maintenance that the Siemens fleet offers.

RECOMMENDATION

The Siemens fleet procurement has been an incredible success story: we successfully executed a performance-based contract to improve on our past experiences operating and maintaining a light rail fleet; the bid price came in far below engineering expectations; Siemens has exceeded original production timelines; and the public has embraced the fleet and wants more of the new vehicles in service.

Facing diminishing performance from our legacy fleet and reviewing the many hard and soft benefits of the early retirement, we strongly believe that the accelerated delivery of the new Siemens fleet is the best choice for our riding public. It allows us to continue to build on a highly successful project and for the public to benefit sooner from this success.