

**Item 6 Enclosure  
Board  
October 16, 2018**

**2019 PROPOSITION K  
5-YEAR PRIORITIZATION PROGRAM**

## **ADVANCED TECHNOLOGY AND INFORMATION SYSTEMS (SFgo)**

Pending Board Approval: October 23, 2018

Prepared for the San Francisco County Transportation Authority

By San Francisco Municipal Transportation Agency



**SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY**

1455 Market Street, 22nd Floor, San Francisco, CA 94103

TEL 415.522.4800 FAX 415.522.4829

EMAIL [info@sfcta.org](mailto:info@sfcta.org) WEB [www.sfcta.org](http://www.sfcta.org)



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## Eligibility

Eligibility as identified in the voter approved Prop K Expenditure Plan is as follows:

“Advanced Technology and Information Systems (SFgo): Programmatic improvements using advanced technology and information systems to better manage roadway operations for transit, traffic, cyclists, and pedestrians. Includes interconnect and traffic signal controller technology and related communications systems to enable transit and emergency vehicle priority; dissemination of real time information to transit passengers; and management of vehicular flows and signalization to enhance bicycle and pedestrian safety (Priority 1). Closed circuit TV and communications systems (e.g. Variable Message Signs) for incident and special event traffic management as well as responsive/adaptive signal control and traveler information (Priority 2). Includes project development and capital costs. Sponsoring Agency: DPT, MUNI. The first \$17.3M is Priority 1 and the remainder is Priority 2. Total Funding: \$100.0M; Prop K: \$19.6M.”

DPT stands for Department of Parking and Traffic and MUNI stands for San Francisco Municipal Railway. DPT and MUNI are now under the San Francisco Municipal Transportation Agency (SFMTA).

## Prioritization Criteria

One of the key required elements of the 5YPPs is a transparent process for how projects get selected. Prop K requires at a minimum that each category include prioritization criteria that address project readiness, community support, and relative level of need or urgency. For the 2014 5YPP update, the Citizens Advisory Committee requested that the

Transportation Authority and project sponsors develop a user-friendly, transparent scoring table that could apply to all 5YPPs, and that the scoring highly prioritize safety and community input. For the 2019 5YPP update the prioritization criteria and scoring are unchanged. Table 3 shows the Prioritization Criteria and Scoring Table. Each project can receive a maximum of 20 points, with 10 points allocated programwide criteria and 10 points allocated for category specific criteria.

The Expenditure Plan also requires consideration of geographic equity in terms of project distribution that takes into account the various needs of San Francisco’s neighborhoods. For the next five years, SFMTA is proposing to use Prop K SFgo funds to purchase and deploy bus transit signal priority (TSP) devices and communications equipment at all intersections along local bus routes citywide where TSP has not already been implemented. In collaboration with the Transit Effectiveness Project, SFMTA has prioritized corridors located on the Muni Rapid Network, and TSP implementation is complete for all of Muni’s Rapid routes. Beginning in FY 2018/19 SFMTA will use Prop K SFgo funds to deploy TSP on local bus routes – benefitting neighborhoods citywide.

## Stretching Your Prop K Sales Tax Dollars Farther

Leveraging Prop K funds against non-Prop K fund sources (e.g., federal, state, other local funds) is necessary to fully fund the Expenditure Plan projects and programs. For the SFgo category, the Prop K Expenditure Plan assumes that every \$1 of every dollar of sales tax revenue spent would leverage about \$4 in non-Prop K funds. The table below compares Prop K Expenditure Plan assumptions with proposed leveraging in the 2019 5-year project lists.

**Table 1. Prop K Leveraging<sup>1</sup>**

Category	Expected Leveraging (Non-Prop K Funds)	Proposed Leveraging (Non-Prop K Funds)
SFgo	80%	72%

<sup>1</sup> This table compares the expected leveraging assumed in the Expenditure Plan with the proposed leveraging assumed in the 5-Year Project List.

The SFMTA is proposing to leverage Prop K funds with revenue from development impact fees, namely Interagency Plan Implementation Committee funds and Transportation Sustainability Fee funds.

## Performance Measures

Prop K requires the establishment of performance measures for each programmatic category in the Expenditure Plan. The intent is to demonstrate the system performance benefits of sales tax projects (e.g. reduced transit travel time), to ensure funds are being used cost effectively, and to inform allocation of Prop K funds and programming and

prioritization of other funds by the Transportation Authority (e.g. Transportation Fund for Clean Air, Prop AA Vehicle Registration Fee funds).

Implementation of TSP systems is one of many factors affecting transit performance along a particular corridor. Transit performance is evaluated at the corridor level as part of the Transportation Authority's Congestion Management Program. Analysis results of congestion levels in corridors citywide can be viewed on the Transportation Authority's interactive Congestion Explorer map, which displays annual congestion levels starting in 2011 and updated biannually.

The following are proposed performance measures for the projects proposed in the 2019 5YPP for the category:

1. Number of intersections with TSP systems installed
2. Reduced transit travel time on corridors where TSP was installed with Prop K funds

**Table 2. Project Delivery Snapshot  
Advanced Technology and Information Systems (SFgo)**

5-Year Prioritization Program (5YPP) Period *		Programmed (Available for Allocation)	Allocated (as of July 2018)	% Allocated
	2005 5YPP (FYs 2004/05 - 2008/09)	\$ 2,841,300	\$ 2,726,698	96%
	2009 5YPP (FYs 2009/10 - 2013/14)	\$ 2,974,700	\$ 1,092,998	37%
	2014 5YPP (FYs 2014/15 - 2018/19) as of 7/24/2018	\$ 3,006,611	\$ 2,192,000	73%
	<b>Total</b>		\$ 6,011,697	

\*Unallocated funds are carried forward for programming in the following 5YPP period.

Table below shows percent complete as reported by project sponsors in July 2018.

**Completed Projects/Project Phases** (sorted by allocation year, then sponsor, then project name)

Sponsor	Fiscal Year of Allocation	Project Name	Phase(s) Funded	Allocated (as of July 2018)	% Complete
SFMTA	2004/05	5-Year Prioritization Program - 2004	Planning	\$ 35,903	100%
SFMTA	2005/06	3rd Street Intelligent Transportation Messaging Signs	Construction	\$ 695,132	100%
SFMTA	2005/06	Center-to-Center Communications	Construction	\$ 70,000	100%
SFMTA	2005/06	Network Communication Equipment - Pilot Project	Planning	\$ 20,000	100%
SFMTA	2005/06	Oak and Fell Streets Intelligent Transportation Messaging Signs Deployment	Design	\$ 113,018	100%
SFMTA	2006/07	Oak and Fell Streets Intelligent Transportation Messaging Signs Deployment	Construction	\$ 1,134,346	100%
SFMTA	2006/07	Traffic Signal Controller and Cabinet Replacement	Construction	\$ 192,509	100%
SFMTA	2008/09	Oak and Fell Streets TMS Deployment - Supplemental Funds	Construction	\$ 463,300	100%
SFMTA	2009/10	SFgo Franklin and Gough Streets (Van Ness Corridors) Improvements	Construction	\$ 1,087,489	100%

**Projects/Project Phases Underway** (sorted by allocation year, then sponsor, then project name)

Sponsor	Fiscal Year of Allocation	Project Name	Phase(s) Funded	Total Allocated (as of July 2018)	% Complete
SFMTA	2017/18	Intelligent Transportation Systems - Traffic Camera Deployment	Construction	\$ 1,200,000	0%
SFMTA	2017/18	Intelligent Transportation Systems - Variable Message Signs	Construction	\$ 1,000,000	0%

For more information about the projects funded by the Transportation Authority, as well as projects for which we help oversee in our role as the Congestion Management Agency for San Francisco, visit our interactive project map at [mystreetsf.sfcta.org](http://mystreetsf.sfcta.org).

Table 3 - Prioritization Criteria and Scoring Table  
Advanced Technology and Information Systems (SFgo) (EP 32)

	PROP K PROGRAM-WIDE CRITERIA			CATEGORY SPECIFIC CRITERIA			Total
	Project Readiness	Community Support	Time Sensitive Urgency	Safety	Provides Benefits to Multiple Users	Muni Rapid Network	
<b>Total Possible Score</b>	4	3	3	4	3	3	20
Local Bus Transit Signal Priority	3	0	0	3	3	0	9

**Prioritization Criteria Definitions:**

**Project Readiness:** Project likely to need funding in fiscal year proposed. Factors to be considered include adequacy of scope, schedule, budget and funding plan relative to current project status (e.g. expect more detail and certainty for a project about to enter construction than design); whether prior project phases are completed or expected to be completed before beginning the next phase; and whether litigation, community opposition or other factors may significantly delay project.

**Community Support:** Project has clear and diverse community support and/or was it identified through a community-based planning process. An example of a community-based plan is a neighborhood transportation plan, but not a countywide plan or agency capital improvement program. Three points for a project in an adopted community based plan with evidence of diverse community support. Two points for a project with evidence of support from both neighborhood stakeholders and groups and citywide groups. One point for a project with evidence of support from either neighborhood stakeholders and groups or citywide groups.

**Time Sensitive Urgency:** Project needs to proceed in proposed timeframe to enable construction coordination with another project (e.g. minimize costs and construction impacts), to support another funded or proposed project (e.g. new signal controllers need to be installed to support TEP implementation) or to meet timely use of funds deadlines associated with matching funds.

**Safety:** Project is located on a WalkFirst Safety Streets corridor (four points) or allows for a signal upgrade (e.g. pedestrian countdown signals) (two points).

**Provides Benefits to Multiple Users:** Project receives one point each for addressing the needs of pedestrians, bicyclists and/or transit users.

**Muni Rapid Network:** Project is located on the Muni Rapid Network.

**2019 Prop K 5-Year Prioritization Program - Program of Projects  
Advanced Technology and Information Systems (SFgo) Category (EP 32)  
Programming**

Agency	Project Name	Phase	Status	Fiscal Year					Total
				2019/20	2020/21	2021/22	2022/23	2023/24	
SFMTA	Local Bus Transit Signal Priority	CON	Planned	\$2,320,000					\$2,320,000
SFMTA	Local Bus Transit Signal Priority	CON	Planned		\$661,167				\$661,167
SFMTA	Local Bus Transit Signal Priority	CON	Planned			\$689,716			\$689,716
SFMTA	Local Bus Transit Signal Priority	CON	Planned				\$715,736		\$715,736
SFMTA	Local Bus Transit Signal Priority	CON	Planned					\$742,061	\$742,061
<b>Funds Requested in 2019 5YPP</b>				\$2,320,000	\$661,167	\$689,716	\$715,736	\$742,061	\$5,128,680
<b>Funds Programmed in 2019 Strategic Plan Baseline</b>				\$2,320,000	\$661,167	\$689,716	\$715,736	\$742,061	\$5,128,680
<b>Cumulative Remaining Programming Capacity</b>				\$0	(\$0)	(\$0)	\$0	\$0	\$0



**2019 Prop K 5-Year Prioritization Program - Program of Projects  
Advanced Technology and Information Systems (SFgo) Category (EP 32)  
Cash Flow (Maximum Annual Reimbursement)**

Project Name	Phase	Fiscal Year					Total
		2019/20	2020/21	2021/22	2022/23	2023/24	
Local Bus Transit Signal Priority	CON	\$1,620,000	\$700,000				\$2,320,000
Local Bus Transit Signal Priority	CON		\$661,167				\$661,167
Local Bus Transit Signal Priority	CON			\$689,716			\$689,716
Local Bus Transit Signal Priority	CON				\$715,736		\$715,736
Local Bus Transit Signal Priority	CON					\$742,061	\$742,061
<b>Cash Flow Requested in 2019 5YPP</b>							
		\$1,620,000	\$1,361,167	\$689,716	\$715,736	\$742,061	\$5,128,680
<b>Cash Flow in 2019 Strategic Plan Baseline</b>							
		\$2,320,000	\$661,167	\$689,716	\$715,736	\$742,061	\$5,128,680
<b>Cumulative Remaining Cash Flow Capacity</b>							
		\$700,000	(\$0)	(\$0)	\$0	\$0	\$0

**San Francisco County Transportation Authority  
Proposition K Sales Tax Program Project Information Form**



<b>Prop K Project Information Form</b>	
<b>Project Name:</b>	Local Bus Transit Signal Priority (TSP)
<b>Implementing Agency:</b>	San Francisco Municipal Transportation Agency
<b>Prop K Expenditure Plan Information</b>	
<b>Category:</b>	C. Street & Traffic Safety
<b>Subcategory:</b>	ii. System Operations, Efficiency and Safety
<b>EP Line (Primary):</b>	32-Adv. Technology & Info Systems SFgo
<b>Other EP Line Number/s:</b>	
<b>Fiscal Year of Allocation:</b>	2019/20, 2020/21, 2021/22, 2022/23, 2023/24
<b>Project Information</b>	
<b>Project Location:</b>	TBD
<b>Supervisory District(s):</b>	TBD
<b>Project Manager:</b>	Robert Lim
<b>Phone Number:</b>	415.701.5669
<b>Email:</b>	robert.lim2@sfmta.com
<b>Brief Project Description for MyStreetSF (80 words max):</b>	Purchase and deploy bus transit signal priority (TSP) devices and communications equipment at all intersections along local bus routes citywide where TSP has not already been implemented. TSP implementation is complete for all of Muni's Rapid bus routes. The project will improve vehicle management and travel time reliability, improve communication among traffic signals, update signal timing to the latest standards, and enable remote monitoring of the effectiveness of the TSP network to facilitate adjustments and repairs as needed.
<b>Detailed Scope (may attach Word document):</b> Please describe the project goals, scope, benefits and how the project was prioritized. Also, describe any coordination with other projects (e.g. paving, MuniForward, Vision Zero).	<p>TSP installations started citywide in 2012 with a goal to fully equip every signalized intersection on a Muni bus route with TSP. As of Summer 2018 there are about 600 intersections equipped with TSP and about 450 intersections remaining to be equipped. All Muni Rapid routes have been equipped with TSP; the subject request will equip intersections along Local routes with TSP, including Routes 5/5R, 6, 7, 10, 12, 18, 19, 21, 22, 23, 24, 27, 28/28R, 30, 31, 33, 35, 36, 37, 41, 43, 44, 45, 47, 48, 49, 52, 54, 55, 56, 57, 66 and 67. Buses have already been equipped with TSP radios through other funds. The primary equipment to be installed through the requested funds would be:</p> <ul style="list-style-type: none"> <li>• Intersection-installed radios to communicate with the radios on the buses</li> <li>• Phase selector cards to be installed inside traffic signal cabinets. These are used to translate information from intersection TSP radios to traffic signal controllers.</li> <li>• Wireless radios to provide remote access to connect to TSP intersections to monitor activity and to pull maintenance logs.</li> <li>• Equipment needed to install and connect TSP equipment to the network.</li> </ul> <p>SFMTA's Sustainable Streets division will procure the equipment and update signal timing. SFMTA's Signal Shop will install the equipment and work with other City agencies such as the Department of Technology on network upgrades and other related issues. SFMTA's Transit Division prioritizes the next routes to receive TSP installations.</p> <p>Benefits: The benefits from the proposed investment will include the following:</p> <ol style="list-style-type: none"> <li>(1) Improved transit performance - TSP is used to extend green lights or to bring up green lights earlier for transit. Improving the odds that a transit vehicle sees a green light will reduce red light delay and thus improve both reliability and travel times.</li> <li>(2) Updated traffic signal timing to latest standards – The signal timing will be updated to reflect the latest standards for Yellows, All-Reds and pedestrian clearance.</li> <li>(3) Remote monitoring – Installed equipment will allow us to remotely check into an intersection and observe current traffic signal timing and produce maintenance logs to review timestamped information on when TSP calls were made and which bus number made the call.</li> </ol>
<b>Prior Community Engagement/Support (may attach Word document):</b> Please reference any community outreach that has occurred and whether the project is included in any plans (e.g. neighborhood transportation plan, corridor improvement study, station area plans).	N/A



**San Francisco County Transportation Authority  
Proposition K Sales Tax Program Project Information Form**

<b>Partner Agencies:</b> Please list partner agencies and identify a staff contact at each agency.	Department of Technology - Joseph John, 415-671-3012	
<b>Type of Environmental Clearance Required:</b>	Categorically Exempt	
<b>Attachments:</b> Please attach maps, drawings, photos of current conditions, etc. to support understanding of the project.	Yes	Photos of equipment to be installed

Project Delivery Milestones Phase	Status	Work	Start Date		End Date	
	% Complete	In-house - Contracted - Both	Quarter	Fiscal Year	Quarter	Fiscal Year
Planning/Conceptual Engineering						
Environmental Studies (PA&ED)	100%	In-house	Q1-Jul-Aug-Sep	2008/09	Q1-Jul-Aug-Sep	2008/09
Right of Way						
Design Engineering (PS&E)						
Advertise Construction						
Start Construction (i.e. Award Contract)	0%	In-house	Q1-Jul-Aug-Sep	2019/20		
Operations (i.e. paratransit)						
Open for Use					Q4-Apr-May-Jun	2023/24
Project Completion (means last eligible expenditure)					Q4 Mar-Jun	2022/2023

**Comments/Concerns**  
 The timeline for each phase does not follow the "traditional" project delivery timeline in that there is no actual true phase for: Planning/Conceptual Engineering and Design Engineering. The work of installing TSP equipment at the intersection and updating traffic signal timing parameters is done in the Construction phase. Each intersection is open to use on a rolling basis immediately after we install the updated traffic signal timing and the TSP equipment. For the Environmental Studies milestone we received a CAT-EX in Aug 2008. Upon consultation with our environmental review team the current CAT-EX is still valid.



San Francisco County Transportation Authority  
 Proposition K Sales Tax Program Project Information Form

<b>Project Name:</b>	Local Bus Transit Signal Priority (LSP)
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Project Cost Estimate	Phase	Cost	Funding Source	
			Prop K	Other
	Planning/Conceptual Engineering	\$ -	\$ -	\$ -
	Environmental Studies (PA&ED)	\$ -	\$ -	\$ -
	Right of Way	\$ -	\$ -	\$ -
	Design Engineering (PS&E)	\$ -	\$ -	\$ -
	Construction	\$ 18,065,129	\$ 5,128,680	\$ 12,936,449
	Operations (i.e. paratransit)	\$ -	\$ -	\$ -
	<b>Total Project Cost</b>	<b>\$ 18,065,129</b>	<b>\$ 5,128,680</b>	<b>\$ 12,936,449</b>
	<b>Percent of Total</b>		<b>28%</b>	<b>72%</b>

Funding Plan - All Phases		Cash Flow for Prop K Only (i.e. Fiscal Year of Reimbursement)									
Fund Source	Prop K Expenditure Line	Phase	Fund Source Status	Fiscal Year of Allocation (Programming Year)	Total Funding	Previous	2019/20	2020/21	2021/22	2022/23	2023/24
Prop K	32-Adv. Technology & Info Systems SFIGo	Construction	Planned	2019/20	\$ 2,320,000		\$ 1,620,000	\$ 700,000			
Interagency Plan Implementation Committee		Construction	Programmed	2019/20	\$ 763,966						
Prop K	32-Adv. Technology & Info Systems SFIGo	Construction	Planned	2020/21	\$ 661,167			\$ 661,167			
TBD		Construction	Planned	2020/21	\$ 1,000,000						
Transportation Sustainability Fee		Construction	Planned	2020/21	\$ 5,696,689						
Prop K	32-Adv. Technology & Info Systems SFIGo	Construction	Planned	2021/22	\$ 689,716				\$ 689,716		
Transportation Sustainability Fee		Construction	Planned	2021/22	\$ 500,000						
Prop K	32-Adv. Technology & Info Systems SFIGo	Construction	Planned	2022/23	\$ 715,736					\$ 715,736	
Transportation Sustainability Fee		Construction	Planned	2022/23	\$ 1,350,000						
Prop K	32-Adv. Technology & Info Systems SFIGo	Construction	Planned	2023/24	\$ 742,061						\$ 742,061
Transportation Sustainability Fee		Construction	Planned	2023/24	\$ 1,350,000						
TBD		Construction	Planned	2023/24	\$ 2,275,794						

Comments
TBD funds will include additional local discretionary funds.

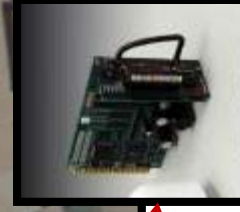
# TSP Equipment at the Intersection



Wireless Radio



GPS Receiver



Phase selector

Table 4 - Prop K 5-Year Project List (FY 2014/15 - 2018/19)  
 Advanced Technology and Information Systems (SFgo) (EP 32)  
 Programming and Allocations to Date

Approved July 22, 2014

Agency	Project Name	Phase(s)	Status	Fiscal Year					Total
				2014/15	2015/16	2016/17	2017/18	2018/19	
SFMTA	SFgo Controller Upgrades	PROC	Programmed		\$2,000,000				\$2,000,000
SFMTA	SFgo Controller Upgrades	PROC	Programmed				\$506,611		\$506,611
SFMTA	SFgo Controller Upgrades	PROC	Programmed					\$500,000	\$500,000
<b>Total Programmed in 5YPP</b>				\$0	\$2,000,000	\$0	\$506,611	\$500,000	\$3,006,611
<b>Total Programmed in 2014 Strategic Plan</b>				\$0	\$2,000,000	\$0	\$506,611	\$500,000	\$3,006,611
<b>Cumulative Remaining Programming Capacity</b>				\$0	\$0	\$0	\$0	\$0	\$0

\*\* "Deobligated from prior 5YPP cycles" includes deobligations from allocations approved prior to the current 5YPP period.

**Prop K 5-Year Project List (FY 2014/15 - 2018/19)**  
**Advanced Technology and Information Systems (SFgo) (EP 32)**  
**Programming and Allocations to Date**

Pending October 23, 2018 Board

Agency	Project Name	Phase(s)	Status	Fiscal Year					Total
				2014/15	2015/16	2016/17	2017/18	2018/19	
SFMTA	SFgo Controller Upgrades	PROC	Programmed		\$0				\$0
SFMTA	SFgo Controller Upgrades	PROC	Programmed				\$0		\$0
SFMTA	SFgo Controller Upgrades	PROC	Programmed					\$0	\$0
SFMTA	Bus Transit Signal Priority	CON	Allocated					\$1,189,972	\$1,189,972
SFMTA	Intelligent Transportation Systems - Variable Message Signs	CON	Allocated				\$1,000,000		\$1,000,000
SFMTA	Intelligent Transportation Systems - Traffic Camera Deployment	CON	Allocated				\$1,200,000		\$1,200,000
<b>Total Programmed in 5YPP</b>				\$0	\$0	\$0	\$2,200,000	\$1,189,972	\$3,389,972
<b>Total Programmed in 2014 Strategic Plan</b>				\$0	\$2,000,000	\$0	\$506,611	\$500,000	\$3,006,611
<b>Cumulative Remaining Programming Capacity</b>				\$391,361	\$2,391,361	\$2,391,361	\$697,972	\$8,000	\$8,000

\* "Deobligated from prior 5YPP cycles" includes deobligations from allocations approved prior to the current 5YPP period.

Programmed
Pending Allocation/Appropriation
Board Approved Allocation/Appropriation