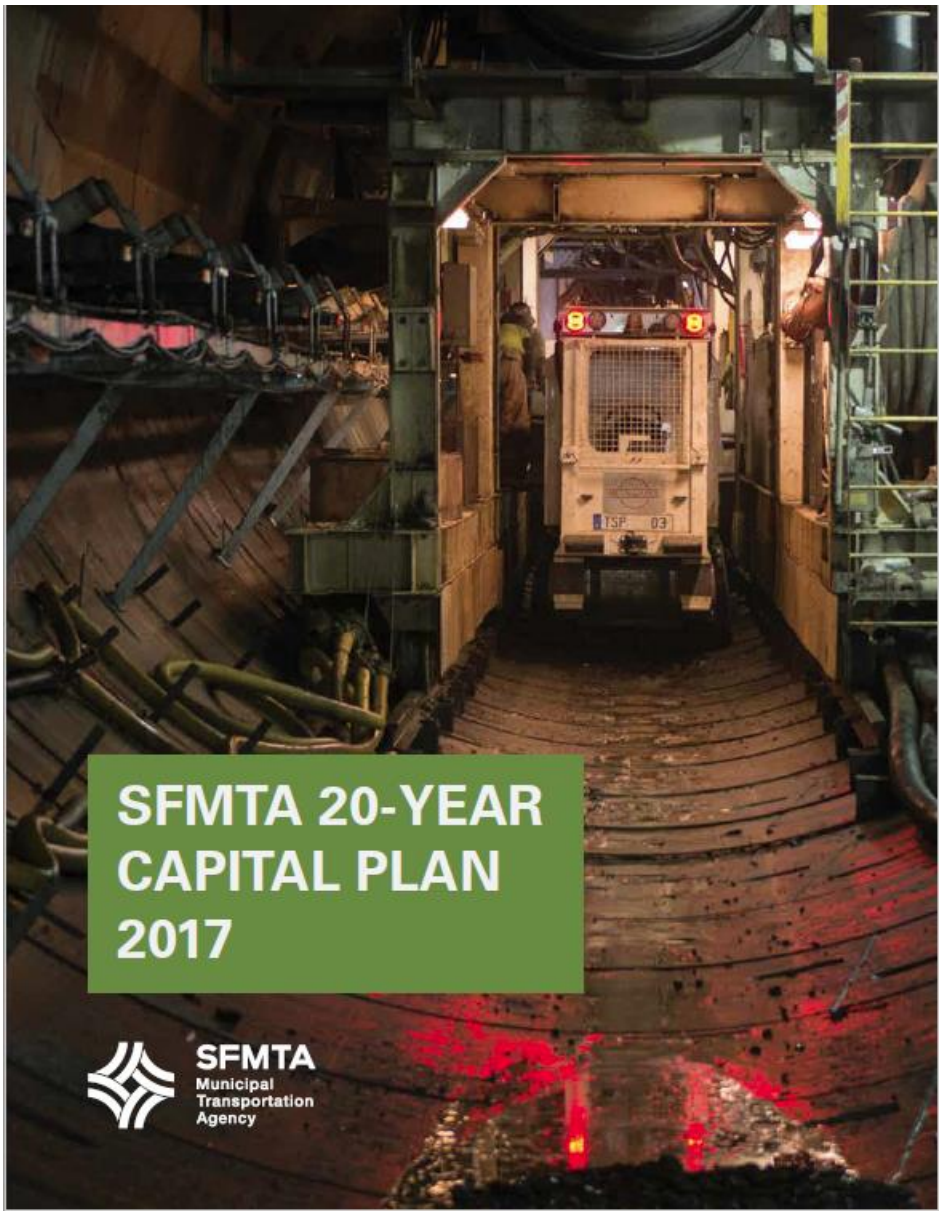
SFMTA 20-YEAR CAPITAL PLAN 2017



Contents

EXECUTIVE SUMMARY

The San Francisco Municipal Transportation Agency's (SFMTA) 20-year Capital Plan is a need-based assessment of the SFMTA's anticipated capital needs for the upcoming 20 years. It is a financially unconstrained plan and includes capital needs for which funding has not yet been committed. The purpose of the Capital Plan is to identify all of the Agency's potential capital investment needs to achieve the Agency's and the City's transportation goals. It also provides the foundation for developing the fiscally constrained 5-year Capital Improvement Program (CIP) and the 2-year Capital Budget. Moreover, it informs citywide and regional capital funding priorities for the City and County of San Francisco and the Bay Area.

This document represents the Agency's fourth comprehensive effort to present a fiscally unconstrained compilation of its capital needs. This version of the Capital Plan focuses on

more fully refining the scopes of the Agency's capital needs as well as characterizing them to better showcase the role of each capital need in bringing the SFMTA closer to the realization of its strategic goals. The Capital Plan makes Agency processes more transparent by publishing the scope of what may be considered for capital funding. This also aides the prioritization process that occurs in the development of the CIP, which details what capital projects the SFMTA intends to fund over the next five years.

This document further details the role of the Capital Plan in the SFMTA and how the capital needs presented in this document reflect the long range capital investment necessary to fully support this part of the Agency's strategic goals.

CAPITAL PLAN OVERVIEW

The Capital Plan is divided into 10 Capital Program Areas to help ensure that capital needs are in line with the Agency's strategic goals and priorities. The table below shows progam descriptions and total Capital Needs for each Capital Program Area:

PROGRAM	PROGRAM DESCRIPTION	20-year total Capital Needs (in millions)	Percent of Total Capital Needs
Communications & IT	Plan, design and implement Information Technology infrastructure to improve internal operations and customer experience.	$237M	1.1%
Facility	Acquire, rehabilitate, and/or construct maintenance facilities and transit stations used for transit, traffic, and parking operations.	$3,490M	15.9%
Fleet	Purchase and maintain revenue and non-revenue vehicles (including motor coaches, light rail vehicles and paratransit vans) to meet transit needs.	$4,540M	20.7%
Parking	Plan, design, engineer, and maintain public parking facilities or street infrastructure related to public parking.	$671M	3.1%
Security	Plan, design, and implement robust systems to improve the security of the transportation system.	$545M	2.5%
Streets	Plan, design, engineer and construct improvements to street safety that promote walking, bicycling and taking transit.	$2,456M	11.2%
Taxi	Plan, design, construct and implement improvements to the taxi system to improve taxi operation and enhance customer experience.	$65M	0.3%
Traffic Signals	Plan, design and construct traffic signals and related infrastructure to make streets safer, improve mobility and decrease transit travel time.	$576M	2.6%
Transit Fixed Guideway	Plan, design, engineer and construct improvements to critical infrastructure including rail track, overhead wires and train control technology.	$1,310M	6.0%
Transit Optimization & Expansion	Plan, design, engineer and construct capital projects to optimize and expand Muni service for greater connectivity.	$8,046M	36.7%
Total		**$21,937M**	

Who We Are

The San Francisco Municipal Transportation Agency (SFMTA), a department of the City and County of San Francisco, is responsible for the management of all ground transportation in the city. The SFMTA was established in 1999 with the passage of Proposition E, which amended the city charter to merge the San Francisco Municipal

Railway (Muni) with the Department of Parking and Traffic (DPT), creating an integrated transportation agency to manage city streets more effectively and advance the city's Transit First policy. The SFMTA continued to evolve after merging with the Taxi Commission in March 2009. The Agency is governed by a Board of Directors, which is appointed by the Mayor and confirmed by the San Francisco Board of Supervisors. The SFMTA governing board provides policy oversight for the Agency, including approval of its budget, contracts, and changes of fares, fees and fines to ensure that the public interest is represented.

What We Do

Today, the San Francisco Municipal Railway (Muni) is the nation's seventh largest public transit system. We connect people and places using a diverse vehicle fleet across multiple modes, including motor coach, trolley coach, light rail, historic streetcar and cable car. The SFMTA also manages a paratransit service for those unable to use fixed-route transit options, regulates the taxi industry, and oversees on- and off-street public parking spaces.

The SFMTA has a robust planning, design and construction function that supports all elements of the city's transportation infrastructure. We provide long-range forecasts for the Agency's fleets and facilities, the city's public rights-of-way, and the transportation impacts of proposed land use developments with private developers and other partners. The SFMTA also partners with other city and regional agencies to define long-range transportation, housing and equity goals. By performing these multiple essential functions, the SFMTA directly touches every person who lives, works in or visits San Francisco, and positively impacts regional efforts to achieve California's climate and sustainability goals, quality of life and economic vitality.


Sunnydale
Bayshore
1437 B

THE SFMTA'S CAPITAL ASSETS

859 Buses
163 miles of Overhead Wires
26 miles of Transit Priority Lanes
9 miles of Transit-Only Lanes

40 Cable cars
151 Light Rail Vehicles (LRVs)
46 Historic Streetcars
99 miles of Rail Tracks

5,259 Sidewalk Bike Racks
75 On-Street Bike Corrals
43 Bikesharing Stations

69 miles Class I Bike Paths
138 miles Class II Bike Paths
213 miles Class III Bike Paths
14 miles Class IV Bike Paths

1,222 Signalized Intersections
1,044 Intersections with Pedestrian Countdown Signals

122 Paratransit Vans
806 Disabled Parking Zones
202 Intersections with Audible Pedestrian Signals

441,950 Public Parking Spaces
26,750 Metered Parking Spaces
38 Off-Street Parking Garages and Lots

30 Facilities for Operations, Maintenance, Storage and Administration Needs

OVERVIEW OF THE CAPITAL PLAN

The Capital Plan is an assessment of the SFMTA's anticipated capital needs for the upcoming twenty years. It is a financially unconstrained plan and includes capital needs for which funding has not yet been committed. The purpose of the Capital Plan is to identify all of the Agency's capital investment needs. These investment needs are based on the analysis provided by a number of strategies and programs, as well as staff identified needs such as those to address potential safety issues or to comply with new mandates. Although inclusion in the Capital Plan does not guarantee funding or approval of any particular project or program contained within it, having clear and consistently stated Capital Needs are critical to the SFMTA's ability to plan for and secure federal, state, regional, and local funding.

The Capital Plan is used by all levels of SFMTA staff, local and regional transportation funding agencies and policy bodies, other City and County of San Francisco departments, advocacy and stakeholder groups, and the general public. Additionally, the Capital Plan is used as an input to other planning documents and to advocate for the Agency's funding needs.

The SFMTA Strategic Plan and Five-Year Capital Improvement Program can be found online at: www.SFMTA.com/reports.

Purpose and Scope

The 20-Year Capital Plan:

1. Provides foundational structure compiling what the Agency sees as necessary over the next 20 years
2. Informs and assists the development of the 5-year Capital Improvement Program (CIP)
3. Is an advocacy tool informing local and regional efforts.

This is the fourth edition of the Capital Plan, which was previously published in 2011, 2013, and 2015. The Capital Plan is updated and published every other year. Each Capital Plan informs the 5-year Capital Improvement Program (CIP) which, unlike the Capital Plan, is fiscally constrained and programs projected revenues to capital projects. The CIP is also published every other year—about six to nine months after the publication of the Capital Plan—and

requires that a capital project be listed in the Capital Plan to be funded. The fifth edition of the Capital Plan is scheduled for release in 2019.

Each of the Capital Needs in the Capital Plan represents one or multiple capital investments needed for the Agency to reach its strategic goals and objectives and to provide an optimal level of service for the City of San Francisco. Assembling these Capital Needs into one document provides a central singular starting point for projects to get funded by showing what may be eligible for funding in the capital planning process.

Capital Needs represent capital infrastructure investments involving the replacement, renewal, improvement, expansion, or acquisition of capital assets. The Capital Plan and the Capital Needs do not include costs to maintain or operate infrastructure and do not involve non-capital programs. It also does not represent assets that are not owned and maintained by the SFMTA and not funded by the Agency's Capital Budget.

For this Capital Plan, Capital Program Managers, Project Managers, and staff throughout the Agency were provided the opportunity to review the existing Capital Needs from the previous Capital Plan. The primary focus of this update was to remove those Capital Needs that have been funded, completed or are no longer planned, refine previously identified needs, and add new Capital Needs based on Agency plans including formal plans such as the:

- Muni Forward Implementation Workbook
- SFMTA Facilities Framework
- SFMTA Fleet Plan
- Rail Capacity Strategy
- State of Good Repair Report
- Vision Zero Action Strategy
- Bicycle Strategy

The Capital Plan covers the Agency's Capital Needs over the next 20 years based on what we currently know and can reasonably predict. Over the next 20 years many of the Agency's assets will need to be rehabilitated or replaced to maintain safe and efficient operations, service will need to be expanded to serve travel patterns of new residents and workers, and the current system will need to be enhanced to continue to provide attractive transportation choices.

In our fiscally constrained environment, the SFMTA proactively and diligently pursues diverse funding opportunities in order to realize more projects, to deliver more optimal service. The Capital Plan serves as the first step in making investment decisions across competing Agency priorities.

Relationship to other Local and Regional Plans

The SFMTA Capital Plan is used to inform transportation funding priorities for the City and County of San Francisco, including the San Francisco Capital Plan, San Francisco Transportation Plan, and Plan Bay Area.

The City and County of San Francisco's Capital Plan (FY 2018-27)

The City and County of San Francisco develops a ten-year Capital Plan on a biennial basis for all recommended investments to replace, repair, and improve the city's capital infrastructure and to restore healthy levels of investment in the City and County's aging infrastructure. These capital investments represent a practical and fiscally- constrained set of improvement projects that address critical capital needs in all major City departments. As a City department, SFMTA's needs are included in this citywide Capital Plan.

San Francisco Transportation Plan 2040 (SFTP)

The San Francisco Transportation Plan, prepared by the San Francisco County Transportation Authority and adopted by the Transportation Authority Board in December 2013, is the blueprint for San Francisco's transportation system development and investment over the next 30 years. The SFTP brings all transportation modes, operators, and networks together, with a view to improving travel choices for all users. Through detailed analysis, interagency collaboration, and public input, the SFCTA evaluated ways to improve the transportation system with existing and potential new revenues. The SFTP recommends a diverse investment and expansion plan, as well as policy changes, which help generate revenues that fund a significant amount of SFMTA's capital needs. It also contains a SF Investment Vision that departs from business as usual and envisions how San Francisco could achieve more with potential bond measures and new sources of local revenue. SFTP will be updated as part of the Connect SF program.

Plan Bay Area 2040
Adopted in 2013 by the Metropolitan Transportation Commission and the Association of Bay Area Governments, Plan Bay Area is the long-range integrated transportation and land-use/housing strategy through 2040 for the San Francisco Bay Area. A state-mandated document (to meet the requirement of SB 375 for Metropolitan Planning Organizations, including MTC, to prepare a Sustainable Communities Strategy), it integrates long-range transportation, land-use and housing plans that will support a growing economy, provide more housing and transportation choices and reduce transportation-related pollution in the nine-county San Francisco Bay Area. This roadmap is updated every four years to reflect changing conditions and new planning priorities and helps Bay Area cities and counties plan for transportation needs and adapt to the challenges of future population growth.

As the Congestion Management Agency (CMA) for San Francisco, the SFCTA assists SFMTA and other local agencies in submitting investment needs to MTC during the Plan Bay Area Call for Projects. Inclusion in the financially-constrained project list in Plan Bay Area is mandatory for all projects seeking state or federal funds or a federal action. Three project parameters are used to evaluate projects: project readiness, plan status, and supporting adopted goals. The Capital Plan and CIP are one way that SFMTA satisfies these parameters. The SFCTA then develops recommendations for project and program priorities within MTC's target budget for the county in consultation with stakeholders. Once approved by the SFCTA Board, the list of recommended investment priorities is submitted to MTC for evaluation in Plan Bay Area. After MTC completes its detailed project evaluation, including environmental review, the final list is adopted by the MTC Commission.

ConnectSF and the Subway Vision

ConnectSF is a multi-agency collaboration process to build an effective, equitable and sustainable transportation system for our future. It is currently developing a long-range Vision to guide transportation planning in the city for the next 50 years. While different city agencies are responsible for the completion of different Planning documents, Connect SF will ensure that these plans work towards a consistent and coherent Vision for the City's transportation future. Over the next three years, Connect SF will coordinate transportation plans and projects for the San Francisco County Transportation Authority, San Francisco Municipal Transportation Agency, and the San Francisco Planning Department. This process is expected to inform the next, 2019 Capital Plan.

One recent effort related to Connect SF was the Subway Vision. Staff performed outreach and technical analysis to understand potential opportunities for subway construction within San Francisco. The Subway Vision does not yet include recommendations pertinent to the 2017 Capital Plan, but will be updated every four years.

THE CAPITAL PLANNING PROCESS

All projects seeking capital funding must be included in the Capital Plan to be eligible for inclusion in the fiscally-constrained 5-year Capital Improvement Program (CIP). Whereas the Capital Plan includes all of the potential capital needs the SFMTA could invest in, the 5-year CIP and 2-year Capital Budget are constrained by projected and awarded revenue; only projects and phases that are substantially funded can move forward for further review and approval. The figure on the next page provides an overview of the Capital Plan's role in the Capital Planning Process.

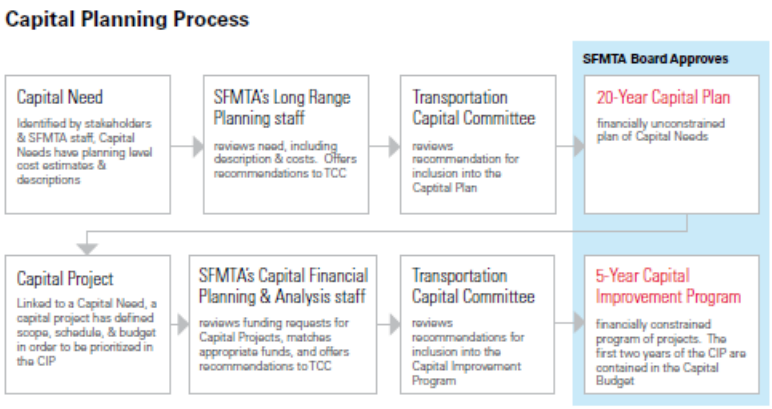
SFMTA Five-Year Capital Improvement Program (CIP)

The CIP is a fiscally-constrained 5-year investment plan for delivery of transportation capital projects. For a project to be considered for funding in the CIP, it must first be included in the Capital Plan. Secondly, a project must have at least 90% of its funding identified for the project or phase to be included in the CIP. Development of the CIP requires Agency staff to prioritize capital investment opportunities using other strategic planning documents, to evaluate the practical logistics of delivering projects using existing staff and agency resources, and is bounded by 5-year projections of capital revenue sources. Cumulatively, these provide the public with an understanding of which projects are planned in the next five years, along with corresponding budgets and timelines. Once included in the CIP, the capital needs become capital projects and will not be included in the next cycle of the Capital Plan. While the CIP does not guarantee funding, it conveys conservative funding projections and secured revenue to support the SFMTA's highest priority and most ready capital improvements. Both the Capital Plan and 5-year CIP are dynamic documents that may be changed or adjusted as needs arise or conditions change.

This 2017 SFMTA 20-year Capital Plan is being released ahead of the FY2019-23 CIP which is scheduled to be released in the spring of 2018. In order to align with the FY 2019-23 CIP, the cost estimates for the Capital Needs listed in this Capital Plan are for unfunded needs from Fiscal Year 2019- 2038 (July 1st 2018 – June 30th 2037). Projects fully funded in the last FY2017-21 CIP are not included in cost estimates for Capital Needs in this Capital Plan.

SFMTA Two-Year Capital Budget

The 2-year Capital Budget represents a list of capital projects that is adopted or appropriated by the SFMTA Board. Capital projects must have full funding plans to be included in the Capital Budget. Many of the same conditions for inclusion in the 5-year CIP apply to the 2-year Capital Budget, with the 2-year Capital Budget largely based on the first two years of the 5-year CIP. The 2-year Capital Budget must be approved by the SFMTA Board by April of each even year.



Transportation Capital Committee (TCC)

The Transportation Capital Committee is responsible for approving, amending and implementing the 20-year Capital Plan, 5-Year CIP, and 2-year Capital Budget. This responsibility includes approving new Capital Needs for inclusion in the Capital Plan. It functions to build transparency to SFMTA's funding decisions, including those which amend the CIP as priorities shift and constraints are realized. The committee meets monthly to consider changes to the Capital Plan and CIP and is comprised of representatives of each of the SFMTA's 10 Capital Program areas. All new capital projects, budget increases, or changes to existing project scopes and schedules must be approved by this diverse committee. An Agency-wide Project Integration Process is also in place to assist inner-agency collaboration between Capital Programs in project planning.

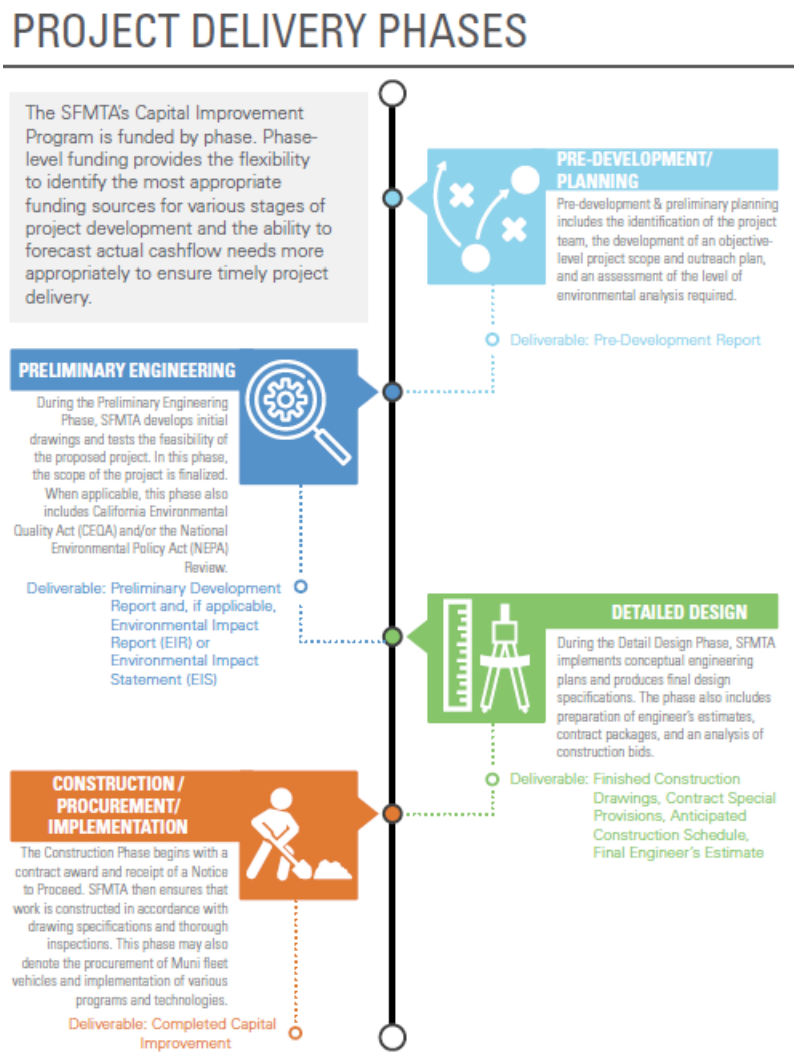
SFMTA's Capital Programs

The Capital Plan details the Agency's Capital Needs for consideration into the CIP, also ensures that one and only one Capital Program is responsible for each of the Agency's Capital Needs. The SFMTA's Capital Programs are:

- Communications and Information Technology
- Facility
- Fleet
- Parking
- Security
- Streets
- Taxi
- Traffic Signals
- Transit Fixed Guideway
- Transit Optimization and Expansion

Since publishing the 2015 Capital Plan, the Pedestrian, Bicycle, Traffic Calming, and Schools Capital Programs have been consolidated into the Streets Capital Program. Likewise, the Accessibility Capital Program is no longer called out separately from the many projects with accessibility components distributed across existing Capital Programs. It should be noted that there is an eleventh Capital Program in the 5-year CIP: Central Subway. As its single Capital Project is fully funded and under construction, it lies outside of the scope of the Capital Plan which details unfunded Capital Needs.

Projects typically occur in four phases as shown on the following graphic:



UPDATES FROM THE 2015 CAPITAL PLAN

The total Capital Needs identified in this Capital Plan are $21.9 billion. This is only a minor increase from the $21.2 billion in Capital Needs presented in the 2015 Capital Plan. Some of the main updates from the 2015 Capital Plan are:

• The addition of Capital Needs Characteristics to each Capital Need.
• A refinement of State of Good Repair needs which resulted in a decrease.
• The increase in scope of the Muni Subway Expansion Project which increased the capital needs
• The incorporation of the SFMTA Facilities Framework.

For further detail about changes in Capital Needs between the 2015 and 2017 Capital Plans, please see Appendix B.

PROGRAM	2015 Total Capital Needs (in Millions)	Percent of 2015 Capital Needs	2017 Total Capital Needs (in millions)	Percent of 2017 Total Capital Needs
Communications & IT	$167	0.8%	$237	1.1%
Facility	$2,769	13.1%	$3,490	15.9%
Fleet	$4,332	20.5%	$4,540	20.7%
Parking	$994	4.7%	$671	3.1%
Security	$67	0.3%	$545	2.5%
Streets	$2,069	9.8%	$2,456	11.2%
Taxi	$90	0.4%	$65	0.3%
Traffic Signals	$771	3.6%	$576	2.6%
Transit Fixed Guideway	$2,648	12.5%	$1,310	6.0%
Transit Optimization & Expansion	$7,245	34.3%	$8,046	36.7%
Total	**$21,152**		**$21,937**	

Addition of Capital Needs Characteristics

This version of the Capital Plan includes Capital Needs Characteristics for each of the identified capital needs. Capital Need Characteristics help to describe the qualities of each of the capital need and illustrates the impact of each capital need relative to other needs within a Capital Program.

The qualitative nature of the Capital Needs Characteristics provides a greater value to Agency decision making as Capital Needs than the more quantitative prioritization process that the Agency conducted in previous Capital Plans. A more detailed quantitative prioritization process is more beneficial as Capital Needs become more defined Capital Projects and are considered for inclusion in the Capital Improvement Program.

Refinement of State of Good Repair Needs

State of Good Repair needs represent the resources required to keep existing capital assets operating in a manner that maintains safety, performance, and condition. The SFMTA operates within a constrained fiscal environment which requires the agency to make decisions between investing in new capital assets and investing in existing capital assets.

The SFMTA utilizes a modeling tool called TERM Lite, developed by the FTA, to support investment decisions by simulating the lifecycle needs of the agency's capital assets. The TERM Lite modeling tool uses the SFMTA Capital Asset Inventory as a primary input and incorporates asset replacement cost, useful life, annual capital expenditure rate, and rehab/replacement policies to determine future needs.

In this 2017 capital planning process, the Agency refined the Capital Asset Inventory and the TERM Lite model to improve the accuracy of the model forecasts. These refinements resulted in a reduction in State of Good Repair capital needs, specifically, it played a significant role in the $195 million reduction in the total capital needs scope of the Traffic Signals capital program, the $334 million reduction in the total capital needs scope of the Parking capital program, and the $1,301 million reduction in the total capital needs scope of the Transit Fixed Guideway capital program.

Muni Subway Expansion Project

The 2017 Capital Plan reflects a more expansive scope of the Muni Subway Expansion Project based on additional planning and project development work that was conducted since the last Capital Plan. This additional planning work led to development of a new project alternative with a larger scope that would construct a new light-rail tunnel between West Portal and Park Merced and re-design portions of 19th Avenue. This alternative includes a substantial increase in the length of the tunnel and additional underground stations and therefore notably increases the capital cost. The increase in the scope of this capital need to $2.5-3 billion in 2017 dollars was part of the $850 million increase in the total capital needs scope of the Transit Optimization and Expansion capital program.

The Incorporation of the Facilities Framework

The SFMTA Facilities Framework is a flexible and dynamic tool to address SFMTA's facility needs through 2040. To provide reliable transit service, the SFMTA needs reliable facilities for its operations and fleets. The inclusion of these capital needs is a significant part of the $721 million increase in the total scope of the Facilities capital program.

Other Considerations of the 2017 Capital Plan

Non Capital/ Non Infrastructure Programs

The Capital Plan covers Capital Needs to restore, enhance, or expand SFMTA infrastructure that our Agency needs to implement over the next 20 years in order to deliver on the City's Transit First Policy and to assist in meeting the Agency's strategic goals. There are many non-infrastructure programs that the SFMTA will fund to assist these infrastructure projects. For example, Transportation Demand Management projects educate the public on use and availability of transit and bicycle infrastructure in order to achieve the transportation mode shift outlined in the Agency's strategic plan away from single occupancy vehicles. These non-infrastructure programs are funded in operations aspects of our budget or listed in and funded within the 'Other' category of the Capital Improvement Program. These non-infrastructure programs however are not covered in the Capital Needs listed in this Capital Plan, not because they are not important, but because they are not capital projects, and are therefore outside of the scope of this document.

THE 2017 CAPITAL NEEDS

The Strategic Plan and Capital Need Characteristics

The SFMTA Strategic Plan establishes the goals, objectives, and metrics by which the Agency will be measured. The 2019 Strategic Plan is currently under development. This Capital Plan is informed by the Fiscal Year 2013-2018 Strategic Plan which identified the following Strategic Goals:

1. Create a safer transportation experience for everyone.
2. Make transit, walking, bicycling, taxi, ridesharing and carsharing the preferred means of travel.

3. Improve the environment and quality of life in San Francisco.
4. Create a workplace that delivers outstanding service.

Unlike the previous three editions of the Capital Plan, this Capital Plan presents characteristics for each of the Capital Needs thereby showing how each of them assists the Agency in reaching these Strategic Goals. We are adding these characteristics to the Capital Plan and are no longer providing a quantitative capital needs prioritization score.

Capital Project Impact
Almost every one of the Agency's Capital Needs either **restore**, **enhance** or **expand** the assets that the Agency owns and uses for service delivery. Some Capital Needs do not effect assets that the Agency owns and operates. These are denoted by an N/A (not applicable).

Restore: Includes investments to replace existing assets that are beyond their useful life or normal replacement cycle (such as the Motor Coach Replacement Program). It also features investments that rehabilitate or renovate existing assets to continue the use of the asset, such as major improvements to an asset that extend the useful life (such as the Motor Coach Midlife Overhaul Program).

Enhance: Includes enhancements to the functionality or quality of SFMTA assets without adding to the total assets owned and operated by the SFMTA (such as the SFMTA Facility Safety Improvement Campaign). This would include investments that upgrade systems or enhance the features of an existing asset.

Expand: Includes expansion or acquisition of additional assets that the SFMTA will own and operate as well as investments that augment and increase capacity of the existing system (such as the Light Rail Vehicle Fleet Expansion).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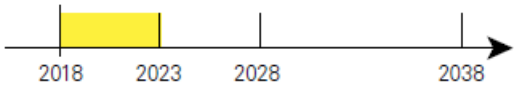
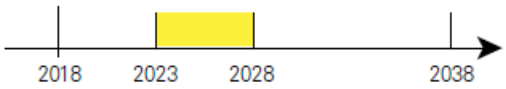
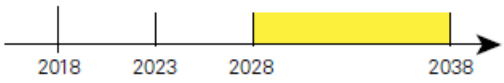
Capital Need Timeframe: The period of time that the SFMTA currently plans on undergoing the project delivery process for this Capital Need.



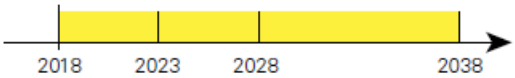
This indicates that the Agency plans to undergo the project delivery process within the next five years.



This indicates that the Agency plans to undergo the project delivery process in five to ten years.



This indicates that the Agency plans to undergo the project delivery process in ten to twenty years.



This indicates an ongoing Capital Need that the Agency will continually address over the next twenty years.

Aside from State of Good Repair, the characteristics below are directly linked to the SFMTA's 2013 Strategic Plan and its four stated goals. They are therefore listed here as they relate to these four goals. These goals also determined the prioritization criteria that were used in the 2015 Capital Plan.

Goal 1: Create a safer transportation experience for everyone

Safety: This Capital Need directly contributes to the safety of the transportation system, reduces incidents and injuries, and/or directly contributes to the Agency's Vision Zero goals.

Security: This Capital Need directly protects the transportation system from external threats including vandalism, theft, or security issues and/or directly assists system adaptation to extreme weather/seismic events.

Goal 2: Make transit, walking, bicycling, taxi and carsharing the preferred means of travel

System Improvement: This Capital Need directly contributes to system reliability, travel time savings, or the quality of the system.

System Access: This Capital Need directly enhances system accessibility for seniors and persons with disabilities.

Goal 3: Improve the environment and quality of life in San Francisco

Environmental Sustainability: This Capital Need directly reduces the Agency's impact on the environment and reduces dependence non-renewable resources.

Financial Sustainability: This Capital Need directly contributes to a net reduction in the Agency's operating and/or maintenance costs, contributes to the Agency's ability to deliver capital projects, generates additional revenue for the Agency, and/or presents a clearly cost efficient method of service delivery.

Goal 4: Create a workplace that delivers outstanding service

Workplace Quality: This Capital Need directly contributes to the betterment of the working environment of SFMTA employees.

Capital Need Characteristic not directly connected to a Strategic Plan goal:

State of Good Repair: Restoration Capital Needs are State of Good Repair Needs, as are Capital Needs that will directly increase the Agency's ability to keep its assets in a State of Good Repair.

SFMTA 2017 CAPITAL NEEDS

Communications & Information Technology
Facility
Fleet
Parking
Security
Streets
Taxi
Traffic Signals
Transit Fixed Guideway
Transit Optimization & Expansion

COMMUNICATIONS & IT INFRASTRUCTURE

Plan, design and implement Information Technology infrastructure to improve internal operations and customer experience.

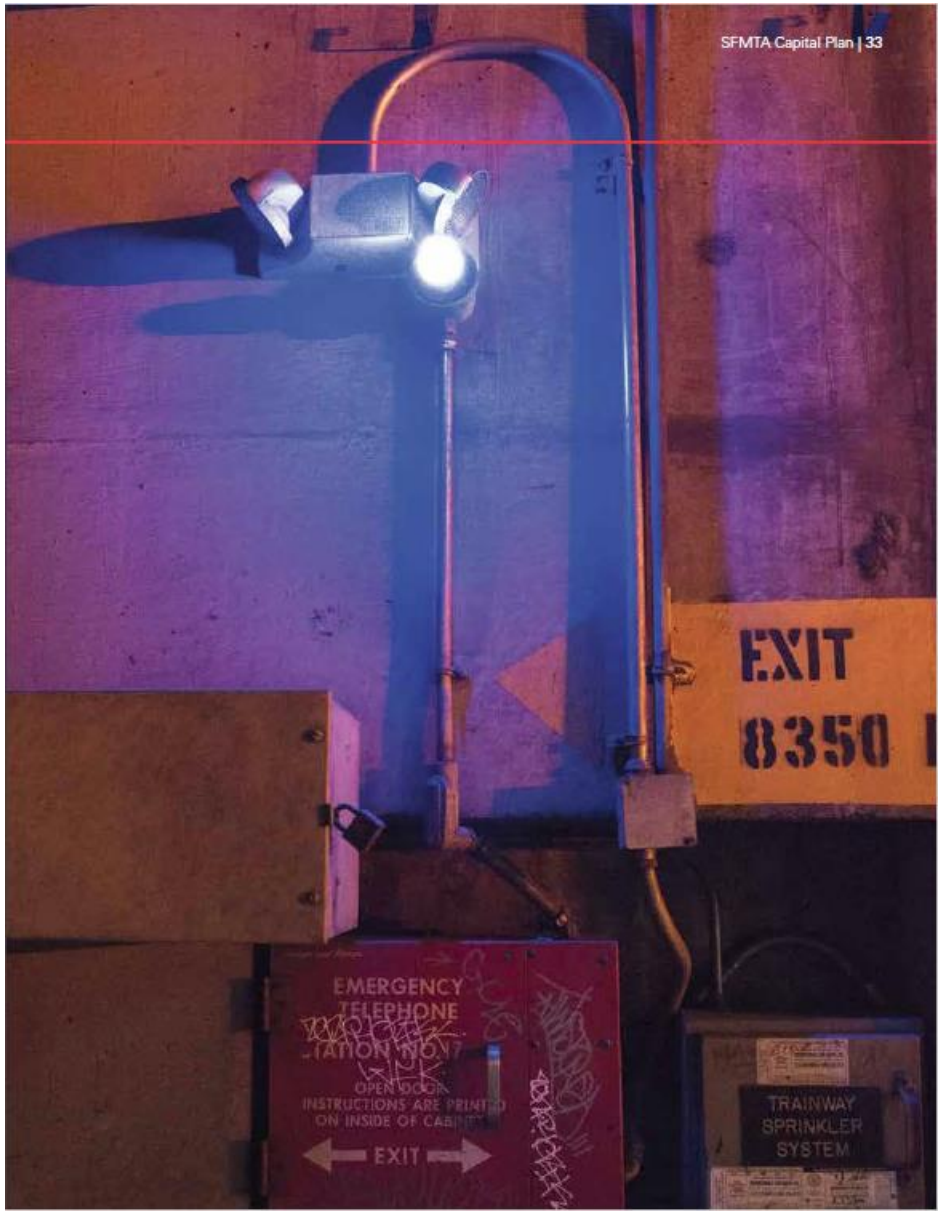
This program supports the planning, design and implementation of IT infrastructure projects to improve efficiency and ease-of-use across the transportation system. The SFMTA maintains a wide array of IT assets across the city, from Wi-Fi and telephony systems at SFMTA worksites to the fiber network that provides the internal communication backbone of the Muni Metro system.

Capital Needs in the Capital Plan include: the Next Generation Customer Information System to update existing NextBus technology to better serve the public, replacement and upgrades of on board Clipper card readers, various needs to improve and streamline the Agency's data processes, build a foundation that supports innovative transportation technology systems, and maintaining our information systems, network infrastructure, security and privacy controls, and user- focused systems such as desktop computers and devices in a State of Good Repair. These initiatives all contribute to a more efficient communication network and help customers to better integrate the transit system into their day-to-day lives.

It should be noted that many of the SFMTA's Communications and IT investments are supported through the SFMTA operating budget, and therefore do not appear in the Capital Plan.

11 CAPITAL NEEDS, **$237M** SCOPE

- Next Generation Transit Customer Information System
- IT and Network System Upgrades
- Data Management and Mapping Upgrades


EXIT
8350
EMERGENCY
TELEPHONE
OPEN DOOR
INSTRUCTIONS ARE PRINTED
ON INSIDE OF CABINET
EXIT
TRAINWAY
SPRINKLER
SYSTEM

CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-CI01	Communications/IT Infrastructure	State of Good Repair of Management Info Systems (MIS), Information Technology (IT), and Network Systems	State of good repair of MIS/IT/Network Systems. Provides for the replacement of various existing Communications/Information Technology assets, including SCADA, Bus On-Board Video, and the Incident Management/Tracking system.	Providing for the timely replacement of these systems supports a safe and reliable transit system.	Restore	0-20 Years	$160310726.30	67.6%	x	x	x		x	x		x
CN-CI02	Communications/IT Infrastructure	On Board Clipper Reader Replacement and Upgrades	Replacement of the existing Clipper readers (approx. 3500 units). Currently the readers are not able to integrate with Radio and only support Clipper. Replacing the existing readers with units that integrate with Radio, support NFC (open payment), QR/Barcodes and are field proven will address future compatibility issues and current equipment performance issues.	The Clipper system is due to be replaced by 2019, however the existing equipment was installed in 2007 and has an operating life of 5 years. The current equipment needs to be replaced to address its on going performance reliability issues. Replacing the equipment at this juncture will allow for integration with the new Radio system providing single sign on for operators and enable the agency to leverage newer technology as an adjunct to the Clipper system.	Restore	0-5 Years	$9,528,441.84	4%					x			x
CN-CI03	Communications/IT Infrastructure	Disaster Recover/Continuity plan	Planning and implementation of an IT server site to provide operations in the event of a disaster. This would be approached in two phases, implement and test key systems, then expand the site to support all systems. High Availability is not covered by this site and is already addressed with the agency's existing infrastructure.	The SFMTA currently does not have a disaster recovery site and in the event of a disaster that renders both of its primary data centers inoperable it would not be able to operate any of its IT systems in any capacity. A Disaster Recovery site is required to enable the operation of key systems in the event of a disaster.	Restore	0-5 Years	$2,875,950	1.2%			x					x
CN-CI06	Communications/IT Infrastructure	Next Generation Transit Customer Information System	Through its use of real-time information, this project is designed to increase public confidence in Muni so that customers can take transit to their destinations quickly and reliably anywhere in San Francisco. The system will employ the latest technology to make transit easier and more convenient to ride in an environment of increasing transportation choices and congestion. The project will take advantage of maturing and advanced technologies including: sophisticated real-time transit arrival prediction algorithms, algorithms that generate alternatives based on location and nearby vehicles, mobile technologies and associated user information to understand system usage and customer preferences, real-time passenger counting to assess vehicle loads, real-time signage on-board vehicles, and solar-powered information signs.	Current system was deployed in 2000 and relies on technologies that are increasingly unsupported and incompatible with current systems. With increasing on-demand transportation options, public feedback indicates that real-time information at the right times and places can influence travel choices and increase transit ridership.	Enhance	0-5 Years	$45,500,000	19.2%	x				x		x	

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CN-CI07	Communications/IT Infrastructure	Transportation On-Demand Platform / Internet of Things (IoT) Mesh Network Infrastructure	This Capital Need includes a Transportation On-Demand Platform to build transportation applications and services on such as sensor technology, Internet of Things (IoT), and integration with "Smart City" services, as well as a mesh network system to organize and prioritize networking technologies for IoT including Sigfox, Wifi, CAD/AVL, fiber and future standards and protocols.	Without a platform, applications and services are developed in a silo which reduces compatibility and increases ongoing support costs. IoT and intelligent transportation technologies will require a robust network of networking technologies to manage their communications.	Enhance	5-20 Years	$4,200,000	1.8%			x		x	x		
CN-CI08	Communications/IT Infrastructure	LiDAR and Internal Building Mapping	High resolution 3-dimensional mapping to allow the SFMTA to fully capture all assets including rail, street and tunnel. This capital need would also provide a full internal map of all SFMTA facilities.	The SFMTA does not have a full list of outdoor and underground assets. A high definition LiDAR effort will allow the SFMTA to fully and accurately map important assets including the path of rail lines, overhead wires, signs, street widths and poles. Also, the SFMTA does not have full internal maps of all facilities. Having such maps would ease planning and also be useful for emergency responders.	Enhance	0-5 Years	$3,500,000	1.5%	x		x			x		x
CN-CI09	Communications/IT Infrastructure	SFMTA System Support and Security	Includes Video Infrastructure Systems to provide a standardized and rationalized video system and network infrastructure with role-based access and security, a full illustrated electronic catalog mapping all parts for all contracted equipment suppliers to digitized engineering diagrams and schematics, and the building and maintainance of a risk-appropriate security framework and technologies to support business continuity and information privacy.	Current systems are fragmented and do not offer the necessary features for long-term system safety, security and operations. It is useful for mechanics and others to have a full listing of available parts. A searchable electronics part catalog will allow staff to be fully certain they are looking up correct parts for a given task. This catalog will also be useful for analysts who have to conduct analyses and are familiar with equipment in general, but who do not order parts on regularly. Business continuity and information privacy are vulnerable without a long-term security roadmap.	Enhance	0-20 Years	$3,300,000	1.4%			x			x		
CN-CI10	Communications/IT Infrastructure	Sub systems for ATCS	Add diversified and redundancy to the Advanced Train Control Systems (ATCS) sub-systems. ATCS manages train traffic and movement when trains switch from manual to automatic control as they exit the surface streets and enter the underground tunnels. The system is built on several sub-systems that ensure safe movement of trains. However, the sub systems are dependent on a single vendor, Thales Transport & Security, and diversification would add resiliency and additional redundancy beyond the current configuration.	Current system is dependent on a single vendor and diversification would add resiliency.	Enhance	0-5 Years	$3,000,000	1.3%	x				x			
CN-CI11	Communications/IT Infrastructure	High Volume Cloud-Based Data Integration, Analytics, Reporting and Monitoring Platform	Create a high volume cloud based data platform for storing a wide range of high volume data, applying analytics to this data for use in recommendation engines and reports, managing and monitoring this incoming data in real-time, and migrating this to government cloud services when appropriate.	The SFMTA is managing and receiving large volumes of data. A platform capable of storing, analyzing, reporting, monitoring and delivering data in a speedy manner with minimal maintenance and effort would assist the Agency in detecting and fixing issues in expediently to deliver quality service.	Enhance	0-5 Years	$2,500,000	1.1%			x			x		x

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CN-CI12	Communications/IT Infrastructure	Phase 2 Radio Project – platform consolidation	The first phase of the computer-aided dispatch/automatic vehicle location (CAD/AVL) system, commonly known as the radio system, will be complete summer of 2017. A second phase is needed to consolidate additional vehicle networks. This would utilize the new CAD/AVL system as a unifying technology platform to provide a single network and technology interface on all vehicles. This is important to ensure future technologies onboard vehicles are compatible with one-another, reduce overall network communications costs and deploy future technologies that would utilize communications and networking through the CAD/AVL.	There are currently 11 networks and antennas on vehicles, which limits compatibility and expansion of systems. This will enable to consolidation of systems resulting in cost savings and expansion of future systems will be more cost effective with a single network on vehicles.	Enhance	0-5 Years	$1,500,000	0.6%	x				x	x		
CN-CI13	Communications/IT Infrastructure	Computer Aided Design Upgrades	Centralize Computer Aided Design (CAD) work into a central repository, digitalize all technical schematics, and automate the transfer of CAD work into a centralized Geographic Information System (GIS) datastore.	This will speed up creation of new designs, make existing technical schematics more usable for SFMTA staff, and close the gap between CAD and GIS users.	Enhance	0-5 Years	$1,000,000	0.4%						x		

FACILITY

Acquire, rehabilitate, and/or construct maintenance facilities and transit stations used for transit, traffic, and parking operations.

Efficient and well-functioning maintenance, fueling, storage, and staging facilities are vital to ensuring reliable transit service and that SFMTA's fleet is in a state of good repair. Several of SFMTA's maintenance facilities are past their useful lives, with some dating more than 100 years into SFMTA's history. The Facilities Program supports the modernization and expansion of obsolete facilities to make them safe and efficient, as well as acquiring new facilities to accommodate fleet expansion. Where possible, the Agency plans to reconfigure, consolidate, or expand existing facilities to meet operational needs, allocate costs efficiently, and incorporate the infrastructure and the space needed for the growing and changing fleet. These Capital Needs will also ensure that all SFMTA employees experience a safe, comfortable and optimal working environment.

The Capital Needs expressed in this program will accommodate the existing and expanded SFMTA Fleet as projected to 2040. Certain Capital Needs represent projects that must be readily implemented to create adequate capacity to store and maintain fleet vehicles. SFMTA does not have capacity at existing yards to accommodate the projected fleet expansion in the 2017 Fleet Plan.

More information on our Facility initiatives can be found in SFMTA's draft Facility Framework, available for viewing at the SFMTA administrative headquarters at 1 S. Van Ness Avenue.

26 CAPITAL NEEDS, **$3,490M** SCOPE

- More efficient, higher-capacity maintenance facilities
- Modernized facilities for a modern fleet
- Better working environment for SFMTA employees


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CN-FC03	Facility	1201 Mason Street (Cable Car Barn) Enhancement	Constructs office space and refurbishes and replans existing offices to aid in growing Cable Car staffing needs. This scope may change if other needs at 1201 Mason Street become a higher priority as informed by ongoing inspection and analysis.	Improvements will enhance maintenance efficiency and safety for the cable car system. It will indirectly result in safer, more reliable service and increases in cable car use. Improvements will also help maintain a healthy working environment for employees.	Enhance	10-20 years	$6,500,000	0.2%						x		x
CN-FC06	Facility	SFMTA Facility Safety Improvement Campaign	Features a series of facility safety improvement projects at all SFMTA facilities, as appropriate. Projects include: Eye Wash Stations, Pigeon Abatement, Pit Drain Sump Systems, Pit Safety Nets, Motive Power Emergency Lights, Potrero Storeroom Isolative Wall, and Presidio Power Shutoff Switches.	These project improve the safety of the work environment. Investments in safety infrastructure also assist in promoting a culture of safety.	Enhance	0-20 years	$4,350,000	0.1%		x				x		
CN-FC08	Facility	SFMTA Facility Fire Life Safety System Campaign	Implement Fire Safety Improvements at 6 SFMTA Facilities, including new and additional fire protection (sprinklers, alarms, strobes, etc) to bring buildings into compliance with fire safety regulations.	Remain in compliance with safety regulations.	Enhance	0-10 years	$8,000,000	0.2%		x				x		
CN-FC11	Facility	1201 Mason (Cable Car Barn) Rehabilitation	Rehabilitate and replace major systems of the Cable Car Barn facility. Major functions of the facility including storage and running repair of vehicles, as well as the cable and winding machines that moves the cable cars.	Maintaining existing cable car facility and fixed equipment in a state of good repair will help ensure safe and reliable transit service.	Restore	10-20 years	$182,230,000	5.2%	x					x		x
CN-FC12	Facility	SFMTA Facilities Renewal Campaign - BACKLOG	Rehabilitate and replace facility infrastructure and fixed equipment, primarily the building structure and internal systems (e.g., HVAC, piping, electrical). Some projects identified in the Real Estate Vision are listed separately.	Timely replacement and rehabilitation of SFMTA facilities improves the agency's ability to provide reliable service. This project is critical to maintaining facilities in a state-of-good-repair.	Restore	0-20 years	$60,300,000	1.7%						x		x
CN-FC13	Facility	Operator Convenience Stations Renewal Campaign	Includes major rehabilitation, preservation, and improvement of 25 existing restroom facilities at 6 locations, including Operations Central Control (OCC), subway stations, etc. and construction of new operator restrooms. Most were built between the 1980s and early 2000s. Some are nearing the end of their estimated 33 year lifespan. A few are historic - with very old outside facades and newer interiors (Taraval and Judah are two examples)	This project will improve and enhance employee facilities, leading to healthier working environments.	Restore	0-20 years	$12,500,000	0.4%						x		x
CN-FC15	Facility	601 25th Street (Muni Metro East) Expansion Project Phase I and Phase II	Expand the Muni Metro Rail Facility into the currently undeveloped 4 acres to the east of the existing yard, for future light rail vehicle storage, a combined back shop for all modes, and interim bus maintenance and storage use prior to delivery of the expanded light rail vehicle fleet.	Facilities for transit operations, paratransit, SSD shops, etc. are located on short-term leased property and it is in the strategic interest of SFMTA to secure long-term or permanent locations for these activities. The continued growth of transit results in a similar challenge as SFMTA has a need for long-term or permanent locations for transit operations facilities.	Expand	Phase I: 0-5 years Phase II: 10-20 years	$120,000,000	3.4%	x					x		x

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CN-FC19	Facility	Transportation Operation Fixed Equipment Replacement Campaign	Provides for ongoing acquisition and replacement of the equipment needed to support all aspects of SFMTA operations, maintenance and administrative functions.	Timely replacement and enhancement of the shop equipment increases SFMTA's ability to provide reliable service and reduce incidents stemming from faulty equipment. This project is critical to maintaining a state-of-good-repair of the equipment that support operations, maintenance, and administration functions.	Restore	0-20 years	$16,750,167	0.5%						x		x
CN-FC20	Facility	Real Property Acquisition for SFMTA Facilities	Acquisition of real estate property (purchase or long-term lease) for needed Facilities expansion / relocation. This would include using funds to acquire real estate on existing leases where SFMTA holds a "right of first refusal" if the property is to be sold, or a "purchase option" as part of a lease, or other similar contract language.	Facilities for transit operations, paratransit, SSD shops, etc. are located on short-term leased property and it is in the strategic interest of SFMTA to secure long-term or permanent locations for these activities. The continued growth of transit results in a similar challenge as SFMTA has a need for long-term or permanent locations for transit operations facilities.	Expand	5-20 years	$95,000,000	2.7%	x				x	x		
CN-FC21	Facility	SFMTA Real Estate Capital (Joint-Use Development)	The SFMTA has numerous sites in San Francisco that would be appropriate for joint-use development for housing or retail purposes; however up front capital is sometimes needed for site preparation or for a capital contribution for concurrent SFMTA operations on-site.	Fully utilizing existing SFMTA properties provides resources to operate and maintain the Muni fleet.	Expand	5-20 years	$20,000,000	0.6%					x			
CN-FC22	Facility	2301 Stockton (Kirkland) Facility Reconstruction	Complete rebuild of the Kirkland Division, including addition of full maintenance capacity at the division, per Option 2 of the Facilities Framework.	The division facility is over 60 years old and is obsolete and needs to be replaced. It is too small, and is located among non-conforming interests. The resulting improvements will provide safer and healthier working conditions and will ensure that the transportation system is more efficient. Efficient and properly designed facilities are key to maintaining the Muni Fleet in a state of good repair.	Restore	10-20 years	$77,600,000	2.2%	x	x	x	x		x		x
CN-FC23	Facility	2500 Mariposa (Potrero) Facility Reconstruction	Complete rebuild Presidio Division - fleet moves to pivot facility to remain in service while rebuild is underway. Cost estimate reflects Option 2 of the Facilities Framework, which consists of construction of a more intense development with a multi-level facility.	The division facility is over 100 years old and is obsolete and needs to be replaced. The resulting improvements will provide safer and healthier working conditions and will ensure that the transportation system is more efficient. Efficient and properly designed facilities are key to maintaining the Muni Fleet in a state of good repair.	Restore	0-10 years	$311,500,000	8.9%	x	x	x	x		x		x
CN-FC24	Facility	949 Presidio (Presidio) Facility Reconstruction	Complete rebuild Presidio Division - fleet moves to pivot facility to remain in service while rebuild is underway. Cost estimate reflects Option 2 of the Facilities Framework, which consists of construction of a more intense development with a multi-level facility.	The division facility is over 100 years old and is obsolete and needs to be replaced. The resulting improvements will provide safer and healthier working conditions and will ensure that the transportation system is more efficient. Efficient and properly designed facilities are key to maintaining the Muni Fleet in a state of good repair.	Restore	5-10 years	$363,800,000	10.4%	x	x	x	x		x		x

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CN-FC25	Facility	1940 Harrison Street (Flynn Facility) Rehabilitation	The scope of the proposed Flynn Bus Maintenance Facility Renovation project includes: lift upgrades for all in-ground lifts and hoists, roof improvements, exhaust fan upgrades, mechanical and HVAC replacement, air and diesel equipment replacement including air compressors, generators and fire pumps.	Other than the new Islais Creek Bus Maintenance Facilility, the Flynn Facility is the only location that the SFMTA can store and maintain 60 ft. motorcoaches. The fleet is currently growing, and this facility needs to be modernized to maintain the new and growing fleet.	Restore	5-10 years	$24,000,000	0.7%	x			x		x		x
CN-FC26	Facility	Rubber Tire Division Wash Rack Replacement (Sustainability - Water)	Provides new updated wash racks for all five Rubber Tire Transit Divisions. Wash racks will be able to handle standard and/or articulated motor coaches depending on the division in which they are installed.	This project will result in cleaner buses, with the potential of improving customer satisfaction. It will also improve the working environment by providing more effective and modernized equipment that reduces water resource consumption and efficiently utilizes necessary cleaning chemicals.	Enhance	5-10 years	$5,000,000	0.1%				x		x		
CN-FC27	Facility	1200 15th Street (Enforcement Headquarters)	Improves the CCSF Animal Care and Control Facility at 1200 15th Street as a newly owned headquarters for the Sustainable Streets Enforcement Sub-Division.	Improves coordination for the Security, Investigations and Enforcement (SIE) Group, and ends the short-term lease of their current facilities. Provides adequate space for SIE group job functions.	Enhance	0-5 years	$28,000,000	0.8%			x			x		
CN-FC28	Facility	Subway Station Rehabilitation Campaign	Provides for ongoing rehabilitation and improvement projects in the Metro Subway stations. It includes rehabilitation of substructure, superstructure, Heating, Ventilating, and Air Conditioning (HVAC) systems, electrical systems, plumbing systems, as well as painting and platform edge detection tile replacement.	Well-maintained subway station facilities will reduce the risk of safety hazards due to deteriorating systems. Timely replacement of assets allows for consistent and efficient station operations, i.e., replaces old systems with energy-efficient ones.	Restore	10-20 years	$964,000,000	27.6%	x		x			x		x
CN-FC29	Facility	SFMTA Facilities Solar Panel Installation (Sustainability - Power)	Installation of solar panels at the Woods, Potrero, Presidio and Flynn Facilities. Each facility has an abundance of open, clear roof space where solar panels could be installed. The resulting electrical generation could be used to power each facility and excess energy could be returned to the power grid.	This project will improve energy efficiency and would result in cost savings. It would also support the agency's sustainability goals by reducing SFMTA's use of non-renewable resources.	Enhance	10-20 years	$21,000,000	0.6%				x	x			
CN-FC30	Facility	1095 Indiana (Woods) Facility Rehabilitation	Replace paint booth, replace wash racks with washer that can handle 60' buses, improve maintenance areas after component rebuild is moved to Burke, modify some maintenance bays to accept 60' buses, upgrade existing equipment throughout the facility.	Upgrade Woods to achieve better performance in maintenance areas, and to have facilities that can accommodate 60' buses.	Enhance	10-20 years	$117,000,000	3.35%	x	x	x	x		x		x
CN-FC31	Facility	SFMTA Elevator/Escalator Rehabilitation Program	Forty elevators and escalators are located in the Muni Metro System. The twelve remaining elevators are located at other facilities. This program replaces several components that are most prone to failure, including door operators, landing doors, cab doors, door tracks, sills and sill angles, thus extending their useful life and improving reliability. These upgrades are especially necessary for ensuring accessibility concerns for seniors and people with disabilities.	The Capital Need will improve the reliability of station elevators and ensure consistent and safe access to stations for persons with disabilities.	Enhance	0-20 years	$17,000,000	0.5%	x	x					x	x

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CN-FC32	Facility	Muni Metro Station Escalator Rehabilitation Program	Existing escalators in transit stations will be rehabilitated or replaced to conform with current building codes and incorporate modern safety features. Capital Need includes the six escalators that have not been completed or funded.	The project will improve the reliability of station escalators and ensure consistent and safe access to stations for persons with disabilities.	Restore	0-5 years	$14,000,000	0.4%	x	x					x	x
CN-FC33	Facility	Muni Metro Elevator Expansion	Install new ADA compliant street and platform elevators at Muni Metro stations with level changes, including shared BART/Metro stations. Initially, elevators would be installed at stations that currently only provide one elevator, or where a fully ADA compliant elevator is not available. The full build-out would provide at least one ADA-compliant elevator at every Muni Metro access point.	The new elevators will ensure consistent and fully ADA compliant access to the underground Metro stations for people with mobility impairments and others needing the elevator for access to the stations.	Expand	0-20 years	$40,000,000	1.15%	x						x	
CN-FC34	Facility	Paratransit Facility	Build a paratransit facility on property owned or long-term leased by City of S.F. The current cost estimate assumes the facility would share a location with a separately operated new or renovated SFMTA transit division.	Build a paratransit facility that would be leased to a paratransit service provider. The purpose behind building a facility of this type is to ensure paratransit service is met in SF, which may be problem if available spaces for leasing are not present at a future time.	Enhance	5-10 years	$135,000,000	3.9%						x	x	
CN-FC35	Facility	Develop a SFMTA New Motorcoach Facility	The SFMTA requires a new multimodal transportation facilitiy for an expanding bus fleet. Cost includes land purcahse and full construction of a facility for approximately 300 busses with storage and full maintenance capability.	A new bus operations facility would provide the flexibility to implement the Real Estate Vision in a shorter timeline, increasing SFMTA vehicle facility capacities and maintenance capabilities sooner.	Expand	5-20 years	$700,000,000	20.1%	x	x	x	x		x		x
CN-FC36	Facility	SFMTA Facilities Renewal Campaign - ONGOING	Rehabilitate and replace facility infrastructure and fixed equipment, primarily the building structure and internal systems (e.g., HVAC, piping, electrical). Some projects identified in the Real Estate Vision are listed separately.	Timely replacement and rehabilitation of SFMTA facilities improves the agency's ability to provide reliable service. This project is critical to maintaining facilities in a state-of-good-repair.	Restore	0-20 years	$140,100,000	4%						x		x
CN-FC37	Facility	1 South Van Ness (SFMTA Headquarters)	Perform tenant improvements at 1 SVN replacing carpets and workstations to increase capacity and space use with existing square footage. Includes modernization conference and meeting room technology and other minor improvements to conference spaces.	The SFMTA has increased staff at 1 SVN (SMFTA Headquarters), however the Agency is working to optimize existing square footage, rather than purchase or lease additional space in the downtown area.	Enhance	0-5 years	$6,700,000	0.2%					x	x		x

FLEET

Purchase and maintain revenue and non-revenue vehicles (including motor coaches, light rail vehicles and paratransit vans) to meet transit needs.

Muni currently operates over 1,021 service vehicles across 79 transit lines. The Fleet Capital Program ensures that these vehicles are safe, comfortable, clean, and reliable for San Francisco passengers. Rehabilitating or replacing vehicles as they near the end of their useful life helps avoid costly repairs and service interruptions caused by vehicle failures. SFMTA also prioritizes adding more vehicles, which alleviates overcrowding on busy routes and enables the transit system to carry more passengers as the city grows. These initiatives all contribute to SMFTA's long-term goals of increasing Muni service on key routes and eliminating delays caused by outdated vehicles and infrastructure.

Some of our Fleet Capital Needs include cable car and historic vehicle renovations, replacing and expanding the light rail fleet, routine replacement of the paratransit and non-revenue vehicle fleet, and replacing and expanding Muni's entire rubber tire fleet with modern, efficient busses.

16 CAPITAL NEEDS, **$4,540M** SCOPE

- New transit vehicles for a safer and more reliable Muni experience
- Fleet expansion to provide more service capacity on overcrowded routes
- Vehicle rehabilitation projects to reduce service delays


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CN-FT01	Fleet	Light Rail Vehicle Fleet Expansion	Expansion of light rail vehicle fleet by up to 113 vehicles. The current contract includes 24 vehicles to allow for the opening of the Central Subway. These vehicles will be in service prior to 2019. An option has also been exercised for 40 additional vehicles to further expand service. Delivery is scheduled in 2018 and 2019. The contract also provides for the option to purchase 45 additional light rail vehicles to further increase the level of transit service. The 45-car option has not been exercised. The City will also purchase four vehicles per a development agreement related to the Warriors arena that may be in addition to those included in the contract.	This project will provide for increased service along existing and under construction light rail lines. Expansion of the Light Rail fleet with modern vehicles should allow for greater speed, reliability and comfort.	Expand	0-10 Years	$467,000,000	10.3%	x			x				
CN-FT02	Fleet	Rail and Bus Training Simulators	Purchase and installation of a one rail simulator and one bus simulator. These simulators will be used to train transit operators on basic operations and how to maintain control through difficult weather conditions, equipment malfunctions, traffic obstacles, and other real-world situations.	Adequately trained operators are critical to maintaining system safety. Increased operator knowledge of vehicles can also assist maintenance staff when troubleshooting problems.	Enhance	0-5 Years	$5,000,000	0.1%		x				x		
CN-FT03	Fleet	Cable Car Vehicle Rehabilitation (Program)	This program consists of the accelerated, phased overhaul and reconstruction of the 40 vehicle Cable Car fleet. Given the cultural significance and historical importance of the Cable Car system and Fleet, it is a priority to ensure that the Cable Cars' condition is consistent with the City's pride in our fleet. The expected life of a rebuilt Cable Car is approximately 20 years, with a minor rehabilitation every 5-7 years. This program includes major rehabilitation of 17 Powell Cars and 11 California Cars to like-new condition, and mid-life rehabilitation of 10 Powell Cars and 2 California Cars. This program will ensure the availability of funding for staff and materials to complete needed rehabilitation on a rolling 5-7 year basis.	This program will maintain a high level of system reliability, safety, and productivity, providing quality service to this top tourist attraction.	Restore	0-20 Years	$42,000,000	0.9%	x				x			x
CN-FT04	Fleet	Historic Vehicle Rehabilitation (Program)	The program consist of the systematic rehabilitation of 45 historic streetcar vehicles, featuring an end of life rehab (to like-new condition). A rehab is needed every 15 to 20 years. It includes rehab or replacement of the brake interlock system, backup master controller, electrical system, propulsion, and other systems as well as complete body repair, fare box and radio replacement, and ADA updates.	This program will maintain a high level of system reliability, safety, and productivity, providing quality service to patrons. It is necessary to keep the cars in operation since they are not replaced.	Restore	0-20 Years	$113,000,000	2.5%	x						x	x
CN-FT05	Fleet	Light Rail Vehicle Midlife Overhauls (Program)	Includes the systematic midlife rehabilitation and overhaul of 242 out of 264 Siemens light-rail vehicles. The current delivery schedule estimates that the majority of vehicles will reach the middle of their lives by 2038. This program includes heating ventilating and air conditioning (HVAC), brakes, couplers, pantograph, propulsion, doors, car body, seats, and cab. These figures include cars from the 45-car option, but the delivery and subsequent overhaul years are estimated at this time, and it is possible that not all will be purchased. Additionally, it is anticipated that mid-life overhauls of the Breda LRV fleet will be complete by 2019 and that any additional overhauls will be of selected systems on only a portion of the fleet.	Mid-life overhauls are required to ensure that the vehicles can operate for their full useful lives of 25 years.	Restore	10-20 Years	$484,000,000	10.7%	x				x			x

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CN-FT06	Fleet	Light Rail Vehicle Replacement (Program)	Includes replacement of the entire fleet of Breda light rail vehicles when they reach the end of their useful life, with 151 new light rail vehicles (LRVs) that meet the operational and capacity needs of the Metro light rail system. Replacement every 25 years.	This project will provide for the modernization of the existing light rail vehicle (LRV) fleet and will also allow for greater speed, reliability, and comfort.	Restore	0-10 Years	$762,000,000	16.8%	x							x
CN-FT07	Fleet	Replace On-Board Fare Collection Equipment	Covers replacement of 1,336 fareboxes. In addition to fareboxes, this project would include replacement of revenue transfer and collection equipment and software, a data collection and reporting system, and integration with the computer aided dispatch/automatic vehicle location (CAD/AVL) system. Further fleet expansion could increase this capital need.	This project will effectively improve system accountability as well as passenger boarding. In addition, it will lead to better system reliability and reductions in travel time.	Restore	10-20 Years	$25,000,000	0.6%	x				x			x
CN-FT08	Fleet	Motor Coach Expansion (Program)	Expansion of the motor coach fleet, both in number of vehicles and vehicle capacity, to accommodate projected growth. Expansion after 2018 may include up to 110 additional motor coaches to a total of 674. These expansion vehicles would include those needed to provide expanded service to planned major developments (Parkmerced, Treasure Island, Hunters Point/Candlestick Point Shipyard).	The expansion of the motor coach fleet is needed to meet projected ridership demand. In addition, new fleet procurements will help meet operational needs for larger capacity vehicles and help meet zero emissions targets.	Expand	0-5 Years	$154,000,000	3.4%	x			x				
CN-FT09	Fleet	Motor Coach Midlife Overhaul (Program)	Provides for the systematic mid-life overhaul of all 564 vehicles in the motor coach fleet and new vehicles from confirmed future expansion. It may also include overhauls of a further expansion of up to 110 additional coaches. The program includes rehabilitation and replacement of engines; transmissions; differentials; suspension systems; wheelchair lifts; passenger and driver seats; glass; and body repair and paint.	The primary focus of this program is to maintain the motor coach fleet in a state of good repair by replacing key components midway through the vehicle's useful life. Mid-life rehabilitation of the motor coach fleet ensures that the vehicles operate in a safe and secure manner, reducing safety hazards and vandalism. In addition, this rehabilitation program will allow each vehicle to reach its full useful life before needing to be replaced. Timely rehabilitation of the motor coach fleet reduces the number of breakdowns and improves service reliability.	Restore	0-20 Years	$282,000,000	6.2%	x				x			x
CN-FT10	Fleet	Motor Coach Replacement (Program)	Entails the replacement of 564 standard and articulated motor coaches with hybrid motor coaches. This program seeks to replace the existing fleet and future confirmed expansion vehicles to a state of good repair, replacing old, severely overtaxed equipment with the latest and most advanced hybrid technology available. Replacement every 12 years. Potential further expansion of 110 additional coaches would also require one replacement cycle.	The new coaches will offer greater reliability and safety with enhanced transmission-based brake retarders, composite materials, slip resistant flooring, and better mirrors. As a result, this project will improve agency safety and security, as well as improved transit reliability, on-time efficiency, and customer satisfaction.	Restore	0-20 Years	$733,000,000	16.2%	x							x
CN-FT11	Fleet	Non-Revenue Vehicle Replacement (Program)	Consists of the purchase and replacement of non-revenue vehicles, such as specialized maintenance vehicles, as well as light and heavy duty trucks and sedans that are used throughout the agency. This project will replace existing non-revenue vehicles at the end of their useful life.	On-time replacement of non-revenue vehicles ensures that employees can effectively support the operations of the transportation system and efficiently access locations where there are service incidents and perform corrective measures. Many vehicles have significantly exceeded their useful lives and their current condition presents challenges for maintaining effective operations.	Restore	0-20 Years	$162,000,000	3.6%						x		x

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CN-FT12	Fleet	Paratransit Fleet Replacement (Program)	Provides for the routine, scheduled replacement of 75 large cutaway vans every 5 years, and 38 paratransit minivans every 4 years. The capacity of the cutaway vans is 2 wheelchair users and 12 seated passengers. Maximum minivan capacity is 2 wheelchair users and 3 seated passengers.	This project will replace the current fleet of vehicles used to deliver ADA and non-ADA paratransit service (e.g. paratransit taxi & group van service), providing for newer, modern vehicles and better access for persons with disabilities who are unable to access the fixed route transit system.	Restore	0-20 Years	$59,000,000	1.3%	x						x	x
CN-FT14	Fleet	Trolley Coach Midlife Overhaul (Program)	Implements systematic mid-life overhauls of all 278 vehicles in the trolley coach fleet. This program includes the rehabilitation and replacement of frames, inverter replacement, battery management, and minor overhaul of major components. This program of rebuilds and overhauls involves modernization of equipment to meet current standards (e.g., accessibility).	The primary focus of this program is to maintain the trolley coach fleet in a state of good repair by overhauling vehicle components midway through the vehicle's useful life.	Restore	0-20 Years	$167,000,000	3.7%	x				x			x
CN-FT15	Fleet	Trolley Coach Replacement (Program)	Provides for the systematic replacement of 278 vehicles in the trolley coach fleet. This project replaces the trolley coach vehicles at the end of their useful life, maintaining the trolley coach fleet in a state-of-good-repair. During replacement the mix of vehicles sizes may be adjusted to align with the Transit Fleet Management Plan projections of ridership (more 60' vehicles, fewer 40' vehicles). FTA replacement guidline is every 15 years but SFMTA wishes to replace them at every 12 years since the rubber-tire hybrids are rated for 12 years per FTA guideline. Reasoning is both hybrids & trolley are operating in similiar terrain.	Timely replacement of trolley coach vehicles reduces the number of incidents and breakdowns from vehicle deterioration and age, contributing to greater reliability and a cleaner and more comfortable experience for the customer and employee.	Restore	0-20 Years	$450,000,000	9.9%	x							x
CN-FT16	Fleet	Light Rail Vehicle Heavy Repair Overhaul	Includes periodic overhauls of all 264 Siemens light rail vehicles and one quarter (38) of the Breda vehicles. Heavy repair overhauls are targeted to occur every 4-5 years. This program focuses on overhaul of mechanical components of the trucks, including brakes and propulsion, and does not cover as many systems as the mid-life overhauls. These figures include the 45-car option vehicles, though the final number that is purchased may be different.	Heavy repair overhauls are required to ensure that the vehicles can operate for their full useful lives of 25 years. Although Breda vehicles will be phased out of service as the replacement Siemens vehicles are delivered, overhauls will still be required because phase out will not be complete until 2028.	Restore	0-20 Years	$535,000,000	11.8%	x				x			x
CN-FT17	Fleet	Replacement of Other On-Board Equipment	Replacement of on-board monitoring and control equipment. Includes replacement of CCTV, automatic passenger counters, radio, and on-board ATCS equipment. Replacement required every five to six years when not provided with a new vehicle.	Replacement of on-board equipment is required to maintain safe and efficient operations. The equipment does not last as long as the vehicles on which it is placed.	Restore	0-20 Years	$100,000,000	2.2%			x					x

PARKING

Plan, design, engineer, and maintain public parking facilities or street infrastructure related to public parking.

The SFMTA is responsible for maintaining on- and off-street public parking facilities that serve San Francisco residents, visitors, and businesses. The Parking Program supports the planning, design, rehabilitation, construction and operation of public parking garages, as well as street infrastructure and facilities related to public parking. This includes ensuring that parking garages are structurally sound, well-ventilated, well-lit and otherwise well maintained such that they provide a welcoming customer experience. The SFMTA also ensures that parking structures are accessible and meet the requirements of the Americans with Disabilities Act (ADA). For on-street parking, the SFMTA procures and maintains vehicle detection technology and a means by which drivers can pay for parking in busy areas (primarily in the form of parking meters).

Capital Needs over the next twenty years include ensuring that current SFMTA parking infrastructure remains in a state of good repair, and that our parking garages are able to withstand seismic and extreme weather events. In addition, SFMTA must procure state-of-the-art vehicle detection and payment technologies; because the useful life of these technologies is between 5 and 10 years, we must plan for a few such procurements over the next 20 years.

5 CAPITAL NEEDS, **$671M** SCOPE

- Seismic upgrades to ensure safe and secure parking garages
- Parking Vehicle Detection Technology
- Modernized Parking Meter Equipment


PUBLIC
PARKING
Welcome to
Polk & Bush
Garage
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SFMTA
Municipal
Transportation
Agency

CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-PK02	Parking	Implement Parking Vehicle Detection Technology	Implement vehicle detection technology (e.g., parking sensors, cameras, license plate recognition technology,) to measure parking occupancy at the city's metered parking spaces. This typically involves procuring and installing hardware at each space or, at a minimum, on each block. This will support demand-responsive meter rate adjustments and provide parking availability information to the public.	Improving parking availability and providing information to the public will make it easier to find a parking space. This reduces vehicle miles traveled and greenhouse gas emissions.	Enhance	0-20 Years	$29,000,000	4.3%				x	x			
CN-PK03	Parking	Parking Facilities State of Good Repair (Program)	Restoration of 38 parking facilities that provide nearly 15,000 parking spaces, 90,000 sq. ft. of retail space and generate over $85M in annual gross revenues. Includes major rehabilitation, preservation, and improvement of existing parking facilities to enhance parking infrastructure and improve parking management. Implements improvements to elevators, energy efficient lighting, and mechanical systems (e.g., HVAC, sump pumps), CCTV surveillance systems, and bike parking as well as compliance with ADA regulations and various Planning, Building and Fire Codes.	When completed, this project will extend the useful life of major revenue-generating assets, enhance safety of public facilities, as well as help provide better services for those bicycling, carpooling and carsharing.	Restore	0-20 Years	$379,700,000	56.6%			x				x	x
CN-PK04	Parking	Parking Meters State of Good Repair (Program)	Replaces and modernizes equipment for all 27,000 metered parking spaces. All on-street parking meters were replaced in 2014. This estimate accounts for three additional replacements within the next 20 years. Assumes expansion of number of meters durring replacements.	Modernizing existing parking meters will improve reliability and increase driver convenience by accepting non-cash forms of payment. Modernized meters will also allow for demand-responsive pricing.	Restore	0-20 Years	$127,704,500	19%					x			x
CN-PK05	Parking	Parking Access Revenue Control System	Replacement of the Parking Access and Revenue Control Systems (PARCS) software, hardware, ticket dispensers, gate arms, registers, ticket acceptors, ticket readers, and pay stations at 20 SFMTA off-street parking garages.	The PARCS equipment is antiquated and requires regular maintenance. Due to the different hardware and software versions, staff cannot get a coherent report from the parking garages. Parking equipment replacement parts in some of the garages are no longer available.	Restore	0-20 Years	$45,000,000	6.7%			x		x			x
CN-PK06	Parking	Parking Facility Structural and Seismic Upgrades	Most of SFMTA's parking structures are at least 20 years old (oldest garage was built in 1941). Performing a structural analysis to assess the integrity of the SFMTA garages is the first and necessary step to ensure the viability of SFMTA parking assets. The second step is to implement structural and seismic upgrades, where needed.	Improving the seismic and structural integrity of existing parking structures increases the resiliency of the facilities in the event of a natural disaster.	Restore	0-20 Years	$90,000,000	13.4%			x					x

SECURITY

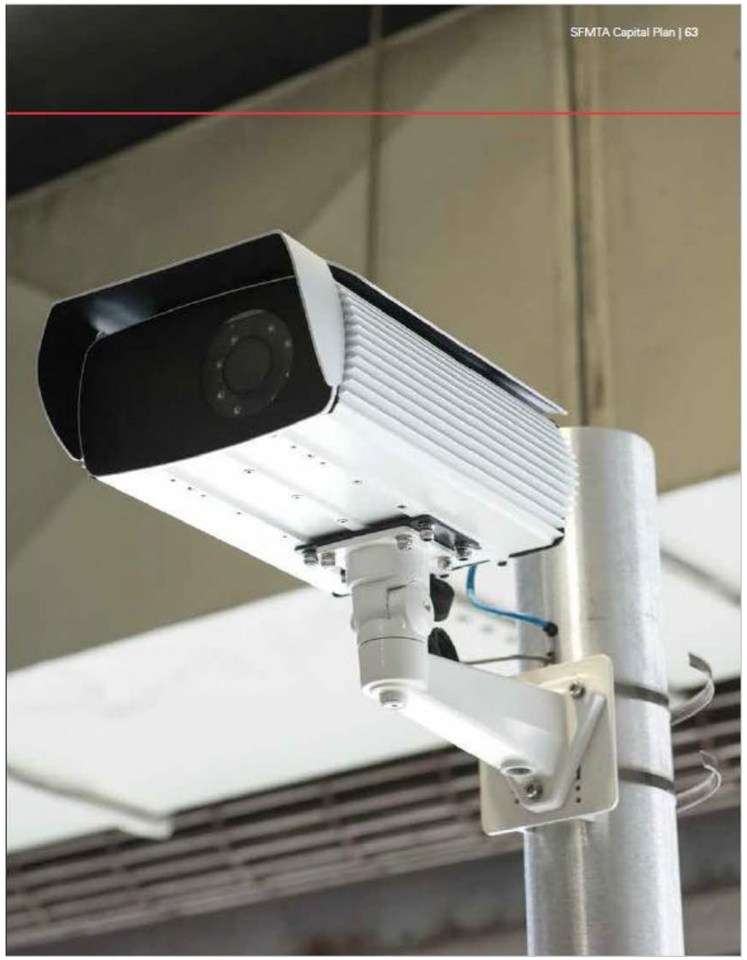
Plan, design, and implement robust systems to improve the security of the transportation system.

Developing state-of-the-art security and emergency management systems is crucial to providing San Francisco with a safe and reliable transportation system. Security Program funds are used to plan, design, and implement security initiatives in case of a natural disaster, terrorist attack, or other emergency situations. SFMTA also applies for competitive grants such as the federal Transit Security Grant Program, which provides funding for projects that protect vital transportation infrastructure, employees and passengers against potential terrorist and security threats.

The Capital Needs listed in this program represent Security and Emergency Management needs to ensure that SFMTA infrastructure remains protected against external threats such as extreme weather events, vandalism, and terrorist attacks.

9 CAPITAL NEEDS, **$545M** SCOPE

- Ongoing planning and implementation to protect critical infrastructure
- Subway flooding and tunnel intrusion mitigation
- Implementation of Threat and Vulnerability Assessment recommendations



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CN-SC01	Security	Threat and Vulnerability Assessment (TVA) Implementation	This capital need addresses two major elements of threat and vulnerability assessment which includes review and mitigation implementation. Capital need CN-SC01 funds annual emergency management and security reviews of major threats and vulnerabilities to SFMTA's critical infrastructure, assets, and facilities. Based on these reviews, the capital need covers the implementation of high-priority mitigation and preparedness projects to protect critical SFMTA facilities, assets, and infrastructure. Project represented by this capital need address natural, manmade, or cyber-security threats of the SFMTA with an emphasis on Rail Transit Security.	Improves safety and security for employees and customers by planning for and implementing solutions to reduce impacts of natural, manmade, or cybersecurity disasters. The annual reviews and strategies developed from these reviews ensure the Agency meets its regulatory requirements.	Enhance	Annually	$67,000,000	12.3%			x					
CN-SC02	Security	Incident Management Planning and Response	Fund continuous upgrades of emergency communications equipment (satellite phones, radios) and supplies; interagency common operating picture operations; post-disaster damage and safety assessment. The exact projects are driven by after-action reports from incident response activations and/or emergency management exercises.	Improves the Agency's emergency response capabilities while-complying with regulations.	Enhance	Initial investment plus review every 2 to 5 years	$4,680,000	0.9%			x					
CN-SC03	Security	Surveillance, Access Control, and Security System Enhancements	Annual high-priority security enhancement measures such as perimeter security enhancements, surveillance equipment, video analytics and monitoring, employee security access control, equipment, signs, manuals, and cyber security systems.	Maintains the security of SFMTA facilities as mandated by regulations.	Enhance	Annually	$15,000,000	2.8%			x					
CN-SC04	Security	Technology In Transportation Emergency Management	Implementation of technology projects from industry best practices to enhance rail system security and employee/customer protection during normal operations as well as to augment response capabilities for all-hazard disasters on the rail system. Systems include emergency vehicles, modeling system, digital message boards, and redundant communication systems.	Enhances the transportation operations and emergency management capabilities of SFMTA.	Enhance	One-time and ongoing	$25,225,000	4.6%			x					
CN-SC05	Security	Subway Tunnel Intrusion Detection and Deterrence Measures	This capital need funds the procurement, installation, and staff training of an upgraded video-based alert system in our subway that actively monitors and detects intrusions into secured areas. This system would monitor our subway stations, tunnels, platforms, and trackside protection assets. This capital need also funds security enhancements related to more traditional methods of intrusion detection and deterrence such as site hardening, trackside protection reinforcement, lighting, and upgraded sensors.	This capital need reduces the potential service disruption and protects SFMTA passengers and employees while complying with regulatory requirements. Intentional or unintentional intrusion into our network has been identified as an issue which poses not only a safety and security risk, but a risk to the overall service delivery of the organization.	Enhance	Annually	$297,162,500	18.4%			x					

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CN-SC06	Security	Market Street Natural Hazard Mitigation	Implementation of the San Francisco Lifelines Council's recommendations outlined in the San Francisco Lifelines Council Interdependency Study to mitigate risks from natural hazards to SFMTA infrastructure assets above and below Market Street. Mitigation recommendations primarily are concerned with earthquake, but also recognize the significant impact of earthquake related flooding and fire. These mitigation strategies include but are not limited to subway, surface rail, electric sub-station, and trolley bus related infrastructure.	The SF Lifelines Council is a private/public partnership sponsored by the San Francisco Office of Resilience and Recovery. The purpose of the Council is to focus on post-disaster reconstruction and recovery efforts. The "Interdependency Study" identified Market Street Corridor where many major components of many lifeline systems are collocated and interdependent. The corridor also represents an areas of Very High to Moderate risks of liquefaction. The study recommends coordinating post-disaster action plans in coordination with partner Lifeline Council members. SFMTA would work closely with other City agencies as well as BART and other regional transit partners.	Enhance	One-time and ongoing	$100,000,000	18.4%			x					
CN-SC07	Security	Subway Flooding Prevention, Preparedness, and Mitigation	Conduct an all-hazard review of the SFMTA subways to prevent, prepare, and mitigate risks, primarily of flooding. A systemwide review is needed every 5 to 10 years.	Maintains the integrity of SFMTA assets and prevents service disruption in the event of major natural disasters.	Enhance	Every 5 to 10 Years	$25,800,000	4.7%			x					
CN-SC08	Security	Continuity of Operations	Implement measures to ensure that the SFMTA would continue its essential functions after a major disaster. An immediate need would be to set up a fully functional Department Operation Center for coordinating rail and bus operations in a post-disaster situation.	Maintains essential SFMTA operations in the event of a major disaster.	Enhance	One-time and annual costs	$6,750,000	1.2%			x					
CN-SC09	Security	Traffic Signal Battery Backup System	Replacement or expansion of traffic signal battery backup system installed in FY17 or earlier. The useful life of the current backup system is about five years at this time.	Maintains traffic safety after a major power outage or natural/manmade disaster. Costs are offset by the otherwise need for PCOs staffing intersections and controlling traffic.	Enhance	Annually	$3,182,700	0.6%			x					

STREETS

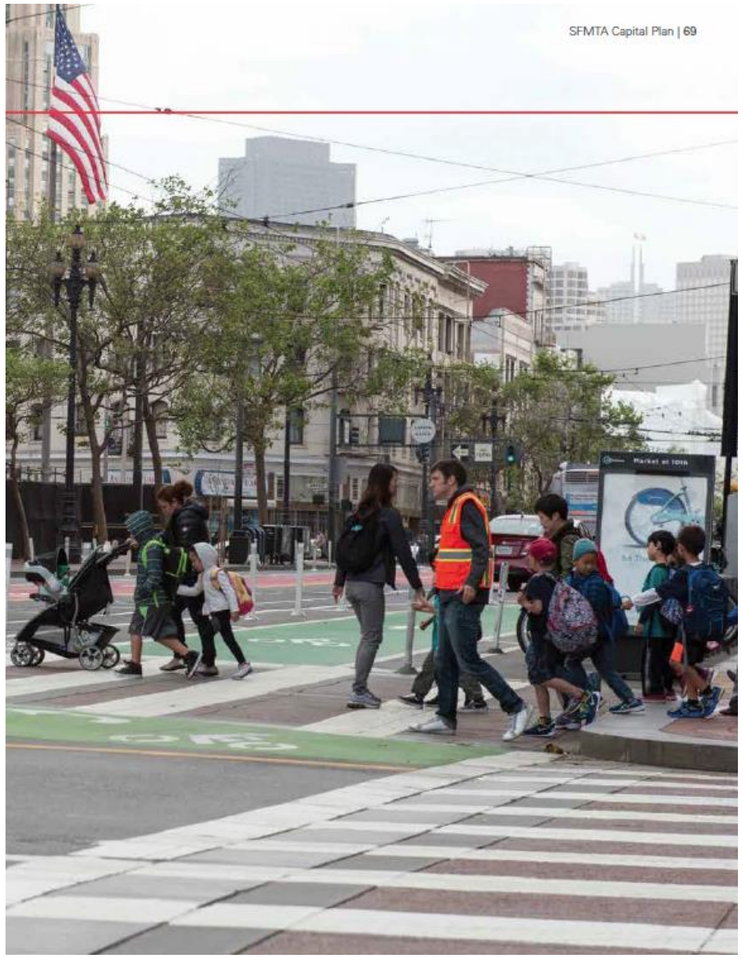
Plan, design, engineer and construct improvements to street safety that promote walking, bicycling and taking transit.

San Francisco is a national leader in complete streets design that accommodates all transportation modes and prioritizes safety for vulnerable users. In order to streamline the capital funding process for this work, we've chosen to unify the former Pedestrian, Bicycle, Traffic Calming, and School capital programs into a more integrated and diverse Streets Program that will invest in capital projects to make our streets safe, vibrant and enjoyable places to walk and bike.

The Capital Needs expressed in this program are based on consistency with the Vision Zero Goal of eliminating traffic deaths and providing infrastructure that supports the mode shift detailed in the SFMTA's Bicycle Strategy. Realizing the scope of these Capital Needs would provide San Francisco with a complete network for bicycling, provide necessary bicycle parking, as well as address the High Injury Network with pedestrian safety projects and provide traffic calming on local streets.

9 CAPITAL NEEDS, **$2,456M** SCOPE

- Improved street safety for all users
- A complete bicycle network, bike parking, and implementation of the Bicycle Strategy
- Safer streets through Traffic Calming projects on residential streets that are both driven by resident request and proactively identified



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CN-ST01	Streets	Bicycle Parking (Program)	Includes the installation of 1,000 bicycle racks per year (e.g., sidewalk racks, on-street racks); wheel stops; bollards; corrals and other measures to facilitate bicycle parking at various locations throughout San Francisco. Also includes the installation of 7 bicycle parking stations, one every three years, which are self-service or attended facilities that have controlled access for secure storage of a bicycle; and the installation of 160 bicycle lockers, 8 per year. Secure bicycle lockers provide flexible, shared use, on-demand bicycle parking options.	These facility improvements serve the entire system through the provision of safe, convenient bicycle parking so that cyclists can access desired land uses at the end of their trips. These facilities serve the entire system by providing for bicycle storage needs, making bicycle transportation a safer, more viable, attractive mode in San Francisco.	Expand	Year 0-20	$31,800,000	1.3%	x		x	x				
CN-ST02	Streets	Protected Bike Lane Network	Add new protected bike lanes and upgrade existing Class II bike lanes to physically protected facilities to create a citywide network of protected bike lanes suitable for a wide range of users. Specific protected bike lane infrastructure includes transit boarding islands to provide protection from bus passenger loading, concrete barriers to separate traffic from people bicycling, and signal and signage upgrades to increase easy of bicycling.	Protected bike lanes add to the comfort of bicyclists and make San Francisco's bicycle infrastructure more accessible to a wider range of users. This aides the SFMTA's strategic goal of making sustainable modes of transportation the preferred means of travel.	Expand	Year 0-20	$585,000,000	23.8%	x	x		x				
CN-ST03	Streets	Neighborway Network	Provide a network of safe and comfortable local streets to connect people walking and biking to schools, parks and other local destinations. Specific improvements include new traffic signals and signage to facilitate bicycle travel, and concrete infrastructure like islands, speed humps, and traffic circles to slow down vehicle speed.	Neighborways reduce the speed and amount of automobile traffic on local streets thereby promoting the residential character of these streets and making them more accessible to bicyclists.	Expand	Year 0-20	$172,000,000	7%	x	x		x				
CN-ST05	Streets	Bicycle Network State of Good Repair (Program)	Replace signs, striping, green pavement, bike signals, and other bicycle facilities. Includes Spot Improvement upgrades to ensure that bicycle facilities are upgraded to meet evolving best practices.	Rehabilitating the bicycle network encourages bicycling and maintains the network in a State-of-Good-Repair. These investments contribute to meeting the goals established in the SFMTA's Bicycle Strategy.	Restore	Year 0-20	$137,000,000	5.6%	x	x		x				x
CN-ST06	Streets	Citywide Pedestrian Core Projects	Pedestrian Core Projects will implement the key infrastructure needed to meet the City's Vision Zero goals, using proven pedestrian countermeasures at the highest need locations. The work will be guided on the City's high injury network, and range from intersection improvements such as bulb-outs to major corridor transformations.	Implementing these projects are the cornerstone of the City's Vision Zero program. The focus in this category on the highest need streets will makes streets safer and more accessible for all users, specifically vulnerable citizens - seniors, people with disabilities, and children, who are more likely to be severely injured if involved in collisions. Increasing walking by improving street safety results in many benefits, not only for individual health, but also for economic development, neighborhood vitality, and environmental sustainability. The projects will reduce injuries and collisions City-wide, but especially in high-risk communities such as the Tenderloin.	Enhance	Year 0-20	$561,500,000	22.9%	x	x		x			x	

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CN-ST07	Streets	Citywide Pedestrian Full Build-Out	This category enhances the existing pedestrian environment and builds on the core pedestrian safety projects by focusing on improving streets to make them more walkable. Projects include walkability improvements on neighborhood connections, such as wider sidewalks and green infrastructure, especially where people already walk. It further builds on local neighborhood corridors to promote walking and economic development, tapping into economic potential. Lastly, this category targets infrastructure deficiencies- locations where there are not high injuries but there are major impediments or barriers to walking, such as highway underpasses, rail crossings or lack of sidewalks in areas experiencing (and targeted for) new growth.	In addition to safety, the SFMTA is committed to making walking a preferred mode choice. The focus on this category is to make key streets more walkable to increase the number of trips made by walking in the City. This is through improving existing streets where people walk, improving local neighborhood shopping corridors and reducing the number of infrastructure real or perceived barriers to walking.	Enhance	Year 0-20	$909,800,000	37%	x	x		x			x	
CN-ST08	Streets	Traffic Calming - School Streets	This program takes a proactive approach to traffic safety on local streets around schools across San Francisco. Provides for the evaluation, design, and implementation of context-specific traffic calming measures around public, private and charter schools in San Francisco. Traffic calming measures range from improved signals and signage to pedestrian bulbs and streetscape measures, to in-road treatments such as speed humps.	These projects will improve pedestrian and bicycle safety, and promote walking and cycling for all school aged children in San Francisco.	Enhance	Annual Program	$2,900,000	0.1%		x						
CN-ST10	Streets	Traffic Calming - Application Based Local Streets	The application-based Traffic Calming Program Program responds to resident concerns about traffic safety and neighborhood livabilty to evaluate requests and design traffic calming projects on local streets across San Francisco. Traffic calming devices such as speed humps, pedestrian bulb-outs, traffic circles, median islands are considered and installed at various locations in the city. Some of the more intensive traffic calming projects may include features such as chicanes, traffic diverters, signalized pedestrian crosswalks and street closures. Program is comprised of Application-Based Residential Traffic Calming, and Proactive Residential Area Improvement sub-programs. Public spaces can also be created or enhanced by traffic calming projects.	Traffic calming projects improve safety and neighborhood livability by reducing speeding on local streets in neighborhoods. These projects also enhance the comfort of people walking and bicycling.	Enhance	Annual Program	$28,000,000	1.1%		x						
CN-ST11	Streets	Traffic Calming - Proactive Local Streets	The Proactive Traffic Calming Program Program will supplement the application-based program by targeting the city's most vulnerable populations from traffic safety by proactively identifying local streets for evaluation and potential traffic calming treatment based on a determined criteria, but without waiting for a citizen petition. The Proactive Program will be data-driven, like the application-based program, ensuring that the local streets with the greatest degree of impacts from vehicular speeding will be addressed. Locations around schools, senior citizen facilities and parks are expected to be the geographic focus for this program.	Traffic calming projects improve safety and neighborhood livability by reducing speeding on local streets in neighborhoods. These projects also enhance the comfort of people walking and bicycling.	Enhance	Annual Program	$28,000,000	1.1%		x						

TAXI

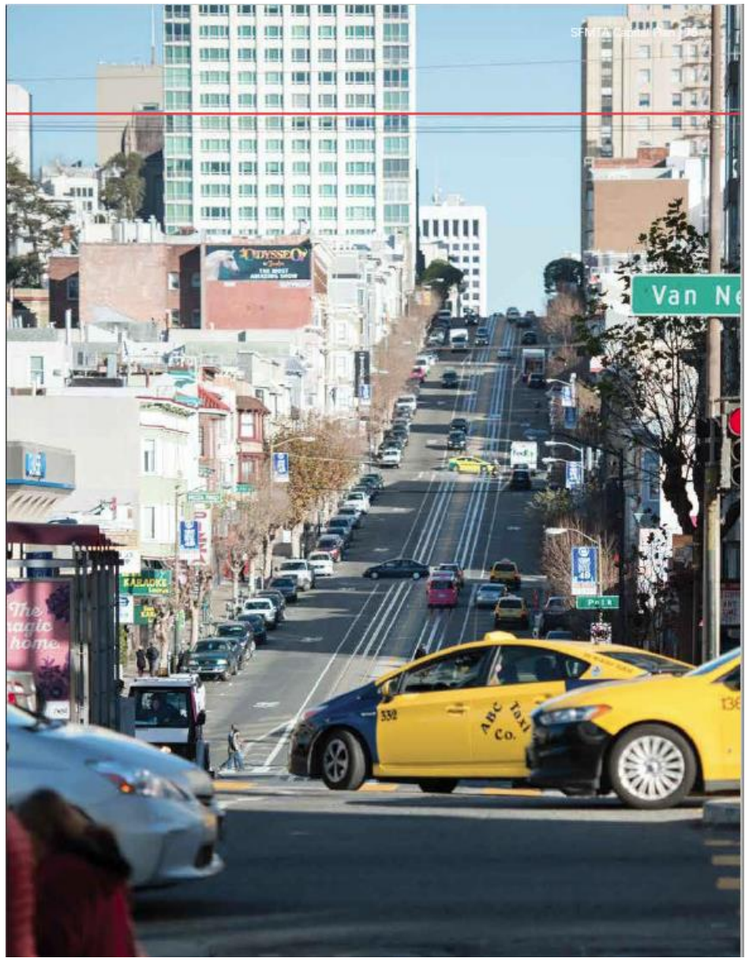
Plan, design, construct and implement improvements to the taxi system to improve taxi operation and enhance customer experience.

The Taxi Program strives to make comfortable, efficient, and environmentally friendly taxis available throughout the city. Program funds are used to plan, design, and implement improvements to the taxi system and to provide a better customer experience for all taxi users. The Taxi Program also includes initiatives to reduce the environmental impact of taxi use, such as promoting electric vehicles. The Taxi program also strives to assist the SFMTA's non-fixed route paratransit services.

Capital Needs expressed in this program would make our Taxi fleet more accessible to the senior and disabled communities as well as users that need to transport bicycles. These Capital Needs would also provide improved facilities for taxi drivers to support them in providing excellent non-fixed route service for the City of San Francisco.

7 CAPITAL NEEDS, **$65M** SCOPE

- Improved customer experience
- Expansion of facilities to support taxi drivers
- Rebate programs for clean fuel and accessible vehicles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CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-TA01	Taxi	Accessible Taxi Rebate Program	Establish a rebate program for new purpose built accessible vehicles purchased by companies or medallion holders to incentivize the purchase of wheelchair accessible vehicles. This program will subsidize costs for one of the more expensive vehicle types in the taxicab fleet which provides arguably one of the most important services. Greater incentives may be provided to operators willing to purchase alternative fuel accessible vehicles.	Improve mobility options for those unable to use other transportation options for some or all trips. The MTA views transportation vehicles as capital investments, the need to offer accessible vehicles therefore is a capital expense as is needed for capital expense to assist the purchase and availability of accessible vehicles.	N/A	Year 0-20	$10,500,000	16.1%							x	
CN-TA02	Taxi	Bicycle Racks For Taxis	This will start as a pilot program, providing bicycle racks to willing drivers. The program will then expand to ensure that every taxi vehicle will have bicycle racks.	This allows for taxis to better serve multi-modal connections, allowing those who own or rent bicycles a higher connectivity to the rest of San Francisco.	Expand	Year 0-20	$300,000	0.5%	x							
CN-TA03	Taxi	Implement Taxi Driver Rest Stops	Construct taxi operator break facilities implemented across the city. Ranging from parklets, restrooms, or other facilities to improve taxi driver break conditions.	This installation would provide multiple benefits, including: 1) provide a rest stop to the drivers, 2) disperse taxis throughout the city, and 3) act as a pseudo-taxi stand.	Expand	Year 5-20	$10,000,000	15.4%						x		
CN-TA04	Taxi	Increase Taxi Stands	In an effort to increase service to the outer city, 15 additional taxi stands will be established around major hail hubs to better manage and direct taxi flow and utilization.	Taxi stands establish locations so that taxis can be easier found throughout the city and aids in movement throughout the city for individuals or groups who chose, or require, taxis as their travel mode.	Enhance	Year 0-10	$200,000	0.3%	x							
CN-TA06	Taxi	Taxi Clean Fuel Rebate Program	Rebate program to incentivize the purchase of clean fuel vehicles. Greater incentives are provided to operators willing to purchase the cleanest vehicles available.	In an effort to make a 100% green taxi fleet; the SFMTA offers drivers a rebate incentive for the purchase of a clean fuel vehicle. This incentive is given to offset the increased costs of purchasing a non-clean fuel vehicle.	N/A	Year 0-20	$37,200,000	57.1%				x				
CN-TA07	Taxi	Taxi Management System	Provide funding for the creation and implementation of a fleet management system for taxicabs. This system would include the ability to monitor vehicle location, affiliation, insurance and inspection status. There will also be an interface that allows the system to integrate driver information from other databases which will allow staff to track driver history, complaints, and compliments as well as allow staff to issue real-time citations to drivers in the field. There will also be a function that allows drivers and taxi companies to pay fees through various user interface portals.	This project will help streamline taxicab regulation management by allowing multiple functions to be managed in one database through one system. Currently there are numerous databases and paper files to track activity in the industry including vehicle management, and as the industry expands it is becoming increasingly difficult to manage the growth through paper files.	expand	Year 0-20	$4,500,000	6.9%	x						x	
CN-TA08	Taxi	Taxi Toplight Improvement	Provide new toplights that will give taxi vehicles higher visibility and a pooling feature. Taxis would operate to augment existing overburdened transit service to focus on common origins/destinations. Taxis would be provided Scrolling LED lights to indicate the Cab-Pooling service. Drivers will then utilize a standard rate and drive along established set pickup locations. The driver will then pick-up as many riders along the route and drop off riders at any point along the route, allowing a faster, more flexible transportation alternative if you require a seat, storage, or are in a rush.	Toplights will clearly communicate taxi availability and increase driver and passenger safety, efficiency, and emulate the unique look and feel of San Francisco.	expand	Year 0-10	$2,400,000	3.7%	x							

TRAFFIC SIGNALS

Plan, design and construct traffic signals and related infrastructure to make streets safer, improve mobility and decrease transit travel time.

Traffic signals are integral to the smooth functioning of the transportation system. The Traffic Signals Program provides funding for upgrading, replacing and constructing new traffic signals and signal infrastructure. Some of San Francisco's traffic signals and supporting infrastructure is over half a century old. Modernizing these systems to better manage traffic flow will result in time and money savings for people across every mode of transportation.

The SFMTA is replacing outdated signals with Intelligent Transportation Systems (ITS) tools to enhance traffic analysis, provide transit signal priority, and expedite maintenance procedures. The Traffic Signals Program also funds the design and construction of new and upgraded traffic signals to improve safety and help the city reach its Vision Zero goal of eliminating all traffic fatalities and severe injuries by 2024. Upgrading and replacing signals and signal infrastructure will decrease travel time, improve mobility, and increase the safety of San Francisco roadways.

6 CAPITAL NEEDS, **$576M** SCOPE

- Traffic signal visibility improvements
- Support of transit signal priority projects
- Pedestrian Countdown Signals and Audible Pedestrian Signals for a safer pedestrian environment


PERSIA

CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-SG01	Traffic Signals & Signs	Automated Photo Traffic Enforcement	Provides for the replacement of photo enforcement for 23 existing approaches and adding an additional 10 approaches.	Automated Photo Enforcement systems improve intersection safety by improving compliance, reducing the number of vehicle crashes. Established systems include red light photo and illegal turn enforcement. Others, like speed, require state legislature approval.	Enhance	On-going	$7,000,000	1.2%		x						x
CN-SG02	Traffic Signals & Signs	Signal and Sign Infrastructure State of Good Repair (Program)	Encompass upgrades of existing traffic control devices, including modifications to existing signals that lack a pedestrian countdown feature, mast arms, 12" signals, battery backup systems, accessible pedestrian signals, wireless detectors, or related amenities. The project also includes the upgrade or replacement of signal equipment that is at the end of its useful life (50 years). Funded sign work in this category includes pavement marking installations and the graffiti program, where existing signs are replaced with signs that have higher reflectivity, and a coating that eases graffiti removal.	Support the Vision Zero program by improving safety, reducing the number of injuries through improved traffic control (e.g., where pedestrian countdown signals and signal visibility improvements are provided as part of a signal modification effort).	Restore	On-going	$363,600,000	63.1%	x	x					x	x
CN-SG03	Traffic Signals & Signs	Traffic Management State of Good Repair (Program)	This includes street paint marking/striping, parking control curb painting.	Maintaining existing infrastructure in a state of good repair will help ensure a safe and reliable street network.	Restore	On-going	$25,000,000	4.3%	x	x						x
CN-SG04	Traffic Signals & Signs	New Signals & Signs (Program)	Provides for installation of new traffic signals, signs, pavement markings and related traffic control hardware, with an emphasis on new locations. Over a 20-year period, this program anticipates installing a mix of 10 new signals and/or flashing beacons every other year and 1,500 new signs per year.	Support the Vision Zero project to improve safety at crash or other problem locations. This project reduces vehicle delays, travel time and injuries by improved traffic control, often where STOP signs are inappropriate, i.e., due to traffic volumes, intersection configuration, and other such factors.	Enhance	On-going	$48,600,000	8.4%	x	x					x	
CN-SG05	Traffic Signals & Signs	Sfgo (Program)	This citywide intelligent transportation management system gathers and analyzes real-time information on current transit and auto traffic flow and congestion; responds to changes in roadway conditions; provides transit priority and emergency vehicle preemption; disseminates real-time traveler and parking information to the public; facilitates the management of special events; and enhances day-to-day parking and traffic operations. It will significantly improve obsolete and deteriorating traffic signal communications facilities, and will implement a number of Intelligent Transportation System (ITS) technologies.	The SFgo Program will replace obsolete and deteriorating traffic signal communications facilities and provide real-time information on current transit and auto traffic to improve transit flow and reliability.	Enhance	On-going	$75,000,000	13%	x	x						
CN-SG06	Traffic Signals & Signs	Transit Only Red Lane Replacement	This need covers the ongoing replacement and renewal costs of the SFMTA Transit Only Red Lanes. This assumes that 12 new miles of red lanes will be built every five years as well as a 20% contingency of cost escalation every five years.	Transit Only Red Lanes improve transit travel time and reliability for Muni riders. Timely replacement of these transit only red lanes ensures that they may serve their intended purpose.	Restore	On-going	$56,700,000	9.8%	x	x						x

TRANSIT FIXED GUIDEWAY

Plan, design, engineer and construct improvements to critical infrastructure including rail track, overhead wires and train control technology.

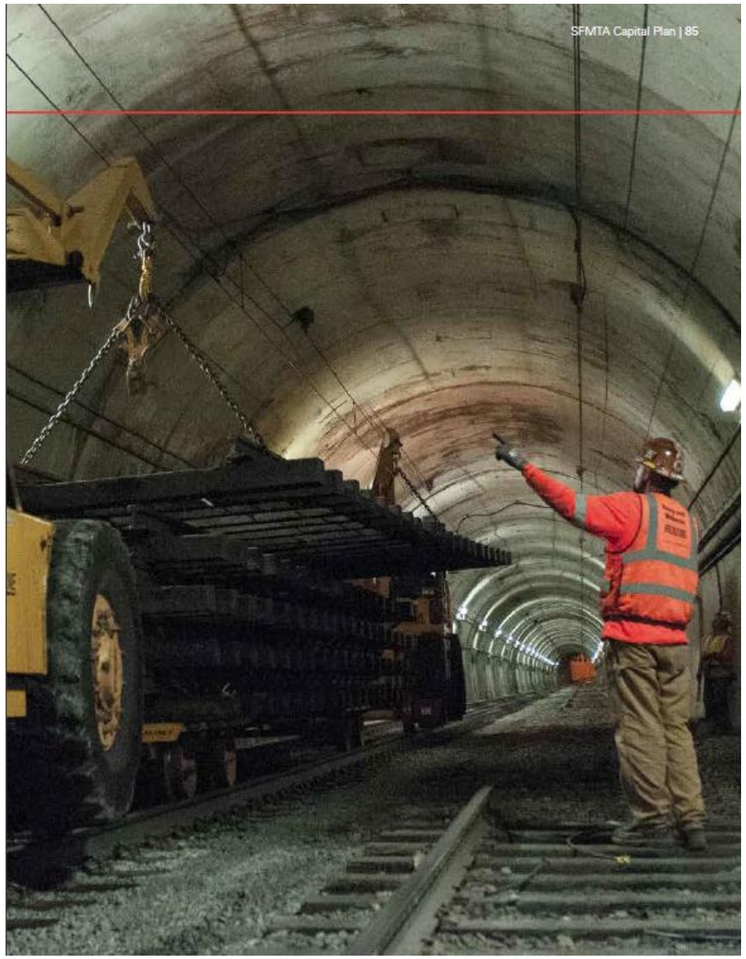
Muni's fixed guideway systems, which include light rail, trolley coach, streetcar, and historic cable car lines, are a crucial component of San Francisco's transportation infrastructure. With over 99 miles of track and approximately 206,950 daily customers, vehicles on fixed guideway routes carry nearly 30% of Muni's daily ridership.

Capital Needs in the Transit Fixed Guideway capital program help to maintain, replace, and enhance these services, including investing in new train control technology, replacing track, upgrading maintenance facilities, and maintaining Muni's 243 miles of overhead wires.

Key Fixed Guideway Capital Needs over the next twenty years include replacing worn track trolley wire and trolley poles on the K & M, and N lines, reconstructing substations, and replacing or rehabilitating Overhead and Traction Power and Cable Car System assets. These Capital Needs will help to make the Fixed Guideway system more reliable, safe and comfortable for the approximately 206,950 daily passengers who currently rely on fixed guideway routes.

10 CAPITAL NEEDS, **$1,310M** SCOPE

- Fixed Guideway Track Replacement
- Substation Reconstruction
- Automatic Train Control System Rehabilitation



CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-TF01	Transit Fixed Guideway	Automatic Train Control System State of Good Repair (Program)	Provides for the phased rehabilitation and replacement of the Automatic Train Control System (ATCS). The current system was implemented in 1999, and technology has changed significantly. The program will include improvements to the current infrastructure such as updating the main Vehicle Control Center (VCC) computer system, upgrading station controllers to support current and future technology, and updating the loop cable system to modern equipment that is less susceptible to cuts. This program would also include future improvements to technology that would improve service delivery and safety.	A proper functioning ATCS is vital to the day-to-day operations of the San Francisco transit system. Without the ATCS trains in the Muni Metro Tunnel would be required to operate manually which increases travel time and reduces overall capacity of the Muni Metro Tunnel and the overall Muni System. Muni Metro travel time reliability is directly reliant on a functional ATCS.	Restore	0-20 Years	$250,000,000	19.1%	x							x
CN-TF02	Transit Fixed Guideway	Cable Car Infrastructure State of Good Repair (Program)	Covers a wide variety of cable car infrastructure needs. Projects include: upgrades to the cable car barn; turntable rehabilitation at Powell and Market, Victoria Park, and Bay and Taylor; track switch replacement; safety upgrades; tangent track/slot replacement; depression beam replacement; crossover installation at Powell and Market; cable rewinder and holdback replacement; cable propulsion upgrade; and other projects as needed.	To replace track work, machinery, and communications equipment improve overall safety and increase the likelihood of attaining operational performance standards by providing updated and modern equipment which cable cars utilize.	Restore	0-20 Years	$210,000,000	16%	x				x			x
CN-TF04	Transit Fixed Guideway	Rail State of Good Repair (Program)	Provides for the phased design and replacement of the trackway and related systems serving the light rail lines. Projects under this program include rail replacement, rail grinding, switch machine replacement, special trackwork replacement, track fastener replacement, tunnel infrastructure repairs and replacement, train signal upgrades, other electrical and mechanical improvements, and other work required to maintain non-traction power rail infrastructure. This program includes construction projects and a proactive replace in kind program for smaller projects.	The primary focus of this program is to maintain the light rail and cable car trackways in a state of good repair by replacing components that have reached the end of their useful life.	Restore	0-20 Years	$125,525,000	9.6%	x				x			x
CN-TF06	Transit Fixed Guideway	Overhead and Traction Power System Rehabilitation (Program)	Provides for the rehabilitation, replacement, and improvement of all components of the existing Muni overhead catenary system (OCS) and traction power infrastructure to support electrically-powered trolley coaches, light rail vehicles, and historic streetcars. This includes overhead wires, support poles, switches, substations, feeders, related hardware, underground infrastructures, communications, power cables, and SCADA.	The primary focus of this program is to maintain the overhead system in a state of good repair by replacing components that have reached the end of their useful life.	Restore	0-20 Years	$53,975,000	4.1%	x							x
CN-TF07	Transit Fixed Guideway	N-Line Rail Replacement between Arguello/Carl and La Playa	This project is to replace 3.5 miles of worn tangent track, trolley wire and trolley poles for the N-Judah LRV line west of Arguello and Carl. Replace special trackwork including: Curved track located at Arguello/Carl, 9th/Irving, 9th/Judah, and La Playa/Judah; Single crossovers at 20th/Judah, 37th/Judah, 48th/Judah;Turn out track at 30th/Judah;Spur track at La Playa/Judah;Updating 26 boarding islands, street lighting, traffic signals, ADA improvements, water and sewer upgrades will also be encompassed by this project. This scope may change if other locations become a higher priority to be addressed instead of those listed here as informed by ongoing inspection and analysis.	The N-Line is an important part of the Muni transit network. The state of good repair of this railway ensures that trains may continue to run in a timely and efficient manner and provide maximum comfort for Muni customers.	Restore	5-10 years	$233,000,000	17.8%	x				x		x	x

CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-TF08	Transit Fixed Guideway	Substation Reconstruction	The substations of West Portal, Laguna Honda, Church, Civic Center, Carl, Bryant, Station J, Judah, Outer Mission, Taraval, and Downtown are close to or beyond their design lives.	This program will update the aging traction power substation to improve the reliability of the system which is important in maintaining Muni rail service in a state of good repair in order to continue to serve our customers. The substations are a critical component of our system as they provide the power to operate the Light Rail System.	Restore	0-10 Years	$154,000,000	11.8%								x
CN-TF09	Transit Fixed Guideway	K & M-Lines	One project is to replace approximately 1 mile of worn tangent track, trolley wire and trolley poles for the M-Line from Broad/Plymouth to San Jose/Ocean including curved tracks located at San Jose/Broad, San Jose/Farallones, San Jose/Mt. Vernon & Niagara; single crossovers at San Jose/Niagara and at Broad/Plymouth; turnouts at San Jose/Ocean(1), San Jose/Seneca(1), San Jose at Cameron Beach Yard (2); updating 4 low level boarding islands and 1 key stop; construct 1 new key stop; and new street lighting, traffic signals, ADA improvements, water and sewer upgrades. The other project is to replace about a half mile of worn tangent track, trolley wire and trolley poles on West Portal Ave from Ulloa to 15th Ave. Updating 2 boarding islands and street lighting, traffic signals, ADA improvements, water and sewer upgrades will also be encompassed by this project. This scope may change if other locations become a higher priority to be addressed instead of those listed here as informed by ongoing inspection and analysis.	The K- and M-Lines are an important part of the Muni transit network. The state of good repair of this railway ensures that trains may continue to run in a timely and efficient manner and provide maximum comfort for Muni customers.	Restore	10-15 Years	$144,103,727	11%	x				x		x	x
CN-TF10	Transit Fixed Guideway	Cameron Beach Reconstruction of trackwork including pull in and pull outs, and yard grading	This project is intended to raise the elevations of the Cameron Beach Yard, involving major structural, foundation and earthwork; replacing the north and south ladder tracks, tangents tracks, track switches, frogs and closure rails. Traction power and worn OCS trolley wires, poles, foundations, special work, various other OCS components at the Cameron Beach Rail Yard will also be replaced to accomodate the new yard elevations.	This work at the Cameron Beach yard is necessary to provide a more efficient path of travel for train accessing the the facility supporting Muni rail service in a state of good repair.	Restore	10-20 Years	$68,410,256	5.2%	x				x	x		x
CN-TF11	Transit Fixed Guideway	Automatic Train Control System VCC Backup	Design and installation of redundant VCC system for ATCS. VCC is currently the brain of the ATCS system and is located at West Portal on Lenox Avenue. Any major failure would cause significant service impacts in the subway. A second VCC located downtown at the TMC in hot standby mode would provide critical backup capability in the event a system failure at Lenox.	A proper functioning ATCS is vital to the day-to-day operations of the San Francisco transit system. Without the ATCS trains in the Muni Metro Tunnel would be required to operate manually which increases travel time and reduces overall capacity of the Muni Metro Tunnel and the overall Muni System. Muni Metro travel time reliability is directly reliant on a functional ATCS.	Enhance	5-10 Years	$44,000,000	3.4%	x							
CN-TF12	Transit Fixed Guideway	Automatic Train Control System Wiring Replacement	Replacement of critical ATCS wiring components. This work includes replacement of ATCS VCC to SCS, axle counter wiring, and intrusion wiring.	A proper functioning ATCS (Automatic Train Control System) is vital to the day-to-day operations of the San Francisco transit system. It is the system that controls train movements within the subway and allows the trains to operate at opitmal and safe headways. Without the ATCS trains in the Muni Metro Tunnel would be required to operate manually which increases travel time and reduces overall capacity of the Muni Metro Tunnel and the overall Muni System. Muni Metro travel time reliability is directly reliant on a functional ATCS.	Restore	5-10 Years	$27,000,000	2.1%	x							x

TRANSIT OPTIMIZATION & EXPANSION

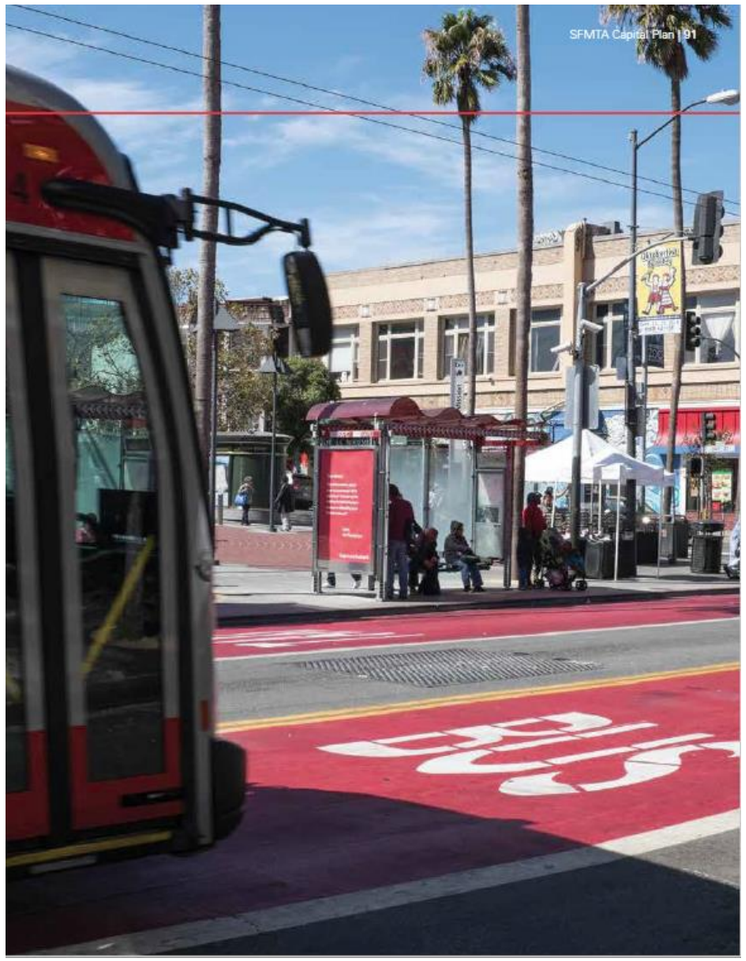
Plan, design, engineer and construct capital projects to optimize and expand Muni service for greater connectivity.

The SFMTA is currently embarking on an ambitious plan to make Muni more efficient, reliable, safe, and comfortable for its existing 700,000 daily passengers – as well as to prepare the system for future growth. The Capital Needs listed here such as Muni Forward ensure the continued streamlining and expansion of transit resources so that the Agency may continue to provide excellent service to its customers. These Capital Needs also address making Muni Metro Stations more convenient for all users and prioritize transit through Transit Signal Priority and other programmatic enhancements as discussed in the Rail Capacity Strategy.

This Capital Program details the Bus Rapid Transit, Light Rail, and Subway Projects on Geary Blvd, Geneva and 19th Avenue, as well as to Fisherman's Wharf and Fort Mason. These projects will support San Francisco's Transit First policy as the city continues to grow. As the 2019 Capital Plan integrates the work of ConnectSF, this list of projects may increase or change slightly.

16 CAPITAL NEEDS, **$8,046M** SCOPE

- Faster Muni Service
- Transit First Streets
- Upgraded Stations & Transit Stops



CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-TO01	Transit Optimization & Expansion	Muni Subway Expansion Project	The proposed project would: 1) Construct new light-rail tunnel between West Portal and Parkmerced to improve the Muni Metro M-line's speed, reliability, and capacity; 2) Re-design 19th Avenue between Eucalyptus and Brotherhood with wider sidewalks, a bike path separated from traffic, and new trees and landscaping.	These improvements are anticipated to make Muni Metro a more reliable and attractive option for existing riders and attract new riders. These improvements are also are anticipated to make 19th Avenue feel safer and more comfortable for everyone who travels along this street, including people walking, cycling, driving, and riding transit.	Expand	10-20 years	$3,000,000,000	37.3%	x	x				x		x
CN-TO03	Transit Optimization & Expansion	Better Market Street	Includes planning, conceptual engineering, environmental review, public outreach and construction of the Better Market Street Project. Concepts will be developed and evaluated for urban design of sidewalks and boarding islands, transit facilities and operations, pedestrian facilities (e.g., crosswalks), new traffic signals, and bicycle facilities. The study area is roughly bounded by blocks just north of Market St., Mission St., Octavia Blvd. and Steuart St. $256 Million has already been allocated for this project in the FY17-21 CIP. The total estimated cost of this project is $406 Million.	This project will improve the quality of the public realm and optimize sustainable mobility modes (transit, walking and cycling), so that they are pleasant, reliable, efficient and comfortable for all users.	Enhance	Construction compleded by end of 2023	$150,000,000	1.9%	x	x		x			x	
CN-TO04	Transit Optimization & Expansion	Historic Street Car Expansion	Consists of two separate projects. One project creates a northern terminal that consists of an independent E-Line track loop & terminal that allows for operational independence of the F-Line, including layovers, from E-Line service. The second project extends the current terminal west from Fisherman's Wharf to the Fort Mason Center through an abandoned railroad tunnel underneath Fort Mason. The E-Line would likely operate along this extension. The F-Line extension would cost approximately $80M, and the E-Line track loop would cost approximately $10M.	E-Line service is a component of the planned TEP service improvements and will serve the projected growth in trips along the waterfront area. A northern terminal is needed to provide the operational flexibility required for overlapping E-Line and F-Line services. A Fort Mason terminal provides access to Fort Mason and areas to the west, which have limited transit access options.	Expand	5-10 Years	$90,000,000	1.1%	x							
CN-TO05	Transit Optimization & Expansion	Geary Boulevard Improvement Project	Geary Boulevard Improvement Project's goals are to: 1) Improve bus travel times and on-time performance, 2) Improve safety and access for all users, and 3) Enhance neighborhood livability and community vitality. This project improves transit by providing buses with their own lane, physically separated by traffic. This reduces conflicts with vehicles that cause delays. Other improvements include transit-optimized traffic signals, increased bus frequencies, and high-quality station platforms. The Locally Preferred Alternative is projected to have a 24% travel time savings, 20% reliability improvement, and a nearly 20% ridership increase where the BRT treatments are applied. BRT provides these improvements in a cost-effective manner, allowing them to be phased over time. The project also includes pedestrian safety and streetscape enhancements in neighborhoods and commercial districts along the corridor.	This project would increase pedestrian safety, service reliability, person capacity, passenger comfort and attractiveness and reduce travel time along the corridor.	Expand	Phase 2: CER & DD completed by 2019/2020, followed by construction	$240,000,000	3%	x	x		x				
CN-TO06	Transit Optimization & Expansion	Geary Light Rail Transit	Constructs a surface-subway, light rail transit (LRT) line to replace the 38 Geary bus lines. Geary is in the county's Four Corridors plan and is the next priority for major investment after the Central Subway. This is a long-term proposal with Geary Bus Rapid Transit Service providing near-term improvements until funding for the LRT can be identified.	This project will provide a higher capacity service along the corridor, providing passengers with improved speed, reliability and comfort.	Expand	10-20 years	$2,000,000,000	24.9%	x							

CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-TO07	Transit Optimization & Expansion	Geneva Avenue Light Rail Transit Extension	Entails extending light rail track 2.7 miles along Geneva Avenue from the Green Railyard to Bayshore Boulevard and then to the existing T-Third terminus at Sunnydale Station. Operations would occur at-grade with station locations to be determined.	This project would provide for the operational flexibility needed to meet long-term rail service needs.	Expand	10-20 years	$610,000,000	7.6%	x							
CN-TO08	Transit Optimization & Expansion	Geneva/Harney Avenue Bus Rapid Transit	The project will implement BRT service from Balboa Park BART to the Hunters Point Transit Center, including bus-only lanes and transit signal priority along Geneva Avenue in the Cities of San Francisco and Daly City, Harney Way and Crisp Road. This BRT service may be operated partly as an extension of the 28 Rapid service, which would provide a one-seat connection between major SE San Francisco residential and employment development areas, the two largest college campuses in San Francisco, and regional retail centers. A second route would be added as demand warrants to provide more frequent service between City College, Balboa Park BART and the Hunters Point Transit Center. The Geneva Harney BRT project will link existing neighborhoods and planned developments, including the Candlestick Point/Hunters Point Shipyard project to the Bayshore Caltrain Station, Balboa Park BART, and the Muni Metro T-Third line. Enhancements to improve bicycle and pedestrian safety and accessibility will be made throughout the BRT Corridor. $30 Million has already been allocated for this project in the FY17-21 CIP. The total estimated cost of this project is $102 Million.	This project will provide new and expanded transit capacity to accommodate new development growth areas, reduce transit travel time and improve transit reliability. The project will provide service on a corridor that connects regional transit services, Priority Development Areas, and the Candlestick Point/Hunters Point Shipyard Development.	Expand	0-5 years	$72,000,000	0.9%	x	x		x			x	
CN-TO09	Transit Optimization & Expansion	Muni Forward Capital Projects	Muni Forward aims to make getting around San Francisco safer and more reliable by creating a Rapid Network, improving reliability, using state-of-the-art technology to make the system run better, and enhancing safety and access to stops and stations. Muni Forward transit priority projects on the Rapid Network may include adding bus or pedestrian bulbs, transit-only lanes, transit signal priority, and other street design changes to reduce delay for transit and enhance pedestrian safety. The first phase of Muni Forward is already underway, with a 10% service increase in place and over 40 miles of transit priority improvements on the way. During the next phase of Muni Forward transit priority projects, priority will be given to lines 1, 5, 7R, 8, 22, K, and M, then to lines that have high existing or projected ridership, such as the 24, 29, 43, and 44.	The improvements result in greater transit travel time reliability and on-time performance. Improved reliability and on-time performance should also result in decreased operational resource needs.	Enhance	0-10 Years	$200,000,000	2.5%	x	x		x	x		x	
CN-TO12	Transit Optimization & Expansion	Rail Capacity Strategy: Programmatic Enhancements	The Rail Capacity Technical Panel conducted a line-by-line review of current operational pain points and impediments. While major enhancements were identified along every line, a reasonable delivery timeline for these enhancements given their cost and benefits relative to the prioritized mid- and long-term concepts is beyond the horizon of the Rail Capacity study. However, less significant improvements were identified that would be implemented at a programmatic level as part of regular rail replacement or enhancement projects.	The current Muni light rail system was not designed with consideration for flexible service operations or adjustments to service disruptions. The Rail Capacity Strategy Programmatic Enhancements will leverage State of Good Repair investments to provide a necessary increase in the flexibility of both service design and adjustments, and allow for more efficient delivery of service.	Enhance	0-5 Years	$67,000,000	0.8%	x				x			x

CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-TO13	Transit Optimization & Expansion	Bayshore Mulitmodal Facility	The project would construct support facilities to improve transfers near the Caltrain Bayshore Station among Caltrain, the T-Third line, the future Geneva Harney BRT, Muni 8 Bayshore and 9 San Bruno lines, Samtrans bus service, and employee/community shuttle buses and vans. This project would also improve pedestrian/bicycle access to and passenger loading near the Caltrain Bayshore Station. Facilities would include: shuttle/auto passenger loading space and shelters, bicycle parking, bicycle sharing facility, street furniture, landscaping, a plaza, wayfinding signs, information displays and possibly a bicycle/pedestrian path. In the initial stage, the facility would be sited near the Sunnydale Avenue extension east of Bayshore Boulevard being constructed by the Schlage Lock development project. In a potential second phase, this facility could be expanded or even partially relocated to a nearby location to improve Caltrain connections with BRT and T-Third service. In this later phase, vertical and horizontal circulation improvements, ticket/information facilities, and an enclosed waiting area could be added.	This project improves connectivity and enhances transit travel options for residents and employees of southeast San Francisco, supporting major planned transit-oriented development and affordable housing. It would address current limited connections among Caltrain, the T-Third light rail line, and Muni bus lines. It would also support efforts to increase Caltrain service at this station, which will increasingly serve as a major regional transit connection with planned growth and Caltrain electrification.	Expand	5-10 Years	$20,000,000	0.3%	x						x	
CN-TO14	Transit Optimization & Expansion	T Third Phase 3 to Fisherman's Wharf	Provides for the study and extension of the T-Third rail line approximately 1 mile north, from the planned Central Subway terminal at Stockton/Clay through North Beach and into Fisherman's Wharf. This project will provide a higher capacity service along the corridor, introducing improved speed, reliability and comfort. Cost estimate ranges from $643M - $2.6B. Future studies might include the Lombard Corridor.	Extension would connect Fisherman's Wharf and North Beach, a regional trip generator and one of the most dense neighborhoods in San Francisco, with efficient and reliable rapid transit service.	Expand	10-20 Years	$1,500,000,000	18.6%	x							
CN-TO15	Transit Optimization & Expansion	Accessible Light Rail Stops (Program)	Design and construct 20 new accessible light rail stops at 10 locations that have been identified in the Accessible Key Stop Feasibility Study (M679.0), then continue with other feasible, high-priority locations as they are identified. The program will also replace the wayside lift at San Jose & Geneva with a ramp and platform.	This project will improve passenger access to light rail transit, particularly for people with mobility impairments.	Enhance	10-20 Years	$28,600,000	0.4%		x					x	
CN-TO16	Transit Optimization & Expansion	Accessible Stop Spot Improvement Program	Implement small light rail and bus and stop improvements to improve accessibility for persons with disabilities. Improvements could include: repair/replacement of damaged railings, signage and attenuators at Key Stops; installation of NextMuni/Push-to-Talk at transit shelters; improving crosswalks, and installing or upgrading curb ramps adjacent to transit stops.	This project will improve passengers' access, wayfinding, and safety to transit stops, particularly for people with mobility impairments.	Enhance	10-20 Years	$2,000,000	0.02%		x					x	
CN-TO17	Transit Optimization & Expansion	Transit Stop Boarding Islands and Features (Program)	This includes the costs of installing activated beacons, leaning bars, and NextMuni signs at 80 mini-high platforms as they are reconstructed towards the end of their useful life.	Provide a safe and accessible transit system by keeping assets in a state of good repair. Enhance the customer experience.	Enhance	10-20 Years	$500,000	0.01%		x					x	
CN-TO18	Transit Optimization & Expansion	Muni Metro Station Enhancements	Improve Muni customer and employee experience by providing better travel information, wayfinding, cleaner stations and safety improvements at the seven Muni Metro underground stations. Scope includes lighting upgrades, new signage, state of good repair upgrades, accessibility improvements, and enhancements to station agent booths.	This project will enhance the customer experience and address critical capital maintenance needs for stations.	Enhance	0-5 Years	$37,000,000	0.5%	x	x					x	x

CN #	Capital Program	Name	Description	Justification	Investment Type	Implementation Timeline	Total Capital Need (2017 dollars)	Percent of Total Capital Program	System Improvement	Safety	Security	Environmental Sustainability	Financial Sustainability	Workplace Quality	System Access	State of Good Repair
CN-TO19	Transit Optimization & Expansion	Transit Signal Priority	Purchase and deploy Transit Signal Priority (TSP) devices and communications equipment for intersections on the Muni Bus and Rail network. The project includes capital equipment and associated costs, including: vehicle detection loops, conduit, cabinets, controllers and electrical wiring (rail); cabinets, controllers, wireless communication and associated hardware (bus).	Transit signal priority has proven to improve travel time and service reliability for Muni riders.	Enhance	0-10 Years	$29,000,000	0.4%	x				x			

APPENDIX: COST ESTIMATE SCOPES

The Capital Plan covers the Agency's Capital Needs over the next 20 years based on what we currently know and can reasonably predict. We are providing additional information in the following appendix to show how the cost estimates were arrived at for some of the Capital Needs presented in the Capital Plan. Due to the nature of many of the Capital Needs, it is not possible to do this with all of the needs presented in this document.

Appendix A: Capital Need Cost Estimate Scopes

Fleet Capital Need Cost Estimate Scopes

- **Light Rail Vehicle Fleet Expansion (CN-FT01) $467,000,000** Estimated project cash flow for FY2019-2028 plus $21M for Warriors cars plus $280M for 45 car expansion.
- **Rail and Bus Training Simulators (CN-FT02) $5,000,000** Estimate based on current price of simulators ($2-2.5M apiece).
- **Historic Vehicle Rehabilitation (CN-FT04) $113,000,000** $2.5M per vehicle in 2017 dollars for the full fleet one time during the capital plan cycle.
- **Light Rail Vehicle Midlife Overhauls (CN-FT05) $484,000,000** Estimate based on delivery schedule of Siemens LRVs at $2M per car in 2017 dollars.
- **Replace On-Board Fare Collection Equipment (CN-FT07) $25,000,000** Capital cost of current contract ($20.4M) plus 10% contingency and sales tax inflated with no escalation.
- **Light Rail Vehicle Heavy Repair Overhaul (CN-FT16) $535,000,000** Estimated Based on delivery schedule of Siemens LRVs and overhaul of 1/4 of Breda fleet at $750,000 per car in 2017 dollars.

Parking Capital Need Cost Estimate Scopes

Implement Parking Vehicle Detection Technology (CN-PK02)

Procurement date	Sensor unit cost	Number of sensors	Cost
2018	$300	30000	$9,000,000
2026	$250	40000	$10,000,000
2034	$200	50000	$10,000,000
Total			$29,000,000

Parking Meters State of Good Repair (CN-PK04)

Procurement year	Unit Price 2020	Unit Price 2028	Unit Price 2036
Single Space Mechanisms	$ 515	$ 515	$ 515
Housing	$ -	$ 200	$ -
Lock	$ 175	$ 175	$ 175
Paystations	$ 9,000	$ 9,000	$ 9,000
Total SS	$ 690	$ 890	$ 690
Total MS	$ 9,000	$ 9,000	$ 9,000
Subtotal	$ 25,200,000	$ 41,000,000	$ 40,800,000
Contingency 10%	$ 2,520,000	$ 4,100,000	$ 4,080,000
Sales tax	$ 2,356,200	$ 3,833,500	$ 3,814,800
Total cost	$ 30,076,200	$ 48,933,500	$ 48,694,800
Total cost over 20-year capital plan			$ 127,704,500

Procurement Year	2020	2028	2036
Meters procured	30,000	40,000	50,000
Paystations procured	500	600	700

Streets Capital Need Cost Estimate Scopes

Bicycle Parking (CN-ST01)

Facility Type	Units	Cost/unit	Cost
Bike Stations	7	$1,000,000	$7,000,000
Bike Lockers	160	$12,063	$1,930,096
Bike Racks	20,000	$1,000	$20,000,000
Subtotal			$28,930,096
10% contingency			$2,893,010
Grand Total			**$31,823,106**

Protected Bike Lane Network (CN-ST02)
$3.25M per mile based on recent 7th St and 8th St protected lanes. Includes:
• 4 transit boarding islands per mile @ $100k each
• 6 signal modifications per mile @ $250k each
• Signing and striping $600k per mile
• 25 concrete barriers, islands, and pedestrian refuges per mile @ $30k each
• Estimated 180 miles of protected bike lanes
Total cost: $585M

Neighborway Network (CN-ST03)
$1.275M per mile based on Wiggle Green Corridor cost estimates. Includes:
• 2 new traffic signals per mile @ $400k each
• 4 concrete islands, diverters, and/or traffic circles per mile @ $30k each
• 8 speed humps per mile @ $10k each
• 4 curb extensions per mile @ $50k each
• Signing and striping $75k per mile
• Estimated 135 miles of neighborways
Total cost: $172M

Bicycle State of Good Repair Network (CN-ST05)
$6.85M per year
• 300,000 sq ft of epoxy green paint per year at $6 per square foot (assumes useful life of 5 years)
• 50,000 sq ft of thermoplastic green paint per year at $16 per square foot (assumes useful life of 5 years)
• 400k linear feet of thermoplastic striping per year at $3 per linear foot (assumes useful life of 5 years)
• $3M per year for routine upgrades and spot improvements to maintain facilities consistent with evolving industry best practices.
• Counter maintenance $50k per year
Total cost: $137M

Citywide Pedestrian Core Projects (CN-ST06) $561,500,000
WalkFirst 2013 estimated $240 to meet 50% of injuries + fatalities, doubled to meet 100%, escalated 2013 number to 2017 at 4% annually.

Citywide Pedestrian Full Build Out (CN-ST07) $909,800,000
WalkFirst Streetscape Prioritization 2014, escalated to 2017 $ at 4% annually.

Traffic Calming - School Streets (CN-ST08) $2,900,000
Cost estimate assumes $15K/school and that 2/3 of SF's 282 schools receive traffic calming treatments.

Traffic Calming - Application Based Local Streets (CN-ST10) $28,000,000
Cost estimate assumes 50 projects per year at cost of $28K per project.

Traffic Calming - Proactive Local Streets (CN-ST11) $28,000,000
Cost estimate assumes 50 projects per year at cost of $28K per project.

Taxi Capital Need Cost Estimate Scopes

Bicycle Racks for Taxis (CN-TA02) $300,000
As part of integrating Bike awareness within the SFMTA. An estimate of 10% of taxis will be given bike racks. This capital expenditure represents the cost of the turnover of vehicles during the project timelime encompassing approx 1000 bike racks.

Implement Taxi Driver Rest Stops (CN-TA03) $10,000,000
This involves acquisition of space and construction of facilities. Construction estimates of 500k-1 M per facility, and market based land acquisition of 500k-2M.

Increase Taxi Stands (CN-TA04) $200,000
Spaces range from 5-15k depending on the number of spaces needed for the additional cab stand.

Taxi Toplight Improvement (CN-TA08) $2,400,000
Merged with CN15-TX05.approx cost of 1.2k/unit for 2,000 cabs.

Traffic Signals Capital Need Cost Estimate Scopes

Automated Photo Traffic Enforcement (CN-SG01) $7,000,000
Excludes transit lane or parking enforcement. Estimated $5 Million for red light and turn enforcement programs enhance and expansion. $2 M is a placeholder for potential expansion into other traffic enforcement areas not yet approved, like speed enforcement or do not block box enforcement.

Signals and Sign Infrastructure State of Good Repair (CN-SG02)

Type of Signal Work	Cost
PCS Contract (full)	$45,000,000
Signal Mod Contract	$60,000,000
Corridor Contract (full)	$90,000,000
State of Good Repair Contract (full)	$67,500,000
Install Conduits & Poles (Follow the Paving)	$40,000,000
Graffitti Program	$4,500,000
12” Signal Visibility Upgrades (Signal Shop)	$8,400,000
Sensys (Signal Shop)	$4,800,000
BBS (Signal Shop)	$30,000,000
APS (Signal Shop)	$6,000,000
All-way Plates (Sign Shop)	$200,000
Raised Pavement Markers (Paint Shop)	$7,200,000
Total Cost over 20-year Capital Plan	**$363,600,000**

New Signals and Signs (CN-SG04)

Type of Signal Work Cost New Signals & Beacons $45,000,000 **New Signs** $3,600,000 **Total $48,600,000**

SFGO (CN-SG05)
Total Infrastructure $43,980,000 Total Material $31,000,000 **Total Program’s Needs $74,980,000** Approx. per year over 20 years $3,749,000

Transit Only Red Lane Replacement (CN-SG06)
5 year repaint cycle

Years	#Years	Miles	Maintenance Cost 2017-2021 in millions	Maintenance Cost 2022-2026 in millions	Maintenance Cost 2027-2031 in millions	Maintenance Cost 2032-2036 in millions	TOTAL
2017-2021	5	9	$3.2	$3.84	$4.61	$5.53	$17.2
2022-2026	5	12	*initial paint in 17-21*	$5.12	$6.14	$7.37	$18.6
2027-2031	5	12		*initial paint in 22-26*	$6.14	$7.37	$13.5
2032-2036	5	12			*initial paint in 27-31*	$7.37	$7.4
TOTAL	20	45	$3.2	$9.0	$16.9	$27.6	**$56.7**

Assume 20% contingency 5 year to 5 year

Transit Optimization and Expansion Capital Need Cost Estimate Scopes

Muni Forward Capital Projects (CN-TO09)
Includes 47 miles of Muni Forward Projects on the following lines, Transit Priority Projects:
• 1 - Downtown & Outer
• 5 - 6th Ave to 25th Ave (Mid Route)
• 7 - Outer • 22 - Fillmore Street
• K - Ocean Ave
• K/M - West Portal Ave
• M - Oceanview
• 24 - Divisadero
• 29 - Sunset
• 43 - Masonic
• 44 - O'Shaughnessy
Total cost: $200M

Appendix B: Changes in Capital Needs from 2015-2017

Overall, inflationary growth has raised the scope of many capital needs, and as parts of certain capital needs have been funded or are deemed to be no longer necessary, these capital needs have been reduced. Significant changes in the SFMTA's Capital Needs from 2015 to 2017 are detailed here and broken down by Capital Program.

Communications/IT:
• The Next Generation Customer Information System Capital Need (CN-CI06) as well as CN-CI07 through CN-CI13 were added to the Communications & IT Infrastructure Capital Program.

Facilities:
• The 2017 Facilities Framework has been incorporated into this Capital Program.
• The following 2015 Facilities Capital Needs have been funded, are accounted for elsewhere, or are no longer needed such as:
    • Beach Track Rebuild (CN15-FA01)
    • Burke Facility Reconfiguration (CN15-FA02)
    • Cable Car Museum Renovation (CN15-FA04) (now part of CN-FC11)
    • Electronic L.E.D. Signage System –Expansion To NextMuni Program (CN15-FA05)
    • Implement Fall Protection Improvements at Multiple Facilities (CN15-FA07)
    • Install New Operator Convenience Stations (Program) (CN15-FA09)
    • Marin Site – New Use Project (CN15-FA14)
    • Muni Metro East – Build Paint and Body Shop for the Entire Muni Fleet (CN15-FA16) (now part of CN-FC15)
    • Muni Metro East – Historic Streetcar Canopy (CN15-FA17)
    • Muni Metro Station Wayfinding Project (CN15-FA18)
• The Development of a New Motorcoach (CN-FC35) and Paratransit (CN-FC34) Facility has been added.

• Elevator and Escalator Capital Needs (CN-FC31 through CN-FC33), captured in the Accessibility Capital Program in 2015, have been added to the Facilities Capital Program.
• SFMTA Facilities Renewal Campaign has been split between Ongoing (CN-FC12) and Backlog (CN- FC36)
• 1 South Van Ness (SFMTA Headquarters) (CN-FC37) has been added to the Facilities Capital Pro- gram.

Fleet:
• The Capital Needs to expand and overhaul the Light Rail Vehicle Fleet (CN-FT01, CN-FT05, and CN- FT16) have increased in scope.
• Replacement of Other On-Board Equipment (CN-FT17) has been added to the Fleet Capital Pro- gram.
Parking:
• The 2015 Electric Vehicle Charging Infrastructure Capital Need (CN15-PA01) has not been included in the 2017 Parking Capital Program.
• Staff analysis led to a reduction in the Parking Facilities State of Good Repair Program (CN-PK03).
Security:
• CN-SC05 through CN-SC09 have been added to the 2015 Capital Plan.
• The Threat and Vulnerability Assessment Implementation Capital Need (CN-SC01) has expanded in scope.

Streets:
• The 2015 Bicycle Safety Education (CN15-BI02) and Bike Sharing Program (CN15-BI03) Capital Needs are outside of the defined scope of the 2017 Capital Plan.
• The 2015 Citywide Bicycle Strategy Capital Need has been divided into the Protected Bike Lane (CN-ST02) and Neighborway (CN-ST03) Network Capital Needs.
• The Citywide Pedestrian Core Projects (CN-ST06) and Full Build-Out (CN-ST07) Capital Needs have expanded in scope.
• The Traffic Calming Program Capital Needs (CN-ST08, CN-ST10, and CN-ST11) have decreased in scope.

Taxi:
• The Accessible Taxi Rebate Program (CN-TA01), Increase Taxi Stands (CN-TA04) and Taxi Management System (CN-TA07) Capital Needs decreased in scope.
• The Taxi Cab Pooling Pilot (CN15-TX05) 2015 Capital Need was merged with the Taxi Toplight Improvement (CN=TA08) Capital Need.

Traffic Signals:
• Staff analysis led to a reduction in the Signal and Sign Infrastructure State of Good Repair Program (CN-SG02).
• The Transit Only Red Lane Replacement Capital Need (CN-SG06) was added to the Traffic Signals Capital Program.

Transit Fixed Guideway:
• Staff analysis led to a reduction in the Overhead and Traction Power System Rehabilitation Program (CN-TF06) as well as the Automatic Train Control System (CN-TF01), Cable Car Infrastructure (CN- TF02), and Rail State of Good Repair Programs (CN-TF04).
• Capital Needs CN-TF07 through CN-TF12 were added to the 2017 Capital Plan. Most of these needs were part of the Capital Needs listed above in 2015.
• The Subway Tunnels Structures State of Good Repair Program (CN15-FG03) is not individually listed in the 2017 Capital Plan.

Transit Optimization & Expansion:
• The following Transit Optimization & Expansion Capital Needs have been funded, are accounted for elsewhere, or are no longer needed such as:
    • Arena Transit Capacity Improvements (CN15-TE02)
    • Rail Capacity Strategy: Long-Term (CN15-TE10)
    • Rail Capacity Strategy: Near-Term (CN15-TE11)
• The Muni Subway Expansion Project Capital Need (CN-TO01) expanded in scope.
• Better Market Street (CN-TO03), Geary Boulevard Improvement Project (CN-TO05), and Muni For- ward Capital Projects (CN-TO09) have been partially funded.
• CN-TO15, CN-TO16, and CN-TO17 are Accessibility Capital Needs that have been added to the Tran- sit Optimization & Expansion Capital Program.
• Muni Metro Station Enhancements (CN-TO18) and Transit Signal Priority (CN-TO19) Capital Needs have been added to the Transit Optimization & Expansion Capital Program.

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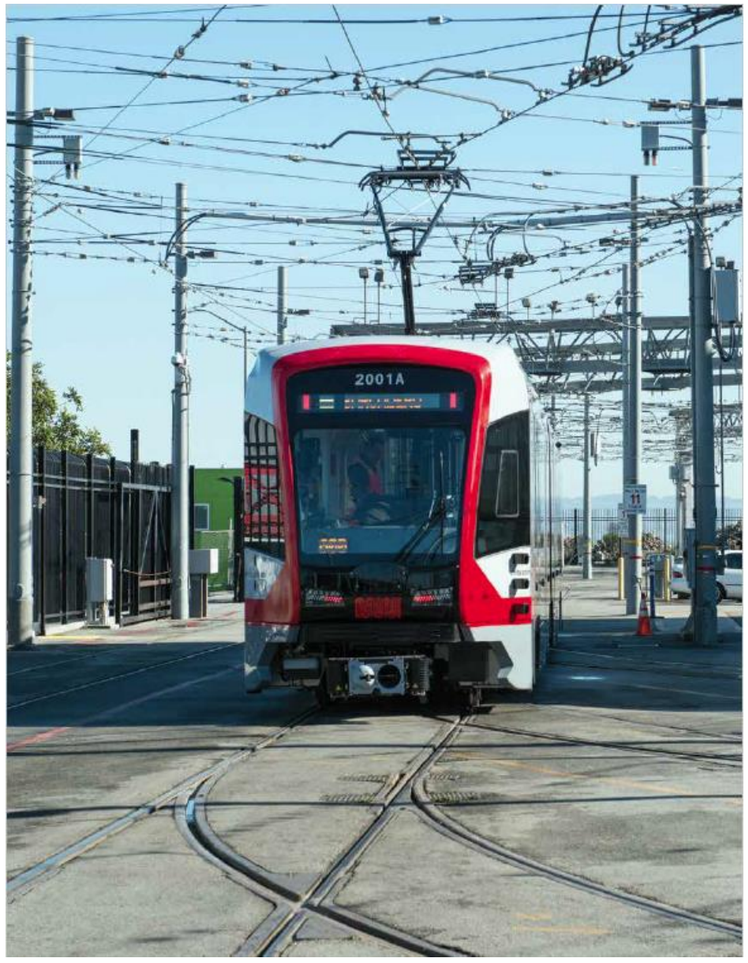
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