2019 State of Good Repair Report

San Francisco Municipal Transportation Agency

Table of Contents

List of Figures

Executive Summary

The San Francisco Municipal Transportation Agency's (SFMTA) 2019 State of Good Repair Report provides an overview of the Agency's rehabilitation and replacement needs and investments. It also outlines the Agency's project prioritization, planning, and delivery practices related to maintaining a State of Good Repair and institutionalizing the practice of asset management.

This is the seventh comprehensive annual State of Good Repair Report published by the SFMTA. The Agency is committed to issuing this Report annually as a matter of best practices shared by transit agencies across the region, country and world. The Report aims to track the progress of State of Good Repair investments and asset management practices compared to previous reporting periods. This document builds on previous State of Good Repair Reports and contains financial data and condition scores from the past few years.

The SFMTA owns and maintains an estimated $14.9 billion of capital assets in FY2018-19; including motor coaches, trolley buses, light rail vehicles, historic streetcars, cable cars, maintenance and administrative facilities, parking garages, active transportation infrastructure, and street signs and paint. With an annual budget of $1.3 billion, the SFMTA needs to balance the needs of the transportation system between expanding capacity and reinvesting in existing assets. Achieving a State of Good Repair requires an understanding of the desired performance of an asset and timely investment to maximize that performance over its useful life.

The SFMTA has committed to investing an average of $250 million annually in State of Good Repair. This is a commitment made to the Federal Transit Agency (FTA) in 2010. In FY2018-19, the SFMTA spent $394 million on State of Good Repair investments that maintain or renew the Agency's assets. This brought the Agency's annual average investment since FY 2010 to $235 million per year continuing progress towards Agency's $250 million minimum goal and commitment to the FTA. Pursuant to Agency policy, these funds are directed first towards "Transit Service Critical" investments.

This Report also provides data on the condition of the SFMTA's capital assets based on an FTA standard. The FTA's Transit Economic Requirements Model Lite ("TERM Lite") calculates a condition score on a scale of 1 (poor) to 5 (excellent). The TERM Lite condition scores for FY2018-19 assets averaged 3.18. A score of at least 2.5 is required for the FTA to recognize a transportation system as being in a State of Good Repair. This score represents a decline of 0.01 from the reported value of 3.19 in the 2018 State of Good Repair Report. The model calculated these scores based only on the age of the assets reported, excluding other factors such as specific operating conditions and level of use that impact the assets' condition. In the future, the Agency plans to do a condition assessment of all its assets to produce a TERM Lite score that more accurately reflects the true conditions of its assets.

I. Introduction

Agency Overview

We operate today's transportation system and work with our partners to plan the transportation system of tomorrow.

Who We Are

San Francisco voters established the San Francisco Municipal Railway (Muni) in 1912, creating the nation's first publicly owned transit system. In 1999, voters created the San Francisco Municipal Transportation Agency (SFMTA) by passing Proposition E, which merged Muni with the Department of Parking and Traffic to form an integrated Agency to manage city streets more effectively and advance the city's Transit First policy. In 2009, the SFMTA merged with the Taxi Commission to further streamline transportation management in San Francisco. A department of the City and County of San Francisco, the SFMTA currently manages all ground transportation in the city.

A Board of Directors governs the Agency, providing policy oversight and ensuring the public interest is represented. The Board's duties include approving the Agency's budget and contracts and authorizing proposed changes to fares, fees and fines. Its seven members are appointed by the Mayor and confirmed by the Board of Supervisors.

What We Do

The SFMTA plans, designs, builds, operates, regulates and maintains one of the most comprehensive transportation networks in the world. Directly managing five types of public transit in San Francisco (motor coach, trolley coach, light rail, historic streetcar and cable car), the Agency has kept people moving with Muni, the nation's eighth largest public transit system. The Agency also manages on- and off-street public parking, facilitates bicycling and walking, regulates taxis, and manages paratransit services for those unable to use fixed-route services.

Guided by its Strategic Plan, the Agency strives to deliver on priorities defined by the four goals of Safety, Travel Choices, Livability, and Service. The city's streets are made safer as the Agency implements a Vision Zero initiative with a goal of eliminating traffic deaths. The Agency moves "Muni Forward" with new trains and buses, and improvements to its Transportation Control Center to ensure consistent delivery of its scheduled service hours. The SFMTA's Bike Program is considered one of the best in the world; and advancing electric vehicle use, ongoing conservation efforts, and implementation of sustainable transportation and land use polices help improve the quality of life and environment in San Francisco. The Agency provides an outstanding workplace for staff who in turn strive to provide outstanding service to the community.

Vision: Excellent transportation choices for San Francisco.

Mission: We connect San Francisco through a safe, equitable, and sustainable transportation system.

Asset Management Unit

The SFMTA's Transportation Asset Management Unit advances the SFMTA's efforts to continuously improve the way the Agency procures, operates, maintains, rehabilitates and replaces transportation assets, including fleet and infrastructure, to create a culture of data-driven decision-making and analysis that is timely, accurate, and actionable.

The Asset Management Unit manages the program to define, build and lead the support, policies, processes, documentation, and tools to optimize the performance and cost effectiveness of San Francisco's transportation infrastructure. This team prepares required plans and documents including the Transit Asset Management Plan (TAM), City and County of San Francisco 10-Year Capital Plan, SFMTA State of Good Repair Report and supports the development of the SFMTA 20-Year Capital Plan; oversees the development and administration of the SFMTA's capital asset inventory; manages the implementation of the SFMTA 10-Year Asset Management Strategy; leads the planning, design and implementation of condition assessments in partnership with SFMTA divisions and sections; and analyzes the impacts of and makes recommendations for investments to improve the transportation system.

2009: 1st SFMTA Asset Inventory Created

2012: 1st State of Good Repair Report Issued

2018: Asset Management Plan and Strategy Adopted

2019: Asset Management Unit Fully Staffed

State of Good Repair Policies

The SFMTA has specific policies related to the State of Good Repair of the transportation system. These policies are integrated into the Agency's Capital Plan and Program Policies.

In 2019, the SFMTA solidified its Asset Management Unit to advance the long-term 10-Year Asset Management Strategy developed in 2018. The goal is to realize the full value of managing the Agency's assets regarding centralized asset inventory development, resource management, and target setting.

The Agency's development and documentation of new State of Good Repair Policies is a key element in laying the foundation for a successful Asset Management Program. These policies were integrated into the SFMTA's Capital Plan and Program Policies in 2018, tying asset management into the Agency's capital planning process, the development of the 5-Year Capital Improvement Program and 2-Year Capital Budget.

State of Good Repair Policies:

• State of Good Repair is when an asset's condition results in the operation of that asset at a full level of performance.

• The Asset Management Program shall set the framework for asset condition standards and reporting methods that classify the level of performance of Asset Classes within the Agency's Asset Hierarchy.

• Each Asset Class will have defined metrics for evaluating State of Good Repair based on condition, safety, reliability or other defined data metric.

• State of Good Repair metrics will be reviewed and approved by the Asset Management Steering Committee.

• Divisions, through their respective Subject Matter Experts, will regularly evaluate the State of Good Repair by identifying investment levels required in the appropriate Asset Classes in the Capital Improvement Program.

• The Asset Management Unit of the Finance and Information Technology Division shall prepare an annual State of Good Repair Report detailing capital investment impacts on SFMTA Asset Classes.

10-Year Asset Management Strategy

A complete performance model that includes asset life cycle management and capital planning for sustained success.

The 10-Year Asset Management Strategy (see Figure 1) is a blueprint and process that builds upon existing work that will result in lower costs, improved infrastructure management and greater efficiencies when fully implemented Agency-wide. The goal is more than a collection of data and reporting, but actively using this data in the prioritization of investment choices and the development of capital projects.

FIGURE 1: 10-YEAR ASSET MANAGEMENT STRATEGY

A circular diagram showing the six phases of the strategy: inventory, categorize, prioritize, assess, deliver, and update. An example of the inventory phase is creating a capital asset inventory; an example of the categorize phase is creating an asset hierarchy. These two phases enable consistent and accurate capital planning and recording. An example of the prioritize phase is creating the 5 year CIP, which addresses needs on capital budgets based on the criticality of the transportation system. Examples of the assess phase include condition assessments and asset validation, which determine and/or confirm the real condition of assets. As example of the deliver phase is the project delivery, which ensures that systems of record are updates as assets are capitalized and maintained. And example of the update phase is EAMS/systems, which improve data accuracy and overall integrity.

Each of the elements of the cycle above is defined as follows:

• Inventory – The complete, detailed listing of the Agency's asset portfolio, that incorporates age, useful life, value, maintenance activities, and other key elements to accurately track the status of each asset and the portfolio as a whole.

• Categorize – The manner in which the inventory is broken into distinct groups for the sake of sorting, management, and consistent reporting activities.

• Prioritize – Based on the state of elements in the inventory, the Agency will develop an order in which SFMTA's requirements and needs will be met.

• Assess – All elements of the inventory are both continuously and periodically assessed for their condition to determine the state of repair of each individual asset and the inventory as a whole; these are completed on a 1-5 scale (with 5 being the highest).

• Deliver – Based on the condition assessment and prioritization of the inventory, the Agency will perform various activities to improve the state of its assets; this will be accomplished via Capital Projects implementation, preventive maintenance and/or as-needed repair.

• Update – Following the delivery of improvement activities, the details of each asset will be updated to reflect key elements, including age, new useful life, value, and other relevant information to accurately track and manage the asset.

FY2019 marked the first year that the Agency operated with the 10-Year Asset Management Strategy in effect. During this period, the newly staffed Asset Management Unit worked to implement each step of the Strategy. The Unit reviewed the existing Capital Asset Inventory data with feedback from Capital

Program Managers; made steps to improve the Asset Hierarchy including presenting it to asset maintainers and program managers alike; drafted condition assessment projects for the FY2021-25 CIP; moved forward with the previously-planned condition assessment regarding Traffic Signals; and updated the CAI with data from major projects completed during the 2019 fiscal year.

The 10-Year Asset Management Strategy follows an annual cycle of continuous improvement that addresses processes, tools, and people related to Asset Management practice at SFMTA. The Asset Management Unit is dedicated to implementing the year-round strategy and aims to improve performance after each cycle.

FIGURE 2: A COMPLETE ASSET MANAGEMENT MODEL

A diagram of text boxes connected with arrows that depicts the complete asset management model.

Figure 2 represents the Institute of Asset Management's Conceptual Asset Management model. This model comprises a suite of six subject groups which represent processes, people, and tools that contribute to functional asset management practice within an organization. The focus of the 10 – Year Strategy is in the center of this model, highlighting actions to align Strategy & Planning, Lifecycle Delivery, Asset Knowledge, and Asset Decision Making. It's the responsibility of the Asset Management Unit to work with stakeholders to enhance these subject groups to implement a robust asset management program at SFMTA.

The advancement of the Strategy is measured by the Agency's Asset Management Maturity level. The asset management maturity level can be applied at difference scales across the Agency from the division down to the individual business unit and represents the level at which asset management practice is integrated into existing business processes. Asset management maturity advances at different rates depending on the state of existing processes, staff awareness, and capacities.

As the 10 Year Asset Management Strategy advances, the Agency overall moves up levels in Asset Management Maturity (see Figure 3). The goal is to reach level 5, a state of practice where asset information is so integrated into the organization's functions that it optimizes each asset to extract the most value over its entire lifecycle with minimal waste. Performance against the 10-Year Strategy can be measured by the maturity of asset management across the Agency. The Asset Management Unit will conduct bi-annual review of the Agency's asset management maturity and incorporate those results into future versions of the State of Good Repair report.

FIGURE 3: ASSET MANAGEMENT MATURITY SCALE

This line graph depicts the five levels of the performance model. The levels are measured as Asset Management Elements on the X axis and Asset Management Maturity Level on the Y axis.
Level 1: Policy and strategy. Level of service objectives. Business plan. "I know where I want to be."
Level 2: Asset Inventory. Condition Inspection. "I know what I have."
Level 3: Condition Assessment. Performance Assessment. Risk Analysis. "I know where I am against my objectives."
Level 4: Capital Planning. O & M Budgeting. "I use asset lifecycle information in my budgeting processes."
Level 5: Performance modeling. Lifecycle management. Planning and Models. "I know how to optimally manage across the lifecycle."

Transit Asset Management Plan

TAM Plans must include at a minimum an asset inventory, condition assessments of inventoried assets and a prioritized list of investments to improve the State of Good Repair of capital assets.

The 2018 Transit Asset Management Plan satisfies the FTA's requirement and serves as the implementation plan for the SFMTA's 10-Year Asset Management Strategy.

In July 2016, the Federal Transit Administration (FTA) published a Final Rule for Transit Asset Management. The Transit Asset Management Rule (49 CFR part 625) is a set of federal regulations that sets out minimum asset management practices for transit providers. The FTA's Rule for Transit Asset Management requires every transit provider that receives federal financial assistance under 49 U.S.C. Chapter 53 to develop a Transit Asset Management (TAM) Plan. According to the FTA, the TAM Plan is a tool that will aid transit providers in assessing the current condition of their capital assets, determining what the condition and performance of its assets should be, identifying the acceptable risks in continuing the use of an asset that is not in a State of Good Repair, and deciding how best to balance and prioritize funding to improve an asset's condition.

In October 2018, the SFMTA completed its inaugural TAM Plan, detailing the Agency's policy, approach, and implementation process to improve its asset management practices over the next four years. The 2018 SFMTA TAM Plan employed an action-oriented framework that aimed to improve the maturity of asset management at the SFMTA. The TAM Plan documents the SFMTA's asset management policy and presents the SFMTA's overall asset management improvement program. Additionally, the TAM Plan includes the ongoing governance and system of accountability for managing implementation of an asset management program.

FY2019 was the first fiscal year in which the SFMTA began to implement its TAM Plan, and a lot of progress was made. The 2018 TAM Plan includes an ambitious set of goals to advance the nine FTA required asset management elements. The Agency established the Asset Management Unit in January of 2019 to meet these goals within the 4-year TAM Plan period.

The TAM Plan's development process was designed to:

Communicate the SFMTA's commitment to asset management.

Facilitate the establishment of a culture that values and prioritizes asset management.

Embed asset management responsibilities and accountabilities into strategic planning activities.

Build on existing asset management strengths and best practices.

Provide leadership and direction in establishing asset management into capital, operation, and maintenance activities.

SFMTA TAM Plan Elements and Implementation Progress

FIGURE 4: TRANSPORTATION ASSET MANAGEMENT PLAN PROGRESS

Asset Inventory
- *TAM Element: All capital assets a transit provider owns, operates, or manages*
- *SFMTA Approach: The SFMTA keeps an inventory of all its assets within a database*
- *TAM Implementation Progress: SFMTA Capital Asset Inventory is updated annually. A new hierarchy has been developed to categorize assets to roll up into the City's fixed asset accounting standard.*

Asset Condition Assessment
- *TAM Element: Ratings of inventoried assets that generate information to monitor and predict the performance of assets and inform investment prioritization*
- *SFMTA Approach: The SFMTA uses TERM to determine the condition of its assets with an on-going program to update this data and further refine it.*
- *TAM Implementation Progress: Asset Management Unit has initiated an Asset Condition Assessment Program which has set dedicated funding integrated into the Capital Improvement Program*

Analytical Process or Decision-Support Tool
- *TAM Element: Tool used to analyze capital investment needs over time and develop investment prioritization*
- *SFMTA Approach: The SFMTA uses its Capital Plan, Capital Improvement Program, and Capital Budget process to determine capital investment needs over time.*
- *TAM Implementation Progress: Asset Management Unit initiated discussions with Capital Program managers to review their program assets and estimated upcoming needs. These discussions resulted in steps to refine the asset inventory and the initial identification of State of Good Repair needs and projects*

Investment Prioritization
- *TAM Element: Ranked list of a provider's programs and projects to improve or manage over the TAM plan horizon period in order of priority and anticipated year*
- *SFMTA Approach: The SFMTA has created a Capital Improvement Program that is a list of projects with a full funding plan prioritized from the Capital Plan.*
- *TAM Implementation Progress: SFMTA is committed to a minimum level of State of Good Repair investment which the Asset Management Unit monitors each budget cycle. Projects which support the SGR investment goal are typically given more support during the Capital Improvement Program creation process.*

Transit Asset Management and State of Good Repair Policy
- *TAM Element: Provider's goals and objectives in creating TAM Plan and SGR Report*
- *SFMTA Approach: The SFMTA has established Asset Management and State of Good Repair policies.*
- *TAM Implementation Progress: Commitment to meeting minimum $250 million in annual State of Good Repair funding. Utilized State of Good Repair Report analysis to develop the Capital Improvement Program and inform the Capital Plan's needs assessment.*

Implementation Strategy
- *TAM Element: Operation process designed to implement TAM plan*

- *SFMTA Approach: The SFMTA has created the Asset Management Unit to implement the TAM Plan and the 10-Year Asset Management Strategy.*
- *TAM Implementation Progress: The Asset Management Plan identifies 15 Action Plans which guide the work of the Asset Management Unit.*

Key Activities

- *TAM Element: Description of activities that a provider intends to engage in over the TAM plan horizon period*
- *SFMTA Approach: The SFMTA Asset Management Plan has mapped out a set of 15 phased action plans to advance asset management practice at the Agency*
- *TAM Implementation Progress: The Asset Management Unit made progress on Phase I action plans, namely: Condition Assessment Methods (1), Asset Classification Hierarchy (3), Link TAM Priorities to 20-year Capital Plan and 5-year Capital Improvement Program (8).*

Resources

- *TAM Element: Summary or list or resources need to develop and carry out TAM plan*
- *SFMTA Approach: The Asset Management Unit has met and partnered with several other SFMTA business units to learn about and develop required asset management resources*
- *TAM Implementation Progress: New system to host the Capital Asset Inventory. Establishment of the Asset Management Working group*

Monitoring, Updating, and Evaluating Strategy

- *TAM Element: A strategy that will outline how a provider will monitor, update, and evaluate its TAM plan to ensure continuous improvement*
- *SFMTA Approach: The SFMTA 10 Year Asset Management Strategy defines annual cycles related to monitoring, updating, and evaluating the actions to advance asset management, state of good repair activities, and the implementation of the TAM plan.*
- *TAM Implementation Progress: FY2019 was the first year operating under the TAM Plan and 10 Year Asset Management Strategy, also this year was the first year the Asset Management Team was fully staffed. FY2020 will provide a clearer report on progress made since being fully resourced.*

Capital Planning Process

Provides foundational structure for the SFMTA's capital investments involving replacement, renewal, improvement, expansion and acquisition of capital assets.

Several documents describe the Agency's need for capital investments, most notably the 20-Year Capital Plan and the 5-Year Capital Improvement Program (CIP). These planning documents support the Agency's overarching strategic goals:

- Create a safer transportation experience for everyone.

- Make transit and other sustainable modes of transportation the most attractive and preferred means of travel.

- Improve the quality of life and environment in San Francisco and the region.

- Create a workplace that delivers outstanding service.

Formally updated every two years, the most recent 20-Year Capital Plan was updated in September 2019. The purpose of the Capital Plan is to identify and characterize all the Agency's potential capital investments needed to achieve the City's transportation goals. It is a financially unconstrained document, meaning that it includes capital needs for which funding has not yet been identified or committed. It also provides the foundation for developing the fiscally constrained 5-Year CIP and the 2-Year Budget. A capital project must be included in the 20-Year Capital Plan to be eligible for inclusion in the 5-Year CIP. The 2019 Capital Plan identifies over $30.7 billion in potential SFMTA capital investments over the next 20 years.

Like the 20-Year Capital Plan, the 5-Year CIP is formally updated every two years. The SFMTA is currently operating off of the FY2019-23 CIP that was adopted by the SFMTA Board in December 2018. The FY2021-25 CIP is under development and due for publication in early April 2020. The Agency's 5-Year CIP is a fiscally constrained program of capital projects that is organized into 10 Capital Programs: Communications/IT, Facility, Fleet, Parking, Security, Traffic Signals, Streets, Taxi & Accessible Services, Transit Fixed Guideway, Transit Optimization & Expansion.

The proposed FY2021-25 CIP includes 188 projects for a total investment of $2.54 billion, including infrastructure investments, capital procurements, area plans, and one-time initiatives such as educational programs. Of this $2.54 billion, approximately $1.3 billion was dedicated to State of Good Repair investments.

The Asset Management Unit supports both the development of the Capital Plan and the 5-year CIP by identifying long range capital needs, prioritizing projects based on the State of Good Repair policies, and reconciling actual State of Good Repair investment with planned investment. During the development of the Capital Plan, the Asset Management Unit provided data on the projected 20-year State of Good Repair capital needs.

Also, as part of the Agency's development of its FY 2020-21 and FY 2021-22 Consolidated Operating and Capital Budget, the Asset Management Unit provided recommendations to each of the Capital Program Managers based on Capital Asset Inventory data regarding which assets should be prioritized for funding and illustrated future capital needs. The Asset Management Unit anticipates playing a prominent role in future budget cycles to facilitate decision-making for capital investments, helping to ensure that funding is provided for critical deferred maintenance and replacement needs.

In 2010, the SFMTA committed to investing an average of $250 million annually in replacing and rehabilitating the Agency's transportation assets. This commitment was made to the FTA in 2010 as part of the full-funding grant agreement for the Central Subway project. With the $1.6 billion allocated to State of Good Repair in the FY2019-2023 CIP, combined with prior years' funding, the Agency exceeded the $250 million commitment in FY2019 with an actual SGR spending of $393.86 million.

II. State of Good Repair

State of Good Repair Defined

State of Good Repair is the condition in which a capital asset can operate at a full level of performance.

The SFMTA categorizes an asset as being in a State of Good Repair if the asset can function at a full level of performance. Investments that contribute to realizing a full performance from an asset are qualified as State of Good Repair investments. This definition excludes projects or capital investments in which the primary purpose is to enhance or expand the transportation system. However, new assets that are introduced to the transportation system through enhancement or expansion projects are added to the Capital Asset Inventory upon substantial completion. This ensures that they will be included in future assessments of the transportation system's long-term rehabilitation and replacement needs.

The SFMTA currently evaluates whether an asset or Asset Class is in a State of Good Repair using the TERM Lite tool developed by the Federal Transit Administration. The TERM Lite model produces a "condition score" for all assets in the Capital Asset Inventory on a scale of one (Poor) to five (Excellent). The cumulative, value-weighted average of all asset condition scores in the Capital Asset Inventory determines the Agency's overall condition score. The FTA defines a transportation system in which assets receive an overall condition score of 2.5 or better as being maintained in a State of Good Repair.

Currently, the SFMTA generates this score based solely from asset age, which shows an asset's condition score deteriorating as it reaches the end of its scheduled useful life. It does not reflect specific operating conditions, level of use, or other factors that impact the performance and operating life of an individual asset. A key component of the 10-Year Asset Management Strategy is to incorporate additional factors into condition scoring, such as an inspected operating condition. Accordingly, the Agency will start to incorporate use-based condition data to better model the condition of its assets. So far, this type of data has been provided through the following condition assessments:

- ultrasonic rail testing on the rail network,

- completed condition assessments of all buildings and grounds,

- and an upcoming traffic signal condition assessment.

This refined condition scoring will support more precise State of Good Repair assessments and more data-driven investment decision and project development.

The key elements of State of Good Repair include:

Function: The transportation asset can fully perform its designed function.

Safety: The transportation asset does not pose any safety risk to the employees or the public.

Value: The transportation asset performed within its useful life at its planned cost.

Capital Asset Inventory

With nearly 5,000 individual entries, the Capital Asset Inventory is a digital model of the Agency's physical assets that contains critical information about each asset such as install date, estimated useful life, and replacement value. The SFMTA can use this to understand future needs of the Agency by modeling replacement and rehabilitation cycles. Currently, the Capital Asset Inventory represents a point in time snapshot of capital assets which is updated annually, but the goal is to connect the inventory to active data systems and business processes to provide a higher resolution picture which is updated more frequently and with less data manipulation.

The SFMTA kicked off its Capital Asset Management Program in 2009 with the development of its first comprehensive Capital Asset Inventory (CAI). The program was intended to support Agency, regional, and nation-wide capital planning efforts. The resulting 2009 inventory reflected an extensive effort that engaged many SFMTA divisions in collecting asset information, including age, replacement cost, and scheduled useful life.

Following the completion of the 2009 CAI, the SFMTA identified several opportunities to improve the quality of its transportation inventory data, such as refining replacement cost estimates and adding previously undocumented assets to the inventory. The SFMTA worked with the Metropolitan Transportation Commission (MTC) and C2HM Hill to make these updates in 2011, which fed into the MTC's Regional Transit Capital Inventory (RTCI).

Beginning in 2014, the Agency has updated the CAI on an annual basis. These annual updates include updating changes to capital assets, refining replacement costs, and ensuring asset records reflect completed capital projects within the fiscal year. Today, the CAI includes nearly 5,000 individual entries, categorized to differentiate between various CIP Programs, as well as "Transit Service Critical" or "Other State of Good Repair" assets. These categorizations provide further insight to the SFMTA when prioritizing State of Good Repair investments.

The Agency has begun the process of implementing organizational changes to make the CAI actionable and integrate data from it into daily management processes. The first step in the 10-Year Asset Management Strategy life cycle is to update the CAI with more accurate information, enabling more consistent and accurate capital planning and reporting. In 2018, the Capital Asset Inventory was modified to allow assets to be categorized following the City and County of San Francisco's fixed asset classification standard.

Agency assets can be categorized from the Capital Asset Inventory into a variety of hierarchies and attributes depending on the type of analysis that is required of the data. The Asset Management Unit is responsible for structuring the data so it can serve various reporting and analysis needs; such as supporting the FTA's NTD report, the Metropolitan Transportation Commission's RTCI database, and linking the City and County of San Francisco's Fixed Asset Accounting System.

Categorizing Investment Needs

For this report, the assets are categorized into Asset Classes which were developed in 2009 and aligned with the FTA's asset reporting categories. Investments in these assets occur via capital projects, which are sorted by Capital Program for capital planning purposes. To provide full transparency, this Report will use both Asset Classes and Capital Programs to report upon State of Good Repair needs and investments. To facilitate trend comparison, the 2019 Report will continue to use the original 2009 Asset Classes. Future State of Good Repair reports will reflect appropriate changes in asset hierarchy.

The SFMTA categorizes State of Good Repair needs as either "Transit Service Critical" or "Other State of Good Repair". Transit Service Critical investments are made in Asset Classes and Capital Programs that are essential to ensuring the safe and reliable functioning of the transit system, such as maintaining or replacing overhead wires, rail track, or transit vehicles. Other State of Good Repair signifies areas of investment that help to make the transportation network more comfortable, efficient, and enjoyable for riders, along with maintenance of non-transit assets related to pedestrian, bicycle, enforcement, and administration. Figure 3 outlines the Asset Classes as either Transit Service Critical or Other State of Good Repair.

FIGURE 5: STATE OF GOOD REPAIR CATEGORIZATION

Transit Service Critical
- *Asset Class: Light Rail Vehicles; Capital Program: Fleet; Example Assets: LRV's, Historic Streetcars*
- *Asset Class: Motor Coach Vehicles; Capital Program: Fleet; Example Assets: Motor Coaches*
- *Asset Class: Overhead Catenary System; Capital Program: Fixed Guideway; Example Assets: Trolley Wire, Poles*
- *Asset Class: Track; Capital Program: Fixed Guideway; Example Assets: Switches, Trackwork*
- *Asset Class: Train Control & Communications; Capital Program: Communications/IT, Fixed Guideway; Example Assets: Automatic Train Control System, Radio*
- *Asset Class: Other Systems/Vehicles; Capital Program: Fleet, Communications/IT; Example Assets: Cable Cars*

Other State of Good Repair
- *Asset Class: Facilities; Capital Program: Facility; Example Assets: Administrative Buildings, Maintenance Buildings*
- *Asset Class: Parking & Traffic; Capital Program: Parking, Signals, Streets; Example Assets: Parking Garages, Traffic Signals, Parkin Meters*
- *Asset Class: Stations; Capital Program: Facility; Example Assets: Muni Metro Stations*
- *Asset Class: Other Systems/Vehicles; Capital Program: Communications/IT; Example Assets: CCTV, Non-revenue vehicles*

2019 Capital Asset Inventory Update

The FY2019 State of Good Repair Report is based on an updated Capital Asset Inventory database that was used in subsequent reports. As per the 10-Year Asset Management Strategy, the data in this inventory has been reviewed – to true-up entries from FY2018 – as well as built upon with significant FY2019 capital project investments. Part of the FY2019 review of the pre-existing inventory included consolidating the Agency's revenue vehicle data. The FY2019 CAI has an asset entry count of 4,927

which is about one thousand entries less than the 2018 version. This is due to grouping revenue vehicles by in-service year and vehicle type, rather than individually listing each vehicle separately. Grouping assets in this way brought the revenue vehicle record count from 1,330 entries down to 395 entries without changing the TERM Lite output values. This practice is also more consistent with Agency-wide standards regarding revenue fleet data and thus saved time and reduced data manipulation. The most recent inventory review also included general retiring of fleet vehicles that were out of service and a degree of right-sizing for the Agency's non-revenue fleet. New entries to the CAI in FY2019 include several large-scale communication software investments, facility safety and systems improvements, and new fixed guideway assets. The latest edition of the CAI is otherwise unchanged from the FY2018 version.

While reviewing and updating the CAI are key steps in the 10-Year Asset Management Strategy, there remains work to be done to further increase the usefulness of the inventory. Future steps include obtaining cost and date-built information for all assets not in the inventory such as overhead lines poles, bike lanes, painted bus bulbs, bike racks, parking meters, soft hit barriers and bus stops. Additionally, refining the format of the capital asset inventory to link with the Agency's Enterprise Asset Management System (EAMS) – the primary database developed to keep track of the Agency's work orders – would enhance the level of detail of the data and make the inventory data more accessible and useful. Finally, performing and incorporating condition assessments of all assets would make inventory analysis more accurate and credible, particularly in informing the asset condition scores in a State of Good Repair analysis.

TERM Lite Scoring

Assists in evaluating the SFMTA's current State of Good Repair asset backlog, future investment needs, and different funding and prioritization scenarios.

The FTA's Transit Economic Requirements Model Lite (TERM Lite) is a computer application designed to estimate an agency's transit capital investment needs over an extended time horizon. The model estimates the total amount of annual capital expenditures required up to a 30-year period to maintain or improve the physical condition and performance of an agency's transit infrastructure. Specifically, the TERM Lite tool determines levels of investment required to maintain or improve asset condition, assesses the impact of investment scenarios on asset conditions, and simulates future needs with age-based asset decay formulas. The tool produces Asset Condition Scores, projects Future Investment Needs, and provides a reported Asset Backlog.

Condition scores are based on the estimated useful life of each asset; they do not reflect specific operating conditions, level of use, or other factors that impact the performance and operating life of individual assets. The TERM Lite condition scores use a scale of 1 (poor) to 5 (excellent), with assets approaching zero as they reach the end of their scheduled useful life. In their 2010 National State of Good Repair Assessment, the FTA defines State of Good Repair as maintaining a transportation system in which assets receive a score of 2.5 or better based on these classification rankings.

The SFMTA's reported Asset Backlog is calculated based on scheduled useful life and replacement value of an asset. When an asset is first capitalized and entered into the CAI, it is given an estimated useful life approximating the number of years the asset will be operable in a State of Good Repair. Useful life estimates are based on several factors including manufacturer recommendations, FTA guidelines, and subject matter expert input. When an asset comes to the end of its estimated useful life, TERM Lite

reports the asset is in a status called backlog. An asset reported in backlog is measured by its full replacement value. As with the condition score, the reported Asset Backlog does not account for specific conditions of operation, level of use, or other factors that would adjust the anticipated useful life of an asset.

The 2019 State of Good Repair analysis is based on a TERM Lite run of 20 years of analysis. This time horizon was selected to better align analysis to the time horizon of the Agency's 20-Year Capital Plan. It also ensures that the results are as accurate and useful as possible. As the time horizon moves farther out from the present, it becomes exponentially harder to accurately forecast State of Good Repair needs, replacement schedules, and asset condition scores.

The 2019 State of Good Repair analysis is also based on assumptions of unconstrained spending and 3% escalation, unless otherwise noted. Unconstrained spending allows a more complete picture of the total investment needs necessary to maintain the Agency's capital assets in a State of Good Repair. Escalation is considered in the model to make the results useful when trying to budget out for future projects and investment costs. An escalation rate of 3% was chosen based on historical context.

III. 2019 State of Good Repair Analysis

Asset Replacement Value

The term "replacement value" refers to the amount that the SFMTA would have to pay to replace an asset at the present time. This value helps estimate the future need that the Agency is liable for to keep up with the regular cycle of rehabilitation and replacement of its capital assets.

The 2019 State of Good Repair analysis calculates a total replacement value of $14.98 billion for the Agency's assets. This is an estimation of the combined 2019 cost of all of the SFMTA's recorded assets in operation as of July 2019. Figure 6 shows total reported replacement value for all recorded assets fell from $14.63 billion to $14.04 billion in FY2018 and rose to the current value of $14.98 billion.

The $943 million or 6.7% increase in reported replacement value from FY2018 to FY2019 is due to widespread investments in largely Transit Service Critical assets. These include procurement of 24 Siemens vehicles under the Light Rail Vehicles Asset Class, significant replacements of M-Line and T-Line overhead catenary system in the Overhead Traction Power System Asset Class, and significant replacements of track along the M- and T-Lines and within the Twin Peaks tunnel as represented in the Track Asset Class.

FIGURE 6: TOTAL REPLACEMENT VALUE BY ASSET CLASS

This bar graph shows the replacement value of each asset class for 2017, 2018 and 2019. The 2019 replacement value for facilities is $2.157 billion; for light rail vehicles is $977 million; for motor coach vehicles it is $541 million; for other systems and vehicles it is $555 million; for overhead traction power system it is $2.896 billion; for parking and traffic it is $1.707 billion; for stations it is $3.642 billion; for track it is $1.261 billion; for train control and communications it is $904 million; for trolley coach vehicles it is $286 million. The replacement value for 2019 is $14.98 billion, for 2018 it was $14.04 billion, for 2017 it was $14.63 billion.

By knowing the current value of its assets, the Agency is in a better position to advocate for funding from federal, state and local funding agencies. By regularly updating and documenting the replacement value of its assets, the Agency can provide detailed confirmation to funding agencies of its need for capital investments and support the leveraging of funds for critical State of Good Repair needs.

Reported Asset Backlog

The reported asset backlog is the replacement value of assets older than their estimated useful life. In 2019, the Agency's reported asset backlog is $3.24 billion.

When an asset is entered in the CAI, it is given an estimated useful life calculated by TERM Lite that approximates the number of years the asset will be operable in a State of Good Repair. This estimated useful life is based on manufacturer recommendations, FTA guidelines, and subject matter expert input. When an asset comes to the end of its estimated useful life, TERM Lite reports the asset is in a status called backlog. An asset reported in backlog is measured by its full replacement value. As the number of assets reported in backlog grows, the total amount of investment needed to replace those assets grows as well.

Based on the 2019 FTA's TERM Lite output, the SFMTA's reported asset backlog has a total value of $3.19 billion. Figure 6 shows that the Agency's reported asset backlog rose from $3.13 billion in FY2018 to $3.19 billion in FY2019. The 2019 reported asset backlog is comprised of $1.031 billion in Transit Service Critical assets and $2.154 billion in Other State of Good Repair assets. The reported asset backlog growth shows an increasing need for the Agency to invest in a State of Good Repair across all its assets, particularly Other State of Good Repair assets that have increased $211 million or 10.8% since FY2018. The backlog for Transit Service Critical assets decreased $100 million or 8.7% in the past fiscal year despite the overall increasing trend, indicating directed investment towards Transit Service Critical assets. Figure 8 details the reported asset backlog by Asset Class, showing that the Agency's Parking & Traffic assets have the highest reported backlog at $1.05 billion.

FIGURE 7: REPORTED ASSET BACKLOG

This bar chart shows the backlog value in 2018 for Transit Service Critical is $1.18 billion and for Other SGR it is $1.94 billion. The backlog value in 2019 for Transit Service Critical is $1.03 billion and for Other SGR it is $2.15 billion.

FIGURE 8: REPORTED ASSET BACKLOG BY ASSET CLASS

This bar chart shows the backlog for Trolley Coach Vehicles is $54 million; Train Control & Communications has no backlog; Track is $286 million; Stations is $489 million; Parking & Traffic is $1,053 million; Overhead is $459 million; Other Systems & Vehicles is $283 million; Motor Coach Vehicles is $59 million; Light Rail Vehicles is $2 million; Facilities is $553 million.

While the reported backlog value is a useful goalpost to measure the Agency's progress in maintaining a State of Good Repair, it should not be considered the actual value of assets in the backlog that need replacement. Adjustments to the Agency's reported backlog are necessary as follows:

• TERM Lite's calculated estimated useful life does not incorporate the asset's specific operating environment that affects an asset's performance and useful life. For example, San Francisco's dense urban environment has a more adverse impact on its transit vehicles and their related capital infrastructure than the environment experienced by other transit systems in the United States.

• TERM Lite's calculated estimated useful life does not consider the level of use, maintenance, rehabilitation or other factors that would affect the anticipated useful life of an asset. For example, certain assets may have exceeded their useful life but remain in perfectly acceptable operating condition because of maintenance. While the Agency's Stations have a reported backlog value of $489 million, the Stations will not be replaced but rehabilitated as needed.

• Refining of data, specifically actualizing of dates, is an on-going process that will affect the estimated useful life of an asset. The 2018 actualization of the fleet data played a role in increasing backlog by establishing earlier built dates than what was previously in the Capital Asset Inventory, translating to a higher backlog.

• Accounting for potential shifts in how service is delivered is not factored in by TERM Lite. For example, the overhead line system represents a significant group of assets in the current backlog, but the adoption of alternative electric systems to power the Agency's fleet may replace this backlog with a new set of assets. This doesn't negate the current analysis but

supports the cost benefit businesses decisions the Agency will need to make during that transition. The backlog information needs to be reviewed side by side with Agency risk and performance goals to determine if assets can age beyond their useful life or if they should be prioritized for investment.

To adjust for these discrepancies, the Agency will continue to verify asset dates and place a strong emphasis on condition assessments moving forward. Currently, the SFMTA does not make changes to the estimated useful life once it is entered in the CAI, regardless of its operating condition. This is the most conservative approach the Agency can take when calculating its State of Good Repair investment needs. By ensuring asset dates are correct in the CAI and incorporating condition assessments to better inform the TERM Lite model, the Agency will have a more accurate reported asset backlog and better understanding of what and when assets need to be replaced.

Asset Condition Scores

Asset Condition Scores are based on the age of an asset and use a scale of 1 to 5. The weighted average condition score for all SFMTA assets in FY2019 is 3.18.

In addition to calculating current and future investment needs for SFMTA assets, the TERM Lite model also produces a "condition score" for each asset in the capital asset inventory. These condition scores are based only on the scheduled useful life of each asset; they do not reflect specific operating conditions, level of use, or other factors that impact the performance and operating life of individual assets. Part of the Condition Assessment Program is to conduct condition assessments of the Agency's assets and generate usable metrics to gain a better understanding of each asset's actual useful life.

The TERM Lite condition scores use a scale of 1 (poor) to 5 (excellent) with scores for assets declining as they age. For the FTA to recognize a transportation system as being in a State of Good Repair, assets must receive a score of 2.5 or higher based on these classification rankings.

2019 Asset Condition Score

As shown in Figure 9, the average condition score for all of SFMTA's assets is 3.18 in 2019. The SFMTA incorporates a weighted average based on total replacement cost. This creates a more accurate representation of the State of Good Repair of Agency assets. For example, it is more detrimental if a high-value asset has a low condition score than a low-value asset. This score also qualifies SFMTA's assets as within an overall State of Good Repair according to the FTA's benchmark.

Figure 9 also segments asset condition score by Transit Service Critical and Other State of Good Repair assets. Transit Service Critical assets have a substantially higher average condition score than Other State of Good Repair assets. TSC assets score a weighted 3.39 on the scale which translates to an Adequate condition category. OSGR assets are scored at 2.89, labeling these assets as Marginal in their condition category. This result stems from the Agency's conscious focus over the past five years on maintaining and improving Transit Service Critical assets (see Figure 9). Because these assets are critical to the Agency's ability to fulfill essential transportation functions, the Agency has allocated higher State of Good Repair funding to Transit Service Critical assets over time.

FIGURE 9: TRANSIT SERVICE CRITICAL VS. OTHER STATE OF GOOD REPAIR CONDITION SCORES

A percentage weighted bar graph shows that the distribution of scores for All Assets is 4% excellent, 18% good, 44% adequate, 20% marginal, and 15% poor with a total average condition score of 3.18. The distribution for Transit Service Critical is 3% excellent, 24% good, 45% adequate, 23% marginal and 5% poor with a total average condition score of 3.39. The distribution for Other SGR is 5% excellent, 10% good, 42% adequate, 16% marginal and 28% poor with a total average condition score of 2.89.

FIGURE 10: COMPARISON OF CONDITION SCORES, 2015 VS. 2019

A percentage weighted bar graph shows the above information compared to the 2015 conditions core distributions. The 2015 distribution of scores for All Assets is 10% excellent, 35% good, 30% adequate, 13% marginal, and 12% poor with a total average condition score of 3.33. The 2015 distribution for Transit Service Critical is 11% excellent, 43% good, 25% adequate, 15% marginal and 5% poor with a total average condition score of 3.53. The distribution for Other SGR is 8% excellent, 22% good, 38% adequate, 9% marginal and 22% poor with a total average condition score of 3.04.

Figures 11 and 12 provide detailed breakdowns of average condition scores by Capital Program and Asset Class, respectively. The data affirms that the Agency's State of Good Repair efforts have had positive results on the condition scores of Transit Service Critical assets such as the revenue fleet; but that other State of Good Repair assets, including non-revenue vehicles (Other Systems and Vehicles) and parking assets (Parking & Traffic), have not been a point of recent emphasis for the Agency.

FIGURE 11: AGE-BASED CONDITION SCORE BY CAPITAL PROGRAM

A percentage weighted bar graph shows that the distribution of scores for Facility is 5% excellent, 10% good, 51% adequate, 15% marginal, and 19% poor with a total average condition score of 3.08. The distribution for Fleet is 5% excellent, 34% good, 45% adequate, 15% marginal and 2% poor with a total average condition score of 3.7. The distribution for IT & Communications is 10% excellent, 32% good, 50% adequate, 7% marginal and 1% poor with a total average condition score of 3.63. The distribution for Other Systems & Vehicles is 1% excellent, 10% good, 14% adequate, 23% marginal and 52% poor with a total average condition score of 2.31. The distribution for Parking is 0% excellent, 1% good, 21% adequate, 28% marginal and 49% poor with a total average condition score of 2.19. The distribution for Traffic & Signals is 9% excellent, 13% good, 15% adequate, 10% marginal and 52% poor with a total average condition score of 2.51. The distribution for Transit Fixed Guideway is 1% excellent, 19% good, 44% adequate, 30% marginal and 6% poor with a total average condition score of 3.25.

FIGURE 12: AGE-BASED CONDITION SCORE BY ASSET CLASS

A percentage weighted bar graph shows that the distribution of scores for Facilities is 10% excellent, 15% good, 35% adequate, 22% marginal, and 18% poor with a total average condition score of 3.20. The distribution for Light Rail Vehicles is 5% excellent, 30% good, 49% adequate, 16% marginal and 0% poor with a total average condition score of 3.78. The distribution for Motor Coach Vehicles is 0% excellent, 29% good, 45% adequate, 20% marginal and 6% poor with a total average condition score of 3.38. The distribution for Other Systems & Vehicles is 1% excellent, 5% good, 33% adequate, 32% marginal and 28% poor with a total average condition score of 2.55. The distribution for Overhead is 0% excellent, 31% good, 42% adequate, 19% marginal and 8% poor with a total average condition score of 3.44. The distribution for Parking & Traffic is 5% excellent, 8% good, 18% adequate, 18%

marginal and 51% poor with a total average condition score of 2.36. The distribution for Stations is 1% excellent, 4% good, 61% adequate, 20% marginal and 13% poor with a total average condition score of 3.01. The distribution for Track is 3% excellent, 12% good, 45% adequate, 38% marginal and 2% poor with a total average condition score of 3.15. The distribution for Train Control & Communications is 12% excellent, 38% good, 50% adequate, 0% marginal and 0% poor with a total average condition score of 3.79. The distribution for Trolley Coach Vehicles is 13% excellent, 58% good, 29% adequate, 0% marginal and 0% poor with a total average condition score of 4.18.

Asset Condition Score Trends

Figure 13 provides a breakdown of average condition scores by Asset Class over time. An analysis follows explaining the trend in condition scores for each Asset Class. Although the TERM Lite data is only based on the useful life of the assets and does not incorporate the actual operating condition of the assets, it provides a general indicator of the state of the Asset Class.

FIGURE 13: ASSET CLASS CONDITION SCORES FROM 2015 – 2019

The age based condition score of Facilities is 3.2 in 2015, 3.2 in 2016, 3.3 in 2017, 3.3 in 2018, 3.2 in 2019. For Light Rail Vehicles it is 3.8 in 2015, 3.8 in 2016, 3.7 in 2017, 3.8 in 2018, 3.8 in 2019. For Motor Coach Vehicles it is 3.7 in 2015, 3.5 in 2016, 3.7 in 2017, 3.6 in 2018, 3.4 in 2019. For Other Systems & Vehicles it is 3.0 in 2015, 3.1 in 2016, 3.1 in 2017, 2.6 in 2018, 2.6 in 2019. For Overhead Traction power System it is 3.7 in 2015, 3.7 in 2016, 3.6 in 2017, 3.5 in 2018, 3.4 in 2019. For Parking & Traffic it is 2.8 in 2015, 3.0 in 2016, 2.9 in 2017, 2.4 in 2018, 2.4 in 2019. For Stations it is 3.1 in 2015, 3.1 in 2016, 3.1 in 2017, 3.0 in 2018, 3.0 in 2019. For Track it is 3.3 in 2015, 3.2 in 2016, 3.3 in 2017, 3.1 in 2018, 3.2 in 2019. For Train Control & Communications it is 3.7 in 2015, 3.6 in 2016, 3.5 in 2017, 3.4 in 2018, 3.8 in 2019. For Trolley Coach Vehicles it is 3.4 in 2015, 3.3 in 2016, 3.2 in 2017, 3.6 in 2018, 4.2 in 2019. For all asset classes it is 3.33 in 2015, 3.32 in 2016, 3.30 in 2017, 3.19 in 2018, 3.18 in 2019.

Asset Class Detail Analysis

Facilities

The condition score for facilities is holding steady over the last 5 years at 3.24. The SFMTA's facility campus includes a varied group of buildings, grounds and bus yards. These facilities support the SFMTA's ability to provide reliable transit service, maintain street infrastructure, and store, protect and maintain its diverse transit fleet. The 2017 SFMTA Facilities Framework helped identify deficiencies, associated costs and prioritized improvements for 18 SFMTA facilities. The result was $60.4 million in repairs and a Building Progress program of $140.2 million to keep these facilities in a State of Good Repair.

Over the past year, the SFMTA added essential equipment at its facilities and conducted upgrades of several systems that were at the end of their useful life and were difficult to maintain. The SFMTA added and upgraded its fall protection systems at Potrero Yard, Muni Metro East, Presidio Facility, Metro Green Light Rail Center, Cameron Beach Facility, and Duboce Yard. The fall protection systems are used to improve the safety and working conditions of maintenance staff who must perform equipment repairs and maintenance atop the Agency's light rail vehicles, historic streetcars, and trolley coaches. The SFMTA also upgraded several fuel and waste storage tanks at its Kirkland, Flynn and Scott facilities. These storage tanks store and deliver diesel, gasoline, motor oil, coolant, automatic transmission fluid and other chemicals consumed in the maintenance and up-keep of the SFMTA's diesel bus fleet. These upgrades ensure that the fuel and waste storage tanks are reliable, efficient, reduce infrastructure maintenance requirements, and comply with State regulations.

Backlog

- Major categories in Facilities are buildings and systems, including communication systems and utilities.

- The Presidio and Potrero buildings have the greatest backlog of investment needs of approximately $100 million.

- While the FY2021-25 CIP shows that the SFMTA is rebuilding the entire Potrero Maintenance facility, specific funding needs to be set aside to address the maintenance needs in the Presidio building.

FY2021-25 CIP Planned Investments

General components that need addressing in all SFMTA buildings within the next few years are building exteriors and interiors, built-in equipment, plumbing, and HVAC systems. Prioritized needs can be addressed in the FY2021-25 CIP project, Facility Reserve, which sets aside $10 million in funding for critical backlogged State of Good Repair investments. Additional funding will be needed to ensure that building components do not deteriorate and contribute to an increased backlog.

Future Needs

The SFMTA will need to monitor the estimated useful life of its facilities and supporting systems. Due to the long replacement cycles, relatively high valuation, and complex development timelines compared to other assets, facilities can easily be easily overlooked and represent a large liability to the transportation system if they fall out of a state of good repair.

Light Rail Vehicles

The LRV Fleet remained in adequate condition from FY2015 through FY2019. The SFMTA is in the process of replacing and expanding its existing fleet of 151 Breda LRVs, in service since 1996, with over 200 new LRVs from Siemens. In FY2019, the LRV fleet expanded by 24 Siemens vehicles as part of the Central Subway and Chase Center projects.

Backlog

The sum of the current Light Rail Vehicle backlog is 0, while the sum of the Historic Streetcar backlog is $2,357,408. The current backlog is the valuation of a single streetcar that reached the end of its useful life in 2019.

FY2021-25 CIP Planned Investments

The SFMTA is planning to address the backlog and invest in the fleet through capital projects such as:

- FT061: Vintage Streetcar Rehabilitations
- FT097: Double-Ended Streetcar Rehabilitations (2 Streetcars)
- FT102: Streetcar Wreck Repair Program
- FT103: Streetcar State of Good Repair (SGR) Program Study

Future Needs

A ten-year forward look at Light Rail Vehicle investment need shows significant investment needed for FY2027 and FY2031. In FY2027, an investment of $129,947,917 is required to replace 7 historic streetcars and 17 light rail vehicles that were rehabilitated/procured in 2002. In FY2031, an investment of $132,708,105 is required to rehabilitate 33 historic streetcars that were last rehabilitated in 2016. The Asset Management Unit recommends continuing the current practice replacing light rail vehicles at the end of their useful lives to maintain performance and asset condition.

Motor Coach Vehicles

The motor coach fleet has remained in adequate condition from FY2015 through FY2019. The SFMTA entered a contract with New Flyer Inc. to procure over 200 40' and 224 60' hybrid motor coaches in December 2014. In FY2019, the motor coach replacement project continued and placed 68 40' motor coaches and one 60' motor coach into revenue service. Despite the addition of these new vehicles, the FY2019 condition score fell to 3.4 because 20% of the motor coach fleet is past its useful life.

Backlog

The sum of the current Motor Coach backlog is $59,374,727.76, the valuation of 137 vehicles that have reached or are past their useful lives. This group of vehicles include 30 and 40 ft. Neoplan and Orion coaches that were placed in service in either 1999 or 2007.

FY2021-25 CIP Planned Investments

The Agency is planning to address the backlog and invest in the fleet through capital projects such as:

- FT091: Orion Motor Coach Component Refurbishments

- FT092: 30' Motor Coach Replacement Procurement

- FT093: 40' & 60' Motor Coach Replacement Procurement

Future Needs

A ten-year forward look at Motor Coach investment need shows significant investment needed for FY2028 and FY2029. In FY2028, an investment of $133,667,319 is required to replace 122 40' and 60' New Flyer coaches that were procured in 2016. In FY2029, an investment of $111,157,424 is required to replace 99 40' and 60' New Flyer coaches that were procured in 2017. The Asset Management Unit recommends replacing motor coaches at the end of their useful lives.

Other Systems & Vehicles

The Other Systems & Vehicles Asset Class is composed of a variety of assets including: the building components that support SFMTA facilities, substations, non-revenue vehicles, Cable Car related assets and paratransit vehicles. The condition of this Asset Class steadily decreased from adequate condition in FY2015 to marginal condition in FY2019.

Building components and substations are some of the SFMTA's oldest assets. Aside from the asset age, little is known about the condition of these assets and asset data quality is low. However, the SFMTA Condition Assessment Program aims to address these data gaps in the coming fiscal years.

The condition of vehicle assets is better documented and understood. The Agency has replaced roughly 15% of the non-revenue fleet every fiscal year since FY 2016 and replaced 45 paratransit vehicles in FY2019. Non-revenue support vehicles and paratransit vehicles typically have a shorter useful life than the Agency's revenue fleet which means these assets conditions decay quicker and require higher frequency rehabilitation and replacement.

Also included in this Asset Class is the fixed closed-circuit television surveillance system and associated assets. The SFMTA has invested in a single large-scale subway video camera software platform to replace the older, disparate video recording platforms.

Backlog

The sum of the current Other Systems & Vehicles backlog is $283,071,770.37. 48% of the cost to replace the assets past their useful life is attributed to substations that provide electricity, plumbing, and HVAC to the Muni Metro tunnels and other Light Rail lines around the city. 24% of the value of the backlog is due to Information Technology Systems in Facilities across the city. 15% is for the cost of special guideway structures on the cable car lines. The final 12% of the backlog is the cost to replace Non-Revenue Vehicles and Cable Cars past their useful life.

FY2021-25 CIP Planned Investments

The SFMTA is planning to address the backlog and invest in its substations through capital projects such as:

- TF071: San Jose Substation Phase 1
- TF113: Backup Battery Replacement for Substation
- TO091: King Street Substation
- TF017: Traction Power SGR Program
- TF018: Subway Mechanical Systems SGR Program
- TF023: Subway Electrical Systems SGR Program
- CI054: Network Infrastructure Replacement Project
- CI056: Subway Video Security
- CI058: Video Modernization – Real Time Video
- TF021: Cable Car Turntable SGR Program
- TF052: Cable Car Barn Turntable
- TF053: Cable Car Curved Track Replacement
- TF121: Cable Car Surface Planning Study
- FT095: Cable Car SGR Program

- FT103: Street Car SGR Program Study
- FT100: Non-Revenue Fleet Management Program
- FT098: Fleet Capital Program Asset Assessment

Future Needs

A ten-year forward look at Other Systems & Vehicles investment needs shows ongoing replacement costs of more than $350 million. Included in these projected investments is: $143 million for Cable Car upgrades and Non-Revenue Vehicles; $139 million for substations and other systems like fare boxes and IT upgrades; and $74 million in communications systems in the Agency's facilities. The Asset Management Unit recommends the Agency focus on maintaining the substations and electrification systems at stations and refreshing the non-revenue vehicle fleet.

Overhead Traction Power System

Overhead Traction Power System includes all the components of the overhead catenary system (OCS) and traction power infrastructure to support electrically powered trolley coaches, light rail vehicles, and historic streetcars. For the last 5 years, this asset was maintained in adequate condition, with condition scores ranging from 3.5 to 3.7. In FY2019, the SFMTA replaced significant portions of M-line and T-line OCS. The SFMTA will continue to invest in maintaining this critical asset in a State of Good Repair.

Backlog

The sum of the current Overhead Traction Power System backlog is $458,602,520.08. This represents approximately 12.8 million linear feet of overhead wire that is either past its projected useful life or has been repaired in small pieces ad hoc without a major SGR project and associated update to the asset inventory.

FY2021-25 CIP Planned Investments

- TF014: Overhead Line SGR Program

- TF059: Islais Creek Bridge Overhead Reconstruction

- TO068: L Taraval Improvement Project (overhead lines will receive an upgrade as part of a larger project)

- TO208: 30 Stockton 3rd Street Muni Forward (overhead lines will receive an upgrade as part of a larger project)

Future Needs

A ten-year forward look at Overhead Traction Power System investment needs show ongoing replacement costs of approximately $675 million. Much of the overhead power line is for trolley buses in the city.

Due to new Caltrans requirements, the Agency's long-term policy is to transition away from trolley buses and move towards electric buses. Accordingly, the Asset Management Unit recommends the Agency use future resources on overhead lines that serve the Muni Metro lines rather than the trolley bus lines.

Parking & Traffic

Included in this asset class are the SFMTA's parking garages, transit only red lanes, parking meters, and traffic signals. With the SFMTA primarily investing in Transit Critical Services over the last few years, the SFMTA's investment in Parking & Traffic has lagged, resulting in an average condition score of 2.4, the lowest of the Asset Classes.

The SFMTA has made two significant investments in Parking assets in FY2019, initiating projects which are expected to be complete in FY2020. These two projects include an elevator modernization effort to reset the useful life of the elevators at seven parking garages via replacements of moving parts – such as the motors, ropes, control systems, car door mechanisms, and cab interior walls, ceilings and flooring. So far, ten of the 14 total elevators have been completed or are in progress. The other investment that SFMTA has made towards Parking in FY2019 has been the new Parking Access Revenue Control Systems (PARCS) program which is bringing new parking access and revenue control systems to 22 city-owned parking facilities to provide faster exiting, improved customer service, and enhanced credit-card security. Some of the new equipment includes ticket machines, gate arms, payment machines and cameras.

Backlog

Almost half of the backlog in Parking & Traffic is attributable to Traffic Signals. Another significant portion is due to the Agency's parking garages and their associated building systems including electrical, plumbing, HVAC and roofing. Due to this significant backlog, the Asset Management Unit recommends a large-scale replacement of traffic signals. The Asset Management Unit also recommends a comprehensive condition assessment and rehabilitation of the Agency's parking garages; specifically, the 5th & Mission Garage, the Sutter-Stockton Garage, and the Golden Gateway Garage.

FY2021-25 CIP Planned Investments

The SFMTA has made plans to invest nearly one billion dollars in traffic signals in the five year CIP. There is also currently a project to modernize 17 elevator cabs at six parking garage locations. There are no plans currently in the FY2021-25 CIP to comprehensively assess the Agency's 16 parking garages.

Future Needs

A ten-year forward look at Parking & Traffic investment need shows significant investment needed for traffic signals in FY2028 and FY2030. FY2028 reports a $148 million investment need for traffic signals built before 1990. Guideway elements built from 2005-2015 are due for a replacement in FY2030 and valued at roughly $98 million. The Agency's 16 parking garages also show significant investment need in FY2035 totaling $87 million for replacement of garage access elements.

The parking garages were built in the 1980s with an estimated useful life of 50 years, which is why their investment need spikes in FY2035. The Asset Management Unit does recommend comprehensive condition assessments of these structures and significant rehabilitation or replacement of their associated systems by FY2035.

Stations

The condition score for the SFMTA's subway and surface stations shows a slight but steady decrease over the years. During the past year, the SFMTA conducted upgrades of critical station systems that were at the end of their useful life and were difficult to maintain. The SFMTA installed a new fall arrest anchoring system at the roof of the West Portal Station to enable safe maintenance and cleaning. The SFMTA also prioritized and upgraded 17 of its 28 Muni Metro station escalators, beginning in 2015 and completing the project in 2019. The new escalators, equipped with state-of-the-art technology, greatly improve safety, reliability and access to the Muni system. The SFMTA will continue to make investments to maintain its transit stations in a State of Good Repair, including a condition assessment of the Muni Metro stations anticipated next year.

Backlog

The $490 million backlog for Stations is made up of the mechanical, electrical and plumbing systems that support the Muni Metro stations. The stations themselves make up 35% percent of the backlog. It is unrealistic for these stations to be completely replaced, however the SFMTA will need to address how it will plan for and fund a major rehabilitation of these stations to maintain service.

FY21-25 CIP Planned Investments

The FY2021-2025 CIP allocates funding for various Muni Metro Station projects that support maintenance of the Stations, including Subway Electrical Systems State of Good Repair Program, Subway Special Trackwork Replacement and Muni Metro Subway Station Enhancement.

Future Needs

In the near future, the SFMTA anticipates conducting a condition assessment of its subway stations so that it can develop a comprehensive work plan to address deferred maintenance needs.

A ten-year forward look, beyond the FY2021-25 CIP, at Station asset investment needs identifies approximately $439 million to replace the on-street center boarding islands that reach the end of their useful life in FY2031 and FY2033.

Track

The track system remained in adequate condition from FY2015 through FY2019. In FY2019, the SFMTA replaced significant portions of track along the M and T lines and all the track within the Twin Peaks tunnel. The SFMTA will continue to invest in maintaining this critical asset in a State of Good Repair.

Backlog

The sum of the current Tracks backlog is $286 million. The majority of the assets in backlog fall into two categories of track: Special Trackwork and Embedded Trackwork. $121 million of Special Trackwork assets are in backlog are located along the J, Powell-Hyde, Powell-Mason, T, California, M, and K lines. $121 M of Embedded Trackwork assets in backlog are located along the Powell-Mason, Powell-Hyde and California lines,

FY21-25 CIP Planned Investments

To address this backlog, the 5-year CIP includes projects for the assets discussed above, specifically:

- N Judah Trackwork Replacement TF125

- Subway Special Trackwork Replacement TF073

- Special Trackwork Replacement (3 Locations) TF090

Future Needs

A ten-year forward look at Track investment needs show ongoing replacement costs of nearly $500 million. Of note, the Asset Management Unit's model projects an investment need of over $132 million four years from now to replace ballasted track on the J, K, and M lines, and other special track around the city. Ten years from now, the model predicts $243 million is needed to replace embedded track on the California, Powell-Hyde, and Powell-Mason lines.

Train Control & Communications

The Train Control & Communications asset class includes the infrastructure necessary to run the light rail vehicles, including the Automatic Train Control System (ATCS), blue light emergency phones in the subway, and communication systems. The condition score increase from 3.4 to 3.8 reflects significant investment in these assets in FY2019.

The SFMTA has invested in the facilities and traction power SCADA systems; the Public Address and Public Display Sign Systems in several stations; the fiber broadband network system; the radio communication system which now includes Automatic Vehicle Location and Global Positioning Systems to accommodate better schedule tracking, expedited emergency response, and passenger data collection; and a replacement of the emergency blue light telephone system in the Metro Tunnel and MMT locations and installation of new phones to meet new codes and incorporate the Sunset Tunnel.

Backlog

There is currently no backlog for the Train Control & Communications Asset Class.

FY21-25 CIP Planned Investments

The SFMTA is procuring a new Train Control System, with several projects in the FY21-25 CIP contributing to achieve this goal. The Transit Fixed Guideway Train Control System Upgrade project has over $200 million reserved in the CIP. The current 5-year CIP includes significant projects to replace the train control system with construction complete in Fall 2028.

Future Needs

The AMU recognizes that these systems have some of the shortest lifespans of SFMTA assets due to the nature of technological advancement and recommends considering the long-term value of these new systems at purchase.

Significant investment for Train Control & Communications Assets is projected for FY2028, FY2029 and FY2035. A $392 million train control system will be due for replacement in FY2028. The SFMTA's recently upgraded radio communication system is due for replacement in FY2029 and currently valued at over $105 million. A centralized train control system is due to expire in FY2035, which is currently valued at $288 million.

Trolley Coach

The Trolley Coach condition score is trending upward from 3.2 in FY2017 to 4.2 in FY2019 as the SFMTA replaces its Trolley Coach Fleet. With an investment of over $400 million, the SFMTA is purchasing up to 240 40' and 93 60' trolley coaches from New Flyer Inc. Between FY2018 and FY2019, the Agency put 142 40' trolleys into service.

Backlog

There is currently no backlog for the Trolley Coach Asset Class.

FY21-25 CIP Planned Investments

The SFMTA is planning to invest in trolley coach state of good repair through capital projects such as:

- FT080: New Flyer Midlife Overhaul Phase I

- FT099: New Flyer Midlife Overhaul Phase II

Future Needs

A ten-year forward look at Trolley Coach investment need shows significant investment needed for FY2033. In FY2033, an investment of $115,928,019 is required to replace 108 40' New Flyer coaches that were procured in 2018. The Asset Management Unit recommends replacing trolley coaches at the end of their useful lives.

State of Good Repair Investments

Since 2010, the SFMTA has made a commitment to spend an average $250 million per year on State of Good Repair investments.

Because the SFMTA operates in a fiscally constrained environment, the Agency must balance State of Good Repair needs with operations, enhancement, and expansion priorities. In 2010, the SFMTA committed to spend an average of $250 million annually on State of Good Repair over the next 20 years. This was a condition of the full funding grant agreement with the Federal Transit Administration for the Central Subway project. This goal is intended to ensure that the SFMTA balances its resources effectively between maintaining a State of Good Repair and enhancing and expanding the transportation system.

Of the $250 million per year, the SFMTA has made it a policy priority to direct these resources primarily towards "Transit Service Critical" Asset Classes and projects. This spending has resulted in positive results across the asset condition scores of those assets.

In calculating yearly State of Good Repair expenditures, the SFMTA analyzes expenditures at both a project-level and Capital Program-level. Some Capital Programs such as Transit Fixed Guideway are entirely comprised of State of Good Repair investments so that 100% of that Capital Program is counted towards the SFMTA's $250 million annual commitment. Other Capital Programs like Transit Optimization are only partly comprised of State of Good Repair projects and programmatic expenditures so that the SFMTA must consider such programs on a project-by-project basis to determine the amount of State of Good Repair expenditures. At a granular level, some individual projects may contain both State of Good Repair and non-State of Good Repair components. For example, the Van Ness Improvement Project currently under construction combines the expansion and enhancement element of the added Bus Rapid Transit system with the rehabilitation of existing assets including replacement of essential utilities, namely sewer and water. The Agency categorized this project as an improvement and applied 70% of its spending towards State of Good Repair.

Expenditure Average:

From FY 2010 through FY2019, the Agency averaged $234 million per year on State of Good Repair spending.

Actual Expenditures:

The SFMTA has increased its State of Good Repair expenditures nearly every year since FY2015. In FY 2016, the total expenditures for State of Good Repair was $333 million, a 135% increase from the $141 million spent in FY2015; another significant jump was in FY2018 during which $402 million was spent on State of Good Repair, an increase of 19% from the previous year. FY2019 has shown a slight drop of 2% from FY2018.

State of Good Repair funding in the next CIP reflects the realities of the current fiscal landscape. The FY2021-25 CIP budget is approximately $2.4 billion dollars, down $3.4 billion from the previous FY2017-21 CIP, which means that funding available for State of Good Repair investments is reduced proportionally. The FY2021-25 CIP estimates $1.3 billion in State of Good Repair spending over the 5 years of the program.

FIGURE 14: STATE OF GOOD REPAIR INVESTMENTS (FY2010-19 ACTUALS; FY2020-25 PLANNED)

A line graph shows the average SGR spending goal is $250 million per year. The reported annual SGR spending in millions starting in FY2010 has been $125, $125, $140, $135, $211, $142, $333, $338, $402, $394. The projected annual spending starting in FY2020 is $228, $264, $297, $278, $233, $322. The running annual average of SGR spending in millions starting in FY2010 is $125, $125, $130, $131, $147, $146, $173, $194, $217, $235. The projected running average of SGR spending in millions starting in FY2020 is $234, $236, $241, $244, $243, $248.

2019 State of Good Repair Spending: $394 million

Average State of Good Repair Spending: $235

Long-Term Investment Needs

The SFMTA must continue investing in State of Good Repair at or above the current rate over the next 20 years, or aging assets will cause the reported backlog to grow.

Based on the 2019 TERM Lite analysis, it is not enough for the Agency to simply aim to meet its $250 million per year planned State of Good Repair investment goal. Figures 15 and 16 show State of Good Repair annual investment levels and their impact on the reported asset backlog, including an annual 3% escalation. Without accounting for escalation, the SFMTA will need to invest $12.78 billion over the next 20 years to keep its assets in a State of Good Repair. To do this and maintain the reported asset backlog at the same level, the Agency needs to invest an average of $472 million per year for 20 years in State of Good Repair assets. In order to eliminate the entire reported asset backlog, the Agency would need to invest an average of $632 million per year for 20 years on State of Good Repair needs.

FIGURE 15: STATE OF GOOD REPAIR REQUIRED INVESTMENT LEVELS (0% ESCALATION)

$632 million – Full Scheduled Asset Replacement & Eliminate the Backlog

$552 million – Full Scheduled Asset Replacement & Reduce the Backlog by 50%

$472 million – Full Scheduled Asset Replacement & No Growth in Backlog

$304 million – Transit Service Critical Scheduled Asset Replacement

$250 million – Annual State of Good Repair Investment Target

When accounting for a 3% per year escalation rate, the 20-year investment needs rise to $16.75 billion. To fully eliminate the reported asset backlog and meet all State of Good Repair investment needs, the Agency would need to invest $828 million per year for 20 years.

FIGURE 16: STATE OF GOOD REPAIR REQUIRED INVESTMENT LEVELS (3% ESCALATION)

$828 million – Full Scheduled Asset Replacement & Eliminate the Backlog

$749 million – Full Scheduled Asset Replacement & Reduce the Backlog by 50%

$669 million – Full Scheduled Asset Replacement & No Growth in Backlog

$431 million – Transit Service Critical Scheduled Asset Replacement

$250 million – Annual State of Good Repair Investment Target

This analysis shows that the SFMTA still has significant work to do to fully meet recommended State of Good Repair investment levels over the next 20 years. However, the Agency's proactive State of Good Repair spending over the past few years has helped to improve the future State of Good Repair outlook.

Figure 17 shows the $16.75 billion in investment needs by year through FY2039. This excludes the existing $3.24 billion reported backlog. While the model shows a relative steady rise and fall in investment need over the years, it does show a spike in investment need in 2035. The spike is the result of the TERM Lite Model assuming that many of the Agency's assets have a replacement life of 15 years and that the last replacement of assets occurred in 2019 when the backlog was replaced; and thus, many of the Agency's assets are designated for replacement again in 2035.

FIGURE 17: UPCOMING INVESTMENT NEED

FY 2020 investment need is $130 million for TSC and $236 million for Other SGR. FY 2021 investment need is $188 million for TSC and $150 million for Other SGR. FY 2022 investment need is $254 million for TSC and $195 million for Other SGR. FY 2023 investment need is $370 million for TSC and $113 million for Other SGR. FY 2024 investment need is $116 million for TSC and $93 million for Other SGR. FY 2025 investment need is $349 million for TSC and $177 million for Other SGR. FY 2026 investment need is $311 million for TSC and $108 million for Other SGR. FY 2027 investment need is $386 million for TSC and $142 million for Other SGR. FY 2028 investment need is $918 million for TSC and $438 million for Other SGR. FY 2029 investment need is $497 million for TSC and $139 million for Other SGR. FY 2030 investment need is $705 million for TSC and $593 million for Other SGR. FY 2031 investment need is $301 million for TSC and $51 million for Other SGR. FY 2032 investment need is $240 million for TSC and $375 million for Other SGR. FY 2033 investment need is $443 million for TSC and $212 million for Other SGR. FY 2034 investment need is $688 million for TSC and $391 million for Other SGR. FY 2035 investment need is $1.23 billion for TSC and $631 million for Other SGR. FY 2036 investment need is $216 million for TSC and $182 million for Other SGR. FY 2037 investment need is $274 million for TSC and $88 million for Other SGR. FY 2038 investment need is $477 million for TSC and $199 million for Other SGR. FY 2039 investment need is $655 million for TSC and $251 million for Other SGR.

Annual spending needed to meet 20 year need and eliminate the backlog: $632 million.

Annual spending needed to meet 20 year need and eliminate the backlog (3% inflation): $828 million.

IV. Conclusions and Next Steps

Conclusion

Overall, the 2019 State of Good Repair Report reflects the SFMTA's continuous efforts to update and refine its Capital Asset Inventory, its measurements of condition of the transportation system, and process to prioritize and deliver capital improvements that will have the greatest operational impact and value to San Francisco's transportation system.

In 2019, San Francisco's transportation system is generally in a State of Good Repair, with a TERM Lite score of 3.18. Investments in transit service critical assets have resulted in the score of these assets rising since reporting began in 2014. Non-transit service critical assets, however, continue to decline in condition score and increase the overall backlog. The SFMTA will begin to refocus its efforts on supportive infrastructure such as facilities, stations, and technology including modernization of transit yards and investment in new systems such as the Advanced Train Control System and advanced Traffic Signals.

The COVID-19 health emergency will have long term effects on the ability to invest in State of Good Repair projects. While the total available funding will be limited in future years, the emphasis on austerity in transportation spending will mean that new projects must demonstrate additional benefits to the overall transportation system. Projects that emphasize state of good repair and illustrate clear links to improvement in asset condition and performance will be prioritized in future capital improvement programs. As the Agency builds its asset management capacity, it will be in a better position to make these choices and ensure a high level of service in a heavily constrained fiscal environment.

The conclusion of this report is clear; the investment levels are not able to address the Agency's aging assets; the backlog increases each year and the condition trends are declining. The SFMTA has demonstrated the ability to reverse these trends in focused areas with positive results; however, the overall system continues to decline.

The SFMTA can address this through prioritizing capital investments to maximize asset condition, performance and meet replacement and rehabilitation cycles. Additionally, the Agency can address this through operating investments, to ensure sufficient workforce capacity to inspect, monitor, and maintain the condition of its assets to meet performance standards and deliver service.

Next Steps

The SFMTA will continue to build and mature its Asset Management Program by establishing and implementing tasks, strategies and processes to enable efficient asset life cycle management. Future activities include:

Data Refinement

The Asset Management Unit will continue to refine its Capital Asset Inventory data by: adding operational condition data, continuing to develop and detail an Agency-wide asset hierarchy to meet additional reporting requirements, and adding data source and personnel data to assets to support the maturation of the people and processes responsible for asset management practices at the Agency.

Condition Assessment of Traffic Signals

The Agency anticipates completing a condition assessment of 20% of its 1,240 individual traffic signals in FY 2021. This representative sample will allow the SFMTA to extrapolate the condition of the city's traffic signals. The assessment will include a prioritized review of deficiencies, estimates of repair options, and projected scheduled maintenance needs. The Traffic Signals Condition Assessment will result in a new inventory with more accurate condition scores and operational condition data.

SFMTA In-reach and Education

The Asset Management Unit will be conducting a comprehensive and sustained in-reach campaign to build asset management understanding and capacity across the Agency. This campaign will include making the Capital Asset Inventory easily accessible and transparent, reconvening the asset management working group, developing resources for asset maintainers and data owners, and connecting with other asset management units in other departments.

Minimum $250 Million State of Good Repair Investment

The Agency will continue to meet the minimum investment goal of $250 million per year in State of Good Repair needs pursuant to its commitment to the FTA. However, based on the analysis of the past few State of Good Repair reports, it is not enough for the Agency to simply invest in this amount per year. The Agency will need to reevaluate the minimum investment target moving forward, prioritize the funding of projects that support meeting the goal, and identify new sources of revenue to fund State of Good Repair projects.

Enterprise Asset Management System (EAMS)

As the Enterprise Asset Management System (EAMS) continues to be developed across the SFMTA, the Asset Management Unit will continue to connect the disparate data sources across the Agency and integrate these into a meaningful way in the Capital Planning process. The ultimate goal is to link up data sources across the Agency to simplify reporting processes, establish a shared understanding of the Agency's assets, and support decision making across the Agency to promote State of Good Repair.

2018 Transit Asset Management (TAM) Plan Follow-Up

The Asset Management Unit has been implementing the 15 Action Plans identified in the 2018 Transit Asset Management Plan. A priority for the next year is to use asset data to better inform the capital planning process and support cost benefit analysis for new project requests. The Agency will also start conducting bi-annual Asset Management Maturity assessments to measure asset management capacity and ensure the Agency is on track to support increased State of Good Repair decision making in the future.

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